

A study of professional learning community components and Montana class AA high schools
by Douglas Walter Reisig

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Education in Education
Montana State University
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Abstract:
The purpose of this study was to determine the extent to which the five components of a professional learning community exist within Montana Class "AA" high schools. The sample population for the study consisted of building administrators and certified staff personnel in three Montana Class "AA" high schools. These individuals were surveyed to obtain their perceptions on the extent that professional learning community components exist within their Montana "AA" high school and the degree to which five independent variables, such as an administrator's or a certified staff member's gender, years of education experience, employment position, years in similar employment position, and post-baccalaureate training, influence that perception.

Two major questions were answered as a result of this study: (1) to what extent did the five professional learning community components exist within Montana "AA" high schools? (2) was there a difference between the perceived extent that professional learning community components exist within Montana "AA" high schools among and between building administrators and certified staff personnel? The independent t tests of significance were used to determine whether identified individual characteristics provide a significant and unique contribution to the perception that professional learning community components exist within Montana Class "AA" high schools. Second, Analysis of Variance, or ANOVA was used to determine whether there was a significant difference between two or more means at a selected probability level. Finally, multiple linear regression were used to correlate the degree to which the perception that professional learning community components exist was influenced by building administrators and certified staff personnel characteristics.

By understanding the perception among building administrators and certified staff that professional learning community components exist within respective Montana Class "AA" high schools, educational policy makers should gain valuable insights as they begin to develop professional learning communities within their schools.

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APPROVAL

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This dissertation has been read by each member of the dissertation committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

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Date March 27, 2003

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ABSTRACT

The purpose of this study was to determine the extent to which the five components of a professional learning community exist within Montana Class "AA" high schools. The sample population for the study consisted of building administrators and certified staff personnel in three Montana Class "AA" high schools. These individuals were surveyed to obtain their perceptions on the extent that professional learning community components exist within their Montana "AA" high school and the degree to which five independent variables, such as an administrator's or a certified staff member's gender, years of education experience, employment position, years in similar employment position, and post-baccalaureate training, influence that perception.

Two major questions were answered as a result of this study: (1) to what extent did the five professional learning community components exist within Montana "AA" high schools? (2) was there a difference between the perceived extent that professional learning community components exist within Montana "AA" high schools among and between building administrators and certified staff personnel?

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By understanding the perception among building administrators and certified staff that professional learning community components exist within respective Montana Class "AA" high schools, educational policy makers should gain valuable insights as they begin to develop professional learning communities within their schools.

CHAPTER 1

INTRODUCTION

Introduction

Since 1983, with the publication of A Nation at Risk: The Imperative for Educational Reform, the public, public officials, and education professionals have been vocal in their demands for new education programs and procedures in hopes of enhancing school practices through the improvement of the organization of schools. School reforms, such as site-based management, decentralization, staff empowerment, and/or visionary leadership, have been suggested as possible avenues for school improvement. These school improvement recommendations have made assumptions about the nature of schools and the types of reform necessary if schools are going to be more responsive (Brandt, 1992). School reform efforts have promoted the notion that school decision making must become more decentralized because it is the strategic unit for reform (Darling-Hammond, 1995). Peter Senge, in his book, The Fifth Discipline, stated that the people who were in the best position to improve an organization's productivity were the people who currently did the work of the organization (1990). Moreover, literature about school reform has extolled the importance of school staff personnel working collegially to increase organizational results and of building administrators demonstrating skills, both as managers and as visionary leaders (Sergiovanni, 1996).

Equally important as decentralization and visionary leadership is the school improvement emphasis placed on collaboration and staff empowerment in order for building level staff to become meaningfully involved in planning, problem-solving, and evaluating their school programs (Hoerr, 1996). Through empowerment, it is the educator who constitutes the teaching community of the school, who is being encouraged to take greater responsibility for collective actions (Hoerr, 1996, p. 381). Ron Edmonds stated:

> If we are going to achieve school improvement in the United States, we must first get teachers to understand and accept the limitations of what they can do if they continue to work alone and the possibilities of what they can accomplish if they work together (1979).

Just as educational professionals were involved in reform efforts during the 1980's, private industry devoted time and funding to understanding the workplace and its effect on managers and workers. Deal and Kennedy, in their book, Corporate Cultures, reported how business used cultural factors to bring about change with staff (1982). The work of Senge (1990), Block (1993), Galagan (1994), and Whyte (1994) emphasized the importance of nurturing and celebrating the work of each staff member and supporting the collective engagement of staff in such activities as shared vision development, problem identification, learning, and problem resolution. In the business sector this method of business operation was labeled as a "learning organization" (Senge, 1995).

The business literature has served to reinforce the schooling literature as educators have investigated methods by which corporations operate and ways business managers and staff members interact to stay abreast of the influence of work settings on workers. Rosenholtz, building from private industry research, brought teacher workplace factors into the discussion of teaching quality, maintaining that teachers who felt

supported in their own learning and classroom practice were more committed and effective than those who did not (1989). McLaughlin and Talbert confirmed Rosenholtz's findings, suggesting that when experienced teachers had opportunities for collaborative inquiry and its related learning, the result was a body of wisdom about teaching that could be widely shared (1993). Michael Fullan in his book, Change Forces: Probing the Depths of Educational Reform, focused on the teacher workplace and recommended a "redesign of the workplace so that innovation and improvement are built into the daily activities of building administrators and teachers" (1991).

As societal and educational needs continue to change, the application of new forms of school organization configurations has become critical to the success of public education (Hord, 1995). One such configuration is that of a professional learning community. Some educators see it as extending classroom practice into the community, utilizing community resources, both material and human (Sergiovanni, 1994). For others, it suggests bringing community personnel into the school to enhance curriculum (Peterson & Brietzke, 1994). For still others, it means having students, teachers, and administrators reciprocally engage in learning (Boyd & Hord, 1995). Regardless of how professional learning communities are envisioned, there is agreement that a professional learning community is an organizational design where communication is open, participation is widespread, teamwork is prevalent, and diversity is incorporated among administrators and staff members (Royal & Rossi, 1997). Moreover, there exists a shared vision for the future of the school, a common sense of purpose, and a common set of values (p. 4). Schools characterized as professional learning communities exhibit qualities of caring, trust, and respect for each other and such communities recognize

individual effort and accomplishment (Darling-Hammond, 1995). Research suggests that the existence of a professional learning community within a school setting can facilitate an administrator's and a staff member's instructional efforts and enhance his/her personal well-being (Hord, 1995). Bryk and Driscoll have found that in schools characterized as professional learning communities administrator and staff morale is higher, teacher absenteeism is lower, and teachers are more satisfied with their work (Bryk & Driscoll, 1988). In addition, evidence suggests that staff members working within a professional learning community tend to be clearer about the expectations others at school have for them and tend to report feeling burned out, overwhelmed, or confronted with conflicting demands less often at school (Royal & Rossi 1997). Moreover, the existence of a sense of community among staff members may also be an important precursor to the development of a sense of community among students (Darling-Hammond, 1995). The existence of a professional learning community can foster among staff members collaborative behaviors and attitudes that can be modeled for students helping them to mature in their own interpersonal relationships (p. 67). According to Scott and Smith, schools whose teachers cooperate with one another are characterized by cooperation among students (1990).

Problem Statement

It is unknown the extent to which the five components of a professional learning community exist within Montana Class "AA" high schools. Moreover, it is also unknown what characteristics, such as an administrator's or a certified staff member's gender, years of education experience, employment position, years in similar

employment position, and post-baccalaureate training, have the greatest perceived impact on the extent that professional learning community components exist. Understanding the extent that components of a professional learning community exist and the extent that personal characteristics interact on that understanding should help educational policy makers gain valuable insights as they begin to develop professional learning communities within their own high schools.

Purpose Statement

According to the Office of Public Instruction in their publication, Montana Statewide Education Profile, 2001, the number of high school students enrolled in the 182 Montana high school units is 50,031 students. Of that number, 21,579 students, or 43% of the total Montana high school student enrollment, attend high school in 13 of Montana's 182 high school units (pp. A7-A23). These 13 high school units represent the largest Montana high school units. The Montana High School Association classifies the 13 largest Montana high schools as "AA" high schools (Montana High School Association Handbook, 2000). In addition, the Office of Public Instruction estimates there are approximately 3,145 certified and administrative personnel working in Montana high schools (Montana Statewide Education Profile, 2001). Of that number, 1,375, or 44%, of all Montana high school certified and administrative personnel work within Montana "AA" high schools (p. 54). Since 43% of the Montana high school student population attend "AA" high schools and 44% of all certified and administrative Montana high school personnel are concentrated within just 13 Montana "AA" high schools, it is reasonable to use Montana "AA" high school personnel as the target

population for a descriptive research study on the professional learning community components that exist within Montana high schools.

Therefore, the purpose of this study was to determine the extent that components of professional learning communities exist within a selected sample of Montana "AA" high schools.

Theoretical Framework of the Study

In synthesizing the research surrounding professional learning communities, Dr. Shirley Hord, in an article entitled "Professional Learning Communities: What Are They and Why Are They Important" identified five key characteristics of building administrators and school staff personnel that operate in professional learning community organizations (1997). The five important components identified by the literature as fundamental to the existence of a professional learning community include:

1. School administrators participate democratically with teachers in sharing power, authority, and decision making.
2. Certified staff personnel share visions for school improvement that have an undeviating focus on student learning, and are consistently referenced for the staff's work.
3. Certified staff personnel's collective learning and application of learning (taking action) create high intellectual learning tasks and solutions to address student needs.
4. Peers are afforded the opportunity to review and give feedback based on observing each other's classroom behaviors in order to increase individual and

organizational capacity.

5. School conditions and capacities support the certified staff personnel's arrangement as a "professional learning community" (Hord, 1997, p.31).

The requirements necessary for organizational arrangements that produce such professional learning community outcomes include:

> the collegial and facilitative participation of the principal who shares leadership–and thus, power and authority–through inviting staff input in decision making; a shared vision that is developed from an unswerving commitment on the part of staff to students' learning and that is consistently articulated and referenced for the staff's work; collective learning among staff and application of the learning to solutions that address student needs (Hord, 1997, p.32).

What are the components of professional learning communities? To what extent do the five components of professional learning communities exist within a selected sample of Montana "AA" high school systems? Dr. Linda Vrooman Peterson, Director of the School Improvement Division of the Montana Office of Public Instruction, stated that it is the position of the Montana Office of Public Instruction that a study designed to identify the inherent components of professional learning communities and the degree to which Montana high school structures use those components would indeed benefit Montana school districts as well as the Office of Public Instruction and the Montana Board of Public Education. The collection, analysis, and interpretation of data from such a study would have strong implications for the statewide professional development initiative that is a collaborative effort of the Montana education community and is designed to assist districts in implementing standards and assessment (Appendix A).

Significance of the Study

Numerous studies have indicated the value to both students and staff from professional learning community components within the context of a high school setting. However, there is little information about what extent the components inherent in professional learning communities exist within a selected sample of Montana "AA" high schools. From the available research, the suggestion was made that understanding and applying the components to an organizational structure, such as an organizational structure found within Montana "AA" high schools, could provide a positive benefit for both students and staff. This strongly suggested a need for a study that addressed the extent to which the components of professional learning communities exist within Montana "AA" high school systems and whether perceptions of certified staff members and building level administrators were influenced by selected characteristic variables.

Research Questions

This study addressed the following questions:

1. To what extent do the five professional learning community components exist within a selected sample of Montana "AA" high schools?
2. Is there a difference between the perceived extent that professional learning community components exist within a selected sample of Montana "AA" high schools among and between building administrators and certified staff personnel?

Definition of Terms

The following definitions were provided by the researcher or correspond to those used in other sources as indicated by citation and are to be considered operational definitions.

Professional Learning Community: A professional community of learners in which the teachers in a school and its administrators continuously seek and share learning and then act on what they learn. The goal of their actions is to enhance their effectiveness as professionals so that students benefit. The arrangement has also been termed communities of continuous inquiry and improvement. The literature on professional learning communities repeatedly gives attention to five components of such organizational arrangements: supportive and shared leadership, collective creativity, shared values and vision, supportive conditions, and shared personal practice (Hord, 1997).

Certified Teacher: "A fully certified teacher employed by a Montana "AA" high school to perform assigned educational responsibilities" (Montana Statewide Education Profile, 2001).

Building Level Administrator: "A fully certified administrator employed by a Montana "AA" high school to perform assigned administrative responsibilities" (Montana Statewide Education Profile, 2001).

"AA" High School: "A Montana High School Association designation for Montana high school units having over 1,000 enrolled students" (Montana High School Association Handbook, 2000).

Shared Leadership: "A professional relationship between building level administrators and teachers where all grow professionally and learn to view themselves as "all playing on the same team and working toward the same goal: a better school the ability to share authority, the ability to facilitate the work of staff, and the ability to participate without dominating" (Senge, 1995).

Collective Creativity: "People continually expand their capacities to create the results they desire, and where new and expansive patterns of thinking are nurtured" (Senge, 1995).

Shared Values and Vision: "A particular mental image of what is important and not important to an individual and to an organization" (Hord, 1997).

Supportive Conditions: "An environment that determines when, where, and how staff personnel regularly come together as a unit to do the learning, decision making, problem solving, and creative work that characterizes a 'professional learning community'" (Hord, 1997).

Shared Personal Practice: "A review of teacher/administrative work by colleagues that is characterized by observation, scripted notes, and observation discussions" (Darling-Hammond, 1995).

Descriptors of Professional Learning Communities: "A questionnaire instrument developed by Dr. Shirley Hord and the Southwest Educational Laboratory to gauge the extent that educational institutions implement the components of professional learning communities within respective high school units" (Hord, 1997).

Montana High School Association: "Montana state high school activity control organization made up of 169 public and private high school organizational units"

(Montana High School Association Handbook, 2000).

Office of Public Instruction: "A statutorily created Montana governmental agency whose function is to supervise all K-12 agencies and school district units within the K-12 Montana public school system" (Montana Statewide Education Profile, 2001).

Board of Public Education: "A statutorily created Montana governmental agency whose function is to supervise all agencies and school district units within the Montana public school system" (Montana Codes Annotated, 2001).

School Administrators of Montana: "A professional organization of Montana administrators designed to promote Montana education" (School Administrators of Montana [on-line website], 2001).

Design of the Study

This study used the questionnaire, "Descriptors of Professional Learning Communities" developed in 1996 by Dr. Shirley Hord (used with her permission), in conjunction with the two regional educational laboratories: (1) Southwest Educational Laboratory and (2) Appalachia Educational Laboratory (1997). The questionnaire instrument consists of 17 variable descriptors grouped into five major areas or dimensions identified from the literature review (Hord, 1997). Variable descriptors were designed as a series of three statements structured along a continuum that reflected most desirable or more mature practice of the variable descriptor to least desirable or less mature. These statements differentiated the high, middle, and low parameters of the descriptor along a five-point scale. The format and layout of the instrument required the respondent to read all three indicators for each of the 17 variable descriptors and then

mark the response scale (p. 35).

In addition, to explore the extent that administrators and certified staff personnel perceive the components of professional learning communities to exist, a set of variable characteristics (e.g., gender, employment position, years of educational employment experience, years in a similar teaching/administrative position, and educational attainment) was examined. The survey included demographic questions that obtained the individual characteristics that were measured and subsequently correlated. Scores for each variable (such as supportive and shared leadership, collective learning and application of learning, shared values and vision, supportive conditions, and shared personal practice) were examined with the complex variables of interest (i.e., gender, years of teaching experience, high school employment position, number of years in a similar teaching/administrative position, and educational attainment). The techniques used to analyze the collective data from the sample were independent t tests of significance, Analysis of Variance (ANOVA), and regression analysis.

Contact was made with each school district by phone and letter to explain the nature of the study and to inquire about its interest in having one or all of its high school units participate in the study. In addition, a plan was discussed as to the most appropriate person within each selected high school to coordinate the data collection process. Because of the unique nature of each high school, it was left up to the building coordinator to determine the most appropriate procedure for distributing and collecting the completed questionnaires. A collection container and a self-addressed stamped box was provided for each participating high school to mail back completed surveys (see Appendix B).

Summary

Dr. Merrill L. Meehan, in his monograph, "Field Test of an Instrument; Measuring the Concept of Professional Learning Communities in Schools," stated that

> the targets of education reform have shifted dramatically over the past four decades. In the decade of the 1960s, educational reform focused most directly on classroom teachers, both in service and in preparation, through competency/ performance-based teacher education efforts and other innovations. In the decade of the 1970s, the targets for reform efforts moved to students through efforts such as minimum competency tests and increased graduation requirements. In the 1980s, the popularity of the effective school research studies and the publication of the provocative book, A Nation at Risk (National Commission on Excellence in Education, 1983), moved the reform target to that of the school itself. The effective schools research, especially, featured the importance of the school building principal as the instructional leader of more successful schools-along with several other factors. This shift to the school as the target of reform efforts continues in the 1990s. In fact, the term "restructuring schools" has replaced "reforming schools" and "improving schools" in the literature.... Educational reform in the 1990s has also experienced a dramatic interest in the concept of community in educational reform efforts. As Plank noted, there are as many definitions of community as there are authors to write about it. Hord noted the term has multiple meanings to various writers. One meaning is that of expanding the traditional classroom into the broader community to use more and different resources and locales to provide improved learning situations and experiences for school children. A second meaning identified by Hord is when members of the larger community come to the school to enhance the curriculum and learning tasks for students. A third meaning of community is the full assembly of a school's groups–students, teachers, and administrators–all engaged in the learning process. A fourth meaning of learning community for Hord is that of a professional community of learners. She defines this meaning of community as ...the teachers in a school along with its administrators continuously seek and share learning, and act on their learning (p.1).

Today, public schools are expected to successfully fulfill three basic missions:

- The school is expected to serve the community as an institution of custodial care.
- The school is expected to serve the community as an institution that sorts and selects students and prepares them for various roles in a highly differentiated

society.

- The school is expected to serve the community as an institution of teaching for learning (Newmann & Wehlage, 1995).

Many approaches have been offered in the hope that schools, including Montana "AA" high schools, will gain sufficient knowledge and skills to enhance school organizational structures in order to fulfill the educational missions of America's public schools. The message seems clear: professional learning communities can increase staff capacity to serve students (Hord, 1997). Regardless of how they are labeled–whether schools organized in a way as set forth in the study are labeled learning organizations, professional learning communities, or communities of continuous inquiry and improvement–it is important to keep in mind that what is envisioned is a school organization where, "inquiry is normal and the conditions of the workplace support continuous, collegial inquiry . . . that involves the total faculty, builds community, serves to increase student learning through the study of instruction and curriculum, and seeks to provide a supportive organization through a collective study of the health of the school" (Joyce & Calhoun, 1995).

CHAPTER 2

LITERATURE REVIEW

Introduction

Teachers and building level administrators, like members of most organizations, shape their beliefs and actions largely in conformance with the structures, policies, and traditions of the workday world around them. A social organizational perspective asks whether commonly observed associations such as that between teaching and learning are conditionalized by structures, policies, and traditions (Rosenholtz, 1991). The ultimate social organizational variable is the meaning that the organization has for those who work within it (Senge, 1995). To understand schools, schools must be understood the way teachers and building administrators understand them, and attempts must be made to construe how schools appear to teachers and building level administrators who inhabit them (Fullan, 1994).

People come to define their workday realities through a set of shared assumptions about appropriate attitudes and behaviors constructed within them. Meanings of work are exchanged, negotiated, and modified through the communications people have with or the observations they make of others. Thus teachers and administrators learn through everyday interactions how to name and classify organization procedures, and in that process learn how they are expected to behave with reference to those things. In this way, as with other methods, teachers and administrators define the nature and substance

of their work. Building level interactions among teachers and administrators that reflect beliefs and behaviors become necessary, natural, and proper to the social organization of the school (Leiberman, 1995).

The National Association of Secondary School Principal's recent publication "Breaking Ranks," highlights "personalization" of the high school as a key challenge for school reform (Royal & Rossi, 1997). Similarly, Ernest Boyer argues in The Basic School that fostering "community" in schools is essential (1995). Indeed, evidence exists suggesting that a strong sense of community in schools has benefits for both staff members and students and provides a necessary foundation for school improvement (Hord, 1995).

It has become axiomatic in the sociological literature that for organizations to remain viable and productive they must adapt to ever-changing needs and conditions, find solutions to problems and uncertainties, and develop and implement new knowledge, skills, and ideas (Hall, 1987). In short, successful organizations must have the capacity for regulation and self-renewal. Organizational renewal results in large measure from contextual variables–those processes and structures set in place for purposive experimentation, change, and continuous growth (Senge, 1990). It requires a problem-solving orientation by its members undertaken reiteratively and on a collaborative basis (Darling-Hammond, 1994). Finally, it reflects the view that even for organizations that are performing adequately or superbly, as conditions change there is need for still further improvement (p. 2).

Criteria for Selecting the Literature Used in the Review

The criteria for selecting information to include in this literature review involved selecting research information related to the components of school professional learning communities. In addition, only information published in respected professional journals within the last 25 years or in book form was included in the literature review.

Problem Context

In the quest for school improvement, reform initiatives have come and gone. Since the 1980's, it seems that schools have had new initiatives every year or two (Lieberman, 1995). Schools now struggle to coordinate multiple initiatives in hopes of finding answers to educational problems–the technology initiative, the literacy initiative, and the safe schools initiative–but together they create overwhelmed and overworked staff and a potentially fragmented education for students (Caine & Caine, 1998). This predisposition to make improvements by reorganizing procedures, adding new procedures, and taking out ineffective procedures dates back to the Newtonian mechanistic world view of the 17th century. The Newtonian model was built on the idea that the world could be controlled like a big machine (p. 35). By the 1800's, this mechanistic imagery had influenced not only our thinking in the sciences but also our thinking about organizations. Youngblood (1997) commented on this mechanistic perception of organizations in his book, Life at the Edge of Chaos, when he stated, "normally we view organizations as machines with parts that we can disassemble and reconstruct in any fashion we wish. Organizational change is frequently an exercise in

moving parts around until we achieve the magic formula that produces the performance results we desire. We expect to be able to predict the outcomes of these changes and to control them completely" (p. 76).

Education adopted a predictable, orderly, bureaucratic model of functioning. After all, the charge of the public education system was to provide education to the masses–a task that resembled the mass production that was going on in factories (Caine & Caine, 1998). Schools have been divided into grade levels, with each grade assigned specific pieces of the curriculum and a teacher to teach it. When procedures of the system failed, the leaders isolated the problem and replaced the broken piece or added another piece to make the system more effective. In this way, schools got more curriculums, more specialists, and more supervisors (p. 92). However, social, economic, and political changes have occurred since this system of education was originally conceived. Diversity, mobility, and technology have emerged as prime forces shaping our daily lives–forces that were minimal to nonexistent 50 years ago (Youngblood, 1997).

Since A Nation at Risk: The Imperative for Educational Reform, public schools have been urged to engage in improvement activities. In the 1970's, research on effective schools and on the process to achieve them was the focus of improvement efforts (Boyd & Hord, 1994). In the 1980's, the principal came under scrutiny for the role that a person in that position could play in school change efforts (p. 23). In fact, school improvement proponents have mandated that administrators demonstrate skills, both as managers and as visionary leaders (Sergiovanni, 1996). One of the messages that comes from the school improvement research is the critical role leadership plays in initiating and sustaining processes of school improvement. It seems clear and compelling

that local school leaders need both knowledge and demonstrated skill in managing vision-driven organizations (p. 77). In succession came attention to restructuring, school-based management, total quality management, and a myriad of additional programs and processes that were offered to schools to support their improvement efforts (Hord, 1997). R. Brandt, in the article, "On Building Learning Communities: A Conversation with Hank Levin," stated the following with respect to the idea of professional learning communities: "Our view is, by the way, that if you can't make a school a great professional place for its staff, it's never going to be a great place for kids" (1992).

Such factors, indicators, or components that are supportive of the growth, development, and self-esteem of students are exactly those that are critical to gaining the same outcomes for staff in a professional learning community. Numerous studies have indicated the value to both students and staff from the existence of professional learning community components within the context of a school setting. For staff, the results can include:

- reduction of isolation of teachers
- increased commitment to the mission and goals of the school
- increased vigor in working to strengthen the mission
- shared responsibility for the total development of students and collective responsibility for students' success
- higher likelihood that teachers will be well informed, professionally renewed, and inspired to inspire students
- more satisfaction and higher morale, and lower rates of absenteeism

- commitment to making significant and lasting changes a higher likelihood of undertaking fundamental, systemic change (Hord, 1997).

For students, the results can include:

- decreased dropout rate and fewer classes "cut"
- increased learning that is distributed more equitably
- larger academic gains in math, science, history, and reading than in traditional schools
- smaller achievement gaps between students from different backgrounds (p. 50).

Lee, Smith, and Croninger, in a report on one of the extensive restructuring studies conducted by the Center on Organization and Restructuring of Schools, shared findings on 11,000 students enrolled in 820 secondary schools across the nation (1995). In the schools that were characterized by professional learning communities, the staff worked together and changed their classroom pedagogy. As a result, teachers engaged students in high intellectual learning tasks, and students achieved greater academic gains in math, science, history and reading than students in traditionally organized schools (p. 45). In addition, the achievement gaps between students from different backgrounds were smaller in these schools, students learned more, and in the smaller high schools learning was distributed more equitably (p. 48). The schools in the study were organized as professional learning communities and promoted a setting in which staff and students were committed to the mission of the school and worked together to strengthen that mission. Staff members saw themselves as responsible for the total development of the students and shared a collective responsibility for the success of students. In such schools, "teachers and other staff members experience more satisfaction and higher

morale, while students drop out less often and cut fewer classes. And both staff and students post lower rates of absenteeism" (p. 5).

According to the Office of Public Instruction in their publication, Montana Statewide Education Profile, 2001, the number of high school students enrolled in the 182 Montana high school units is 50,031 students. In addition, the Office of Public Instruction estimates there are approximately 3,145 certified and administrative personnel working in Montana high schools (Appendix B, a3-a14). It is unknown at this time the extent that components of a professional learning community exist within Montana high schools. Therefore, if as the literature suggests there is benefit for both students and staff operating within the umbrella of a professional learning community context, it is worth exploring the extent that components of professional learning communities exist within a selected sample of Montana Class "AA" high schools.

Current Understanding of the Problem

Increasingly, educators are paying attention to the quality of the relationships that exist among staff members, building administrators, and students in schools. Although vague generalizations plague many discussions of professional learning communities, a number of researchers have attempted to identify the fundamental components of a healthy and vital school professional learning community (Royal & Rossi, 1997). For Anthony Bryk and Mary Driscoll, a professional learning community is characterized by a system of shared values related to the school and to education in general (1988). Common learning community attributes also include linking school members to each other and to the school's traditions and an "ethos of caring" in interpersonal relations,

evidenced by collegial interactions among staff members (p. 2). For others, including Dr. Shirley Hord, components of a school professional learning community include supportive and shared leadership, collective learning and application of learning, shared values and vision, supportive conditions, and shared personal practice (1996). In a school professional learning community communication is open, participation is widespread, teamwork is prevalent, and diversity is incorporated (p. 35). Staff members and students share a vision for the future of the school, a common sense of purpose, and a common set of values (Royal & Rossi, 1997).

In 1995, Lieberman recommended teacher-learning contexts that included the support of colleagues in a professional learning community that was nurtured and developed not only within, but also outside the school (1995a). In The Work of Restructuring Schools, Lieberman reported that providing ways for teachers to discuss with each other their work on behalf of students reduces the isolation of teachers and mobilizes them to commit themselves to making major changes in how they participate in the school (1995b).

In commenting on the case studies of schools in The Work of Restructuring Schools, Darling-Hammond observed that the schools that began school improvement efforts by looking into teaching and learning and discussing how the practices were effective for students showed academic results more quickly than schools that did not (1995). She insisted that teachers needed to have opportunities to share what they knew, to consult with peers about problems of teaching and learning, and to observe peers teaching (p. 34). Darling-Hammond noted that such activities that fall within the context of professional learning communities deepened teachers' professional understanding

(1993). Further, Bryk et al. concurred that schools with strong democratic practices and expanded local participation were more likely to undertake fundamental, systemic change (1994). He advised helping schools become professional learning communities in order to provide learning environments for adults as well as students so that the full potential of reform could be reached (p. 76).

Moreover, the Center on Organization and Restructuring of Schools indicated that a powerful form of teacher learning came from membership in professional learning communities that extended beyond classrooms and school campuses (Darling-Hammond & McLaughlin, 1995; Wood, 1995). Such communities engaged individuals in collective work and brought them into contact with other people and possibilities. These learning community settings provided opportunities for teachers to reflect critically on their practice, thus creating new knowledge and beliefs about teaching and learning (p. 602). Dr. Gary Sykes agreed that "an invaluable resource for teachers is a professional learning community that can serve as a source of insight and wisdom about problems of practice" (1996).

Furthermore, in a professional learning community, teachers considered educational goals and their meaning in terms of their classrooms, their students, and their subject area. Teachers who made effective teaching adaptations for their students belonged to a professional learning community that encouraged and supported them in transforming their teaching. Through discussion with other teachers and administrators in the professional learning community, teachers' ideas of good teaching and classroom practice were defined (McLaughlin & Talbert, 1993).

In addition, Ernest Boyer's research (1995) concluded that the most essential factor in a successful school is that of connection; the most successful learning occurs when teachers teach effectively in their own classrooms but also find solutions together. In such schools, teachers operated as team members, with shared goals and time routinely designated for professional collaboration. Under these conditions, teachers were more likely to be consistently well informed, professionally renewed, and inspired so that they inspired students (p. 212).

Likewise, the work of the Center on Organization and Restructuring of Schools (Newmann & Wehlage, 1995) comprised four complementary studies involving 1,500 elementary, middle, and high schools throughout the United States, with field research in 44 schools in 16 states. The paper made specific reference to the studies reported by Lee, Smith, and Croninger; Bryk; Louis and Kruse; and Newmann and Wehlage. The results showed that a comprehensive redesign of schools, including decentralization, shared decision making, schools within schools, teacher teaming, and/or creation of professional learning communities of staff, can improve student learning. Four interconnected factors leading to improved student outcomes were identified:

1. Student learning. Teachers agree on a vision of authentic (in agreement with real-world experience or actuality, not contrived) and high-quality intellectual work for students that include intellectually challenging learning tasks and clear goals for high-quality learning. This vision is communicated to students and parents.
2. Authentic pedagogy. High-quality student learning is achieved in classrooms through authentic pedagogy (instruction and assessment) and students of all social backgrounds benefit equally, regardless of race, gender, or family income.

3. Organizational capacity. In order to provide learning of a high intellectual quality, the capacity of the staff to work well as a unit must be developed. The most successful schools functioned as professional learning communities, where teachers helped one another, took collective (not just individual) responsibility for student learning, and worked continuously to improve their teaching practices. Schools with strong professional learning communities offered more authentic pedagogy and were more effective in encouraging student achievement.
4. External support. Schools needed essential financial, technical, and political support from districts, state and federal agencies, reform projects, parents, and other citizens (p. 45).

Similar key professional learning community components of successful school-based reform studied by Quellmalz, Shields, and Knapp included challenging learning experiences for all students, a school culture that nurtures staff collaboration and participation in decision making, and meaningful opportunities for professional growth (Newmann & Wehlage, 1995).

Previous Research, Findings and Opinions

As societal and educational needs continue to change, the application of new forms of school organization configurations has become critical to the success of public education. One such configuration is that of a professional learning community. The term professional learning community is becoming integrated into the language of American education. Some educators see it as extending classroom practice into the community, utilizing community resources, both material and human. For others, it

suggests bringing community personnel into the school to enhance the curriculum and learning tasks for students. For still others, it means having students, teachers, and administrators reciprocally engaged in learning. Astuto et al. (1993) proposed three related communities: (1) the professional community of educators, (2) learning communities of teachers and students (and among students) both within and outside the classroom, and (3) the stakeholder community. Astuto and colleagues labeled the "professional community of learners" as one in which the teachers in a school and its administrators continuously seek and share learning, and act on their learning (Astuto et al., 1993).

In both the private corporate world and the public education sector, attention in the 1980's began to focus on the influence of work settings on workers. Rosenholtz emphasized teacher workplace factors into the discussion of professional learning communities maintaining that teachers who felt supported in their own ongoing learning and classroom practice were more committed and effective than those who did not (1989). Support by means of teacher networks, cooperation among colleagues, and expanded professional roles increased teacher efficacy for meeting students' needs (p. 35). Further, Rosenholtz found that teachers with a strong sense of their own efficacy were more likely to adopt new classroom behaviors and that a strong sense of efficacy encouraged teachers to stay in the profession (p. 47). McLaughlin and Talbert confirmed Rosenholtz's findings, suggesting that when experienced teachers had opportunities for collaborative inquiry and its related learning, the result was a body of wisdom about teaching that could be widely shared (1993). Adding to the discussion, Darling-Hammond cited shared decision making as a factor related to curriculum reform and the

transformation of teaching roles in some schools (1996). In such schools, structured time was provided for teachers to work together in planning instruction, observing each others' classrooms, and sharing feedback (p. 127). Darling-Hammond observed that attention to redesigning the way teachers spend their time and to rethinking teacher responsibilities is greater now than at any time in the past (p. 10). Likewise, McGreal observed that he sees more collaboration and more collegial conversation among school staff than ever before (Brandt, 1996). Further, he judged that "schools are getting better–a lot better" as a result (p. 33).

The private sector has devoted considerable attention to the workplace and its culture. Deal and Kennedy reported how business and private industry managers used cultural factors to bring about change with staff (1982). And, parallel with the educational researchers noted above, organizational theorists working in corporate America have espoused similar ideas about workplace factors. The work of Senge (1990), Block (1993), Galagan (1994), Whyte (1994), and others has emphasized the importance of nurturing and celebrating the work of each individual staff person (Hord, 1997). Moreover, their collective work has emphasized the importance of supporting the collective engagement of staff in such activities as shared vision development, problem identification, collective learning, and problem resolution (p. 23). In the business sector, this way of operating has been labeled a learning organization or a systems approach (Senge, 1990).

The business literature has reinforced the schooling literature as educators have investigated the methods by which corporations operate and the ways business managers and staff interact with one another (Senge, 1995). Currently, the educational consumer is

making demands ever more long and strong. "Schools are now expected not only to offer education, but to ensure learning," and high-quality learning at that (Darling-Hammond, 1996).

Components of Professional Learning Communities

Education reformers are considering a new strategy–professional learning communities–for adopting and implementing potentially powerful programs and practices for staff and students (Hord, 1997). Teachers need to engage in school-wide collegial activities and in joint professional efforts that have children's learning as their purpose (Jalongo, 1991). This strategy involves investing in teacher preparation and professional development, as well as permitting greater autonomy and decision making for teachers. The literature on educational leadership and school change recognizes several components fundamental to the development of a professional learning community within a high school context (Hord, 1996). The essential components identified by the literature as fundamental to the existence of a professional learning community include:

- school administrators participate democratically with teachers in sharing power, authority, and decision making.
- certified staff personnel share visions for school improvement that have an undeviating focus on student learning, and are consistently referenced for the staff's work.
- certified staff personnel's collective learning and application of learning (taking action) create high intellectual learning tasks and solutions to address student

needs.

- peers are afforded the opportunity to review and give feedback based on observing each other's classroom behaviors in order to increase individual and organizational capacity.
- school conditions and capacities support the certified staff personnel's arrangement as a "professional learning community" (p. 31).

Supportive and Shared Leadership

Clearly the role and influence of the campus administrator (the principal, and sometimes an assistant principal) on whether or not change will occur in the school (Sergiovanni, 1996) is central to the creation of a professional learning community. School improvement proponents have mandated that administrators demonstrate skills, both as managers and as visionary leaders (p.78). One message that comes from the school improvement research is the critical role leadership plays in initiating and sustaining processes of school improvement. Ray Stata, CEO of Analog Devices, Inc., pointed to organizational design as the critical function of organizational leadership and saw design as an integrative task (Senge, 1995). "The new job description of leaders," according to Stata, "will involve design of an organization and its policies. This will require seeing a company as a system in which the parts are not only internally connected, but also connected to the external environment, and clarifying how the whole system can work better." Further, Edward Simon, President of Herman Miller, stated, "we need a new generation of organizational architects. But to get there we must first correct basic misunderstandings about the nature of organizational design. It's not just

rearranging the organization structure. We have to get away from the P&L statement and design for the long term–based on understanding interdependencies. Most changes in organization structure are piecemeal reactions to problems. Real designers are continually trying to understand the whole of the organization" (p. 343).

School leadership is leadership at the center in a professional learning community. School leaders clearly position themselves in the center of the staff rather than at the top of the school organizational structure. Leading from the center requires being at the center with accessibility the key and consistent collaboration among the staff as the guiding principal (Louis & Kruse, 1995). In addition, leading from the center means giving up some of the expected leadership behaviors (such as being authoritative, or always running the meetings) in favor of sharing such behaviors with others. Moreover, individuals who lead at the center take advantage of every opportunity to stimulate conversation about teaching and learning, to bind faculty around issues of students and instruction (Hoerr, 1996). Senge in his book, The Fifth Discipline, noted one way to begin developing a learning organization or a professional learning community is to start with those ready to start–but, he cautioned, it is imperative to include all the staff of a school, and that is the hard part (1990). Louis and Kruse warned that unless the initiative extends beyond the enthusiasts, the "community will remain, at best, fragmented" (p. 222). Leaders must realize the necessity of creating opportunities that would pull the faculty together in pursuit of a common objective or goal (Sergiovanni, 1994). Moreover, leaders must provide foresight and personal involvement in nurturing the expansion process (p. 89). Fashioning meaningful ways for teachers to come together to focus on issues and work that concerns all of them is key to creating an

atmosphere for professional learning communities (p. 134).

In a professional learning community, school leaders need both knowledge and demonstrated skill in managing a vision-driven organization (p. 77). Sergiovanni maintained that classrooms must become communities of learning, caring, and inquiring (1996). For this to happen, schools must become a place where teachers are involved in a community of learning, caring, and inquiring. "Key to community in both classrooms and schools is a commitment to inquiry, and a commitment to learning as the basis for decisions" (p. 147). "If our aim is to help students become lifelong learners by cultivating a spirit of inquiry and the capacity for inquiry, then we must provide the same conditions for teachers" (p. 52). It seems clear that transforming the school organization into a learning community can be done only with the leaders' sanction and active nurturing of the entire staff's development as a community (p. 78). It is the chief executive of the school building who supports and encourages continuous learning among its professionals (Darling-Hammond, 1995). This suggests that no longer can leaders be thought of as top-down agents of change or seen as the visionaries of the corporation; leaders must be envisioned as democratic teachers that plant the seeds of community, nurture fledgling community, and protect the community once it emerges. They lead by following; they lead by serving; they lead by inviting others to share in the burdens of leadership (Sergiovanni, 1994, p. 19).

Carmichael discussed the authority and power position held by principals, in whom the principal is viewed as all-wise and all-competent by the staff on the lower rungs of the power-structure ladder (1982). Carmichael found that the "omni-competence" factor that may become internalized by principals and reinforced by others

in the school makes it difficult for principals to admit to any need for professional development themselves or to recognize the dynamic potential of staff contributions to decision making (p. 36). Furthermore, it was difficult for staff to propose divergent views or ideas about the school's effectiveness when the principal is seen in such a dominant position (p. 51). In addition, Carmichael proposed that the notion of principal omni-competence be replaced in favor of principal participation in professional development. Kleine-Kracht suggests that administrators, along with teachers, must be learners: "questioning, investigating, and seeking solutions" for school improvement (1993). The traditional pattern that "teachers teach, students learn, and administrators manage is completely altered. . . . [There is] no longer a hierarchy of who knows more than someone else, but rather the need for everyone to contribute" (p. 393). This new relationship forged between administrators and teachers leads to a shared and collegial leadership in the school, where all grow professionally and learn to view themselves as "all playing on the same team and working toward the same goal: a better school" (Hoerr, 1996, p. 381). Leithwood, Leonard, and Sharratt reinforced these values where principals treated teachers with respect and as professionals, and worked with them as peers and colleagues (1997). Louis and Kruse identified the supportive leadership of principals as one of the necessary human resources for school-based professional communities referring to them as "post-heroic leaders who do not view themselves as the architects of school effectiveness" (1995). Prestine defined three factors required of principals in schools that attempted essential school restructuring: the ability to share authority, the ability to facilitate the work of staff, and the ability to participate without dominating (1993).

The studies of Leithwood, Leonard, and Sharratt made clear that leadership contributes "significantly to school conditions fostering organizational learning processes" (1997). A school whose staff is learning together and participating in decisions about its operation requires a campus administrator who can let go of power and his/her own sense of omnipotence and omni-competence and thereby share the leadership of the school (p. 24). As Sergiovanni explained, "The sources of authority for leadership are embedded in shared ideas" (1994). Snyder, Acker-Hocevar, and Snyder asserted that it is also important that the principal believe that teachers have the capacity to respond to the needs of students, that this belief "provides moral strength for principals to meet difficult political and educational challenges along the way" (1996). Senge (quoted by O'Neil, 1995) added that the principal's job is to create an environment where the staff can learn continuously "then in turn, . . . the job of the superintendent is to find principals and support principals who have that attitude."

Shared Values and Vision

"Vision is a trite term these days, and at various times it refers to mission, purpose, goals, objectives, or a sheet of paper posted near the principal's office" (Isaacson & Bamburg, 1992). However, in a professional learning community, leaders model the behaviors of the professional community, keeping the vision of such a workplace culture alive and visible. As Louis and Kruse observe, "a democracy is more than a form of government; it is primarily a mode of associated living through communicated experience" and a professional learning community is founded on a "process of communicating ideas, ideals, shared concerns, and interests" (1995). Thus,

the autocratic leader who holds all the power, who is dominating, and who makes all decisions will not likely model participatory behaviors related to democratic practice. The professional learning community allows dissent and debate among its members, and this can result in increased understanding and learning (Rosenholtz, 1989). Traditions and commonly accepted practice are challenged and discussed as a means to new insights and practices. The leader's vision of a democratically grounded community of professionals is an important factor in the development of a successful professional learning community (Darling-Hammond, 1996).

However, sharing vision is not just agreeing with a good idea; it is a particular mental image of what is important to an individual and to an organization (Senge, 1990). Staff members are encouraged not only to be involved in the process of developing a shared vision, but to use that vision as a guidepost in decision making about teaching and learning in the school (p. 172). A core characteristic of the professional learning community is an undeviating focus on student learning (Louis & Kruse, 1995). Students are pictured as academically capable, and staff envisions learning environments to support and realize each student's potential achievement (p. 76). These shared values and visions lead to binding norms of behavior that the staff shares (Hord, 1996).

In such a community, the individual staff member is responsible for his/her actions, but the common good is placed on a par with personal ambition (Senge, 1990). The relationships of individuals are caring and such caring is supported by open communication and trust (Fawcett, 1996). Newmann maintained that the concern of the adults in the school for the "intellectual quality of student learning, in contrast to concern for techniques, such as whether to have portfolios or whether to eliminate all ability

grouping" makes the difference in the values and visions that the staff bring to teaching and learning (Brandt, 1995).

Further, Newmann explained that the degree to which the staff develops into a professional learning community that engages and develops the commitment and talents of all individuals into a group effort that "pushes for learning of high intellectual quality" is the key to student success (p. 73). Martel defined the vision of the professional learning community as a focus on "the quality of life, quality of work, and quality of learning–in short, a total quality focus" (Martel, 1993).

Collective Learning and Creativity

In his book, The Fifth Discipline, Peter Senge provides a description of a learning organization that serves to increase organizational capacity and creativity applicable to the educational environment (1990). The idea of a learning organization "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" caught the attention of educators struggling to plan and implement reform in the nation's schools (p. 3).

As Senge's paradigm shift was explored by educators and shared in educational journals, the concept became known as a "professional learning community." In schools, the professional learning community was exemplified when people from multiple constituencies at all levels collaboratively and continually worked together, "enhancing their capacity to create things they really want to create" (Louis & Kruse, 1995). Within a professional learning community a culture of high intellectual quality exists among staff,

students, and administrators (Darling-Hammond, 1995). Acquiring and applying new knowledge is an intellectual task and a high priority in a professional learning community. Leaders support a culture of inquiry through constant scanning and bringing in of new ideas and people to help teachers reflect on their teaching practices and to develop increased skills. Leaders championed the need for information and sharing of data so that staff could become engaged in organizational discussions (Louis & Kruse, 1995). Likewise, leaders also support and promote action research by teachers as a means by which teachers consume and generate new knowledge (Brandt, 1995). Teachers need continuous interaction to assimilate significant ideas, as well as support for examining and identifying new practices that can increase their effectiveness. For this to happen, leaders take personal action to make connections to research and promising practice outside the school or provide the external means for doing so (Sergiovanni, 1995).

Such collaborative work is grounded in what Newmann and Louis and Kruse (Brandt, 1995) labeled reflective dialogue, in which administrative and staff personnel conduct conversations about students and teaching and learning, identifying related issues and problems. Griffin referred to these activities as inquiry and believes that as principals and teachers inquire together they create community (Sergiovanni, 1994). Inquiry helped overcome chasms caused by various specializations of grade level and subject matter (p. 105). Inquiry forced debate among teachers about what is important. Inquiry promoted understanding and appreciation for the work of others....and inquiry helped principals and teachers create the ties that bound them together as a special group and that bound them to a shared set of ideas. Inquiry, in other words, helped principals

and teachers become a community of learners (p. 115). Participants in such conversations learned to apply new ideas and information to problem solving (Hord, 1996).

Such reflection almost certainly leads to conflict through questioning organizational activities and challenging organizational values (Senge, 1990). Principals can address this conflict by providing an environment in which teachers resolve their dissension through discussion and debate (Lieberman, 1995). In essence, this means persistently addressing disagreements through a series of opportunities provided by the principal for continuous discussion and exploration (p. 155). Frequently such discussion results in an accommodation of differences among individuals and a sense of arriving at a solution that everyone can live with, even if all are not wholeheartedly in favor of it (Senge, 1995). Such discussion, often made possible by the building administrator, allows individuals to rethink their decisions and actions (Sergiovanni, 1996). Addressing conflict is in direct opposition to the traditional posture of ignoring or avoiding conflict (p. 76). Effective leaders manage conflict by providing a safe forum for discussion, reinforcing the values of the community, and being willing to live with uncertainty and ambiguity as the participants work through the issues involved (Fullan, 1993).

Supportive Conditions

The design of a high school as a work setting either nourishes or impedes the formation of a strong professional learning community (Louis & Kruse, 1994). Structural conditions that create interdependent work settings foster interdependence in other parts of the school, creating connections between different aspects of teachers' academic work.

Issues of time, size, physical conditions, coordination among teachers, communication and autonomy, and control over membership influence professional practice (pp. 13-17). Supportive conditions determine when, where and how staff comes together as a unit to do the learning, decision making, problem solving, and creative work that characterize a professional learning community (Hord, 1996). Two types of conditions are necessary for professional learning communities to function productively: (1) the physical or structural setup and (2) the human qualities/capacities of the people involved (Boyd, 1992; Louis & Kruse, 1995).

Physical Capacities. Louis and Kruse identified physical factors that support professional learning communities. Issues, such as time to meet and talk, small size of the school and physical proximity of the staff to one another, teaching roles that are interdependent, communication structures, school autonomy, and teacher empowerment (1995) were found to be key supportive conditions in the creation of professional learning communities. An additional factor was staff ability to select teachers and administrators for the school with the possibility of encouraging staff who are not in tune with the program to find work elsewhere (p. 56). Boyd's list of physical factors in a context conducive to school change and improvement is similar: the availability of resources; schedules and structures that reduce isolation; policies that provide greater autonomy, foster collaboration, provide effective communication, and provide for staff development (1994).

For Watts and Castle, the vital physical condition is time. Louis (1992a) and Raywid (1993) suggest that time is not only necessary to carry out change agendas but essential if innovation is to be maintained. In 1983, Goodlad claimed that schools could

not remain both static and exceptional. He argued that an institutionalized ongoing self-renewal process is necessary for the maintenance of school effectiveness, and that this, in turn, implies a need for considerable and regular blocks of time devoted to professional learning and school improvement. Teachers need opportunities to consider pedagogy within department or grade level gatherings and in the context of all-school efforts (Louis & Kruse, 1994).

Tacking additional voluntary time onto the ends of already tiring school days rarely works; it must be built into the school day and calendar. Consequently, the use of professional time must be understood in two ways. First, teachers must be provided the means to meet on a daily basis to address issues of concern to immediate work groups of faculty–departments, grade levels or teams. Second, provision must be made for cross-connection among smaller work groups that emerge in the full faculty (Darling-Hammond, 1996).

"Time is a resource and time, or more properly lack of it, is one of the most difficult problems faced by schools and districts" (Watts & Castle, 1993). This problem is a significant issue for faculties that wish to work together collegially, and it has been cited as both a barrier (when it is not available) and a supportive factor (when it is present) by staff members engaging in school improvement (p. 306). Donahoe maintained that formally rearranging the use of time in schools so that staff is supported in their interactions is a prime issue to be resolved by restructuring schools (1993). Raywid also addressed the need for supplying meaningful time for staff to engage in the work of learning and acting on behalf of improvement for students (1993).

In addition to time, physical proximity structures that provide opportunities for informal communication are important in promoting administrative and teacher effort in school improvement efforts. Teachers need places in which to interact, but physical conditions are often a barrier to the exchange of ideas and the establishment of a sense of identity relating to common interests and goals (Louis & Miles, 1990). Creating common work spaces, such as team planning rooms, is one way to provide relief from the classroom isolation and pressured work schedules found in most school buildings. Moreover, when teachers are physically close, occasions for sustained observations and conversations related to teaching and student learning increase (Darling-Hammond, 1995). Teachers interacting in new roles (such as mentors, advisors, and specialists concerning classroom practice) create feedback mechanisms to learn (Senge, 1990). Administrators and teachers who work in interdependent settings act as professionals when their interactions support a shared value structure rather than reinforcing artificial boundaries between their roles (Rosenholtz, 1991). In turn, interdependent teaching fosters opportunities for closer relationships, more dialogue, feedback and discussion of specifics of practice–all of which produces a greater certainty about education pedagogical practice (Louis, 1991).

People Capacities. One of the basic characteristics of individuals, cited by Louis and Kruse, working in a productive professional learning community, is a willingness to accept feedback and work toward improvement (1995). Creating a school-wide professional learning community requires structures that encourage exchange of ideas within and across organizational boundaries. Regular meetings with agendas focused on teaching and learning provide opportunities to discuss instruction and curriculum,

personal and professional growth experiences, and the establishment of discourse communities that encourage the exchange of ideas (p. 16). Teacher networks within schools help to foster an environment where talk about pedagogy, school organization and student learning is common. By linking teachers engaged in similar work or with similar interests, communication networks of every sort promote discussion and reflection (p. 17). In addition, professional learning communities are distinguished by high degrees of teacher empowerment and school autonomy (Hord, 1995). Autonomy to act as an individual frees teachers to decide what is the best practice given their classroom situation. In a professional learning community, teachers become empowered as a group to consider the impact of their collective actions and practice on students, and arrive at decisions to limit individual freedom to promote the effectiveness of the group (Louis & Kruse, 1994). Bryk and colleagues have articulated the significance of the human and social dimensions within professional learning communities (Bryk & Driscoll, 1988; Bryk & Rollow, 1992; Bryk, Lee & Holland, 1993; Bryk, Easton, Kerbow, Rollow, & Sebring, 1993). The factors include openness to improvement, trust and respect, access to expertise, supportive leadership, and mechanisms to socialize new members. Openness to improvement within the school is important to ensure teachers' sense of professional community (Louis, Marks & Kruse, 1994). Trust and respect from colleagues inside the school and key members of relevant external communities, such as parents and the district office staff, are necessary conditions for developing professional learning communities (Rosenholtz, 1991). Trust is an essential ingredient for collegiality, because it helps to induce a sense of loyalty, commitment and effectiveness necessary for shared decision making and the establishment of collegiality. Without trust

among faculty, change efforts become contrived and without lasting impact (Hargreaves, 1992). Trust involves both predictability and common goals that are the reflection of the foundation of shared values. Access to expertise is another key ingredient in the formation of professional learning communities (Lieberman, 1995b). A professional learning community is based on an intellectual and practical grasp of a knowledge and skills base. A professional learning community can only be maintained when individual teachers improve learning not only for their own students but also make their expertise available to their colleagues. The practice of teaching becomes understood, generated through development, and enhanced through innovation in schools with strong cognitive and skill bases (Brown & Duguid, 1991). Without continued individual growth in teachers' knowledge and skills, in concert with supportive leadership to mediate existing poor performance, it is unlikely that a collectively rewarding environment can be established or maintained (Louis, 1992b). Leadership, whether provided by school administrators or site-based teams, focuses efforts on the core issues of shared purpose, continuous improvement and structural change (Fullan, 1992; Murphy & Louis, 1994). Within professional learning communities there is support for the teacher and his/her classroom instructional activities. Instructional leadership becomes a central requirement of a developing community of learning professionals in which "increased cognitive understanding of instruction and learning and a more sophisticated repertoire of teaching skills" are goals (Guskey & Peterson, 1996). The main support issues are that leaders need to assist teachers in improving their classroom performance; leaders can look to others, either inside or outside the physical building, but the leader must be certain that help is available. Further, in order for teachers to feel safe about asking or receiving

assistance individually, a climate in which instruction is viewed as problematic must exist (Kleine-Kracht, 1993).

Supporting a shared vision acts to create coherence and unity, and establishes a sense of "internal quality" (Vandenberghe & Staessens, 1991). School leaders stimulate general commitment of participants to organizational effectiveness by creating meaningful interaction among faculty that focuses on a supportive environment and a climate for learning (Angle & Perry, 1983; Caldwell & Spinks, 1992). What leaders say and do, express what they value for the organization. The behavioral expectations that they communicate on a daily basis either reinforce or call into question these basic values and assumptions (Staessens, 1991). Administrators who focus on classroom practice demonstrate through their actions that pedagogy is important, which in turn supports the expectation that conversation around these issues is worthy. Socialization refers to the processes for inducting new members of the group. Clear socialization procedures must be present to maintain a sense of community since this is the main mechanism for helping new members become part of the group (VanMaanen & Schein, 1979). Where strong organizational norms exist, processes to socialize new members into the school are likely to exist (Driscoll, 1989). Through their mutual efforts, teachers generate an informal induction process to protect existing routines and perpetuate the school community. Because administrators often pay minimal attention to mentoring new teachers, veteran teachers have become, by default, the "bearers of the vision" (Vandenberghe & Staessens, 1991) that ensures conformity with valued practices. While this may work to ensure coherence and quality in teaching in schools where professional learning communities already exist, where such professional learning communities do not

exist the result is often the reinforcement of the "egg carton" model of teacher isolation. Development activities need to focus not only on training in new curriculum practices and instructional techniques but also on the development of the staff as an effectively functioning group, a professional learning community. Collective work is the vehicle for clarifying the expected and possible as well as the prohibited and unthinkable. These interactions become, therefore, a form of social control, as certain behavior is accepted and other is dissuaded in a daily process aimed at creating the common social reality, a professional learning community.

Respect and trust among colleagues at the school and district level, possession of an appropriate cognitive and skill base that enables effective teaching and learning, supportive leadership from administrators and others in key roles, and relatively intensive socialization processes are key social structure characteristics for the creation and maintenance of professional learning communities (p. 111). There is a strong parallel between the findings of Louis and Kruse (1995) and those identified by Boyd (1992) with respect to these characteristics. Boyd identified characteristics necessary to build on people capacities for development of professional learning communities (1992). Among those characteristics were: positive teacher attitudes toward schooling, students, and change; students' heightened interest and engagement with learning; norms of continuous critical inquiry and continuous improvement; widely shared vision or sense of purpose; norm of involvement in decision making; collegial relationships among teachers; positive, caring student-teacher-administrator relationships; and a sense of community in the school (p. 89). Boyd continued by pointing out that the physical condition and people factors are highly interactive, each influencing the other (p. 123). Boyd and Hord

clustered the people capacity factors into four functions that help build a context conducive to change and improvement: reducing staff isolation, increasing staff capacity, providing a caring and productive environment, and improving the quality of the school's programs for students (1994).

Peer Feedback and Review

Review of a teacher's behavior by colleagues is the norm in the professional learning community (Louis & Kruse, 1995). This practice is not evaluative but is part of the "peers helping peers" process (p. 143). Such review is conducted regularly by teachers who visit each other's classrooms to observe, script notes, and discuss observations with each other (p. 167). The process is based on the desire for individual and community improvement and is enabled by the mutual respect and trustworthiness of staff members (Hord, 1996). Wignall described such high schools as high schools in which teachers share their practice and enjoy a high level of collaboration in their daily work life (1992). Mutual respect and understanding are the fundamental requirements for this kind of workplace culture. Teachers find help, support, and trust as a result of the development of a positive relationship with each other (p. 12). For Wignall, teachers who work within a professional learning community are "teachers that tolerate (even encourage) debate, discussion and disagreement. They are comfortable sharing both their successes and their failures. They praise and recognize one another's triumphs, and offer empathy and support for each other's troubles" (p. 18). Teachers need "an environment that values and supports hard work, the acceptance of challenging tasks, risk taking, and the promotion of growth" (Midgley & Wood, 1993).

To support staff and student growth, Lieberman recommended a teacher-learning context to include the support of colleagues in a professional learning community nurtured and developed not only within but also outside the school (1995). In The Work of Restructuring Schools, providing ways for teachers to discuss with each other about their work on behalf of students reduces the isolation of teachers and mobilizes them to commit themselves to making major changes in how they participate in the school (1995). Further, schools that initiated school improvement efforts by looking into teaching and learning, and discussing how the practices were effective for students, showed academic results more quickly than schools that did not (Louis & Kruse, 1995). Darling-Hammond insisted that teachers need to have opportunities to share what they know, to consult with peers about problems of teaching and learning, and to observe peers teaching (1993). Darling-Hammond noted that such activities in professional learning communities deepen teachers' professional understanding (p.72).

Bryk, Easton, Kerbow, Rollow, and Sebring concurred that schools with strong democratic practices and expanded local participation are more likely to undertake fundamental, systemic change (1994). They advised helping schools to become professional learning communities in order to provide learning environments for adults as well as students, so that the full potential of reform may be reached (pp. 74-78).

A powerful form of teacher learning comes from membership in professional learning communities that extend beyond classrooms and school campuses (Darling-Hammond & McLaughlin, 1995; Wood, 1995). Such communities engage individuals in collective work and bring them into contact with other people and possibilities (p. 601). These settings provide opportunities for teachers to reflect critically on their practice,

thus creating new knowledge and beliefs about teaching and learning (Wood, 1995).

Lieberman and McLaughlin advised against pressuring individual teachers to develop new skills but rather recommended building communities of teacher/learners (1992). Gary Sykes (1996) agreed that "an invaluable resource for teachers is a professional learning community that can serve as a source of insight and wisdom about problems of practice." Teachers need opportunities for colleagues–someone other than the campus administrator–to observe them in trying new practices and to provide non-evaluative feedback (p. 466). This helps them to understand the subjects they teach and the facilitating roles they play in the school. McLaughlin and Talbert (1993), from their longitudinal study of 16 high schools in California and Michigan, reported that teachers' groups and professional communities "offer the most effective unit of intervention and powerful opportunity for reform" and that "participation in a professional learning community . . . supports the risk-taking and struggle entailed in transforming practice" (pp. 15-18).

In a professional learning community, teachers can consider educational goals and their meaning in terms of their classrooms, their students, and their subject area (Hord, 1995). Teachers who made effective teaching adaptations for their students belonged to a professional learning community that encouraged and supported them in transforming their teaching. Through discussion with other teachers and administrators in the professional community, ideas of good teaching and classroom practice are defined (McLaughlin & Talbert, 1993). Ernest Boyer's research concluded that the most essential factor in a successful school is that of connection; the most successful learning occurs when teachers teach effectively in their own classrooms but also find solutions

together (1995). In such schools, teachers operate as team members with shared goals and time routinely designated for professional collaboration (p. 33). Under these conditions, teachers are more likely to be consistently well informed, professionally renewed, and inspired so that they inspire students (p. 39). Quellmalz, Shields, and Knapp reinforced Boyer's research by finding that key features of a successful professional learning community included challenging learning experiences for all students, a school culture that nurtures staff collaboration and participation in decision making, and meaningful opportunities for professional growth (1995)

Review of Methodologies Used

It is unknown the extent that the five components of a professional learning community exist within a selected sample of Montana Class "AA" high schools. Moreover, it is also unknown at this time which characteristics, such as an administrator's or a certified staff member's gender, years of education experience, employment position, years in similar employment position, and post-baccalaureate training, have the greatest interaction on the perceived extent that professional learning community components exist. Understanding the extent that components of a professional learning community exist and the extent that personal characteristics interact on that understanding should help educational policy makers gain valuable insights as they begin to develop professional learning communities within their own high schools.

This study used the questionnaire, "Descriptors of Professional Learning Communities," developed in 1996 by Dr. Shirley Hord in conjunction with the two regional educational laboratories: (1) Southwest Educational Laboratory; and (2)

Appalachia Educational Laboratory (1997). The questionnaire instrument consists of 17 variable descriptors grouped into five major areas or dimensions identified from the literature review (Hord, 1997). The five dimensions are:

- the collegial and facilitative participation of the principal, who shares leadership (and power and authority) and decision making with the staff (with two descriptors);
- a shared vision that is developed from the staff's unswerving commitment to students' learning and that is consistently articulated and referenced for the staff's work (with three descriptors);
- learning that is done collectively to create solutions that address students' needs (with five descriptors);
- the visitation and review of each teacher's classroom practices by peers as a feedback and assistance activity to support individual and community improvement (with two descriptors); and
- physical conditions and human capacities that support such an operation (with five descriptors) (Hord, 1997).

Needed informational data was studied using appropriate statistics based on the data gathered. Scores for each variable (such as supportive and shared leadership, collective learning and application of learning, shared values and vision, supportive conditions, and shared personal practice) were correlated with the complex variables of interest (i.e., gender, years of teaching experience, high school employment position, number of years in a similar teaching/administrative position, and educational

attainment). The techniques used to analyze data were independent t tests of significance, Analysis of Variance (ANOVA), and regression analysis.

Summary

This review of the literature on professional learning communities represents the work of educational researchers in the fields of teaching and learning. Through defining components, characteristics and operational procedures of professional learning communities, the review of the literature provided understanding and awareness. Further, the literature review is clear about the significant outcomes for both staff and students that result from professional learning community organization arrangements. The collection of research studies cited clearly identified the power of the organized professional learning community that makes possible the advancement of student achievement and professional staff growth. Through the professional learning community teachers can learn "how to translate enhanced curricula and higher standards into teaching and learning for all of their students" (McLaughlin & Talbert, 1993). In support of McLaughlin and Talbert, Sergiovanni maintained that classrooms must become professional communities of learning, caring, and inquiring. For this to happen, the school itself must become a place where teachers are involved in a community of learning, caring, and inquiring (1996). "Key to community in both classrooms and schools is a commitment to inquiry, and a commitment to learning as the basis for decisions" (p. 147). "If our aim is to help students become lifelong learners by cultivating a spirit of inquiry and the capacity for inquiry, then we must provide the same conditions for teachers" (p. 52).

It is, however, not simply the presence of the professional learning community but what the community chooses to focus on that influences outcomes (p. 5). To support that premise, McLaughlin cautioned that professional learning communities, in and of themselves, are not necessarily a good thing (1993). Values and beliefs shared by a group of individuals can be misplaced and may not support appropriate efforts to respond to the needs of students (p. 7). There is no certainty that organizing schools into professional learning communities will eliminate all organizational and student achievement problems (p. 15). However, it seems quite plausible that the opportunities provided by regular meetings of professional learning communities, that inquiry into innovative solutions to student learning, and that thoughtful examination of new programs and practices could result in increased understanding and learning (Alexander, Murphy, & Woods, 1996). Professional learning communities can increase administrative and staff capacity to serve students, but success depends on what administrators and staff members do in their collective efforts (Hord, 1996). Whether schools organized in this way are labeled learning organizations, learning communities, professional learning communities, professional schools, problem-solving schools, or communities of continuous inquiry and improvement, it is important to keep in mind that what is envisioned is a quantum leap toward the creation of a setting where inquiry is normal (Darling-Hammond, 1996). Moreover, the conditions of the workplace support continuous, collegial inquiry . . . that involves the total faculty, builds community, serves to increase student learning through the study of instruction and curriculum, and seeks to provide a nurturing organization through collective study of the health of the school (Joyce & Calhoun, 1995).

CHAPTER 3

METHODOLOGY

Introduction

In synthesizing the research surrounding professional learning communities, Dr. Shirley Hord, in her professional journal article entitled, "Professional Learning Communities: What Are They and Why Are They Important," identified five key characteristics of building administrators and school staff personnel that operate in professional learning community organizations (1997). The five important components identified by the literature as fundamental to the existence of a professional learning community include:

1. School administrators participate democratically with teachers in sharing power, authority, and decision making.
2. Certified staff personnel share visions for school improvement that have an undeviating focus on student learning, and are consistently referenced for the staff's work.
3. Certified staff personnel's collective learning and application of learning (taking action) create high intellectual learning tasks and solutions to address student needs.

4. Peers are afforded the opportunity to review and give feedback based on observing each other's classroom behaviors in order to increase individual and organizational capacity.
5. School conditions and capacities support the certified staff personnel's arrangement as a "professional learning community" (Hord, 1997, p.31).

It was unknown at this time the extent that the five components of a professional learning community exist within a selected sample of Montana Class "AA" high schools. Moreover, it is also unknown which characteristics, such as an administrator's or a certified staff member's gender, years of education experience, employment position, years in similar employment position, and post-baccalaureate training, have the greatest interaction on the perceived extent that professional learning community components exist. Understanding the extent that components of a professional learning community exist and the extent that personal characteristics interact on that understanding should help educational policy makers gain valuable insights as they begin to develop professional learning communities within their own high schools.

Population and Sample

There are approximately 182 four-year public high schools in Montana with an aggregate teacher/administrator population of 3,125 certified educators (Office of Public Instruction, 2001). Of that number, approximately 1,375 certified educators and building administrators work in Montana Class "AA" high schools (Montana Statewide Education

Profile, 2001). The sample for this study was drawn from three of the 13 Class "AA" schools as identified by the Montana High School Association school size classification guidelines (Montana High School Association Handbook, 2000). The schools selected for the study are heterogeneous and are representative of the population chosen for the study. The ethnicity of each of the school personnel selected to participate in the study is predominately Anglo-Saxon (Montana Statewide Education Profile, 2001). Although primarily middle class, administrators and teachers who work within Montana high schools represent diversity in socioeconomic status. In addition, a majority (63%) of the administrators/teachers working in Montana high schools are male (OPI, 2001). Montana high schools selected for the study and the corresponding high school administrators and staff personnel were volunteer participants and had the option to have their identities remain confidential. Permission to administer the 17 variable descriptor questionnaire, "Descriptors of Professional Learning Communities," was obtained from district superintendents who oversee administrative operations within the districts the selected high schools are located.

The sample for this study was not a randomly selected from Montana Class "AA" high schools. A purposeful sampling technique was used for this study. In a research study given only to Montana high school administrators and teaching personnel within selected high schools, consideration was given to the convenience and cooperation of the participating schools and the problem of statistical inference was left up to the reader. Therefore, one Class "AA" high school was selected from western Montana, one from central Montana, and one from eastern Montana. The number of respondents contained

within the selected sample provided an acceptable sample size. The Sample Size Table formulated by Krejcie and Morgan found in the book, Educational Research, Competencies for Analysis and Application, by L. R. Gay, suggested that with a population of approximately 1,375, a sample size of approximately 302 responses was acceptable (1996). Moreover, Gay maintains that for descriptive research, the corresponding general guideline is to sample 10% to 20% percent of the population (p. 124). According to the Office of Public Instruction in their publication, Montana Statewide Education Profile (2001, p.53), the average certified and administrative staff size for a Montana "AA" high school ranges from 140 to 175 individuals. Therefore, a sample of three "AA" high schools, which could generate 420 to 520 potential sample responses, was sufficient to generate a necessary response rate for a Montana "AA" high school certified and administrative population of 1,375 while at the same time providing latitude for a "no return" factor.

Data Collection Instrument

This study used the questionnaire, "Descriptors of Professional Learning Communities," developed by Dr. Shirley Hord and the Southwest Regional Education Laboratory. The questionnaire instrument consists of 17 variable descriptors grouped into five major areas or dimensions identified from the literature review (Hord, 1997). The 17 variable descriptors were organized in a Likert-type format and were organized to illuminate the dimensions and are distributed unevenly across the five dimensions. The variable descriptors are designed as a series of three statements structured along a

continuum that reflected most desirable or more mature practice of the variable descriptor to least desirable or less mature. For example, under the first dimension noted above, "collegial and facilitative participation of the principal, who shares leadership . . . through inviting shared decision making from the staff," one of the variable descriptors is presented as a series of three statements along a continuum:

- Administrator(s) involves the entire staff.
- Administrator(s) involves a small committee, council, or team of staff.
- Administrator(s) does not involve any staff.

These statements differentiate the high, middle, and low parameters of the descriptor along a five-point scale. The format and layout of the instrument required the respondent to read all three indicators for each of the 17 variable descriptors and then mark the response scale (p. 35). In addition, to explore the extent that professional learning community components were perceived to exist among administrators and certified staff personnel, a set of school individual characteristics was examined. Characteristics, such as variables of gender identification, years of teaching experience, high school employment position, the number of years in a similar teaching/administrative position, and post-baccalaureate educational training of building administrative and certified staff personnel working in Montana "AA" high schools was examined to see the collective and/or separate contributions of each individual to the perception of professional learning community component existence.

Validity and Reliability

The "Descriptors of Professional Learning Communities" instrument has been tested and proven to be both a valid and reliable instrument (Hord, 1997). Validity of the instrument was established on the basis of construct, concurrent, and content validity. Construct validity assesses whether the instrument can be shown to measure constructs that explain some aspect of human behavior (p. 139). Concurrent validity refers to comparing the instrument with another purporting to measure the same concept (p. 139). Finally, content validity refers to the sampling adequacy of the content of the instrument (p. 141). On the other hand, reliability refers to the stability of an individual's response over time and consistency within the instrument (Gay, 1996). Both reliability and construct, concurrent, and content validity factors were assessed for the "Descriptors of Professional Learning Communities" instrument through pilot and field test procedures.

Pilot Test: Instrument Development. A pilot test, conducted by the Appalachia Education Laboratory in conjunction with Dr. Shirley Hord of the Southwest Regional Education Laboratory, was conducted in 1996. The purpose of the pilot test was to assess the reliability or consistency of the "Descriptors of Professional Learning Communities" instrument. Two types of reliability indicators were used in the pilot test: internal consistency that was established by determining how each item on a test related to all other items on a test and to the total test and stability (test-retest) that determined the degree to which scores were consistent over time (Gay, 1996). For the pilot test, Cronbach's Alpha was applied to the "Descriptors of Professional Learning Communities" instrument. The reliability for the total of the 17 items was + .92. What

constitutes an acceptable level of reliability is to some degree determined by the type of test although a coefficient over .90 would be acceptable for any test and indicate appropriate instrument internal consistency (Meehan, 1997).

The test-retest measures stability over time and the reliability for the 15 participants who could be matched with individual ID numbers was +.94. Again, .90 would be seen as an acceptable indicator for appropriate instrument internal consistency (p. 31). The pilot test of the "Descriptors of Professional Learning Communities" instrument in the Appalachia Educational Laboratory region with the pilot study group suggested that the instrument possessed psychometric properties sufficient to continue its use (p. 37).

Field Test: Instrument Development. The field test of the "Descriptors of Professional Learning Communities" instrument was designed with two objectives relevant to this study: (1) to assess the reliability of the professional learning community instrument, and, (2) to assess the validity of the professional learning community instrument (Hord, 1997). The sample for the study included all the teachers in 21 schools in Appalachia Educational Laboratory's four-state region who completed and returned the instrument. A total of 690 teachers completed and returned the instrument and the field test schools were in Kentucky, Tennessee, Virginia, and West Virginia. In addition, a sub-sample of teachers in four large Tennessee high schools was involved in the Appalachia Educational Laboratory project. They volunteered to participate also in the concurrent validity and stability (test-retest) reliability analyses by (1) completing a school climate instrument at the same time and (2) including an individual identification

number on their instruments for purposes of the retest. The number of teachers in the high schools was 53, 57, 61, and 60. The four high schools were in the same district. The district's student population is 99% Caucasian, with 13% on free or reduced lunches. It is reported that 64% of these high school students are college-bound, a figure based on the percentage of the 1996 graduating class that enrolled in two- or four-year colleges (p.10).

Finally, in addition to being used in the 21 Appalachia Educational Laboratory region schools in the field test, the instrument was administered to the school staff known from previous research and described to be operating as a professional learning community. This school, a "known group" for the construct validity analysis, was an urban school of 23 teachers and about 400 students in the New Orleans school district. The instrument was administered to this school's staff as part of the field test (Meehan, 1997).

Data Analyses: Reliability and Validity. Analyses of the instrument began with a file of the 690 teachers in the 21 schools, with files of data from the four high schools, and with the file of the "known group." All of the analyses were completed at Appalachia Educational Laboratory, using the SPSS statistical analysis software package. The reliability analyses consisted of two types–internal consistency and stability (or test-retest). First, the internal consistency reliability coefficient, using Cronbach's Alpha formula, was computed for the total instrument. The Alpha reliability coefficient was computed on the main file of 690 cases; although not all teachers completed all items, it was .94. Next, the instrument's Alpha reliability was computed for the 21 individual

schools in the field test. These analyses were conducted to assess the reliability at the level of intended use–the individual school. These Alphas ranged from .62 to .95, with one in the .60s, none in the .70s, seven in the .80s, and 13 in the .90s. The instrument yielded satisfactory internal consistency (coefficient Alpha) reliability for the total instrument in the field test (Evaluation Center, 1998). Second, the stability (test-retest) reliability coefficient was computed with the sub-sample of four high school faculties in Tennessee. The resulting value for the total instrument score (.6147) was marginally satisfactory, with the potential to increase, or decrease, if the sample size were to increase (p. 25).

Validity Analyses (Content, Concurrent, Construct). Content validity (checking that the content is appropriate) was assessed at three stages: during the development, early review, and modest reformatting of the instrument. Dr. Shirley Hord, Southwest Educational Laboratory, and the author of the "Descriptors of Professional Learning Communities" instrument established the content of the five dimensions. Dr. Hord's review of the educational and business/corporate literature, plus her field research with schools located in the southwestern United States that functioned as professional learning communities served as the basis for the content of the instrument (1997). The Appalachia Educational Laboratory conducted the second stage of the content validity assessment as they independently reviewed the five dimensions and 17 variable descriptors. Finally, the Appalachia Educational Laboratory, in conjunction with the Southwest Educational Laboratory, reformatted the instrument after reaching consensus on wording to gain additional clarity and consistency (Meehan, 1997). Appalachia Educational Laboratory

sent the reformatted instrument to Dr. Hord, and the third stage of content review was completed when she assessed the minor word changes and confirmed that the reformatting was consistent with the original intentions for the instrument. Based on the three stages of review of items in the instrument, it was judged to possess sufficient content validity for its original intention of measuring the concept of a professional learning community within the professional staff of K-12 schools (1997).

Concurrent validity (comparing the instrument with another purporting to measure the same concept) was assessed by administering a school climate instrument. With respect to concurrent validity, the "Descriptors of Professional Learning Communities" instrument possessed satisfactory correlation with the school climate instrument used in the field test with a sub-sample (n = 114) of four high school faculties (the correlation between the 17-item field test instrument and the 10-item school climate instrument was .7489, significant at even the .01 level) (Evaluation Center, 1998).

Finally, construct validity was addressed by determining if the "Descriptors of Professional Learning Communities" instrument did measure the psychological construct called professional learning community (Hord, 1997). The "known group" was the method used for construct validity analysis. The scores of the teachers in the school that was known from previous research to be functioning as a professional learning community were compared to the scores of the 690 teachers from the 21 schools in the field test database (p. 21). The 21 Appalachia Educational Laboratory schools that were volunteer schools made no assumptions as to whether or not they were schools of professional learning communities; no data was available to support or to refute that. The

purpose of the construct validity check was to assess the difference of the scores from the known group teachers with the scores from all other teachers in the main database with the "t" test. A "t" test is used to determine whether two means are significantly different at a selected probability level. The "t" test makes adjustments for the fact that the distribution of scores for small samples becomes increasingly different from a normal distribution as sample size becomes increasingly smaller (Gay, 1996). The higher scores from the teachers in the school known to be a professional learning community differed significantly from those of the teachers in the field test. Using the known group methodology, the instrument appears to represent the construct of a mature professional learning community (Meehan, 1997).

Research Design

Much of the current literature on school reform addresses the importance of school staff personnel working collegially to increase successful results for students. Research suggests that a strong sense of community, as identified in the components of professional learning communities, can facilitate staff members' instructional efforts and enhance their personal well-being (Darling-Hammond, 1995). Bryk and Driscoll, for instance, found that in communally organized schools staff morale is higher, teacher absenteeism is lower, and teachers are more satisfied with their work (1997). In addition, research suggests that staff members experiencing a strong sense of community tend to be clearer about the expectations others at school have for them and tend to report feeling burned out, overwhelmed, or confronted with conflicting demands less often at school

(Royal & Rossi, 1996). Moreover, a sense of community among staff members may also be an important first step to the development of a sense of community among students (Darling-Hammond, 1996). As community is fostered among staff members, appropriate behaviors and attitudes are modeled for students, helping them to mature in their own interpersonal relationships (Sergiovanni, 1994). Similar observations have been made with respect to the development of a collaborative school climate. Stuart Smith and James Scott suggest that "schools whose teachers cooperate with one another are characterized by cooperation among students" (Smith & Scott, 1990).

It is unknown the extent that the five components of a professional learning community exist within a selected sample of Montana Class "AA" high schools. Moreover, it is also unknown which characteristics, such as an administrator's or a certified staff member's gender, years of education experience, employment position, years in similar employment position, and post-baccalaureate training, have the greatest interaction on the perceived extent that professional learning community components exist. Understanding the extent that components of a professional learning community exist and the extent that personal characteristics interact on that understanding should help educational policy makers gain valuable insights as they begin to develop professional learning communities within their own high schools.

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- the collegial and facilitative participation of the principal, who shares leadership (and power and authority) and decision making with the staff (with two descriptors);
- a shared vision that is developed from the staff's unswerving commitment to students' learning and that is consistently articulated and referenced for the staff's work (with three descriptors);
- learning that is done collectively to create solutions that address students' needs (with five descriptors);
- the visitation and review of each teacher's classroom practices by peers as a feedback and assistance activity to support individual and community improvement (with two descriptors); and
- physical conditions and human capacities that support such an operation (with five descriptors) (Hord, 1997).

In addition, to explore the relationship between the extent that components of professional learning communities are perceived to exist within a selected sample of Montana Class "AA" high schools, a set of school individual characteristics was examined. The techniques used to analyze data were independent t tests of significance, Analysis of Variance (ANOVA), and regression analysis.

Invalidity

With a study of this nature, there are a number of research design concerns surrounding invalidity and minimization issues. First, it is quite possible that components of bias could skew the findings and conclusions resulting from a study of this type. Finding true high school samples from among Montana Class "AA" high schools is making the assumption that there are sample high schools within the Class "AA" Montana high school classification that represent other schools within that particular classification. This bias, known as judgment sampling bias, could tilt study findings and conclusions in one direction or another (Gay, 1996). Second, experimenter effect is another bias element that is of concern (p. 354). Experimenter effect bias occurs when the researcher may be inaccurate in evaluating sample results due to previous knowledge concerning the behavior of subjects selected for the study. Third, insufficient response rates could jeopardize legitimate findings. Fourth, limiting the variables to gender identification, years of teaching experience, high school employment position, the number of years in a similar teaching/administrative position, and post-baccalaureate educational training of building administrative and certified staff personnel working in Montana "AA" high schools could sway statistical findings. Fifth, the study assumed that building administrators and certified teaching staff have the ability to reflect on their particular professional practice and make informed judgments based on the 17 questionnaire topics to be covered by the "Descriptors of Professional Leaning Communities Questionnaire." Asking school administrators and teaching staff personnel to objectively look into their behaviors and those behaviors that permeate their

educational institution organization is a difficult task.

Minimization

Though bias issues are a genuine concern within a study of this nature, certain procedures, such as selecting one "AA" high school from western Montana, one from central Montana and one from eastern Montana, was used to minimize the intrusion of bias. Judgment sampling bias, which involves selecting a sample that is believed to be representative of a given population, could be subject to disagreement on what actually constitutes a "representative sample" (Gay, 1996). Possible experimenter effect bias, though in all likelihood not entirely eliminated from the study, was minimized through strict adherence to avoidance of outcome expectation communication with any personnel connected with the study (p. 356). Insufficient response rates that could jeopardize legitimate findings was minimized by the researcher, if necessary, going to selected high schools and making a personal presentation as to the problem, purpose, and questions to be addressed by the study. Emphasis was placed on the value of responding objectively to questionnaires. Participation remained confidential and only aggregate findings were disseminated to participating high schools. Doing so should ease the concern among school administrators and teaching staff personnel about objectively looking into their behaviors and those behaviors that permeate their educational institution organization.

Initial Data Analysis Strategy

Through this study, inherent components of professional learning communities identified by the review of the literature and the extent that those components exist within

a selected sample of Montana Class "AA" high schools was studied. This study was conducted in an attempt to gain insight into the extent that the components inherent in professional learning communities exist within a selected sample of Class "AA" Montana high schools. Moreover, since no study has been conducted on Montana high schools, this study also explored relationships among selected variables that may assist in understanding the extent that the components of professional learning communities exist in Montana high school systems. Scores for each variable, such as supportive and shared leadership, collective learning and application of learning, shared values and vision, supportive conditions, and shared personal practice were correlated with the variables of interest (i.e., gender identification, years of teaching experience, high school employment position, number of years in a similar teaching/administrative position, and post-baccalaureate educational training of building administrative and certified staff personnel working in Montana "AA" high schools).

To determine if there was a difference between the perceived extent that professional learning community components exist within a selected sample of Montana "AA" high schools among and between building administrators and certified staff personnel, several null hypotheses were tested. The dependent variable (variable Y) in this study was the perception that Montana Class "AA" high school building administrators and certified staff personnel have with regard to the extent that components of professional learning communities exist within their high schools. Identified building administrator and certified staff individual characteristics (variables X_1 - X_5) are the independent variables. They are identified below:

Identified Characteristics (Independent Variables X_1- X_5):

X_1 The gender of the building administrator and certified staff member.

X_2 The employment position an individual holds within a high school organization (i.e., building administrator or certified staff member).

X_3 Number of years the building administrator and certified staff member have worked in education.

X_4 Number of years the building administrator and certified staff member have held a similar employment position in education.

X_5 The level of post-baccalaureate attainment of the building administrator and certified staff member.

The null hypotheses tested in this study were:

Null Hypothesis 1: There is no significant difference based on gender between a building administrator's mean perception on the extent that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools (variable Y) and a certified staff member's mean perception. The independent variable considered was gender (X_1) and the dependent variable (variable Y) was the perception on the extent that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools.

Null Hypothesis 2: There is no significant difference based on employment position between building administrator mean perception on the extent that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools and certified staff member mean perception. The independent variable

considered was employment position (X_2) and the dependent variable (variable Y) was the perception on the extent that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools.

Null Hypothesis 3: There is no significant difference based on years of educational experience, years in a similar employment position, and/or educational attainment on the extent that components of professional learning communities exist within a selected sample of Montana Class "AA" high schools as perceived by building administrators and certified staff personnel: The independent variables considered were years of educational experience (X_3), years in a similar employment position (X_4), or educational attainment (X_5), and the dependent variable (variable Y) was the perception on the extent that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools.

Null Hypothesis 4: None of the independent variables (variables X_1- X_5) provide a significant and unique contribution to a building administrator's or a certified staff member's perception (variable Y) on the extent of professional learning community component existence within a selected sample of Montana Class "AA" high schools.

The techniques used to analyze data were independent t tests of significance, Analysis of Variance (ANOVA), and regression analysis. Independent t tests of significance were used to test Hypothesis #1 and Hypothesis #2 to determine if there was a significant difference based on gender and employment position, on the mean perception on the extent that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools (variable Y) and the set of

independent identified characteristics (variables X_1 and X_2). Independent t tests of significance were used to determine whether two means are significantly different at a selected probability level. In other words, for a given sample size, the t indicates how often a difference as large or larger would be found when there is no true population difference. Independent samples are samples that are randomly formed–formed without any type of matching. The members of one group are not related to members of the other group in any systematic way other than that they are selected from the same population. The t test makes adjustments for the fact that the distribution of scores for small samples becomes increasingly different from a normal distribution as sample sizes become increasingly smaller (Gay 1996). The strategy of the t test is to compare the actual mean difference observed with the difference expected by chance. The t test involves forming the ratio of these two values. If two groups are randomly formed, the expectation is that they are essentially the same at the beginning of a study with respect to performance on the dependent variable. Therefore, if they are essentially the same at the end of the study, the null hypothesis is probably true; if they are different at the end of the study, the null hypothesis is probably false–that is, the treatment does make a difference. The key word is essentially. Thus, the t test for independent samples is used to determine whether there is probably a significant difference between the means of two independent samples (p.478). As such, determining mean differences between teacher/building administrator demographic variables (e.g., variables of gender identification and high school employment position of building administrative and certified staff personnel working in Montana "AA" high schools) and professional learning community components were

reviewed to ascertain levels of statistical significance. One way ANOVA and Tukey's Multiple Comparison was used was to test null hypothesis #3. Its purpose was to determine if there was a significant difference, based on the number of years of teaching experience, number of years in a similar employment position, and educational attainment, on the extent that components of professional learning communities exist within a selected sample of Montana Class "AA" high schools as perceived by building administrators and certified staff personnel. Analysis of Variance, or ANOVA, was used to determine whether there is a significant difference between two or more means at a selected probability level. In a study involving three groups, for example, ANOVA is an appropriate analysis technique (Glass and Hopkins, 1996). Three (or more) means are bound to be different; the question is whether the differences represent true differences or chance differences resulting from sampling error. To answer this question at a given probability level, the ANOVA was applied to the data and an F ratio was computed (p.377). The concept underlying ANOVA is that the total variation, or variance, of scores can be attributed to two sources: (a) variance between groups (variance caused by the treatment) and (b) variance within groups (error variance). With ANOVA, a ratio will be formed (the *F* ratio) with group differences as the numerator (variance between groups) and an error term as the denominator (variance within groups). Randomly formed groups were assumed to be essentially the same at the beginning of a study on a measure of the dependent variable (Gay, 1996). At the end of the study, after administration of the independent variable (i.e. years of experience, attainment, etc.), determination was made as to whether the between groups (treatment) variance differed from the within groups

(error) variance by more than what would be expected by chance. In other words, if the treatment variance was significantly larger than the error variance, a significant *F* ratio would result, the null hypothesis would be rejected. It was concluded that the treatment had a significant effect on the dependent variable. If, on the other hand, the treatment variance and error variance were essentially the same (did not differ by more than what would be expected by chance), the resulting *F* ratio would not be significant and the null hypothesis would not be rejected. The Analysis of Variance (ANOVA) sought to answer whether there was a difference between the perceived extent that components of professional learning communities exist within a selected sample of Class "AA" high schools between and among building administrators and certified staff personnel. The Tukey Range Statistic was utilized as a planned multiple comparison technique between the use of the Scheffe that is more conservative in discriminating significant differences among and between building administrators and certified staff personnel and the Newman-Keuls which is less conservative.

Finally, multiple regression was used to test null hypothesis #4 to determine if any of the identified characteristics (variables X_1- X_5) provide a significant and unique contribution to the relationship of a building administrator's or a certified staff member's perceived extent of professional learning community component existence within a selected sample of Montana Class "AA" high schools (variable Y). According to Kerlinger (1992, p. 531), multiple linear regression can be used to determine the collective and separate contribution of two or more independent variables to the variability of a dependent variable. This study sought to account for the variance in

perception of existence of professional learning community components by identifying to what degree the five independent variables were perceived to impact individual perception. The use of the multiple correlation co-efficient R^2 indicated the amount (percentage) of variability of the dependent variable accounted for by knowledge of the independent variables. The value of R^2 represented the proportion (percentage) of variability of the dependent variable accounted for by knowledge of the independent variables in the regression model. Though the sample for this study was a sample whose results may or may not have implications back to a larger population, the adjusted R^2 value was the expected degree of fit of the regression model to the total population represented by the sample data. Stated differently, the adjusted R^2 reflects the expected percentage of variability of the dependent variable Y explained by knowledge of the independent variables when the model is applied to the full population, Montana Class "AA" high schools.

While the focus of this study was perception of professional learning community component existence, the study attempted to discover the most efficient regression model by employing a backwards, variable elimination regression analysis. A t test of significance was used to test Hypothesis #4, where t was used to determine if the regression coefficients (b) differed significantly from zero (Glass, 1996). Since the five independent variables, $X_1 - X_5$, used a scale that included five measures to determine the extent to which the respondent believed professional learning community components existed, it was difficult to determine the relative importance of each variable on the basis of raw-score (b value) coefficients alone. Since the relative contribution of each variable

was of interest, standardized regression coefficients (beta weights, $ß_i$) were calculated. Each beta weight value indicates the incremental contribution of the corresponding independent variable in the presence of the other included variables. That is, for example, $ß_i$ indicates the unique contribution of X_1 to the variance of the dependent variable Y. Therefore, performing a t test of significance on $ß_i$ was a means of evaluating whether X_1 made a significant contribution with the influence of the other included independent variables controlled. In addition, at each step in the process, an F Test tested the significance of R^2 against the null hypothesis,

$$H_0 : R^2 = 0.$$

Moreover, at each step in the process, a t test of significance for each beta weight in the model tested the null hypothesis,

$$H_0 : ß_1 = 0.$$

Rejection of the null hypothesis implied that X_1 provided a significant and unique contribution to the prediction of Y after the other included variable(s) were taken into account.

Since a combination of variables usually results in a more accurate picture than any one variable, descriptive relationship studies can utilize an inferential statistic equation referred to as a regression equation (Gay, 1996). Use of a regression equation is valued because of its versatility and precision. It can be used with data representing any scale of measurement and can be used to analyze the results from correlation studies (p. 482). It not only determines whether variables are related, but also the degree to which variables are related (p. 483).

Delimitations

The sample was drawn from three of the 13 Class "AA" schools as identified by the Montana High School Association school size classification guidelines (Montana High School Association Handbook, 2000). Of the three sample Class "AA" high schools, one was from western Montana, one from central Montana, and one from eastern Montana. In a research study given only to Montana high school administrators and teaching personnel within selected high schools, consideration was given to the convenience and cooperation of the participating schools, and the problem of statistical inference was left up to the reader. The generalizations of the results of the study were limited to the sample that participated due to the volunteer nature of both the high schools participating in the study and the participating administrators and teaching personnel. The Sample Size Table formulated by Krejcie and Morgan found in the book, Educational Research, Competencies For Analysis and Application by L. R. Gay, suggests that with a population of approximately 1,375, a sample size of approximately 302 responses would be acceptable (1996). Since the average certified and administrative staff size for a Montana "AA" high school ranges from 140 to 175 individuals, a sample of three "AA" high schools, which could generate 420 to 520 potential responses, should be sufficient to generate a necessary response rate for a Montana "AA" high school certified and administrative population of 1,375 while at the same time providing a cushion for a "no return" factor (Montana Statewide Education Profile, 2001).

Further, only the variables of gender identification, years of teaching experience, high school employment position, number of years in a similar teaching/administrative

position, and post-baccalaureate educational training of building administrative and certified staff personnel working in Montana "AA" high schools were considered in the demographic nature of the administrators and teaching personnel in selected high schools. Age of the respondents was considered as a variable but disregarded as accurate; information on age could prove difficult due to personal perceptions on aging. Finally, the questionnaire instrument did not leave any opportunity for open-ended responses but was a close-ended Likert scale instrument.

Limitations

This study was limited by four factors. First, due to time and revenue considerations, only three of the 13 Montana "AA" high schools were selected for the study sample. Selecting more high schools would have an impact on the results of the study, but the number of sampling respondents represented an acceptable number for a representative sample of a given population (Gay, 1996). Second, the scope of this study only addressed issues related to the five major areas with 17 sub-area variables contained in the "Descriptors of Professional Learning Community" questionnaire instrument. The questionnaire instrument consisted of 17 variable descriptors grouped into five major areas or dimensions identified from the literature review (Hord, 1997). The 17 variable descriptors were organized in a Likert-type format and were organized to illuminate the dimensions and were distributed unevenly across the five dimensions. Third, there were few, if any, studies similar to this study on Montana high schools that lent themselves to analysis of research findings. Fourth, since 63% of the people involved in administrative

and/or teaching positions in Montana high schools are male, the study was susceptible to a male bias in the analysis of results (OPI, 2001).

Time Frame

Data were collected by administering the "Descriptors of Professional Learning Communities" questionnaire to a "representative" sample of high school administrators and teaching personnel within selected Montana Class "AA" high schools. Permission to conduct the questionnaire and to make a personal address to high school staff as to the problem, purpose, and questions to be addressed by the study were obtained from appropriate individuals at each Montana school district with a high school selected for the study.

All administrators and teaching staff invited to participate were afforded the opportunity to have their individual identities remain confidential. All participating schools were sent a copy of the aggregate findings relating to the study's problem, purpose and questions.

Contact was made with each school district by phone and letter to explain the nature of the study and to inquire about its interest in having one or all of its high school units participate in the study. In addition, inquiry was made as to the district's willingness to have a personal presentation as to the problem, purpose, and questions of the study. Finally, a plan was discussed as to the most appropriate person within each selected high school to coordinate the data collection process. Once the coordinator for each high school was identified, a face-to-face discussion was conducted to further explain the study and answer

any potential questions. Because of the unique nature of each high school, it was left up to the building coordinator to determine the most appropriate procedure for distributing and collecting the completed questionnaires.

To help standardize the completion of the "Descriptors of Professional Learning Communities" questionnaire, instructions for completing the questionnaire were included on the top of the questionnaire. The participating administrators and teaching staff personnel were informed that, in addition to five individual questions relating to the variables of gender identification, years of teaching experience, high school employment position, the number of years in a similar teaching/administrative position, and post-baccalaureate educational training of building administrative and certified staff personnel working in Montana "AA" high schools, they were asked to rate their particular school situation with respect to each one of the 17 questions contained within five questionnaire categories. Once completed, the "Descriptors of Professional Learning Communities" questionnaires were returned for inclusion in the study.

Summary

Much of the current literature on school reform extols the importance of school staff working collegially to increase results for staff and students. Dr. Shirley Hord, in her professional journal article entitled "Professional Learning Communities: What Are They and Why Are They Important?," defined certain characteristics of school staffs that operated as collaborative communities of professional learners (1997). Among the important components identified by the literature for professional learning community existence are

supportive and shared leadership, collective learning and application of learning, shared values and vision, supportive conditions, and shared personal practice (p. 31). The requirements necessary for organizational arrangements that produce such professional learning community outcomes include:

> the collegial and facilitative participation of the principal who shares leadership–and thus, power and authority–through inviting staff input in decision making; a shared vision that is developed from an unswerving commitment on the part of staff to students' learning and that is consistently articulated and referenced for the staff's work; collective learning among staff and application of the learning to solutions that address student needs (p. 32).

Dr. Linda Vrooman Peterson, Director of the School Improvement Division of the Montana Office of Public Instruction, stated that it is the position of the Montana Office of Public Instruction that a study designed to identify the inherent components of professional learning communities and the degree to which Montana high school structures use those components would indeed benefit Montana school districts as well as the Office of Public Instruction and the Montana Board of Public Education. The collection, analysis, and interpretation of data from such a study would have strong implications for the statewide professional development initiative that is a collaborative effort of the Montana education community and is designed to assist districts in implementing standards and assessment (Appendix A).

It is unknown at this time the extent that the five components of a professional learning community exist within a selected sample of Montana Class "AA" high schools. Moreover, it is also unknown at this time which characteristics, such as an administrator's or a certified staff member's gender, years of education experience, employment position,

years in similar employment position, and post-baccalaureate training, have the greatest interaction on the perceived extent that professional learning community components exist. Understanding the extent that components of a professional learning community exist and the extent that personal characteristics interact on that understanding should help educational policy makers gain valuable insights as they begin to develop professional learning communities within their own high schools.

To conduct the research to determine correlation relationships among selected variables that may assist in understanding the extent that the components of professional learning communities exist in Montana high school systems, this study used the "Descriptors of Professional Learning Communities" questionnaire. The questionnaire was both pilot-tested and field-tested for reliability and validity and found to meet the professional research standard in both areas. The purpose of this study was to determine the extent that components of professional learning communities exist within Montana "AA" high schools. For this purpose, the study relied on the components of descriptive and inferential statistics. The techniques used to analyze data were independent t tests of significance, Analysis of Variance (ANOVA), and inferential statistic procedures, referred to as regression analysis.

CHAPTER 4

RESULTS/FINDINGS

Introduction

The focus of this study was to determine the extent that components of professional learning communities exist within a selected sample of Montana "AA" high schools. To achieve this, two research questions were addressed. First, to what extent do the five professional learning community components exist within a selected sample of Montana "AA" high schools? Second, what is the perception that professional learning community components exist within a selected sample of Montana "AA" high schools among and between building administrators and certified staff personnel?

Four hypotheses were tested for this investigation. The effects of five independent variables: (1) gender, (2) similar employment position, (3) years of educational employment experience, (4) years of employment experience in similar educational position, and (5) educational attainment on the perception that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools were analyzed. For the purpose of testing significance, the .05 alpha level was selected. To test the hypotheses, three types of statistical analysis were performed: independent t tests of significance, Analysis of Variance (ANOVA), and regression analysis. The order of presentation of the hypotheses in Chapter 3 is followed in the analysis and presentation of the data.

Characteristics of the Sample

The sample for this study was comprised of 303 teachers and building administrators from three Montana Class "AA" high schools. In School "A," 54 respondents were male and 44 were female. In School "B," 60 respondents were male and 42 were female. In School "C," 62 respondents were male and 41 were female. Moreover, 22 respondents listed themselves as administrators, while 281 respondents listed themselves as teachers.

Tables 1 through 15 summarize the frequency characteristics of the five independent variables studied, disaggregated by the three schools included in the study. The data indicated that most respondents were males. Furthermore, most were teachers, as opposed to administrators, with a majority of them having between six to 25 years worth of teaching experience. In addition, most respondents had between six to 25 years worth of employment experience in their similar employment positions. Finally, all respondents were grouped by educational attainment in one of the following six attainment categories: BA, BA+30, BA+50, MA, MA+30, or MA+50.

Table 1. Frequency Distribution Based on Gender – School "A"

	Frequency	Percent	Cumulative Percent
Males	54	55.1	55.1
Females	44	44.9	100
Total	98	100	

Table 2. Frequency Distribution Based on High School Employment Position – School "A"

	Frequency	Percent	Cumulative Percent
Administrator	8	8.2	8.2
Staff Member	90	91.8	100
Total	98	100	

Table 3. Frequency Distribution Based on Educational Employment Experience – School "A"

		Frequency	Percent	Cumulative Percent
0 - 5	Years of Experience	6	6.1	6.1
6 - 10	Years of Experience	13	13.3	19.4
11 - 15	Years of Experience	20	20.4	39.8
16 – 20	Years of Experience	23	23.5	63.3
21 - 25	Years of Experience	15	15.3	78.6
26 – 30	Years of Experience	12	12.2	90.8
31 - 35	Years of Experience	9	9.2	100
Total		98	100	

Table 4. Frequency Distribution Based on Experience in Similar Employment Position – School "A"

		Frequency	Percent	Cumulative Percent
0 - 5	Years of Experience	16	16.3	16.3
6 - 10	Years of Experience	21	21.4	37.8
11 - 15	Years of Experience	26	26.5	64.3
16 – 20	Years of Experience	20	20.4	84.7
21 - 25	Years of Experience	10	10.2	94.9
26 – 30	Years of Experience	3	3.1	98.0
31 - 35	Years of Experience	2	2.0	100
Total		98	100	

Table 5. Frequency Distribution Based on Educational Attainment – School "A"

	Frequency	Percent	Cumulative Percent
BA	19	19.4	19.4
BA+30	13	13.3	32.7
BA+50	15	15.3	48.0
MA	15	15.3	63.3
MA+30	18	18.4	81.6
MA+50	18	18.4	100
Total	98	100	

Table 6. Frequency Distribution Based on Gender – School "B"

	Frequency	Percent	Cumulative Percent
Males	60	58.8	58.8
Females	42	41.2	100.0
Total	102	100	

Table 7. Frequency Distribution Based on High School Employment Position – School "B"

	Frequency	Percent	Cumulative Percent
Administrator	7	6.9	6.9
Staff Member	95	93.1	100.0
Total	102	100	

Table 8. Frequency Distribution Based on Educational Employment Experience – School "B"

		Frequency	Percent	Cumulative Percent
0 - 5	Years of Experience	15	14.7	14.7
6 - 10	Years of Experience	17	16.7	31.4
11 - 15	Years of Experience	28	27.5	58.8
16 – 20	Years of Experience	12	11.8	70.6
21 - 25	Years of Experience	14	13.7	84.3
26 – 30	Years of Experience	7	6.9	91.2
31 - 35	Years of Experience	9	8.8	100
Total		102	100	

Table 9. Frequency Distribution Based on Experience in Similar Employment Position – School "B"

		Frequency	Percent	Cumulative Percent
0 - 5	Years of Experience	23	22.5	22.5
6 - 10	Years of Experience	20	19.6	42.2
11 - 15	Years of Experience	29	28.4	70.6
16 – 20	Years of Experience	13	12.7	83.3
21 - 25	Years of Experience	7	6.9	90.2
26 – 30	Years of Experience	7	6.9	97.1
31 - 35	Years of Experience	3	2.9	100
Total		102	100	

Table 10. Frequency Distribution Based on Educational Attainment – School "B"

	Frequency	Percent	Cumulative Percent
BA	24	23.5	23.5
BA+30	16	15.7	39.2
BA+50	10	9.8	49.0
MA	16	15.7	64.7
MA+30	12	11.8	76.5
MA+50	24	23.5	100.0
Total	102	100	

Table 11. Frequency Distribution Based on Gender – School "C"

	Frequency	Percent	Cumulative Percent
Males	62	60.8	60.8
Females	41	39.2	100.0
Total	103	100	

Table 12. Frequency Distribution Based on High School Employment Position – School "C"

	Frequency	Percent	Cumulative Percent
Administrator	8	7.8	7.8
Staff Member	95	92.2	100.0
Total	103	100	

Table 13. Frequency Distribution Based on Educational Employment Experience – School "C"

		Frequency	Percent	Cumulative Percent
0 - 5	Years of Experience	10	9.8	9.8
6 - 10	Years of Experience	31	30.4	40.2
11 - 15	Years of Experience	21	20.6	60.8
16 – 20	Years of Experience	8	6.9	67.6
21 - 25	Years of Experience	4	3.9	71.6
26 – 30	Years of Experience	18	17.6	89.2
31 - 35	Years of Experience	11	10.8	100
Total		103	100	

Table 14. Frequency Distribution Based on Experience in Similar Employment Position – School "C"

		Frequency	Percent	Cumulative Percent
0 - 5	Years of Experience	16	15.7	15.7
6 - 10	Years of Experience	39	38.2	53.9
11 - 15	Years of Experience	13	12.7	66.7
16 – 20	Years of Experience	8	7.8	74.5
21 - 25	Years of Experience	5	4.9	79.4
26 – 30	Years of Experience	19	18.6	98.0
31 - 35	Years of Experience	3	2.0	100
Total		103	100	

Table 15. Frequency Distribution Based on Educational Attainment – School "C"

	Frequency	Percent	Cumulative Percent
BA	22	21.6	21.6
BA+30	24	23.5	45.1
BA+50	12	11.8	56.9
MA	13	11.8	68.6
MA+30	19	18.6	87.3
MA+50	13	12.7	100.0
Total	103	100	

Tables 16 through 18 summarize the descriptive statistics of the 17 variable descriptor questions contained in the Professional Learning Community Questionnaire. These results were again disaggregated by the three sample schools. The results of the questionnaire indicated that building administrators and certified staff personnel within the selected sample of Montana Class "AA" high schools perceive that components of professional learning communities do exist within their school organizational structure. For School "A," the data indicated that the questions with the highest mean were

questions #2B, #3D and #5E. Questions with the lowest mean were questions #4A and #4B. The questions with the greatest standard deviation were questions #2A, #2C, and #5A.

Table 16. Descriptive Statistics of the Seventeen Variable Descriptor Questions – School "A"

	N	Minimum	Maximum	Mean	Std. Deviation
QUES1A	98	1	5	3.03061	1.07889
QUES1B	98	1	5	3.12245	1.05777
QUES2A	98	1	5	2.89796	1.20557
QUES2B	98	1	5	3.28571	1.05518
QUES2C	98	1	5	3.04082	1.28367
QUES3A	98	1	5	2.92857	0.98703
QUES3B	98	1	5	2.92857	0.99742
QUES3C	98	1	5	2.98980	0.95782
QUES3D	98	1	5	3.25510	0.96657
QUES3E	98	1	5	3.14286	0.96324
QUES4A	98	1	4	1.93878	0.85935
QUES4B	98	1	5	2.09184	1.08492
QUES5A	98	1	5	3.09184	1.29302
QUES5B	98	1	5	2.85714	0.94159
QUES5C	98	1	5	3.16327	1.06194
QUES5D	98	1	5	3.06122	0.95049
QUES5E	98	1	5	3.47959	0.96570
School "A" Average (Question #1A - #5E)				2.77431	

For School "B," the data indicated that the questions with the highest mean for were questions #2B, #2A, and #2C. Questions with the lowest mean were questions #4A and #4B. The questions with the greatest standard deviation were questions #2B, #2C, and #5E.

Table 17. Descriptive Statistics of the Seventeen Variable Descriptor Questions – School "B"

	N	Minimum	Maximum	Mean	Std. Deviation
QUES1A	102	1	5	3.00000	1.26648
QUES1B	102	1	5	2.99020	1.16462
QUES2A	102	1	5	3.04902	1.33778
QUES2B	102	1	5	3.26471	1.42764
QUES2C	102	1	5	3.04902	1.30784
QUES3A	102	1	5	2.66667	1.07476
QUES3B	102	1	5	2.60784	1.13589
QUES3C	102	1	5	2.81373	1.14952
QUES3D	102	1	5	3.00000	1.21051
QUES3E	102	1	5	2.90196	1.19826
QUES4A	102	1	4	1.82353	0.84913
QUES4B	102	1	5	2.05882	1.14168
QUES5A	102	1	5	2.40196	1.22886
QUES5B	102	1	5	2.35294	1.04972
QUES5C	102	1	5	2.76471	1.32886
QUES5D	102	1	5	2.80392	1.17767
QUES5E	102	1	5	2.96078	1.27366
School "B" Average (Question #1A - #5E)				2.73586	

For School "C" the data indicated that the questions with the highest mean were questions #5E and #5D. Questions with the lowest mean were questions #5A, #5B, and #4A. The questions with the greatest standard deviation were questions #2A, #2C, and #5A.

Table 18. Descriptive Statistics of the Seventeen Variable Descriptor Questions – School "C"

	N	Minimum	Maximum	Mean	Std. Deviation
QUES1A	103	2	5	2.98039	1.01455
QUES1B	103	2	5	2.86275	0.85642
QUES2A	103	1	5	2.78431	1.58974
QUES2B	103	2	5	3.26471	1.25016
QUES2C	103	1	5	2.73529	1.56019
QUES3A	103	1	5	2.62745	1.08930

Table 18. Descriptive Statistics of the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

	N	Minimum	Maximum	Mean	Std. Deviation
QUES3B	103	1	5	2.75490	1.04773
QUES3C	103	2	5	3.00000	0.68938
QUES3D	103	2	5	3.00980	0.91733
QUES3E	103	2	5	3.23529	0.84638
QUES4A	103	1	4	2.42157	0.68124
QUES4B	103	1	4	2.64706	0.89716
QUES5A	103	1	5	2.38235	1.37908
QUES5B	103	1	5	2.39216	0.86924
QUES5C	103	1	5	2.68627	0.95420
QUES5D	103	1	5	3.33333	1.03726
QUES5E	103	1	5	3.47059	1.12317
School "C" Average (Question #1A - #5E)				2.85755	

Hypothesis #1

Independent t tests of significance were used to test Hypothesis #1 to determine if there was a significant difference based on the independent variable of gender (X_1), on the mean perception (Y) on the extent that components of a professional learning community exist within the three selected sample Montana Class "AA" high schools. The results of the group descriptive statistics along with the independent t test of significance on the independent variable of gender (X_1) and the dependent variable of perception (Y) for School "A" are summarized in Tables 19a and 19b.

Table 19a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "A"

I. School Administrators Participate Democratically with Teachers Sharing Power, Authority, and Decision Making

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES1A	Male	54	2.98148	1.10728	0.15068
	Female	44	3.09091	1.05253	0.15868
QUES1B	Male	54	3.05556	1.13962	0.15508
	Female	44	3.20455	0.95429	0.14387

II. The Staff Shares Visions for School Improvement that Have an Undeviating Focus on Student Learning, and Are Consistently Referenced for Staff Work

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES2A	Male	54	2.70370	1.39581	0.18995
	Female	44	3.13636	0.87845	0.13243
QUES2B	Male	54	3.05556	1.10602	0.15051
	Female	44	3.56818	0.92504	0.13946
QUES2C	Male	54	2.74074	1.40330	0.19097
	Female	44	3.40909	1.01885	0.15360

III. The Staff Collective Learning and Application of the Learning (Taking Action) Create High Intellectual Learning Tasks and Solutions to Address Student Needs

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES3A	Male	54	2.85185	1.05343	0.14335
	Female	44	3.02273	0.90190	0.13597
QUES3B	Male	54	2.81481	1.02927	0.14007
	Female	44	3.06818	0.94985	0.14320
QUES3C	Male	54	2.90741	0.93705	0.12752
	Female	44	3.09091	0.98402	0.14835
QUES3D	Male	54	2.96296	0.91038	0.12389
	Female	44	3.61364	0.92046	0.13876
QUES3E	Male	54	3.09259	0.99562	0.13549
	Female	44	3.20455	0.92960	0.14014

Table 19a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "A" (Cont'd)

IV. Peers Review and Give Feedback Based on Observing Each Other's Classroom Behaviors in Order to Increase Individual and Organizational Capacity

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES4A	Male	54	1.98148	0.90054	0.12255
	Female	44	1.88636	0.81315	0.12259
QUES4B	Male	54	1.96296	0.91038	0.12389
	Female	44	2.25000	1.25984	0.18993

V. School Conditions and Capacities Support the Staff Arrangement as a Professional Learning Organization

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES5A	Male	54	2.83333	1.38387	0.18832
	Female	44	3.40909	1.10639	0.16679
QUES5B	Male	54	2.88889	0.96479	0.13129
	Female	44	2.81818	0.92190	0.13898
QUES5C	Male	54	2.92593	1.06136	0.14443
	Female	44	3.45455	0.99894	0.15060
QUES5D	Male	54	3.03704	1.04544	0.14227
	Female	44	3.09091	0.83019	0.12516
QUES5E	Male	54	3.42593	0.92353	0.12568
	Female	44	3.54545	1.02196	0.15407

School "A" Aggregate Mean for Male Respondents (Question #1A - #5E) 2.83660
School "A" Aggregate Mean for Female Respondents (Question #1A - #5E) 3.10962

Table 19b: Independent t Tests with Gender and the Seventeen Variable Descriptor Questions – School "A"

	t	df
QUES1A	-0.4975	96
QUES1B	-0.6917	96
QUES2A	-1.7870	96
QUES2B	-2.4532*	96
QUES2C	-2.6415*	96
QUES3A	-0.8512	96
QUES3B	-1.2545	96
QUES3C	-0.9428	96
QUES3D	-3.5018*	96
QUES3E	-0.5703	96
QUES4A	0.5430	96
QUES4B	-1.3075	96
QUES5A	-2.2373*	96
QUES5B	0.3681	96
QUES5C	-2.5176*	96
QUES5D	-0.2777	96
QUES5E	-0.6075	96

* Mean difference is statistically significant at the .05 level (2 tailed)

Null Hypothesis #1: There was no significant difference based on the independent variable of gender (X_1), on the mean perception (Y) on the extent that components of a professional learning community exist within School "A" of the three selected sample Montana Class "AA" high schools.

The null hypothesis was rejected at the alpha = .05 level for questions #2B, #2C, #3D, #5A, and #5C. Only on those five questions was there a statistical significance based on gender (variable X_1) on the mean perception on the extent that components of a professional learning community exist in School "A" of the selected sample of Montana Class "AA" high schools (variable Y). The data from Table 19b indicated that all of the seventeen questions, with the exception of the questions #2B, #2C, #3D, #5A, and #5C, had mean differences that were not statistically significant at the .05 alpha level.

The results of the group statistics along with the independent t test of significance on the independent variable of gender (X_1) and the dependent variable of perception (Y) for School "B" are summarized in Tables 20a and 21b.

Table 20a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions – School "B"

I. School Administrators Participate Democratically with Teachers Sharing Power, Authority, and Decision Making

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES1A	Male	60	2.56667	1.30665	0.16869
	Female	42	3.61905	0.90937	0.14032
QUES1B	Male	60	2.51667	1.15702	0.14937
	Female	42	3.66667	0.78606	0.12129

II. The Staff Shares Visions for School Improvement that Have an Undeviating Focus on Student Learning, and Are Consistently Referenced for Staff Work

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES2A	Male	60	2.51667	1.30827	0.16890
	Female	42	3.80952	0.96873	0.14948
QUES2B	Male	60	2.61667	1.42724	0.18426
	Female	42	4.19048	0.77264	0.11922
QUES2C	Male	60	2.50000	1.32127	0.17058
	Female	42	3.83333	0.79378	0.12248

Table 20a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

III. The Staff Collective Learning and Application of the Learning (Taking Action) Create High Intellectual Learning Tasks and Solutions to Address Student Needs

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES3A	Male	60	2.38333	1.16578	0.15050
	Female	42	3.07143	0.77752	0.11997
QUES3B	Male	60	2.21667	1.18023	0.15237
	Female	42	3.16667	0.79378	0.12248
QUES3C	Male	60	2.38333	1.13633	0.14670
	Female	42	3.42857	0.85946	0.13262
QUES3D	Male	60	2.56667	1.24010	0.16010
	Female	42	3.61905	0.85404	0.13178
QUES3E	Male	60	2.40000	1.15274	0.14882
	Female	42	3.61905	0.85404	0.13178

IV. Peers Review and Give Feedback Based on Observing Each Other's Classroom Behaviors in Order to Increase Individual and Organizational Capacity

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES4A	Male	60	1.65000	0.79883	0.10313
	Female	42	2.07143	0.86653	0.13371
QUES4B	Male	60	1.88333	1.12131	0.14476
	Female	42	2.30952	1.13671	0.17540

Table 20a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

V. School Conditions and Capacities Support the Staff Arrangement as a Professional Learning Organization

	Gender	N	Mean	Std. Deviation	Std. Error Mean
QUES5A	Male	60	2.06667	1.13297	0.14627
	Female	42	2.88095	1.21379	0.18729
QUES5B	Male	60	2.15000	1.00549	0.12981
	Female	42	2.64286	1.05510	0.16281
QUES5C	Male	60	2.38333	1.29001	0.16654
	Female	42	3.30952	1.19935	0.18506
QUES5D	Male	60	2.60000	1.19604	0.15441
	Female	42	3.09524	1.10010	0.16975
QUES5E	Male	60	2.61667	1.27680	0.16483
	Female	42	3.45238	1.10878	0.17109

School "B" Aggregate Mean for Male Respondents (Question #1A - #5E) 2.35392
School "B" Aggregate Mean for Female Respondents (Question #1A - #5E) 3.28151

Table 20b: Independent t Tests with Gender and the Seventeen Variable Descriptor Questions – School "B"

	t	df
QUES1A	-4.5081*	100
QUES1B	-5.5966*	100
QUES2A	-5.4416*	100
QUES2B	-6.5040*	100
QUES2C	-5.8388*	100
QUES3A	-3.3382*	100
QUES3B	-4.5434*	100
QUES3C	-5.0350*	100
QUES3D	-4.7625*	100
QUES3E	-5.8223*	100
QUES4A	-2.5321*	100
QUES4B	-1.8786	100
QUES5A	-3.4689*	100
QUES5B	-2.3874*	100
QUES5C	-3.6722*	100
QUES5D	-2.1263*	100
QUES5E	-3.4309*	100

* Mean difference is statistically significant at the .05 level (2 tailed)

Null Hypothesis #1: There was no significant difference based on the independent variable of gender (X_1), on the mean perception (Y) on the extent that components of a professional learning community exist within School "B" of the three selected sample Montana Class "AA" high schools.

The null hypothesis was rejected at the alpha = .05 level for all questions, except #4B. On 16 of the 17 questions there was statistical significance based on gender (variable X_1) on the mean perception on the extent that components of a professional learning community exist in School "B" of the selected sample of Montana Class "AA" high schools (variable Y). The data from Table 20b indicated that 16 of the 17 questions, with the exception of question #4B, had mean differences that were statistically significant at the .05 alpha level.

The results of the group statistics along with the independent t test of significance on the independent variable of gender (X_1) and the dependent variable of perception (Y) for School "C" is summarized in Tables 21a and 21b.

Table 21a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "C

I. School Administrators Participate Democratically with Teachers Sharing Power, Authority, and Decision Making

	GENDER	N	Mean	Std. Deviation	Std. Error Mean
QUES1A	Male	62	2.59677	0.93141	0.11829
	Female	41	3.57500	0.84391	0.13343
QUES1B	Male	62	2.45161	0.69371	0.08810
	Female	41	3.50000	0.67937	0.10742

Table 21a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "C" (Cont'd)

II. The Staff Shares Visions for School Improvement that Have an Undeviating Focus on Student Learning, and Are Consistently Referenced for Staff Work

	GENDER	N	Mean	Std. Deviation	Std. Error Mean
QUES2A	Male	62	2.01613	1.47650	0.18752
	Female	41	3.97500	0.86194	0.13629
QUES2B	Male	62	2.70968	1.10716	0.14061
	Female	41	4.12500	0.93883	0.14844
QUES2C	Male	62	1.96774	1.35462	0.17204
	Female	41	3.92500	1.02250	0.16167

III. The Staff Collective Learning and Application of the Learning (Taking Action) Create High Intellectual Learning Tasks and Solutions to Address Student Needs

	GENDER	N	Mean	Std. Deviation	Std. Error Mean
QUES3A	Male	62	2.06452	0.72136	0.09161
	Female	41	3.50000	0.98710	0.15607
QUES3B	Male	62	2.24194	0.82354	0.10459
	Female	41	3.55000	0.84580	0.13373
QUES3C	Male	62	2.80645	0.62302	0.07912
	Female	41	3.30000	0.68687	0.10860
QUES3D	Male	62	2.58065	0.80058	0.10167
	Female	41	3.67500	0.65584	0.10370
QUES3E	Male	62	3.01613	0.68931	0.08754
	Female	41	3.57500	0.95776	0.15144

Table 21a: Group Descriptive Statistics with Gender and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "C" (Cont'd)

IV. Peers Review and Give Feedback Based on Observing Each Other's Classroom Behaviors in Order to Increase Individual and Organizational Capacity

	GENDER	N	Mean	Std. Deviation	Std. Error Mean
QUES4A	Male	62	2.30645	0.58921	0.07483
	Female	41	2.60000	0.77790	0.12300
QUES4B	Male	62	2.46774	0.86304	0.10961
	Female	41	2.92500	0.88831	0.14045

V. School Conditions and Capacities Support the Staff Arrangement as a Professional Learning Organization

	GENDER	N	Mean	Std. Deviation	Std. Error Mean
QUES5A	Male	62	1.95161	1.27302	0.16167
	Female	41	3.05000	1.28002	0.20239
QUES5B	Male	62	2.11290	0.81190	0.10311
	Female	41	2.82500	0.78078	0.12345
QUES5C	Male	62	2.32258	0.71916	0.09133
	Female	41	3.25000	1.00639	0.15912
QUES5D	Male	62	3.41935	1.22204	0.15520
	Female	41	3.20000	0.64847	0.10253
QUES5E	Male	62	3.43548	1.20954	0.15361
	Female	41	3.52500	0.98677	0.15602

School "C" Aggregate Mean for Male Respondents (Question #1A - #5E) 2.49810
School "C" Aggregate Mean for Female Respondents (Question #1A - #5E) 3.41618

Table 21b: Independent t Tests with Gender and the Seventeen Variable Descriptor Questions – School "C"

	t	df
QUES1A	-5.3696*	101
QUES1B	-7.5122*	101
QUES2A	-7.5898*	101
QUES2B	-6.6799*	101
QUES2C	-7.8098*	101
QUES3A	-8.4757*	101
QUES3B	-7.7496*	101
QUES3C	-3.7517*	101
QUES3D	-7.2192*	101
QUES3E	-3.4244*	101
QUES4A	-2.1631*	101
QUES4B	-2.5827*	101
QUES5A	-4.2454*	101
QUES5B	-4.3896*	101
QUES5C	-5.4253*	101
QUES5D	1.0432	101
QUES5E	-0.3913	101

* Mean difference is statistically significant at the .05 level (2 tailed)

Null Hypothesis #1: There was no significant difference based on the independent variable of gender (X_1), on the mean perception (Y) on the extent that components of a professional learning community exist within School "C" of the three selected sample Montana Class "AA" high schools.

The null hypothesis was rejected at the alpha = .05 level for all questions, except #5D and #5E. On 15 of the 17 questions there was statistical significance based on gender (variable X_1) on the mean perception on the extent that components of a professional learning community exist in School "C" of the selected sample of Montana Class "AA" high schools (variable Y). The data from Table 21b indicated that 15 of the 17 questions, with the exception of the questions #5D and #5E, had mean differences that were statistically significant at the .05 alpha level.

Hypothesis #2

Independent t tests of significance were used to test Hypothesis #2 to determine if there was a significant difference based on the independent variable of employment position (X_2), on the mean perception (Y) on the extent that components of a professional learning community exist within the three selected samples of Montana Class "AA" high schools. The results of the group descriptive statistics, along with the independent t test of significance on the independent variable of employment position (X_2) and the dependent variable of perception (Y) for School "A," is summarized in Tables 22a and 22b.

Table 22a: Group Descriptive Statistics with Employment Position and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions – School "A"

I. School Administrators Participate Democratically with Teachers Sharing Power, Authority, and Decision Making

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES1A	Administrator	8	4.12500	0.64087	0.22658
	Staff Member	90	2.93333	1.05788	0.11151
QUES1B	Administrator	8	4.62500	0.51755	0.18298
	Staff Member	90	2.98889	0.98864	0.10421

II. The Staff Shares Visions for School Improvement that Have an Undeviating Focus on Student Learning, and Are Consistently Referenced for Staff Work

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES2A	Administrator	8	4.00000	0.92582	0.32733
	Staff Member	90	2.80000	1.18227	0.12462

Table 22a: Group Descriptive Statistics with Employment Position and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "A" (Cont'd)

QUES2B	Administrator	8	4.50000	0.53452	0.18898
	Staff Member	90	3.17778	1.02308	0.10784
QUES2C	Administrator	8	4.50000	0.75593	0.26726
	Staff Member	90	2.91111	1.24200	0.13092

III. THE STAFF COLLECTIVE LEARNING AND APPLICATION OF THE LEARNING (TAKING ACTION) CREATE HIGH INTELLECTUAL LEARNING TASKS AND SOLUTIONS TO ADDRESS STUDENT NEEDS

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES3A	Administrator	8	3.87500	0.83452	0.29505
	Staff Member	90	2.84444	0.95883	0.10107
QUES3B	Administrator	8	3.87500	0.83452	0.29505
	Staff Member	90	2.84444	0.97048	0.10230
QUES3C	Administrator	8	3.62500	0.51755	0.18298
	Staff Member	90	2.93333	0.96919	0.10216
QUES3D	Administrator	8	3.75000	0.70711	0.25000
	Staff Member	90	3.21111	0.97721	0.10301
QUES3E	Administrator	8	4.25000	0.46291	0.16366
	Staff Member	90	3.04444	0.93510	0.09857

IV. Peers Review and Give Feedback Based on Observing Each Other's Classroom Behaviors in Order to Increase Individual and Organizational Capacity

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES4A	Administrator	8	2.37500	1.30247	0.46049
	Staff Member	90	1.90000	0.80797	0.08517
QUES4B	Administrator	8	2.50000	1.41421	0.50000
	Staff Member	90	2.05556	1.05320	0.11102

Table 22a: Group Descriptive Statistics with Employment Position and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "A" (Cont'd)

V. School Conditions and Capacities Support the Staff Arrangement as a Professional Learning Organization

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES5A	Administrator	8	3.25000	1.66905	0.59010
	Staff Member	90	3.07778	1.26516	0.13336
QUES5B	Administrator	8	4.00000	0.53452	0.18898
	Staff Member	90	2.75556	0.90332	0.09522
QUES5C	Administrator	8	4.12500	0.64087	0.22658
	Staff Member	90	3.07778	1.05178	0.11087
QUES5D	Administrator	8	4.00000	0.75593	0.26726
	Staff Member	90	2.97778	0.92381	0.09738
QUES5E	Administrator	8	4.25000	0.46291	0.16366
	Staff Member	90	3.41111	0.97028	0.10228

School "A" Aggregate Mean for Administrators (Question #1A - #5E)	3.86029
School "A" Aggregate Mean for Staff Personnel (Question #1A - #5E)	2.87909

Table 22b: Independent t Tests with Employment Position and the Seventeen Variable Descriptor Questions – School "A"

	t	df
QUES1A	3.1263*	96
QUES1B	4.6093*	96
QUES2A	2.7908*	96
QUES2B	3.5998*	96
QUES2C	3.5500*	96
QUES3A	2.9394*	96
QUES3B	2.9061*	96
QUES3C	1.9869	96
QUES3D	1.5214	96
QUES3E	3.5948*	96
QUES4A	1.5080	96
QUES4B	1.1117	96

Table 22b: Independent t Tests with Employment Position and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

	t	df
QUES5A	0.3594	96
QUES5B	3.8259*	96
QUES5C	2.7629*	96
QUES5D	3.0361*	96
QUES5E	2.4124*	96

* Mean difference is statistically significant at the .05 level (2 tailed)

Null Hypothesis #2: There was no significant difference based on the independent variable of employment position (X_2), on the mean perception (Y) on the extent that components of a professional learning community exist in School "A" of the three selected sample Montana Class "AA" high schools.

The null hypothesis was rejected at the alpha = .05 level for all questions, except questions #3C, #3D, #4A, #4B, and #5A. Only on those five questions was there not a statistical significance based on employment position (variable X_2) on the mean perception on the extent that components of a professional learning community exist in School "A" of the selected sample of Montana Class "AA" high schools (variable Y). The data from Table 22b indicated that 12 of the 17 questions had mean differences that were statistically significant at the .05 alpha level.

The results of the group statistics along with the independent t test of significance on the independent variable of employment position (X_2) and the dependent variable of perception (Y) for School "B" are summarized in Tables 23a and 23b.

Table 23a: Group Descriptive Statistics with Position and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "B"

I. School Administrators Participate Democratically with Teachers Sharing Power, Authority, and Decision Making

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES1A	Administrator	7	5.00000	0.00000	0.00000
	Staff Member	95	2.85263	1.18473	0.12155
QUES1B	Administrator	7	4.57143	0.53452	0.20203
	Staff Member	95	2.87368	1.11319	0.11421

II. The Staff Shares Visions for School Improvement that Have an Undeviating Focus on Student Learning, and Are Consistently Referenced for Staff Work

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES2A	Administrator	7	4.57143	0.53452	0.20203
	Staff Member	95	2.93684	1.31125	0.13453
QUES2B	Administrator	7	4.57143	0.78680	0.29738
	Staff Member	95	3.16842	1.41911	0.14560
QUES2C	Administrator	7	4.57143	0.53452	0.20203
	Staff Member	95	2.93684	1.27838	0.13116

III. The Staff Collective Learning and Application of the Learning (Taking Action) Create High Intellectual Learning Tasks and Solutions to Address Student Needs

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES3A	Administrator	7	4.28571	0.75593	0.28571
	Staff Member	95	2.54737	0.99753	0.10234
QUES3B	Administrator	7	4.00000	1.00000	0.37796
	Staff Member	95	2.50526	1.08052	0.11086
QUES3C	Administrator	7	4.00000	0.00000	0.00000
	Staff Member	95	2.72632	1.14336	0.11731
QUES3D	Administrator	7	4.00000	0.57735	0.21822
	Staff Member	95	2.92632	1.21377	0.12453
QUES3E	Administrator	7	4.28571	0.48795	0.18443
	Staff Member	95	2.80000	1.17238	0.12028

Table 23a: Group Descriptive Statistics with Position and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "B" (Cont'd)

IV. Peers Review and Give Feedback Based on Observing Each Other's Classroom Behaviors in Order to Increase Individual and Organizational Capacity

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES4A	Administrator	7	2.71429	0.95119	0.35952
	Staff Member	95	1.75789	0.80841	0.08294
QUES4B	Administrator	7	2.85714	1.21499	0.45922
	Staff Member	95	2.00000	1.12041	0.11495

V. School Conditions and Capacities Support the Staff Arrangement as a Professional Learning Organization

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES5A	Administrator	7	3.57143	0.97590	0.36886
	Staff Member	95	2.31579	1.20516	0.12365
QUES5B	Administrator	7	3.57143	0.78680	0.29738
	Staff Member	95	2.26316	1.01280	0.10391
QUES5C	Administrator	7	4.42857	0.53452	0.20203
	Staff Member	95	2.64211	1.28755	0.13210
QUES5D	Administrator	7	4.42857	0.78680	0.29738
	Staff Member	95	2.68421	1.11339	0.11423
QUES5E	Administrator	7	4.57143	0.53452	0.20203
	Staff Member	95	2.84211	1.23181	0.12638

School "B" Aggregate Mean for Administrators (Question #1A - #5E) 4.11764
School "B" Aggregate Mean for Staff Personnel (Question #1A - #5E) 2.63405

Table 23b: Independent t Tests with Position and the Seventeen Variable Descriptor Questions – School "B"

	t	df
QUES1A	4.7735*	100
QUES1B	3.9873*	100
QUES2A	3.2657*	100
QUES2B	2.5785*	100
QUES2C	3.3488*	100
QUES3A	4.5075*	100
QUES3B	3.5475*	100
QUES3C	2.9338*	100
QUES3D	2.3130*	100
QUES3E	3.3192*	100
QUES4A	2.9865*	100
QUES4B	1.9432	100
QUES5A	2.6882*	100
QUES5B	3.3382*	100
QUES5C	3.6341*	100
QUES5D	4.0618*	100
QUES5E	3.6752*	100

* Mean difference is statistically significant at the .05 level (2 tailed)

Null Hypothesis #2: There was no significant difference based on the independent variable of employment position (X_2), on the mean perception (Y) on the extent that components of a professional learning community exist in School "B" of the three selected sample Montana Class "AA" high schools.

The null hypothesis was rejected at the alpha = .05 level for all questions, except #4B. On 16 of the 17 questions there was statistical significance based on position (variable X_2) on the mean perception on the extent that components of a professional learning community exist in School "B" of the selected sample of Montana Class "AA" high schools (variable Y). The data from Table 11b indicated that 16 of the 17 questions, with the exception of the questions #4B, had mean differences that were statistically significant at the .05 alpha level.

The results of the group statistics along with the independent t test of significance on the independent variable of employment position (X_2) and the dependent variable of perception (Y) for School "C" is summarized in Tables 24a and 24b.

Table 24a: Group Descriptive Statistics with Employment Position and the Five Major Question Areas Disaggregated into the Seventeen Variable Descriptor Questions - School "C"

I. School Administrators Participate Democratically with Teachers Sharing Power, Authority, and Decision Making

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES1A	Administrator	8	4.50000	0.53452	0.18898
	Staff Member	95	2.85106	0.93851	0.09680
QUES1B	Administrator	8	3.50000	0.53452	0.18898
	Staff Member	95	2.80851	0.85856	0.08855

II. The Staff Shares Visions for School Improvement that Have an Undeviating Focus on Student Learning, and Are Consistently Referenced for Staff Work

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES2A	Administrator	8	5.00000	0.00000	0.00000
	Staff Member	95	2.59574	1.51210	0.15596
QUES2B	Administrator	8	3.50000	1.60357	0.56695
	Staff Member	95	3.24468	1.22418	0.12626
QUES2C	Administrator	8	4.00000	0.00000	0.00000
	Staff Member	95	2.62766	1.57933	0.16290

III. The Staff Collective Learning and Application of the Learning (Taking Action) Create High Intellectual Learning Tasks and Solutions to Address Student Needs

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES3A	Administrator	8	2.50000	0.53452	0.18898
	Staff Member	95	2.63830	1.12500	0.11603
QUES3B	Administrator	8	3.50000	0.53452	0.18898
	Staff Member	95	2.69149	1.05776	0.10910
QUES3C	Administrator	8	3.50000	0.53452	0.18898
	Staff Member	95	2.95745	0.68650	0.07081
QUES3D	Administrator	8	3.50000	1.60357	0.56695
	Staff Member	95	2.96809	0.83540	0.08617
QUES3E	Administrator	8	4.00000	1.06904	0.37796
	Staff Member	95	3.17021	0.79836	0.08234

IV. Peers Review and Give Feedback Based on Observing Each Other's Classroom Behaviors in Order to Increase Individual and Organizational Capacity

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES4A	Administrator	8	3.00000	0.00000	0.00000
	Staff Member	95	2.37234	0.68759	0.07092
QUES4B	Administrator	8	3.00000	0.00000	0.00000
	Staff Member	95	2.61702	0.92871	0.09579

V. School Conditions and Capacities Support the Staff Arrangement as a Professional Learning Organization

	POSITION	N	Mean	Std. Deviation	Std. Error Mean
QUES5A	Administrator	8	4.00000	0.00000	0.00000
	Staff Member	95	2.24468	1.34952	0.13919
QUES5B	Administrator	8	3.50000	0.53452	0.18898
	Staff Member	95	2.29787	0.82735	0.08533
QUES5C	Administrator	8	2.50000	0.53452	0.18898
	Staff Member	95	2.70213	0.98188	0.10127
QUES5D	Administrator	8	5.00000	0.00000	0.00000
	Staff Member	95	3.19149	0.95351	0.09835
QUES5E	Administrator	8	4.50000	0.53452	0.18898
	Staff Member	95	3.38298	1.11785	0.11530

School "C" Aggregate Mean for Administrators (Question #1A - #5E)	3.70588
School "C" Aggregate Mean for Staff Personnel (Question #1A - #5E)	2.65274

Table 24b: Independent t Tests with Employment Position and the Seventeen Variable Descriptor Questions – School "C"

	t	df
QUES1A	4.8876*	101
QUES1B	2.2353*	101
QUES2A	4.4768*	101
QUES2B	0.5526	101
QUES2C	2.4466*	101
QUES3A	-0.3432	101
QUES3B	2.1317*	101
QUES3C	2.1761*	101
QUES3D	1.5862	101
QUES3E	2.7469*	101
QUES4A	2.5702*	101
QUES4B	1.1611	101
QUES5A	3.6622*	101
QUES5B	4.0282*	101
QUES5C	-0.5733	101
QUES5D	5.3403*	101
QUES5E	2.7896*	101

* Mean difference is statistically significant at the .05 level (2 tailed)

Null Hypothesis #2: There was a significant difference based on the independent variable of employment position (X_2), on the mean perception (Y) on the extent that components of a professional learning community exists in School "C" of the three selected sample Montana Class "AA" high schools.

The null hypothesis was rejected at the alpha = .05 level for all questions, except questions #2B, #3A, #3D, #4B, and #5C. Only on those five questions was there not a statistical significance based on employment position (variable X_2) on the mean perception on the extent that components of a professional learning community exist in School "C" of the selected sample of Montana Class "AA" high schools (variable Y). The data from Table 24b indicated that 12 of the 17 questions had mean differences that were statistically significant at the .05 alpha level.

Hypothesis #3

The results of the Analysis of Variance, or ANOVA, on the independent variables of years of educational employment experience, years employed in a similar employment position, and educational attainment ($X_3 - X_5$) and the dependent variable of perception (variable Y) are summarized in Tables 13 through 21. The post hoc analysis of variance (ANOVA) Tukey results that address differences among the means for Question #1A through Question #5E can be found in Appendix C.

The concept underlying ANOVA is that the total variation, or variance, of scores can be attributed to two sources: (a) variance between groups (variance caused by the treatment) and (b) variance within groups (error variance). With ANOVA, a ratio is formed (the *F* ratio) with group differences as the numerator (variance between groups) and an error term as the denominator (variance within groups). Randomly formed groups were assumed to be essentially the same at the beginning of the study on a measure of the dependent variable (Gay, 1996). At the end of the study, after administration of the independent variable (i.e. years of experience, years in similar employment position, and educational attainment), determination was made as to whether the between groups (treatment) variance differed from the within groups (error) variance by more than what would be expected by chance. The Analysis of Variance (ANOVA) sought to answer whether there was a statistically significant difference between the perceived extent that components of professional learning communities exist within the three selected samples of Class "AA" high schools and a set of independent characteristics.

Years of Educational Employment Experience (X^3)

The results of the Analysis of Variance statistic on the independent variable of years of educational employment experience (X_3) and the dependent variable of perception (Y) for School "A" are summarized in Table 25.

Table 25: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "A"

Question 1A/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	4.686	6	0.781	0.657
Within Groups	108.222	91	1.189	
Total	112.908	97		

F is not significant at the .05 level.

Question 1B/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	7.837	6	1.306	1.180
Within Groups	100.694	91	1.107	
Total	108.531	97		

F is not significant at the .05 level.

Question 2A/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	33.215	6	5.536	4.675*
Within Groups	107.764	91	1.184	
Total	140.980	97		

* F is significant at the .05 level.

Table 25: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 2B/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	17.806	6	2.968	2.994*
Within Groups	90.194	91	0.991	
Total	108.000	97		

* F is significant at the .05 level.

Question 2C/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	20.671	6	3.445	2.253*
Within Groups	139.166	91	1.529	
Total	159.837	97		

* F is significant at the .05 level.

Question 3A/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	10.449	6	1.742	1.886
Within Groups	84.051	91	0.924	
Total	94.500	97		

F is not significant at the .05 level.

Question 3B/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	12.413	6	2.069	2.239*
Within Groups	84.087	91	0.924	
Total	96.500	97		

* F is significant at the .05 level.

Table 25: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 3C/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	9.802	6	1.634	1.877
Within Groups	79.188	91	0.870	
Total	88.990	97		

F is not significant at the .05 level.

Question 3D/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	14.606	6	2.434	2.914*
Within Groups	76.016	91	0.835	
Total	90.622	97		

* F is significant at the .05 level.

Question 3E/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	16.407	6	2.734	3.381*
Within Groups	73.593	91	0.809	
Total	90.000	97		

* F is significant at the .05 level.

Question 4A/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	6.595	6	1.099	1.538
Within Groups	65.038	91	0.715	
Total	71.633	97		

F is not significant at the .05 level.

Table 25: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 4B/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	2.419	6	0.403	0.328
Within Groups	111.754	91	1.228	
Total	114.173	97		

F is not significant at the .05 level.

Question 5A/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	11.892	6	1.982	1.200
Within Groups	150.281	91	1.651	
Total	162.173	97		

F is not significant at the .05 level.

Question 5B/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	15.821	6	2.637	3.419*
Within Groups	70.179	91	0.771	
Total	86.000	97		

* F is significant at the .05 level.

Question 5C/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	8.338	6	1.390	1.252
Within Groups	101.049	91	1.110	
Total	109.388	97		

F is not significant at the .05 level.

Table 25: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 5D/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	13.125	6	2.187	2.672
Within Groups	74.508	91	0.819	
Total	87.633	97		

* F is significant at the .05 level.

Question 5E/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	8.337	6	1.390	1.540
Within Groups	82.122	91	0.902	
Total	90.459	97		

F is not significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "A" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building administrators and certified staff personnel, and the independent identified characteristic of educational experience (variable X_3).

The null hypothesis was rejected at the alpha = .05 level for questions, #2A, #2B, #2C, 3B, #3D, #3E, and #5B. Table 25 addressed the relationship between years of education employment experience and each of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 25 indicated that for School "A", seven of the 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected

by chance. Further, the data from Appendix C, Table 1 reflects an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "A", the results of the Tukey multiple comparison analysis indicated that only questions #2A, #2B, #2C, #3B, #3D, #3E, and #5B contained statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in only seven of the 17 questions some of the means differences among levels of experience differed by more than what would be expected by chance.

The results of the Analysis of Variance statistic on the independent variable of years of educational experience (X_3) and the dependent variable of perception (Y) for School "B" are summarized in Table 26.

Table 26: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "B"

Question 1A/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	29.777	6	4.963	3.566*
Within Groups	132.223	95	1.392	
Total	162.000	101		

* F is significant at the .05 level.

Question 1B/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	30.679	6	5.113	4.569*
Within Groups	106.311	95	1.119	
Total	136.990	101		

* F is significant at the .05 level.

Table 26: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 2A/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	36.924	6	6.154	4.065*
Within Groups	143.831	95	1.514	
Total	180.755	101		

* F is significant at the .05 level.

Question 2B/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	45.216	6	7.536	4.457*
Within Groups	160.637	95	1.691	
Total	205.853	101		

* F is significant at the .05 level.

Question 2C/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	28.335	6	4.722	3.106*
Within Groups	144.420	95	1.520	
Total	172.755	101		

* F is significant at the .05 level.

Question 3A/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	17.411	6	2.902	2.777*
Within Groups	99.255	95	1.045	
Total	116.667	101		

* F is significant at the .05 level.

Table 26: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 3B/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	25.783	6	4.297	3.905*
Within Groups	104.531	95	1.100	
Total	130.314	101		

* F is significant at the .05 level.

Question 3C/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	40.590	6	6.765	6.920*
Within Groups	92.871	95	0.978	
Total	133.461	101		

* F is significant at the .05 level.

Question 3D/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	44.359	6	7.393	6.777*
Within Groups	103.641	95	1.091	
Total	148.000	101		

* F is significant at the .05 level.

Question 3E/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	36.319	6	6.053	5.290*
Within Groups	108.700	95	1.144	
Total	145.020	101		

* F is significant at the .05 level.

Table 26: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 4A/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	7.185	6	1.198	1.733
Within Groups	65.638	95	0.691	
Total	72.824	101		

F is not significant at the .05 level.

Question 4B/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	10.470	6	1.745	1.368
Within Groups	121.177	95	1.276	
Total	131.647	101		

F is not significant at the .05 level.

Question 5A/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	18.206	6	3.034	2.146
Within Groups	134.314	95	1.414	
Total	152.520	101		

F is not significant at the .05 level.

Question 5B/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	17.368	6	2.895	2.928*
Within Groups	93.926	95	0.989	
Total	111.294	101		

* F is significant at the .05 level.

Table 26: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 5C/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	32.295	6	5.382	3.501*
Within Groups	146.058	95	1.537	
Total	178.353	101		

* F is significant at the .05 level.

Question 5D/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	26.716	6	4.453	3.731*
Within Groups	113.363	95	1.193	
Total	140.078	101		

* F is significant at the .05 level.

Question 5E/Years of Experience – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	35.693	6	5.949	4.410*
Within Groups	128.150	95	1.349	
Total	163.843	101		

* F is significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "B" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building administrators and certified staff personnel, and the independent identified characteristic of years of educational experience (variable X_3).

The null hypothesis was rejected at the alpha = .05 level for all questions, except #4A, #4B, and #5A. Table 26 addressed the relationship between years of education employment experience and each of the 17 variable descriptors contained in the

"Descriptors of Professional Learning Communities" questionnaire. The data from Table 26 indicated that for School "B", 14 of the 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the data from Appendix C, Table 2 reflects an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "B", the results of the Tukey multiple comparison analysis indicated that only questions #4A, #4B, and #5A contained no statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in 14 of the 17 descriptor questions some of the means differences among levels of experience differed by more than what would be expected by chance.

The results of the Analysis of Variance statistic on the independent variable of years of educational experience (X_3) and the dependent variable of perception (Y) for School "C" are summarized in Table 27.

Table 27: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions

Question 1A/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	37.067	6	6.178	8.774*
Within Groups	66.894	95	0.704	
Total	103.961	101		

* F is significant at the .05 level.

Table 27: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions (Cont'd)

Question 1B/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	23.263	6	3.877	7.249*
Within Groups	50.815	95	0.535	
Total	74.078	101		

* F is significant at the .05 level.

Question 2A/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	97.628	6	16.271	9.807*
Within Groups	157.627	95	1.659	
Total	255.255	101		

* F is significant at the .05 level.

Question 2B/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	23.865	6	3.978	2.820*
Within Groups	133.988	95	1.410	
Total	157.853	101		

* F is significant at the .05 level.

Question 2C/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	82.415	6	13.736	7.984*
Within Groups	163.438	95	1.720	
Total	245.853	101		

* F is significant at the .05 level.

Table 27: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions (Cont'd)

Question 3A/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	22.609	6	3.768	3.681*
Within Groups	97.235	95	1.024	
Total	119.843	101		

* F is significant at the .05 level.

Question 3B/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	30.685	6	5.114	6.059*
Within Groups	80.188	95	0.844	
Total	110.873	101		

* F is significant at the .05 level.

Question 3C/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	14.455	6	2.409	6.822*
Within Groups	33.545	95	0.353	
Total	48.000	101		

* F is significant at the .05 level.

Question 3D/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	17.577	6	2.929	4.128*
Within Groups	67.413	95	0.710	
Total	84.990	101		

* F is significant at the .05 level.

Table 27: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions (Cont'd)

Question 3E/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	31.827	6	5.305	12.435*
Within Groups	40.526	95	0.427	
Total	72.353	101		

* F is significant at the .05 level.

Question 4A/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	4.886	6	0.814	1.843
Within Groups	41.986	95	0.442	
Total	46.873	101		

F is not significant at the .05 level.

Question 4B/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	10.484	6	1.747	2.344*
Within Groups	70.811	95	0.745	
Total	81.294	101		

F is significant at the .05 level.

Question 5A/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	64.183	6	10.697	7.945*
Within Groups	127.906	95	1.346	
Total	192.088	101		

F is significant at the .05 level.

Table 27: ANOVA Statistics with Educational Experience and the Seventeen Variable Descriptor Questions (Cont'd)

Question 5B/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	22.147	6	3.691	6.474*
Within Groups	54.167	95	0.570	
Total	76.314	101		

* F is significant at the .05 level.

Question 5C/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	21.996	6	3.666	4.978*
Within Groups	69.965	95	0.736	
Total	91.961	101		

* F is significant at the .05 level.

Question 5D/Years of Experience – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	39.581	6	6.597	9.071*
Within Groups	69.086	95	0.727	
Total	108.667	101		

* F is significant at the .05 level.

Question 5E/Years of Experience – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	50.261	6	8.377	10.315*
Within Groups	77.151	95	0.812	
Total	127.412	101		

* F is significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "C" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building

administrators and certified staff personnel, and the independent identified characteristic of years of educational experience (variable X_3).

The null hypothesis was rejected at the alpha = .05 level for all questions, except #4A. Table 27 addressed the relationship between years of education employment experience and each of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 27 indicated that for School "C," 16 of the 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the data from Appendix C, Table 3 reflects an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "C," the results of the Tukey multiple comparison analysis indicated that only questions #4A and #4B contained no statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in 15 of the 17 questions some of the means differences among levels of experience differed by more than what would be expected by chance.

Similar Employment Experience (X^4)

The results of the Analysis of Variance statistic on the independent variable of years of employment in a similar position (X_4) and the dependent variable of perception (Y) for School "A" are summarized in Table 28.

Table 28: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "A"

Question 1A/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	10.405	6	1.734	1.540
Within Groups	102.503	91	1.126	
Total	112.908	97		

F is not significant at the .05 level.

Question 1B/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	4.655	6	0.776	0.680
Within Groups	103.876	91	1.141	
Total	108.531	97		

F is not significant at the .05 level.

Question 2A/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	12.267	6	2.045	1.445
Within Groups	128.712	91	1.414	
Total	140.980	97		

F is not significant at the .05 level.

Question 2B/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	13.959	6	2.326	2.251*
Within Groups	94.041	91	1.033	
Total	108.000	97		

* F is significant at the .05 level.

Table 28: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 2C/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	21.248	6	3.541	2.325*
Within Groups	138.589	91	1.523	
Total	159.837	97		

* F is significant at the .05 level.

Question 3A/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	4.846	6	0.808	0.820
Within Groups	89.654	91	0.985	
Total	94.500	97		

F is not significant at the .05 level.

Question 3B/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	5.240	6	0.873	0.871
Within Groups	91.260	91	1.003	
Total	96.500	97		

F is not significant at the .05 level.

Question 3C/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	10.425	6	1.737	2.012
Within Groups	78.565	91	0.863	
Total	88.990	97		

F is not significant at the .05 level.

Table 28: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 3D/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	7.666	6	1.278	1.402
Within Groups	82.956	91	0.912	
Total	90.622	97		

F is not significant at the .05 level.

Question 3E/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	9.135	6	1.523	1.713
Within Groups	80.865	91	0.889	
Total	90.000	97		

F is not significant at the .05 level.

Question 4A/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	4.006	6	0.668	0.898
Within Groups	67.627	91	0.743	
Total	71.633	97		

F is not significant at the .05 level.

Question 4B/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	3.541	6	0.590	0.485
Within Groups	110.632	91	1.216	
Total	114.173	97		

F is not significant at the .05 level.

Table 28: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 5A/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	6.997	6	1.166	0.684
Within Groups	155.177	91	1.705	
Total	162.173	97		

F is not significant at the .05 level.

Question 5B/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	10.643	6	1.774	2.142
Within Groups	75.357	91	0.828	
Total	86.000	97		

F is not significant at the .05 level.

Question 5C/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	9.229	6	1.538	1.398
Within Groups	100.159	91	1.101	
Total	109.388	97		

F is not significant at the .05 level.

Question 5D/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	3.408	6	0.568	0.614
Within Groups	84.224	91	0.926	
Total	87.633	97		

F is not significant at the .05 level.

Table 28: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 5E/Years in Similar Employment Position – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	7.135	6	1.189	1.299
Within Groups	83.324	91	0.916	
Total	90.459	97		

F is not significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "A" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building administrators and certified staff personnel, and the independent identified characteristic of years employed in a similar position (variable X_4).

The null hypothesis was rejected at the alpha = .05 level for only questions #2B and #2C. Table 28 addressed the relationship between years of employment in a similar position and each of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 28 indicated that for School "A", only two of the 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the data from Appendix C, Table 4 reflects an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "A", the results of the Tukey multiple comparison analysis indicated that only questions #2C and #3C contained statistically significant means differences at the alpha = .05 level among the varying

levels of employment in a similar position. In other words, in two of the 17 questions some of the means differences among levels of employment in a similar position differed by more than what would be expected by chance.

The results of the Analysis of Variance statistic on the independent variable of years of employment in a similar position (X_4) and the dependent variable of perception (Y) for School "B" are summarized in Table 29.

Table 29: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "B"

Question 1A/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	41.620	6	6.937	5.474*
Within Groups	120.380	95	1.267	
Total	162.000	101		

*F is significant at the .05 level.

Question 1B/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	41.336	6	6.889	6.842*
Within Groups	95.654	95	1.007	
Total	136.990	101		

*F is significant at the .05 level.

Question 2A/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	41.271	6	6.879	4.685*
Within Groups	139.483	95	1.468	
Total	180.755	101		

*F is not significant at the .05 level.

Table 29: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 2B/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	48.798	6	8.133	4.920*
Within Groups	157.055	95	1.653	
Total	205.853	101		

* F is significant at the .05 level.

Question 2C/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	33.315	6	5.553	3.783*
Within Groups	139.440	95	1.468	
Total	172.755	101		

* F is significant at the .05 level.

Question 3A/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	20.486	6	3.414	3.372*
Within Groups	96.180	95	1.012	
Total	116.667	101		

*F is significant at the .05 level.

Question 3B/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	29.331	6	4.888	4.599*
Within Groups	100.983	95	1.063	
Total	130.314	101		

*F is significant at the .05 level.

Table 29: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 3C/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	42.674	6	7.112	7.442*
Within Groups	90.787	95	0.956	
Total	133.461	101		

*F is significant at the .05 level.

Question 3D/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	44.481	6	7.413	6.803*
Within Groups	103.519	95	1.090	
Total	148.000	101		

*F is significant at the .05 level.

Question 3E/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	31.256	6	5.209	4.350*
Within Groups	113.764	95	1.198	
Total	145.020	101		

*F is significant at the .05 level.

Question 4A/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	8.011	6	1.335	1.957
Within Groups	64.813	95	0.682	
Total	72.824	101		

F is not significant at the .05 level.

Table 29: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 4B/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	17.109	6	2.852	2.365
Within Groups	114.538	95	1.206	
Total	131.647	101		

*F is significant at the .05 level.

Question 5A/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	24.974	6	4.162	3.100*
Within Groups	127.546	95	1.343	
Total	152.520	101		

*F is significant at the .05 level.

Question 5B/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	17.678	6	2.946	2.990*
Within Groups	93.616	95	0.985	
Total	111.294	101		

*F is significant at the .05 level.

Question 5C/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	42.033	6	7.005	4.882*
Within Groups	136.320	95	1.435	
Total	178.353	101		

*F is significant at the .05 level.

Table 29: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 5D/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	23.481	6	3.913	3.189*
Within Groups	116.598	95	1.227	
Total	140.078	101		

*F is significant at the .05 level.

Question 5E/Years in Similar Employment Position – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	32.294	6	5.382	3.887*
Within Groups	131.550	95	1.385	
Total	163.843	101		

*F is significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "B" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building administrators and certified staff personnel, and the independent identified characteristic of years employed in a similar position (variable X_4).

The null hypothesis was rejected at the alpha = .05 level for all questions, except #4A and #4B. Table 29 addressed the relationship between years of employment in a similar position and each of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 29 indicated that for School "B," 15 of the 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the

data from Appendix C, Table 5 reflects an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "B," the results of the Tukey multiple comparison analysis indicated that only questions #4A and #4B contained no statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in 15 of the 17 questions some of the means differences among levels of employment in a similar position differed by more than what would be expected by chance.

The results of the Analysis of Variance statistic on the independent variable of years of employment in a similar position (X_4) and the dependent variable of perception (Y) for School "C" are summarized in Table 30.

Table 30: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "C"

Question 1A/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	24.574	6	4.096	4.901*
Within Groups	79.387	95	0.836	
Total	103.961	101		

*F is significant at the .05 level.

Question 1B/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	15.107	6	2.518	4.056*
Within Groups	58.971	95	0.621	
Total	74.078	101		

*F is significant at the .05 level.

Table 30: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 2A/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	56.867	6	9.478	4.539*
Within Groups	198.388	95	2.088	
Total	255.255	101		

*F is not significant at the .05 level.

Question 2B/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	34.214	6	5.702	4.382*
Within Groups	123.639	95	1.301	
Total	157.853	101		

* F is significant at the .05 level.

Question 2C/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	71.558	6	11.926	6.501*
Within Groups	174.295	95	1.835	
Total	245.853	101		

* F is significant at the .05 level.

Question 3A/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	23.304	6	3.884	3.822*
Within Groups	96.539	95	1.016	
Total	119.843	101		

*F is significant at the .05 level.

Table 30: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 3B/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	19.125	6	3.187	3.300*
Within Groups	91.748	95	0.966	
Total	110.873	101		

*F is significant at the .05 level.

Question 3C/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	16.664	6	2.777	8.420*
Within Groups	31.336	95	0.330	
Total	48.000	101		

*F is significant at the .05 level.

Question 3D/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	17.568	6	2.928	4.126*
Within Groups	67.422	95	0.710	
Total	84.990	101		

*F is significant at the .05 level.

Question 3E/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	25.317	6	4.220	8.522*
Within Groups	47.036	95	0.495	
Total	72.353	101		

*F is significant at the .05 level.

Table 30: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 4A/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	7.059	6	1.176	2.807*
Within Groups	39.814	95	0.419	
Total	46.873	101		

*F is significant at the .05 level.

Question 4B/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	13.690	6	2.282	3.206*
Within Groups	67.604	95	0.712	
Total	81.294	101		

*F is significant at the .05 level.

Question 5A/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	30.725	6	5.121	3.015*
Within Groups	161.363	95	1.699	
Total	192.088	101		

*F is significant at the .05 level.

Question 5B/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	19.322	6	3.220	5.368*
Within Groups	56.992	95	0.600	
Total	76.314	101		

*F is significant at the .05 level.

Table 30: ANOVA Statistics with Years of Employment in a Similar Position and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 5C/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	22.686	6	3.781	5.185*
Within Groups	69.275	95	0.729	
Total	91.961	101		

*F is significant at the .05 level.

Question 5D/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	52.835	6	8.806	14.983*
Within Groups	55.832	95	0.588	
Total	108.667	101		

*F is significant at the .05 level.

Question 5E/Years in Similar Employment Position – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	65.951	6	10.992	16.990*
Within Groups	61.461	95	0.647	
Total	127.412	101		

*F is significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "C" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building administrators and certified staff personnel, and the independent identified characteristic of years employed in a similar position (variable X_4).

The null hypothesis was rejected at the alpha = .05 level for all questions. Table 30 addressed the relationship between years of employment in a similar position and each

of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 30 indicated that for School "C," all 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the data from Appendix C, Table 6 reflects an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "C," the results of the Tukey multiple comparison analysis indicated that only questions #4A and #4B contained no statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in 15 of the 17 questions some of the means differences among levels of employment in a similar position differed by more than what would be expected by chance.

Educational Attainment (X^5)

The results of the Analysis of Variance statistic on the independent variable of educational attainment (X_5) and the dependent variable of perception (Y) for School "A" are summarized in Table 31.

Table 31: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "A"

Question 1A/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	13.944	5	2.789	2.592*
Within Groups	98.965	92	1.076	
Total	112.908	97		

*F is significant at the .05 level.

Table 31: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 1B/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	7.305	5	1.461	1.328
Within Groups	101.226	92	1.100	
Total	108.531	97		

F is not significant at the .05 level.

Question 2A/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	19.356	5	3.871	2.928*
Within Groups	121.624	92	1.322	
Total	140.980	97		

*F is significant at the .05 level.

Question 2B/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	14.182	5	2.836	2.781*
Within Groups	93.818	92	1.020	
Total	108.000	97		

* F is significant at the .05 level.

Question 2C/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	18.093	5	3.619	2.349
Within Groups	141.743	92	1.541	
Total	159.837	97		

* F is significant at the .05 level.

Table 31: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 3A/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	1.755	5	0.351	0.348
Within Groups	92.745	92	1.008	
Total	94.500	97		

F is not significant at the .05 level.

Question 3B/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	3.938	5	0.788	0.783
Within Groups	92.562	92	1.006	
Total	96.500	97		

F is not significant at the .05 level.

Question 3C/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	1.066	5	0.213	0.223
Within Groups	87.924	92	0.956	
Total	88.990	97		

F is not significant at the .05 level.

Question 3D/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	5.276	5	1.055	1.137
Within Groups	85.347	92	0.928	
Total	90.622	97		

F is not significant at the .05 level.

Table 31: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 3E/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	5.370	5	1.074	1.168
Within Groups	84.630	92	0.920	
Total	90.000	97		

F is not significant at the .05 level.

Question 4A/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	3.976	5	0.795	1.081
Within Groups	67.656	92	0.735	
Total	71.633	97		

F is not significant at the .05 level.

Question 4B/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	5.439	5	1.088	0.920
Within Groups	108.735	92	1.182	
Total	114.173	97		

F is not significant at the .05 level.

Question 5A/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	11.833	5	2.367	1.448
Within Groups	150.341	92	1.634	
Total	162.173	97		

F is not significant at the .05 level.

Table 31: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "A" (Cont'd)

Question 5B/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	6.294	5	1.259	1.453
Within Groups	79.706	92	0.866	
Total	86.000	97		

F is not significant at the .05 level.

Question 5C/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	13.924	5	2.785	2.684*
Within Groups	95.463	92	1.038	
Total	109.388	97		

*F is significant at the .05 level.

Question 5D/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	2.527	5	0.505	0.546
Within Groups	85.105	92	0.925	
Total	87.633	97		

F is not significant at the .05 level.

Question 5E/Educational Attainment – School "A"

	Sum of Squares	df	Mean Square	F
Between Groups	0.869	5	0.174	0.179
Within Groups	89.590	92	0.974	
Total	90.459	97		

F is not significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "A" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building

administrators and certified staff personnel, and the independent identified characteristic of educational attainment (variable X_5).

The null hypothesis was rejected at the alpha = .05 level for only questions, #1A, #2A, #2B, and #5C. Table 31 addressed the relationship between educational attainment and each of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 31 indicated that for School "A," only four of the 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the data from Appendix C, Table 7 reflects an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "A," the results of the Tukey multiple comparison analysis indicated that only questions #1A, #2B, #3A, and #5C contained statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in four of the 17 questions some of the means differences among levels of educational attainment differed by more than what would be expected by chance.

The results of the Analysis of Variance statistic on the independent variable of educational attainment (X_5) and the dependent variable of perception (Y) for School "B" are summarized in Table 32.

Table 32: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "B"

Question 1A/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	61.792	5	12.358	11.839*
Within Groups	100.208	96	1.044	
Total	162.000	101		

*F is significant at the .05 level.

Question 1B/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	51.490	5	10.298	11.563*
Within Groups	85.500	96	0.891	
Total	136.990	101		

F is not significant at the .05 level.

Question 2A/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	63.542	5	12.708	10.409*
Within Groups	117.213	96	1.221	
Total	180.755	101		

*F is significant at the .05 level.

Question 2B/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	81.245	5	16.249	12.518*
Within Groups	124.608	96	1.298	
Total	205.853	101		

* F is significant at the .05 level.

Table 32: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 2C/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	76.292	5	15.258	15.185*
Within Groups	96.463	96	1.005	
Total	172.755	101		

* F is significant at the .05 level.

Question 3A/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	33.454	5	6.691	7.719*
Within Groups	83.213	96	0.867	
Total	116.667	101		

*F is significant at the .05 level.

Question 3B/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	45.522	5	9.104	10.308*
Within Groups	84.792	96	0.883	
Total	130.314	101		

*F is significant at the .05 level.

Question 3C/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	53.569	5	10.714	12.874*
Within Groups	79.892	96	0.832	
Total	133.461	101		

*F is significant at the .05 level.

Table 32: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 3D/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	63.067	5	12.613	14.257*
Within Groups	84.933	96	0.885	
Total	148.000	101		

*F is significant at the .05 level.

Question 3E/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	55.586	5	11.117	11.934*
Within Groups	89.433	96	0.932	
Total	145.020	101		

*F is significant at the .05 level.

Question 4A/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	19.911	5	3.982	7.225*
Within Groups	52.913	96	0.551	
Total	72.824	101		

*F is significant at the .05 level.

Question 4B/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	39.585	5	7.917	8.256*
Within Groups	92.063	96	0.959	
Total	131.647	101		

*F is significant at the .05 level.

Table 32: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 5A/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	50.224	5	10.045	9.427*
Within Groups	102.296	96	1.066	
Total	152.520	101		

*F is significant at the .05 level.

Question 5B/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	27.298	5	5.460	6.240*
Within Groups	83.996	96	0.875	
Total	111.294	101		

*F is significant at the .05 level.

Question 5C/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	40.399	5	8.080	5.623*
Within Groups	137.954	96	1.437	
Total	178.353	101		

*F is significant at the .05 level.

Question 5D/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	37.058	5	7.412	6.906*
Within Groups	103.021	96	1.073	
Total	140.078	101		

*F is significant at the .05 level.

Table 32: ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "B" (Cont'd)

Question 5E/Educational Attainment – School "B"

	Sum of Squares	df	Mean Square	F
Between Groups	45.510	5	9.102	7.384*
Within Groups	118.333	96	1.233	
Total	163.843	101		

*F is significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "B" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building administrators and certified staff personnel, and the independent identified characteristic of educational attainment (variable X_5).

The null hypothesis was rejected at the alpha = .05 level for all questions. Table 32 addressed the relationship between educational attainment and each of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 32 indicated that for School "B," all 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the data from Appendix C, Table 8 reflect an ANOVA post hoc Tukey multiple comparison statistical analysis. For School "B", the results of the Tukey multiple comparison analysis indicated that all 17 questions contained statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in all 17 questions some of the means

differences among levels of educational attainment differed by more than what would be expected by chance.

The results of the Analysis of Variance statistic on the independent variable of educational attainment (X_5) and the dependent variable of perception (Y) for School "C" are summarized in Table 33.

Table 33. ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "C"

Question 1A/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	45.492	5	9.098	14.939*
Within Groups	58.469	96	0.609	
Total	103.961	101		

*F is significant at the .05 level.

Question 1B/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	33.205	5	6.641	15.597*
Within Groups	40.874	96	0.426	
Total	74.078	101		

F is not significant at the .05 level.

Question 2A/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	124.585	5	24.917	18.306*
Within Groups	130.670	96	1.361	
Total	255.255	101		

*F is significant at the .05 level.

Table 33. ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 2B/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	63.631	5	12.726	12.966*
Within Groups	94.222	96	0.981	
Total	157.853	101		

* F is significant at the .05 level.

Question 2C/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	134.804	5	26.961	23.307*
Within Groups	111.049	96	1.157	
Total	245.853	101		

* F is significant at the .05 level.

Question 3A/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	22.830	5	4.566	4.518*
Within Groups	97.013	96	1.011	
Total	119.843	101		

*F is significant at the .05 level.

Question 3B/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	37.496	5	7.499	9.811*
Within Groups	73.376	96	0.764	
Total	110.873	101		

*F is significant at the .05 level.

Table 33. ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 3C/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	11.403	5	2.281	5.983*
Within Groups	36.597	96	0.381	
Total	48.000	101		

*F is significant at the .05 level.

Question 3D/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	31.581	5	6.316	11.353*
Within Groups	53.410	96	0.556	
Total	84.990	101		

*F is significant at the .05 level.

Question 3E/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	31.304	5	6.261	14.642*
Within Groups	41.049	96	0.428	
Total	72.353	101		

*F is significant at the .05 level.

Question 4A/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	11.855	5	2.371	6.500*
Within Groups	35.018	96	0.365	
Total	46.873	101		

*F is significant at the .05 level.

Table 33. ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 4B/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	14.989	5	2.998	4.340*
Within Groups	66.305	96	0.691	
Total	81.294	101		

*F is significant at the .05 level.

Question 5A/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	92.590	5	18.518	17.867*
Within Groups	99.499	96	1.036	
Total	192.088	101		

*F is significant at the .05 level.

Question 5B/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	17.724	5	3.545	5.808*
Within Groups	58.589	96	0.610	
Total	76.314	101		

*F is significant at the .05 level.

Question 5C/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	30.875	5	6.175	9.704*
Within Groups	61.086	96	0.636	
Total	91.961	101		

*F is significant at the .05 level.

Table 33. ANOVA Statistics with Years of Educational Attainment and the Seventeen Variable Descriptor Questions – School "C" (Cont'd)

Question 5D/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	20.490	5	4.098	4.462*
Within Groups	88.177	96	0.919	
Total	108.667	101		

*F is significant at the .05 level.

Question 5E/Educational Attainment – School "C"

	Sum of Squares	df	Mean Square	F
Between Groups	31.558	5	6.312	6.321*
Within Groups	95.854	96	0.998	
Total	127.412	101		

*F is significant at the .05 level.

Null Hypothesis 3: There is no significant difference on the extent that components of professional learning communities exist in School "C" of the selected sample of Montana Class "AA" high schools (variable Y) as perceived by building administrators and certified staff personnel, and the independent identified characteristic of educational attainment (variable X_5).

The null hypothesis was rejected at the alpha = .05 level for all questions. Table 33 addressed the relationship between educational attainment and each of the 17 variable descriptors contained in the "Descriptors of Professional Learning Communities" questionnaire. The data from Table 33 indicated that for School "C," all 17 questions had an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Further, the data from Appendix C, Table 9 reflect an

ANOVA post hoc Tukey multiple comparison statistical analysis. For School "C," the results of the Tukey multiple comparison analysis indicated that all 17 questions contained statistically significant means differences at the alpha = .05 level among the varying levels of experience. In other words, in all 17 questions some of the means differences among levels of educational attainment differed by more than what would be expected by chance.

Hypothesis #4

Multiple regression was used to test Hypothesis #4 for each of the three sample Montana Class "AA" high schools. The purpose of the multiple regression was to determine if any of the identified characteristics (variables X_1- X_5) provided a significant and unique contribution to the relationship of a building administrator's or a certified staff member's perceived extent of professional learning community components existence (variable Y). In other words, can any of the independent variables be looked upon as accounting for a statistically significant portion of the variability (R^2) found in any of the 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire instrument?

School "A"

The complete results of the multiple regression procedures on the independent variables of gender (X_1), employment position (X_2), years of educational experience (X_3), years in a similar employment position (X_4), and educational attainment (X_5) and the dependent variable of perception (Y) for Question #1A through Question #5E can be found

in Appendix D. A condensed summary of the results for Question #1A is contained in Table 34.

Null Hypothesis 4: None of the identified characteristics (variables X_1- X_5) provide a significant and unique contribution to the relationship of a building administrator's or a certified staff member's perceived extent of professional learning community components existence (variable Y) for School "A" of the selected sample of Montana Class "AA" high schools.

Table 34. Condensed Model Multiple Regression Analysis for Question #1A - #5E

Multiple Regressions ANOVA for Question 1A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	10.433	1	10.433	9.774*	0.002 (a)
Residual	102.475	96	1.067		
Total	112.908	97			
R	.304	R Square	.092	Adjusted R Square	.083

*F is significant at the .05 level

a. Predictors: employment position

Multiple Regressions ANOVA for Question 1B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	19.667	1	19.667	21.246*	0.000 (a)
Residual	88.864	96	0.926		
Total	108.531	97			
R	.426	R Square	.181	Adjusted R Square	.173

*F is significant at the .05 level

a. Predictors: employment position

Table 34. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 2A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.507	2	9.254	7.178*	0.001 (a)
Residual	122.472	95	1.289		
Total	140.980	97			
R	.362	R Square	.131	Adjusted R Square	.113

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 2B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	23.620	2	11.810	13.296*	0.000 (a)
Residual	84.380	95	0.888		
Total	108.000	97			
R	.468	R Square	.219	Adjusted R Square	.202

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 2C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.250	2	18.125	13.932*	0.000 (a)
Residual	123.587	95	1.301		
Total	159.837	97			
R	.476	R Square	.227	Adjusted R Square	.211

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 3A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.803	1	7.803	8.640*	0.004 (e)
Residual	86.697	96	0.903		
Total	94.500	97			
R	.287	R Square	.083	Adjusted R Square	.073

*F is significant at the .05 level

a. Predictors: employment position

Table 34. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 3B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.163	4	4.291	5.034*	0.001 (a)
Residual	79.337	93	0.853		
Total	96.500	97			
R	.422	R square	.178	Adjusted R Square	.142

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience

Multiple Regressions ANOVA for Question 3C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.515	1	3.515	3.948*	0.050 (a)
Residual	85.475	96	0.890		
Total	88.990	97			
R	.199	R Square	.039	Adjusted R Square	.029

*F is significant at the .05 level

a. Predictors: employment position

Multiple Regressions ANOVA for Question 3D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.773	2	7.387	9.251*	0.000 (a)
Residual	75.849	95	0.798		
Total	90.622	97			
R	.404	R Square	.163	Adjusted R Square	.145

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 3E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	10.678	1	10.678	12.923*	0.001 (a)
Residual	79.322	96	0.826		
Total	90.000	97			
R	.344	R Square	.119	Adjusted R Square	.109

Table 34. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

*F is significant at the .05 level
a. Predictors: employment position

Multiple Regressions ANOVA for Question 4A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.658	1	1.658	2.274	0.135 (a)
Residual	69.975	96	0.729		
Total	71.633	97			
R	.152	R Square	.023	Adjusted R Square	.013

*F is not significant at the .05 level
a. Predictors: employment position

Multiple Regressions ANOVA for Question 4B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.998	1	1.998	1.709	0.194 (a)
Residual	112.176	96	1.168		
Total	114.173	97			
R	.132	R Square	.017	Adjusted R Square	.007

*F is not significant at the .05 level
a. Predictors: gender

Multiple Regressions ANOVA for Question 5A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	8.037	1	8.037	5.006*	0.028 (a)
Residual	154.136	96	1.606		
Total	162.173	97			
R	.223	R Square	.050	Adjusted R Square	.040

*F is significant at the .05 level
a. Predictors: gender

Table 34. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 5B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.378	1	11.378	14.637*	0.000 (a)
Residual	74.622	96	0.777		
Total	86.000	97			
R		.364	R Square		.132
Adjusted R Square	.123				

*F is significant at the .05 level

a. Predictors: employment position

Multiple Regressions ANOVA for Question 5C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.395	2	9.198	9.603*	0.000 (a)
Residual	90.992	95	0.958		
Total	109.388	97			
R		.410	R Square		.168
Adjusted R Square	.151				

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 5D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.677	1	7.677	9.218*	0.003 (a)
Residual	79.956	96	0.833		
Total	87.633	97			
R		.296	R Square		.088
Adjusted R Square	.078				

*F is significant at the .05 level

a. Predictors: employment position

Table 34. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 5E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.170	1	5.170	5.820*	0.018 (a)
Residual	85.289	96	0.888		
Total	90.459	97			
R	.239	R Square	.057	Adjusted R Square	.047

*F is significant at the .05 level

a. Predictors: employment position

- Question #1A: The null hypothesis was rejected for Question #1A at the alpha = .05 level of significance as shown in Table 34. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question #1A. The R-square for applying this model was .092. The amount of variance accounted for by the independent variable of employment position was approximately 9%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis 4 was rejected for the variables included in the model, namely X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 2. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual in School "A" (administrator or certified staff member), contributed significantly to variability of the dependent variable Y. The B_2 value for X_2 differs significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 35. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into

account. As such, null hypothesis 4 was rejected at the 0.05 level of significance for variable X_2. It implies that employment position for School "A" correlates highly with the perception of professional learning community existence, as expressed in question #1A.

- Question #1B: The null hypothesis was rejected for Question #1B at the alpha = .05 level of significance as shown in Table 34. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question #1B. The R-square for applying this model was .181. The amount of variance accounted for by the independent variable of employment position was approximately 18%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 4. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual in School "A" (administrator or certified staff member) contributed significantly to variability of the dependent variable Y. The B_2 value for X_2 differs significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 4. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis 4 was rejected at the 0.05 level of significance for variable X_2. It implies that employment position for School "A" correlates

highly with the perception of professional learning community existence, as expressed in question #1B.

- Question #2A: The null hypothesis was rejected for Question #2A at the alpha = .05 level of significance as shown in Table 34. Gender (X_1) and employment position (X_2) for School "A" do account for a significant portion of the variability in perception for Question #2A. The R-square for applying this model was .131. The amount of variance accounted for by the independent variables of gender and employment position was approximately 13%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 6. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "A" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 6. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for

School "A" correlate highly with the perception of professional learning community existence, as expressed in question #2A.

- Question #2B: The null hypothesis was rejected for Question #2B at the alpha = .05 level of significance as shown in Table 34. Gender (X_1) and employment position (X_2) for School "A" do account for a significant portion of the variability in perception for Question #2B. The R-square for applying this model was .219. The amount of variance accounted for by the independent variables of gender and employment position was approximately 22%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 8. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "A" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 8. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for

School "A" correlate highly with the perception of professional learning community existence, as expressed in question #2B.

- Question #2C: The null hypothesis was rejected for Question #2C at the alpha = .05 level of significance as shown in Table 34. Gender (X_1) and employment position (X_2) for School "A" do account for a significant portion of the variability in perception for Question #2C. The R-square for applying this model was .227. The amount of variance accounted for by the independent variables of gender and employment position was approximately 23%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 10. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "A" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 10. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for

School "A" correlate highly with the perception of professional learning community existence, as expressed in question #2C.

- Question #3A: The null hypothesis was rejected for Question #3A at the alpha = .05 level of significance as shown in Table 34. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question #3A. The R-square for applying this model was .083. The amount of variance accounted for by the independent variables of gender and employment position was approximately 8%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 12. The variable coefficients model in multiple linear regression with backward variable elimination indicated that variable X_2, the employment position of an individual (administrator or certified staff member) for School "A" contributed significantly to variability of the dependent variable Y. The B_2 values for X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 12. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variable X_2. It implies that the employment position for School "A" correlate highly with the perception of professional learning community existence, as expressed in question #3A.

- Question #3B: The null hypothesis was rejected for Question #3B at the alpha = .05 level of significance as shown in Table 34. Gender (X_1), employment position (X_2), years of educational experience (X_3), and educational attainment (X_5) for School "A" do account for a significant portion of the variability in perception for Question #3B. The R-square for applying this model was .178. The amount of variance accounted for by the independent variables of gender and employment position was approximately 18%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1, X_2, X_3, and X_5. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 14. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), variable X_3, the number of years of educational experience, and variable X_5, educational attainment for School "A" contributed significantly to variability of the dependent variable Y. The B_1, B_2, B_3, *and* B_5 values for X_1, X_2, X_3, and X_5 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, X_3, and X_5 in Table 14. Therefore, variables X_1, X_2, X_3, and X_5 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, X_3, and X_5. It implies that gender and

the employment position for School "A" correlate highly with the perception of professional learning community existence, as expressed in question #3B.

- Question #3C: The null hypothesis was rejected for Question #3C at the alpha = .05 level of significance as shown in Table 34. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question # 3C. The R-square for applying this model was .039. The amount of variance accounted for by the independent variable of employment position was approximately 4%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 16. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual in School "A" (administrator or certified staff member) contributed significantly to variability of the dependent variable Y. The B_2 value for X_2 differs significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 16. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis 4 was rejected at the 0.05 level of significance for variable X_2. It implies that employment position for School "A" correlates highly with the perception of professional learning community existence, as expressed in question #3C.

- Question #3D: The null hypothesis was rejected for Question #3D at the alpha = .05 level of significance as shown in Table 34. Gender (X_1) and employment position (X_2) for School "A" do account for a significant portion of the variability in perception for Question #3D. The R-square for applying this model was .163. The amount of variance accounted for by the independent variables of gender and employment position was approximately 16%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 18. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "A" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 18. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "A" correlate highly with the perception of professional learning community existence, as expressed in question #3D.

- Question #3E: The null hypothesis was rejected for Question #3E at the alpha = .05 level of significance as shown in Table 34. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question #3E. The R-square for applying this model was .119. The amount of variance accounted for by the independent variable of employment position was approximately 12%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 20. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual in School "A" (administrator or certified staff member) contributed significantly to variability of the dependent variable Y. The B_2 value for X_2 differs significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 20. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variable X_2. It implies that employment position for School "A" correlates highly with the perception of professional learning community existence, as expressed in question #3E.
- Question #4A: The null hypothesis was retained for Question #4A at the alpha = .05 level of significance as shown in Table 34. None of the independent variables for

School "A" account for a significant portion of the variability in perception for Question #4A.

- Question #4B: The null hypothesis was retained for Question #4B at the alpha = .05 level of significance as shown in Table 55. None of the independent variables for School "A" account for a significant portion of the variability in perception for Question #4B.
- Question #5A: The null hypothesis was rejected for Question #5A at the alpha = .05 level of significance as shown in Table 56. Gender (X_1) for School "A" does account for a significant portion of the variability in perception for Question #5A. The R-square for applying this model was .050. The amount of variance accounted for by the independent variables of gender and employment position was approximately 5%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 24. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "A" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 24. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after

other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "A" correlate highly with the perception of professional learning community existence, as expressed in question #5A.

Question #5B: The null hypothesis was rejected for Question #5B at the alpha = .05 level of significance as shown in Table 34. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question #5B. The R-square for applying this model was .132. The amount of variance accounted for by the independent variable of employment position was approximately 13%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 26. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual in School "A" (administrator or certified staff member) contributed significantly to variability of the dependent variable Y. The B_2 value for X_2 differs significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 26. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variable X_2. It implies that employment position for School "A" correlates

highly with the perception of professional learning community existence, as expressed in question #5B.

- Question #5C: The null hypothesis was rejected for Question #5C at the alpha = .05 level of significance as shown in Table 60. Gender (X_1) and employment position (X_2) for School "A" do account for a significant portion of the variability in perception for Question #5C. The R-square for applying this model was .168. The amount of variance accounted for by the independent variables of gender and employment position was approximately 17%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 28. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "A" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 28. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for

School "A" correlate highly with the perception of professional learning community existence, as expressed in question #5C.

- Question #5D: The null hypothesis was rejected for Question #5D at the alpha = .05 level of significance as shown in Table 62. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question #5D. The R-square for applying this model was .088. The amount of variance accounted for by the independent variable of employment position was approximately 9%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 30. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual in School "A" (administrator or certified staff member) contributed significantly to variability of the dependent variable Y. The B_2 value for X_2 differs significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 30. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variable X_2. It implies that employment position for School "A" correlates highly with the perception of professional learning community existence, as expressed in question #5D.

- Question #5E: The null hypothesis was rejected for Question #5E at the alpha = .05 level of significance as shown in Table 64. Employment position (X_2) for School "A" does account for a significant portion of the variability in perception for Question #5E. The R-square for applying this model was .057. The amount of variance accounted for by the independent variable of employment position was approximately 6%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 32. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual in School "A" (administrator or certified staff member) contributed significantly to variability of the dependent variable Y. The B_2 value for X_2 differs significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 32. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variable X_2. It implies that employment position for School "A" correlates highly with the perception of professional learning community existence, as expressed in question #5E.

Multiple regression was used to test Hypothesis #4 for each of the three sample Montana Class "AA" high schools. The purpose of the multiple regression was to determine if any of the identified characteristics (variables X_1- X_5) provided a significant

and unique contribution to the relationship of a building administrator's or a certified staff member's perceived extent of professional learning community component existence (variable Y). In other words, can any of the independent variables be looked upon as accounting for a statistically significant portion of the variability (R^2) found in any of the 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire instrument?

School "B"

The complete results of the multiple regression procedures on the independent variables of gender (X_1), employment position (X_2), years of educational experience (X_3), years in a similar employment position (X_4), and educational attainment (X_5) and the dependent variable of perception (Y) for Questions #1A through #5E can be found in Appendix D. A condensed summary of the results for Question #1A is contained in Table 35.

Null Hypothesis 4: None of the identified characteristics (variables X_1- X_5) provide a significant and unique contribution to the relationship of a building administrator's or a certified staff member's perceived extent of professional learning community component existence (variable Y) for School "B" of the selected sample of Montana Class "AA" high schools.

Table 35. Condensed Model Multiple Regression Analysis for Questions #1A - #5E

Multiple Regressions ANOVA for Question 1A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	63.086	4	15.772	15.466*	0.000 (a)
Residual	98.914	97	1.020		
Total	162.000	101			
R	.624	R Square	.389	Adjusted R Square	.364

*F is significant at the .05 level

1. Predictors: gender, employment position, years in similar employment position, years of educational experience

Multiple Regressions ANOVA for Question 1B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.010	2	25.505	29.367*	0.000 (a)
Residual	85.980	99	0.868		
Total	136.990	101			
R	.610	R Square	.375	Adjusted R Square	.360

*F is significant at the .05 level

Predictors: gender, employment position

Multiple Regressions ANOVA for Question 2A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	58.223	2	29.111	23.521*	0.000 (a)
Residual	122.532	99	1.238		
Total	180.755	101			
R	.568	R Square	.322	Adjusted R Square	.308

*F is significant at the .05 level

Predictors: gender, employment position

Table 35. Condensed Model Multiple Regression Analysis for Questions #1A-#5E (Contd)

Multiple Regressions ANOVA for Question 2B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	73.514	2	36.757	27.497*	0.000 (a)
Residual	132.339	99	1.337		
Total	205.853	101			
R .344	.598	R Square	.357	Adjusted R Square	

*F is significant at the .05 level
a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 2C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	60.834	2	30.417	26.905*	0.000 (a)
Residual	111.921	99	1.131		
Total	172.755	101			
R	.593	R Square	.352	Adjusted R Square	.339

*F is significant at the .05 level
Predictors: gender, employment position

Multiple Regressions ANOVA for Question 3A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	31.120	2	15.560	18.007*	0.000 (a)
Residual	85.547	99	0.864		
Total	116.667	101			
R	.516	R Square	.267	Adjusted R Square	.252

*F is significant at the .05 level
Predictors: gender, employment position

Table 35. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 3B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.532	2	18.266	19.283*	0.000 (d)
Residual	93.781	99	0.947		
Total	130.314	101			
R	.529	R Square	.280	Adjusted R Square	.266

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 3C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	37.258	2	18.629	19.171*	0.000 (a)
Residual	96.203	99	0.972		
Total	133.461	101			
R	.528	R Square	.279	Adjusted R Square	.265

*F is significant at the .05 level

Predictors: gender, employment position

Multiple Regressions ANOVA for Question 3D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	34.615	2	17.307	15.112*	0.000 (d)
Residual	113.385	99	1.145		
Total	148.000	101			
R	.484	R Square	.234	Adjusted R Square	.218

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 3E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	50.684	2	25.342	26.595*	0.000 (d)
Residual	94.336	99	0.953		
Total	145.020	101			
R	.591	R Square	.349	Adjusted R Square	.336

*F is significant at the .05 level

a. Predictors: gender, employment position

Table 35. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 4A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	10.257	2	5.129	8.115*	0.001 (a)
Residual	62.566	99	0.632		
Total	72.824	101			
R	.375	R Square	.141	Adjusted R Square	.123

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 4B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.790	1	4.790	3.776*	0.055 (a)
Residual	126.857	100	1.269		
Total	131.647	101			
R	.191	R Square	.036	Adjusted R Square	.027

*F is significant at the .05 level

a. Predictors: employment position

Multiple Regressions ANOVA for Question 5A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	26.422	2	13.211	10.372*	0.000 (a)
Residual	126.097	99	1.274		
Total	152.520	101			
R	.416	R Square	.173	Adjusted R Square	.157

*F is significant at the .05 level

Predictors: gender, employment position

Multiple Regressions ANOVA for Question 5B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	21.704	3	7.235	7.914*	0.000 (a)
Residual	89.590	98	0.914		
Total	111.294	101			
R	.442	R Square	.195	Adjusted R Square	.170

*F is significant at the .05 level

a. Predictors: gender, employment position, years of educational experience

Table 35. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 5C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	41.615	2	20.807	15.065*	0.000 (a)
Residual	136.738	99	1.381		
Total	178.353	101			
R	.483	R Square	.233	Adjusted R Square	.218

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 5D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.696	2	12.848	11.120*	0.000 (a)
Residual	114.382	99	1.155		
Total	140.078	101			
R	.428	R Square	.183	Adjusted R Square	.167

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 5E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.415	2	18.208	14.146*	0.000 (d)
Residual	127.428	99	1.287		
Total	163.843	101			
R	.471	R Square	.222	Adjusted R Square	.207

*F is significant at the .05 level

a. Predictors: gender, employment position

- Question #1A: The null hypothesis was rejected for Question #1A at the alpha = .05 level of significance as shown in Table 35. Gender (X_1), employment position (X_2), years of educational experience (X_3), and years in similar employment position (X_4) for School "B" do account for a significant portion of the variability in perception for Question #1A. The R-square for applying this model was .389. The amount of

variance accounted for by the independent variables of gender, employment position, years of educational experience, and years in similar employment position was approximately 39%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis 4 was rejected for the variables included in the model, namely X1, X_2, X_3, and X_4. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 34. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), variable X_3, the number of years of educational experience, and variable X_4, years in similar employment position for School "B" contributed significantly to variability of the dependent variable Y. The B_1, B_2, B_3, *and* B_4 values for X_1, X_2, X_3, and X_4 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, X_3, and X_4 in Table 34. Therefore, variables X_1, X_2, X_3, and X_4 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, X_3, and X_4. It implies that gender, the employment position, years of educational experience, and years in similar employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #1A.

- Question #1B: The null hypothesis was rejected for Question #1B at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position

(X_2) for School "B" do account for a significant portion of the variability in perception for Question #1B. The R-square for applying this model was .372. The amount of variance accounted for by the independent variables of gender and employment position was approximately 37%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 36. The variable coefficient model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 36. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #1B.

- Question #2A: The null hypothesis was rejected for Question #2A at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in

perception for Question #2A. The R-square for applying this model was .322. The amount of variance accounted for by the independent variables of gender and employment position was approximately 32%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 38. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 38. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #2A.

- Question #2B: The null hypothesis was rejected for Question #2B at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #2B. The R-square for applying this model was .357. The

amount of variance accounted for by the independent variables of gender and employment position was approximately 36%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 40. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 40. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #2B.

- Question #2C: The null hypothesis was rejected for Question #2C at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #2C. The R-square for applying this model was .352. The amount of variance accounted for by the independent variables of gender and

employment position was approximately 35%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 42. The variable coefficient model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 42. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #2C.

- Question #3A: The null hypothesis was rejected for Question #3A at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #3A. The R-square for applying this model was .267. The amount of variance accounted for by the independent variables of gender and employment position was approximately 27%. Since R-square differs significantly

from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 44. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 44. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #3A.

- Question #3B: The null hypothesis was rejected for Question #3B at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #3B. The R-square for applying this model was .280. The amount of variance accounted for by the independent variables of gender and employment position was approximately 28%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in

the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 46. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 46. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #3B.

- Question #3C: The null hypothesis was rejected for Question #3C at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #3C. The R-square for applying this model was .279. The amount of variance accounted for by the independent variables of gender and employment position was approximately 28%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable

coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 48. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 48. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #3C.

- Question #3D: The null hypothesis was rejected for Question #3D at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #3D. The R-square for applying this model was .234. The amount of variance accounted for by the independent variables of gender and employment position was approximately 23%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in

multiple linear regression. The results are shown in Appendix D, Table 50. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 50. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #3D.

- Question #3E: The null hypothesis was rejected for Question #3E at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #3D. The R-square for applying this model was .349. The amount of variance accounted for by the independent variables of gender and employment position was approximately 35%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 52. The

variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 52. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #3E.

- Question #4A: The null hypothesis was retained for Question #4A at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #4A. The R-square for applying this model was .141. The amount of variance accounted for by the independent variables of gender and employment position was approximately 14%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 54. The variable coefficients model in multiple linear regression with backward variable

elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 54. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #4A.

- Question #4B: The null hypothesis was retained for Question #4B at the alpha = .05 level of significance as shown in Table 35. Employment position (X_2) for School "B" does account for a significant portion of the variability in perception for Question #4B. The R-square for applying this model was .036. The amount of variance accounted for by the independent variable employment position was approximately 4%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 56. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual (administrator or certified staff member) for

School "B" contributed significantly to variability of the dependent variable Y. The B_2 values for X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2 in Table 56. Therefore, variable X_2 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variable X_2. It implies that the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #4B.

- Question #5A: The null hypothesis was rejected for Question #5A at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #5A. The R-square for applying this model was .173. The amount of variance accounted for by the independent variables of gender and employment position was approximately 17%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 58. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ

significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 58. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #5A.

- Question #5B: The null hypothesis was rejected for Question #5B at the alpha = .05 level of significance as shown in Table 35. Gender (X_1), employment position (X_2), and years of educational experience (X_3) for School "B" do account for a significant portion of the variability in perception for Question #5B. The R-square for applying this model was .195. The amount of variance accounted for by the independent variables of gender, employment position, and years of educational experience was approximately 20%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 60. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member) and variable (X_3), years of educational experience for School "B" contributed significantly to variability of the dependent variable Y. The

B_1, B_2, *and* B_3 values for X_1, X_2, and X_3 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_3 in Table 60. Therefore, variables X_1, X_2, and X_3 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_3. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #5B.

- Question #5C: The null hypothesis was rejected for Question #5C at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #5C. The R-square for applying this model was .233. The amount of variance accounted for by the independent variables of gender and employment position was approximately 23%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 62. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ

significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 62. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #5C.

- Question #5D: The null hypothesis was rejected for Question #5D at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #5D. The R-square for applying this model was .183. The amount of variance accounted for by the independent variables of gender and employment position was approximately 18%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 64. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1

and X_2 in Table 64. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #5D.

- Question #5E: The null hypothesis was rejected for Question #5E at the alpha = .05 level of significance as shown in Table 35. Gender (X_1) and employment position (X_2) for School "B" do account for a significant portion of the variability in perception for Question #5E. The R-square for applying this model was .222. The amount of variance accounted for by the independent variables of gender and employment position was approximately 22%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 66. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "B" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 66. Therefore, variables X_1 and X_2 do provide a significant and

unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "B" correlate highly with the perception of professional learning community existence, as expressed in question #5E.

Multiple regression was used to test Hypothesis #4 for each of the three sample Montana Class "AA" high schools. The purpose of the multiple regression was to determine if any of the identified characteristics (variables X_1- X_5) provided a significant and unique contribution to the relationship of a building administrator's or a certified staff member's perceived extent of professional learning community components existence (variable Y). In other words, can any of the independent variables be looked upon as accounting for a statistically significant portion of the variability (R^2) found in any of the 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire instrument?

School "C"

The complete results of the multiple regression procedures on the independent variables of gender (X_1), employment position (X_2), years of educational experience (X_3), years in a similar employment position (X_4), and educational attainment (X_5) and the dependent variable of perception (Y) for Questions #1A through #5E can be found in Appendix D. A condensed summary of the results for Question #1A is contained in Table 36.

Null Hypothesis 4: None of the identified characteristics (variables X_1- X_5) provide a significant and unique contribution to the relationship of a building administrator's or a certified staff member's perceived extent of professional learning community components existence (variable Y) for School "C" of the selected sample of Montana Class "AA" high schools.

Table 36. Condensed Model Multiple Regression Analysis for Question #1A - #5E

Multiple Regressions ANOVA for Question 1A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	49.655	3	16.552	29.869*	0.000 (a)
Residual	54.306	98	0.554		
Total	103.961	101			
R	.691	R Square	.478	Adjusted R Square	.462

*F is significant at the .05 level

a. Predictors: gender, employment position, years in similar employment position

Multiple Regressions ANOVA for Question 1B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	32.130	2	16.065	37.913*	0.000 (a)
Residual	41.949	99	0.424		
Total	74.078	101			
R	.659	R Square	.434	Adjusted R Square	.422

*F is significant at the .05 level

a. Predictors: gender, employment position

Table 36. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 2A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	147.690	2	73.845	67.965*	0.000 (a)
Residual	107.565	99	1.087		
Total	255.255	101			
R	.761	R Square	.579	Adjusted R Square	.570

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 2B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	48.704	1	48.704	44.621*	0.000 (a)
Residual	109.149	100	1.091		
Total	157.853	101			
R	.555	R Square	.309	Adjusted R Square	.302

*F is significant at the .05 level

a. Predictors: gender

Multiple Regressions ANOVA for Question 2C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	113.959	2	56.979	42.769*	0.000 (a)
Residual	131.894	99	1.332		
Total	245.853	101			
R	.681	R Square	.464	Adjusted R Square	.453

*F is significant at the .05 level

a. Predictors: gender, employment position

Table 36. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 3A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	54.573	2	27.287	41.388*	0.000 (a)
Residual	65.270	99	0.659		
Total	119.843	101			
R	.675	R Square	.455	Adjusted R Square	.444

*F is significant at the .05 level

a. Predictors: gender, years of educational experience

Multiple Regressions ANOVA for Question 3B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.751	3	17.250	28.594*	0.000 (a)
Residual	59.122	98	0.603		
Total	110.873	101			
R	.683	R Square	.467	Adjusted R Square	.450

*F is significant at the .05 level

a. Predictors: gender, employment position, years of educational experience

Multiple Regressions ANOVA for Question 3C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	16.523	3	5.508	17.148*	0.000 (a)
Residual	31.477	98	0.321		
Total	48.000	101			
R	.587	R Square	.344	Adjusted R Square	.324

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position

Table 36. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 3D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	32.765	2	16.382	31.055*	0.000 (a)
Residual	52.225	99	0.528		
Total	84.990	101			
R	.621	R Square	.386	Adjusted R Square	.373

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 3E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.803	3	9.601	21.604*	0.000 (c)
Residual	43.550	98	0.444		
Total	72.353	101			
R	.631	R Square	.398	Adjusted R Square	.380

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position

Multiple Regressions ANOVA for Question 4A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.697	3	4.899	14.921*	0.000 (a)
Residual	32.176	98	0.328		
Total	46.873	101			
R	.560	R Square	.314	Adjusted R Square	.293

*F is significant at the .05 level

a. Predictors: gender, employment position, years in similar employment position

Table 36. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 4B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.750	3	4.250	6.076*	0.001 (a)
Residual	68.544	98	0.699		
Total	81.294	101			
R	.396	R Square	.157	Adjusted R Square	.131

*F is significant at the .05 level

a. Predictors: gender, employment position, years in similar employment position

Multiple Regressions ANOVA for Question 5A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	56.845	2	28.422	20.806*	0.000 (a)
Residual	135.243	99	1.366		
Total	192.088	101			
R	.544	R Square	.296	Adjusted R Square	.282

*F is significant at the .05 level

a. Predictors: gender, employment position

Multiple Regressions ANOVA for Question 5B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	31.807	3	10.602	23.345*	0.000 (a)
Residual	44.507	98	0.454		
Total	76.314	101			
R	.646	R Square	.417	Adjusted R Square	.399

*F is significant at the .05 level

a. Predictors: gender, employment position, years of educational experience

Table 36. Condensed Model Multiple Regression Analysis for Question #1A - #5E (Contd)

Multiple Regressions ANOVA for Question 5C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.255	2	12.128	17.733*	0.000 (a)
Residual	67.705	99	0.684		
Total	91.961	101			
R	.514	R Square	.264	Adjusted R Square	.249

*F is significant at the .05 level

a. Predictors: gender, years of educational experience

Multiple Regressions ANOVA for Question 5D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.240	3	17.080	29.148*	0.000 (a)
Residual	57.426	98	0.586		
Total	108.667	101			
R	.687	R Square	.472	Adjusted R Square	.455

*F is significant at the .05 level

a. Predictors: gender, employment position, years of educational experience

Multiple Regressions ANOVA for Question 5E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	49.193	3	16.398	20.544*	0.000 (a)
Residual	78.219	98	0.798		
Total	127.412	101			
R	.621	R Square	.386	Adjusted R Square	.367

*F is significant at the .05 level

a. Predictors: educational attainment, employment position, years in similar employment position

- Question #1A: The null hypothesis was rejected for Question #1A at the alpha = .05 level of significance as shown in Table 36. Gender (X_1), employment position (X_2), and years in similar employment position (X_4) for School "C" do account for a

significant portion of the variability in perception for Question #1A. The R-square for applying this model was .478. The amount of variance accounted for by the independent variable of gender, employment position, and years in similar employment position was approximately 48%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis 4 was rejected for the variables included in the model, namely X1, X_2, and X_4. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 68. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_4, years in similar employment position for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2, *and* B_4 values for X_1, X_2, and X_4 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_4 in Table 68. Therefore, variables X_1, X_2, and X_4 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_4. It implies that gender, the employment position, and the years in the similar employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #1A.

- Question #1B: The null hypothesis was rejected for Question #1B at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) and employment position (X_2) for School "C" do account for a significant portion of the variability in perception for Question #1B. The R-square for applying this model was .434. The amount of variance accounted for by the independent variables of gender and employment position was approximately 43%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 70. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "C" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 70. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #1B.

- Question #2A: The null hypothesis was rejected for Question #2A at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) and employment position (X_2) for School "C" do account for a significant portion of the variability in perception for Question #2A. The R-square for applying this model was .579. The amount of variance accounted for by the independent variables of gender and employment position was approximately 58%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 72. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "C" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 72. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #2A.

- Question #2B: The null hypothesis was rejected for Question #2B at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) for School "C" does account for a significant portion of the variability in perception for Question #2B. The R-square for applying this model was .309. The amount of variance accounted for by the independent variable of gender was approximately 31%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 74. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator for School "C" contributed significantly to variability of the dependent variable Y. The B_1 value for X_1 differed significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 in Table 74. Therefore, variable X_1 does provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variable X_1. It implies that gender for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #2B.
- Question #2C: The null hypothesis was rejected for Question #2C at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) and employment position (X_2) for School "C" do account for a significant portion of the variability in perception for Question #2C. The R-square for applying this model was .464. The

amount of variance accounted for by the independent variables of gender and employment position was approximately 46%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 76. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "C" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 76. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #2C.

- Question #3A: The null hypothesis was rejected for Question #3A at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) and years of educational experience (X_3) for School "C" do account for a significant portion of the variability in perception for Question #3A. The R-square for applying this model was .455. The amount of variance accounted for by the independent variables of

gender and years of educational experience was approximately 46%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_3. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 78. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_3, years of educational experience (administrator or certified staff member) for School "C" contributed significantly to variability of the dependent variable Y. The B_1 and B_3 values for X_1 and X_3 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_3 in Table 78. Therefore, variables X_1 and X_3 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_3. It implies that gender and the years of educational experience for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #3A.

- Question #3B: The null hypothesis was rejected for Question #3B at the alpha = .05 level of significance as shown in Table 36. Gender (X_1),employment position (X_2), and years of educational experience (X_3) for School "C" do account for a significant portion of the variability in perception for Question #3B. The R-square for applying this model was .467. The amount of variance accounted for by the independent variables of gender, employment position, and years of educational

experience was approximately 47%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 X_2, and X_3. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 80. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_3, years of educational experience for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2 and B_3 values for X_1, X_2, and X_3 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_3 in Table 80. Therefore, variables X_1, X_2, and X_3 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_3. It implies that gender, employment position, and years of educational experience for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #3B.

- Question #3C: The null hypothesis was rejected for Question #3C at the alpha = .05 level of significance as shown in Table 36. Gender (X_1), employment position (X_2), and educational attainment (X_5) for School "C" do account for a significant portion of the variability in perception for Question #3C. The R-square for applying this model was .344. The amount of variance accounted for by the independent

variables of gender, employment position, and educational attainment was approximately 34%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1, X_2, and X_5. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 82. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_5, educational attainment for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2, *and* B_5 values for X_1, X_2, and X_5 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_5 in Table 82. Therefore, variables X_1, X_2, and X_5 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_5. It implies that gender, employment position, and educational attainment for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #3C.

- Question #3D: The null hypothesis was rejected for Question #3D at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) and employment position (X_2) for School "C" do account for a significant portion of the variability in perception for Question #3D. The R-square for applying this model was .386. The

amount of variance accounted for by the independent variables of gender and employment position was approximately 39%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 84. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "C" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 84. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #3D.

- Question #3E: The null hypothesis was rejected for Question #3E at the alpha = .05 level of significance as shown in Table 36. Gender (X_1), employment position (X_2), and educational attainment (X_5) for School "C" do account for a significant portion of the variability in perception for Question #3E. The R-square for applying this model was .398. The amount of variance accounted for by the independent

variables of gender, employment position, and educational attainment was approximately 40%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1, X_2, and X_5. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 86. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_5, educational attainment for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2, *and* B_5 values for X_1, X_2, and X_5 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_5 in Table 86. Therefore, variables X_1, X_2, and X_5 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_5. It implies that gender, employment position, and educational attainment for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #3E.

- Question #4A: The null hypothesis was retained for Question #4A at the alpha = .05 level of significance as shown in Table 36. Gender (X_1), employment position (X_2), and years in similar employment position (X_4) for School "C" do account for a significant portion of the variability in perception for Question #4A. The R-square

for applying this model was .314. The amount of variance accounted for by the independent variable of gender, employment position, and years in similar employment position was approximately 31%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis 4 was rejected for the variables included in the model, namely X1, X_2, and X_4. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 88. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_4, years in similar employment position for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2, *and* B_4 values for X_1, X_2, and X_4 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_4 in Table 88. Therefore, variables X_1, X_2, and X_4 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_4. It implies that gender, employment position, and years in the similar employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #4A.

- Question #4B: The null hypothesis was retained for Question #4B at the alpha = .05 level of significance as shown in Table 36. Gender (X_1), employment position (X_2),

and years in similar employment position (X_4) for School "C" do account for a significant portion of the variability in perception for Question #4B. The R-square for applying this model was .157. The amount of variance accounted for by the independent variable of gender, employment position, and years in similar employment position was approximately 16%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis 4 was rejected for the variables included in the model, namely X1, X_2, and X_4. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 90. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_4, years in similar employment position for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2, and B_4 values for X_1, X_2, and X_4 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_4 in Table 90. Therefore, variables X_1, X_2, and X_4 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_4. It implies that gender, employment position, and years in the similar employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #4B.

- Question #5A: The null hypothesis was rejected for Question #5A at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) and employment position (X_2) for School "C" do account for a significant portion of the variability in perception for Question #5A. The R-square for applying this model was .296. The amount of variance accounted for by the independent variables of gender and employment position was approximately 30%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_2. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 92. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_2, the employment position of an individual (administrator or certified staff member) for School "C" contributed significantly to variability of the dependent variable Y. The B_1 and B_2 values for X_1 and X_2 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_2 in Table 92. Therefore, variables X_1 and X_2 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_2. It implies that gender and the employment position for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #5A.

- Question #5B: The null hypothesis was rejected for Question #5B at the alpha = .05 level of significance as shown in Table 36. Gender (X_1),employment position (X_2), and years of educational experience (X_3) for School "C" do account for a significant portion of the variability in perception for Question #5B. The R-square for applying this model was .417. The amount of variance accounted for by the independent variables of gender, employment position, and years of educational experience was approximately 42%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 X_2, and X_3. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 94. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_3, years of educational experience for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2 and B_3 values for X_1, X_2, and X_3 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_3 in Table 94. Therefore, variables X_1, X_2, and X_3 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_3. It implies that gender, employment position, and years of educational experience for School "C"

correlate highly with the perception of professional learning community existence, as expressed in question #5B.

- Question #5C: The null hypothesis was rejected for Question #5C at the alpha = .05 level of significance as shown in Table 36. Gender (X_1) and years of educational experience (X_3) for School "C" do account for a significant portion of the variability in perception for Question #5C. The R-square for applying this model was .264. The amount of variance accounted for by the independent variables of gender and educational experience was approximately 26%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 and X_3. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 96. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member and variable X_3, years of educational experience for School "C" contributed significantly to variability of the dependent variable Y. The B_1 and B_3 values for X_1 and X_3 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1 and X_3 in Table 96. Therefore, variables X_1 and X_3 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1 and X_3. It implies that gender and years of educational experience for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #5C.

- Question #5D: The null hypothesis was rejected for Question #5D at the alpha = .05 level of significance as shown in Table 36. Gender (X_1),employment position (X_2), and years of educational experience (X_3) for School "C" do account for a significant portion of the variability in perception for Question #5D. The R-square for applying this model was .472. The amount of variance accounted for by the independent variables of gender, employment position, and years of educational experience was approximately 47%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_1 X_2, and X_3. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 98. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_1, the gender of a building administrator and a certified staff member, variable X_2, the employment position of an individual (administrator or certified staff member), and variable X_3, years of educational experience for School "C" contributed significantly to variability of the dependent variable Y. The B_1, B_2 and B_3 values for X_1, X_2, and X_3 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_1, X_2, and X_3 in Table 98. Therefore, variables X_1, X_2, and X_3 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables X_1, X_2, and X_3. It implies that gender, employment position, and years of educational experience for School "C"

correlate highly with the perception of professional learning community existence, as expressed in question #5D.

- Question #5E: The null hypothesis was rejected for Question #5E at the alpha = .05 level of significance as shown in Table 36. Employment position (X_2), years in similar employment position (X_4), and educational attainment (X_5) for School "C" do account for a significant portion of the variability in perception for Question #5E. The R-square for applying this model was .386. The amount of variance accounted for by the independent variables of employment position, years in similar employment position, and educational attainment was approximately 39%. Since R-square differs significantly from sig. (F) = 0.000, null hypothesis #4 was rejected for the variables included in the model, namely, X_2, X_4, and X_5. Further, a full model analysis on the variable coefficients was conducted using a backward variable elimination model in multiple linear regression. The results are shown in Appendix D, Table 100. The variable coefficients model in multiple linear regression with backward variable elimination indicates that variable X_2, the employment position of an individual (administrator or certified staff member), variable X_4, years in similar employment position, and variable X_5, educational attainment for School "C" contributed significantly to variability of the dependent variable Y. The B_2, B_4, and B_5 values for X_2, X_4, and X_5 differ significantly from zero (alpha = 0.05), as indicated by the t-statistic given for X_2, X_4, and X_5 in Table 100. Therefore, variables X_2, X_4, and X_5 do provide a significant and unique contribution to the prediction of Y after other variables are taken into account. As such, null hypothesis #4 was rejected at the 0.05 level of significance for variables

X_2, X_4, and X_5. It implies that employment position, years in similar position, and educational attainment for School "C" correlate highly with the perception of professional learning community existence, as expressed in question #5E.

Summary of Results and Conclusions

The "Descriptors of Professional Learning Communities" questionnaire instrument consisted of 17 variable descriptors grouped into five major areas or dimensions identified from the literature review (Hord, 1997). This study provided evidence that implies the following conclusions, subject to the limitations and delimitations of the study. Several conclusions are offered from the analysis of the data.

1. Based on the responses from building administrators and certified staff personnel in the three selected sample of Montana Class "AA" high schools, all five components of professional learning communities, at varying degrees, seem to exist within the three sample high schools. For example:
   - In School "A," the median score for the 17 descriptor questions contained within the five major categories was 2.774 out of a possible 5.00. Of that total, building administrators and certified staff personnel were more likely to perceive that major area #5–school conditions and capacities that support the staff arrangement as a professional learning organization–existed more than any of the other four major areas.
   - In School "B," the median score for the 17 descriptor questions contained within the five major categories was 2.736 out of a possible 5.00. Of that total, building administrators and certified staff personnel were more likely to

perceive that major area #2–the staff shared visions for school improvement that has an undeviating focus on student learning and is consistently referenced in their work–existed more than any of the other four major areas.

- In School "C," the median score for the 17 descriptor questions contained within the five major categories was 2.858 out of a possible 5.00. Of that total, building administrators and certified staff personnel were more likely to perceive that major area #3–the staff collective learning and application of the learning (taking action) create high intellectual learning tasks and solutions to address student needs–existed more than any of the other four major areas.

These results imply a need for continued growth in the extent that components of a professional learning community exist within the sample high schools. Peter Senge's book, The Fifth Discipline, provides a description of a learning organization "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together." For the three sample Montana Class "AA" high schools, the existence of a professional learning community components can be enhanced when people from multiple constituencies at all levels collaboratively and continually work together, "enhancing their capacity to create things they really want to create" (Louis & Kruse, 1995). The data seems to indicate that acquiring and applying of knowledge surrounding professional learning community components must be a priority for the three sample high schools. For this to happen, administrators and teachers must take personal action to make connections

to research and promising practice (Sergiovanni, 1995). Such connections can be made through what Newmann and Louis and Kruse (Brandt, 1995) label as reflective dialogue, in which administrative and staff personnel conduct conversations about students, teaching, and learning. Finally, the data indicates the three sample high schools must continue working towards: (1) an understanding and an appreciation for the work of others that can bind administrators and staff personnel to a shared set of ideas and allow administrators and teachers to become a community of learners; (2) a safe forum for discussion that reinforces the components of the professional learning community and provides the willingness to live with the uncertainty and ambiguity as participants work through the issues involved in enhancing the existence of professional learning community components (Fullan, 1993).

2. Based on the responses from building administrators and certified staff personnel working in the three selected sample of Montana Class "AA" high schools, the three sample schools appear to concur that major area #4–peers review and give feedback based on observing each other's classroom behaviors in order to increase individual and organizational capacity–exists far less than any of the other four major areas.

This result infers a need in the three sample schools for continued growth in the existence of peer review and feedback. Review of a teacher's behavior by colleagues is a norm in the professional learning community (Louis & Kruse, 1995). Such review is conducted regularly by teachers who visit peer classrooms to observe, to script notes, and to discuss observations (p. 167). The process is based

on the desire for individual and community improvement and is enabled by the mutual respect and trustworthiness of staff members (Hord, 1996). Administrators and staff personnel find help, support, and trust as a result of the development of a positive relationships with each other (Wignall, 1992). For Wignall, administrators and staff personnel who work within a professional learning community are "professionals who tolerate (even encourage) debate, discussion and disagreement. They are comfortable sharing both their successes and their failures. Darling-Hammond insisted that administrators and staff personnel need opportunities to share what they know, to consult with peers about problems of teaching and learning, and to observe peers (1993). Darling-Hammond noted that such activities in professional learning communities deepen professional understanding in order to undertake fundamental, systemic change (p.72). In short, the data implies that the three sample high schools need to provide a sense of connection among administrators and staff personnel that includes an environment that values and supports hard work, the acceptance of challenging tasks, risk taking, and the promotion of growth" through a school culture that nurtures staff collaboration (Midgley & Wood, 1993).

3. Based on the statistical means (m) results from independent t tests of significance, it is inferred that gender differences exist as to perception on the extent that components of professional learning communities exist within the selected sample Montana Class "AA" high schools. For example:

   - In School "A," female respondents rated the following descriptor variable questions as most prevalent professional learning community components:

a. The staff, based on their learning, makes and implements plans that address students' needs, more effective teaching, and more successful learning (m = 3.613).

b. Visions for improvement are always focused on students, learning, and teaching (m = 3.568).

c. Caring, collaborative, and productive relationships exist among the staff (m = 3.545).

- In School "A," male respondents rated the following descriptor variable questions as most prevalent professional learning community components:

  a. Caring, collaborative, and productive relationships exist among the staff (m = 3.425).

  b. Trust and openness characterizes the staff (m = 3.037).

  c. Administrators involve the entire staff (m = 3.055).

- In School "B," female respondents rated the following descriptor variable questions as most prevalent professional learning community components:

  a. Visions for improvement are always focused on students, learning, and teaching (m = 4.190).

  b. Visions for improvement target high quality learning experiences for all students (m = 3.833).

  c. Visions for improvement are discussed by the entire staff such that consensus and a shared vision results (m = 3.809).

- In School "B," male respondents rated the following descriptor variable questions as most prevalent professional learning community components:

a. Caring, collaborative, and productive relationships exist among the staff (m = 2.616).

b. Visions for improvement are always focused on students, learning, and teaching (m = 2.616).

c. Trust and openness characterizes the staff (m = 2.600).

- In School "C," female respondents rated the following descriptor variable questions as most prevalent professional learning community components:

a. Visions for improvement are always focused on students, learning, and teaching (m = 4.125).

b. Visions for improvement are discussed by the entire staff such that consensus and a shared vision results (m = 3.975).

c. Visions for improvement target high quality learning experiences for all students (m = 3.925).

- In School "C," male respondents rated the following descriptor variable questions as most prevalent professional learning community components:

a. Caring, collaborative, and productive relationships exist among the staff (m = 3.435).

b. Trust and openness characterizes the staff (m = 3.419).

c. The staff discusses the quality of their teaching and students' learning (m = 3.016).

d. Based on the statistical means (m) results from independent t tests of significance, there appears to be employment position differences as to perception on the extent that components of professional learning

communities exist within the selected sample of Montana class "AA" high schools. For example:

- In School "A," building administrator respondents rated the following descriptor variable questions as most prevalent professional learning community components:
  a. Administrators involve the entire staff (m = 4.625).
  b. Visions for improvement target high quality learning experiences for all students (m = 4.500).
  c. Visions for improvement are always focused on students, learning, and teaching (m = 4.500).
- In School "A," certified staff respondents rated the following descriptor variable questions as most prevalent professional learning community components:
  a. Caring, collaborative, and productive relationships exist among the staff (m = 3.411).
  b. The staff debriefs and assesses the impact of their actions and makes revisions (m = 3.211),
  c. Visions for improvement are always focused on students, learning, and teaching (m = 3.177).
- In School "B," building administrator respondents rated the following descriptor variable questions as most prevalent professional learning community components:

a. Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve the staff in discussing and making decision about most school issues (m = 5.000)

b. Administrators involve the entire staff (m = 4.625).

c. Caring, collaborative, and productive relationships exist among the staff (m = 4.571).

d. Visions for improvement are always focused on students, learning, and teaching (m = 4.571).

e. Visions for improvement are discussed by the entire staff such that consensus and a shared vision results (m = 4.571).

f. Visions for improvement target high quality learning experiences for all students (m = 4.571).

- In School "B," certified staff respondents rated the following descriptor variable questions as most prevalent professional learning community components:

a. Visions for improvement are always focused on students, learning, and teaching (m = 3.168).

b. Visions for improvement are discussed by the entire staff such that consensus and a shared vision results (m = 2.936).

c. Visions for improvement target high quality learning experiences for all students (m = 2.936).

- In School "C," building administrator respondents rated the following descriptor variable questions as most prevalent professional learning community components:
  a. Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve the staff in discussing and making decision about most school issues (m = 4.500).
  b. Visions for improvement are always focused on students, learning, and teaching (m = 5.000).
  c. Caring, collaborative, and productive relationships exist among the staff (m = 4.500).
- In School "C," certified staff respondents rated the following descriptor variable questions as most prevalent professional learning community components:
  a. Visions for improvement are always focused on students, learning, and teaching (m = 3.244).
  b. Caring, collaborative, and productive relationships exist among the staff (m = 3.382).
  c. Trust and openness characterizes the staff (m = 3.191).

The data produced from the statistical means (m) results from independent t tests of significance infers there are gender as well as employment position differences as to perception on the extent that components of professional learning communities exist within the three sample Montana Class "AA" high schools. Female respondents as well as administrator respondents tended to view the

existence of professional learning community components in a more favorable light than did male respondents or staff personnel. One message that emanates from these findings is the critical role leadership needs to play in initiating, sustaining, and promoting the existence of professional learning community components regardless of gender or employment position. This type of leadership is school leadership at the center in a professional learning community. Such school leaders clearly position themselves in the center of the staff rather than at the top of the school organizational structure. Leading from the center requires being at the center–a physical presence, with accessibility the key and consistent collaboration among the staff the guiding principal (Louis & Kruse, 1995). In addition, leading from the center means giving up some of the expected leadership behaviors in favor of sharing such behaviors with others. Moreover, individuals who lead at the center take advantage of every opportunity to stimulate conversation about teaching and learning and to bind faculty around issues of students and instruction (Hoerr, 1996). Leaders in a professional learning community realize the necessity of creating opportunities, regardless of gender or employment position, that will pull the faculty together in pursuit of a common objective or goal (Sergiovanni, 1994). Fashioning meaningful ways for staff personnel to come together to focus on issues and work that concerns all is key to creating an atmosphere for professional learning communities (p. 134). For this to happen, schools must become a place where teachers are involved in a community of learning, caring, and inquiring. The data implies that transforming the school organization into a professional learning community can be done only with the administrator's sanction and active nurturing

of the entire staff development as a community (Darling-Hammond, 1995). Leaders must be envisioned as democratic decision-makers that plant the seeds of community, nurture fledgling community, and protect the community once it emerges. They lead by following; they lead by serving; they lead by inviting others to share in the burdens of leadership (Sergiovanni, 1994, p. 19). Finally, Prestine defined three factors, which are reinforced by the study findings, required of administrators in schools that attempt to promote the existence of professional learning community components: (1) the ability to share authority, (2) the ability to facilitate the work of staff, and (3) the ability to participate without dominating (1993). As Sergiovanni stated, "the sources of authority for leadership in a professional learning community are embedded in shared ideas" (Sergiovanni, 1994).

4. Based on an Analysis of Variance model analysis along with the post hoc ANOVA Tukey analysis, there appears to be differences based on the independent variable of years of experience as to perception on the extent that components of professional learning communities exist within the three sample Montana Class "AA" high schools. For example:

   - In School "A," only seven of the 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means

differences among levels of years of experience differed by more than what would be expected by chance.

- In School "B," 14 out of 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means differences among levels of years of experience differed by more than what would be expected by chance.
- In School "C," 16 out of 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means differences among levels of years of experience differed by more than what would be expected by chance.

5. Based on an Analysis of Variance model analysis along with the post hoc ANOVA Tukey analysis, there appears to be differences based on the independent variable of years in a similar employment position as to perception on the extent that components of professional learning communities exist within the three sample Montana Class "AA" high schools. For example:
   - In School "A," only two of the 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an

F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means differences among levels of years in a similar employment position differed by more than what would be expected by chance.

- In School "B," 15 of the 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means differences among levels of years in a similar employment position differed by more than what would be expected by chance.
- In School "C," all 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means differences among levels of years in a similar employment position differed by more than what would be expected by chance.

6. Based on an Analysis of Variance model analysis along with the post hoc ANOVA Tukey analysis, there appears to be differences based on the independent variable of educational attainment as to perception on the extent that components of

professional learning communities exist within the three sample Montana Class "AA" high schools. For example:

- In School "A," only four of the 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means differences among levels of educational attainment differed by more than what would be expected by chance.
- In School "B" and School "C," all 17 descriptor questions contained in the "Descriptors of Professional Learning Communities" questionnaire produced an F ratio that was statistically significant at the .05 probability level. In other words, the between groups variance differed from the within groups variance by more than what would be expected by chance. Moreover, some of the means differences among levels of educational attainment differed by more than what would be expected by chance.

The data produced by the Analysis of Variance statistical tests and the post-hoc ANOVA Tukey tests infers that years of experience, years in a similar employment position, and educational attainment contribute to differences in perception on the extent that components of professional learning communities exist within the three sample Montana Class "AA" high schools. The statistical findings imply four ideas about a design of a high school, found within the three

independent variables ($X_3 - X_5$), either nourish or hinder the perception of the existence of professional learning community components within the three sample high schools. First, issues such as time to meet and talk, the physical proximity of the staff to one another, teaching roles that are interdependent, communication structures, school autonomy, and teacher empowerment were found to be key conditions in the perception on the existence of professional learning community components. The findings tended to support Donahoe's assertion that the use of time in schools is a prime issue in the existence of a professional learning community. Second, the ANOVA findings also suggested that physical proximity structures that provide opportunities for informal communication were important in promoting administrative and staff personnel effort in increasing the existence of professional learning community components. The findings reinforce the idea that school personnel need places to interact, to exchange ideas, and to establish a sense of identity relating to common interests and goals (Louis & Miles, 1990). Administrators and staff personnel who work in interdependent settings act as professionals when their interactions support a shared value structure rather than reinforcing artificial boundaries between their roles (Rosenholtz, 1991). In turn, interdependent connections foster opportunities for closer relationships, more dialogue, feedback and discussion of specifics of practice, all of which produce a greater opportunity for the existence of professional learning community components (Fullan, 1992; Murphy & Louis, 1994). Third, factors such as openness to improvement, trust and respect, access to expertise, supportive leadership, and mechanisms to socialize new members seemed to be of importance among the three

sample high schools in understanding the existence of professional learning community components. This supports the research that openness to improvement within the school is important to ensure teachers' sense of professional community (Louis, Marks & Kruse, 1994). Trust and respect from colleagues inside the school are necessary conditions for developing professional learning communities (Rosenholtz, 1991). Trust is an essential ingredient for collegiality, because it helps to induce a sense of loyalty, commitment and effectiveness necessary for shared decision making, and the establishment of collegiality. The idea of trust seems to involve both predictability and adherence to common goals that are a reflection of the foundation of shared values in professional learning community components. Finally, the need for leadership that focused efforts on the issues of shared purpose, continuous improvement, and structural change was evident in the observed differences among the three independent variables ($X_3 - X_5$) within the three sample high schools. Within professional learning communities there is support for staff personnel and his/her classroom instructional activities. Instructional leadership becomes a central requirement of developing a professional learning community in which "increased cognitive understanding of instruction and learning and a more sophisticated repertoire of teaching skills" are goals (Guskey & Peterson, 1996). The results imply that administrators need to assist teachers in improving their classroom performance and develop a climate in which instruction was viewed as problematic, thus allowing staff personnel to feel safe about asking or receiving assistance to address areas of concern.

7. Based on the statistical results from multiple regression tests as well as backward coefficient elimination techniques, there appears that certain independent variables or a combination of those variables influence the perception on the extent that professional learning community components exist within the thee sample Montana Class "AA" high schools. For example:

   - In School "A," in nine of the 17 descriptor questions, employment position was the overriding independent variable that influenced administrator and staff personnel perception on the extent that professional learning community components exist. In five of the remaining eight questions, gender and employment position were independent variables that influenced administrator and staff personnel perception on the extent that professional learning community components exist.
   - In School "B," gender and employment position were the overriding independent variables in 14 of the 17 descriptor questions that influenced administrator and staff personnel perception on the extent that professional learning community components exist.
   - In School "C," gender and employment position were the overriding independent variables in five of the 17 descriptor questions that influenced administrator and staff personnel perception on the extent that professional learning community components exist. Gender and years of experience were the independent variables in four of the 17 descriptor questions while gender, employment position and years in a similar employment position were the independent variables in three of the 17 descriptor questions that influenced

administrator and staff personnel perception on the extent that professional learning community components exist.

The multiple regression statistical analysis, along with the backward coefficient elimination tests, indicate that certain patterns exist as to the independent variables that influenced administrator and staff personnel perception on the extent that professional learning community components exist among the three sample high schools. Primarily, gender and employment position serve as the key independent variables that influenced administrator and staff personnel perception on the extent that professional learning community components exist. As such, the data implies that for a professional learning community to exist, administrators and staff personnel must model the behaviors of the professional community to transcend gender and employment position differences, keeping the vision of such a workplace alive and visible. As Louis and Kruse observe, "a democracy is more than a form of government; it is primarily a mode of associated living through communicated experience" and a professional learning community is founded on a "process of communicating ideas, ideals, shared concerns, and interests" (1995). The multiple regression findings confirm the work of Rosenholtz (1989) in that a professional learning community must allow for dissent and debate among its members in hopes of increased understanding and learning. Traditions and commonly accepted practice are to be challenged and discussed as a means to new insights and practices. The data indicates that administrator and staff personnel vision as to the extent that the components of a professional learning community exist within the three sample high schools is an important factor in the

development of a successful professional learning community (Darling-Hammond, 1996). In addition, the sharing of the (at times) conflicting vision helps to develop a particular mental image of what is important to the individual and to the organization (Senge, 1990). The findings suggest that administrators and staff members be encouraged not only to be involved in the process of developing a mutual vision, but to use that vision as a guidepost in decision making about teaching and learning where the individual administrator and staff member is responsible for his/her actions, but the common good is placed on a par with personal ambition (Senge, 1990). Finally, the multiple regression findings support the idea that the extent of existence of professional learning community components must be characterized by relationships among individuals that are caring and such caring is supported by open communication and trust (Fawcett, 1996). Martel (1993) defined this vision of the professional learning community as one that focuses on "the quality of life, quality of work, and quality of learning–in short, a total quality focus."

Statistical vs. Practical Significance

Throughout all statistical testing procedures, attention was given to statistical significance as opposed to practical significance. The results suggested that a statistical significant difference, though not a practical significant difference, existed among the five independent variables and several of the 17 descriptor questions with School "A". Moreover, the findings for School "B" on Questions #4A and #4B suggested a statistically significant difference though not a practical significance. It is important to distinguish

between practical and statistical significance. Observed sample differences are statistically significant if they are greater than would normally be observed by chance. That is, such observed differences are large and convincing compared to normal random variations in the data. Consequently such differences are considered real and caused by real differences in the products tested. However, observed differences are only considered practically significant if they are large enough to be important in real life. Observed differences can be statistically significant but not practically significant. They are statistically convincing but so small that they have no practical value. Thus is the case for several differences perceived to exist among the 17 descriptor questions for School "A" and for Questions #4A and #4B with School "B." The magnitude of the perceived differences on the mean perceptions is small, regardless of the statistical tests performed, leading the author to emphasize that the practical significance showed little difference in the mean perception among all five independent variable categories.

Summary

Peter Senge, in his book, The Fifth Discipline, stated that the people who were in the best position to improve an organization's productivity were the people who currently did the work of the organization (1990). Moreover, literature about school reform has extolled the importance of school staff personnel working collegially to increase organizational results and of building administrators demonstrating skills, both as managers and as visionary leaders (Sergiovanni, 1996). Equally important has been the school improvement emphasis placed on collaboration and staff empowerment in order for building level staff to become meaningfully involved in the planning, problem-solving, and

evaluating their school programs (Hoerr, 1996). Ron Edmonds stated that "if we are going to achieve school improvement in the United States, we must first get teachers and administrators to understand and accept the limitations of what they can do if they continue to work alone and the possibilities of what they can accomplish if they work together (1979). The work of Senge (1990), Block (1993), Galagan (1994), and Whyte (1994) emphasized the importance of nurturing and celebrating the work of each administrator and staff member and of supporting the collective engagement of staff in such activities as shared vision development, problem identification, learning, and problem resolution. In the business sector, this method of business operation was labeled as a "professional learning organization" (Senge, 1995). Dr. Shirley Hord identified five components fundamental to the existence of a professional learning community. One, school administrators participate democratically with teachers in sharing power, authority, and decision-making. Two, certified staff personnel share visions for school improvement that have an undeviating focus on student learning and are consistently referenced for the staff's work. Three, certified staff personnel's collective learning and application of learning (taking action) create high intellectual learning tasks and solutions to address student needs. Four, peers are afforded the opportunity to review and give feedback based on observing each other's classroom behaviors in order to increase individual and organizational capacity. Five, school conditions and capacities support the certified staff personnel's arrangement as a professional learning community (Hord, 1997).

The general area of concern of this study was to determine the extent that components of professional learning communities existed within a selected sample of Montana "AA" high schools. To determine the extent that components of professional

learning communities exist within a selected sample of Montana "AA" high schools, two research questions were addressed. First, to what extent do the five professional learning community components exist within a selected sample of Montana "AA" high schools? Second, is there a difference between the perceived extent that professional learning community components exist within a selected sample of Montana "AA" high schools among and between building administrators and certified staff personnel?

Four hypotheses were tested for this investigation. The effects of five independent variables–(1) gender, (2) similar employment position, (3) years of educational employment experience, (4) years of employment experience in similar educational position, and (5) educational attainment on the perception that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools–were analyzed. For the purpose of testing significance, the .05 alpha level was selected. To test the hypotheses, three types of statistical analysis were performed: independent t tests of significance, Analysis of Variance (ANOVA), and regression analysis.

CHAPTER 5

CONCLUSIONS

Introduction

It was unknown the extent to which the five components of a professional learning community exist within Montana Class "AA" high schools. Moreover, it was also unknown if individual characteristics, such as an administrator's or a certified staff member's gender, years of educational employment experience, years in similar employment position, and post-baccalaureate training, influenced the perception on the extent that professional learning community components exist. Therefore, the purpose of this study was to determine the extent that components of professional learning communities exist within a selected sample of Montana "AA" high schools. The general questions underlying the purpose of the study were:

1. To what extent do the five professional learning community components exist within a selected sample of Montana "AA" high schools?
2. Is there a difference between the perceived extent that professional learning community components exist within a selected sample of Montana "AA" high schools among and between building administrators and certified staff personnel?

To answer these questions, this study used the questionnaire, "Descriptors of Professional Learning Communities" developed in 1996 by Dr. Shirley Hord in conjunction with the two regional educational laboratories: (1) Southwest Educational Laboratory and (2) Appalachia Educational Laboratory (1997). The dependent variable in the study was the perception of building administrators and certified staff personnel on the extent that components of a professional learning community exist within a selected sample of Montana Class "AA" high schools. The independent variables in the study were, gender, employment position, educational employment experience, number of years employed in a similar employment position, and level of educational attainment. Four null hypotheses (Null Hypothesis #1, Null Hypothesis #2, Null Hypothesis #3, and Null Hypothesis #4) were formulated to answer the questions in the study. The data was analyzed using three methods of statistical inference: (a) independent t tests of significance, (b) Analysis of Variance (ANOVA), and (c) Multiple Linear Regression. Results from the statistical procedures were disaggregated by individual school in order to allow for comparison and contrast of statistical findings. In addition, all hypotheses were tested at the .05 level of significance and the statistical analysis was executed on a personal computer using SPSS software.

Conclusions

The "Descriptors of Professional Learning Communities" questionnaire instrument consisted of 17 variable descriptors grouped into five major areas or dimensions identified from the literature review (Hord, 1997). Respondent answers to

variable descriptors were used to differentiate the high, middle, and low parameters of the descriptor along a five-point scale. The format and layout of the instrument requires the respondent to read all three indicators for each of the 17 variable descriptors and then mark the response scale. Though none of the three selected sample high schools were mirror images of the other two, this study has provided evidence that implies the following conclusions, subject to the limitations and delimitations of the study. Several conclusions are offered from the analysis of the data:

1. Based on the responses from building administrators and certified staff personnel in the three selected sample of Montana Class "AA" high schools, all five components of professional learning communities, to varying degrees, seem to exist. However, none of the three sample high schools were viewed as being in the high, or mature, parameter category in relation to the existence of professional learning components. The descriptive statistics for the three sample high schools indicated that all three high schools fell in the middle parameter category in terms of perception on the extent that components exist.
2. Based on the responses from building administrators and certified staff personnel in the three selected sample of Montana Class "AA" high schools, differences to varying degrees seem to exist. First, building administrators in the three sample high schools viewed the existence of professional learning community components more favorable than did the certified staff personnel. The group descriptive statistics, as well as the independent t tests, for building administrators indicated that in the sample high schools, the perception on the existence of

professional learning community components among building administrators approached the high parameter range while certified staff personnel perception was firmly placed in the middle parameter range. Moreover, the aggregate descriptive statistic for the 17 descriptor questions indicated that building administrator responses were at least, on average, one point higher on the scale of 1 to 5 than those submitted by certified staff personnel respondents.

3. Female and male respondents in the three sample high schools also differed in their views on the existence of professional learning community components. The aggregate group descriptive statistics, as well as the independent t tests, for female and male respondents indicated that in two of the three sample high schools, the perception on the existence of professional learning community components among females approached the higher end of the middle parameter range while male perception was firmly placed in the lower middle parameter range. Moreover, the aggregate descriptive statistic for the 17 descriptor questions indicated that female respondents in School "B" and "C" were, on average, one point higher on the scale of 1 to 5 than those submitted by male respondents. On the other hand, School "A" differed from this pattern. Both male and female respondents perceived School "A" as being firmly in the middle parameter range on the "Descriptors of Professional Learning Communities" questionnaire instrument. Further, the aggregate response totals for female and male respondents in School "A" varied only by .3 of one point in terms of perception on the existence of professional learning community components.

4. Though different among the sample high schools, significant differences surfaced among and between administrators and certified staff personnel with respect to educational employment experience, years in a similar educational position, and educational attainment among the three sample high schools. The ANOVA tests applied to all sample high schools and the three independent variable categories implied that differences do exist, though to varying degrees, among the means as to perception of professional learning community component existence. More importantly, post hoc ANOVA Tukey tests performed on each sample school revealed that there are significant differences between the means for two of the sample high schools. For School "B" and School "C," among all three independent variable categories (i.e. educational employment experience, years in a similar educational position, and educational attainment), there appeared to be statistically significant differences between those new to the education profession and those with experience in the profession over the perception of professional learning community component existence. Those educators with between six and ten years of experience and those between ten and 15 years of experience and with less than a BA +50 in educational attainment were less enthusiastic in their perception of professional learning community component existence than those educators in the other categories. Interestingly, School "A" had very few statistically significant differences between respondent groupings regardless of the independent variable (i.e. educational employment experience, years in a similar educational position, and educational attainment).

5. Multiple regression tests along with the corresponding backward coefficient elimination tests implied that differences existed among the three sample high schools as to what variables influence perception as to the extent of professional learning community component existence. For School "A," employment position was the most prominent independent variable influencing perception among building administrators and certified staff personnel. On the other hand, for School "B" gender as well as employment position were the most prominent independent variables influencing perception among building administrators and certified staff personnel. Finally, for School "C," no single variable influenced perception among building administrators and certified staff personnel. On the contrary, an eclectic combination of variables, such as gender, employment position, years employed in similar employment position or educational attainment, years of educational experience, and years in similar employment position, were the most prominent independent variable combinations influencing perception among building administrators and certified staff personnel.

Discussion of the Broader Implications

This study was limited to three sample Montana Class "AA" high schools. The inferences from the study are limited to only those high schools and should not be automatically assigned to all the remaining Class "AA" high schools or any other high school unit. However, there are several implications from the findings and conclusions of this study. First, after reviewing the data from the three sample Montana Class "AA"

high schools, the perception exists that building administrators must demonstrate a capacity to understand and apply the following key leadership functions in order for components of professional learning communities to become institutionalized within the culture of the school community:

- School administrators must be stewards of the vision, values, and purposes of the professional learning community. This requires that school administrators be focused, curious, and courageous. They must be continually ready to ask the essential questions and to resist political agendas that would divert attention from teaching and teaming.
- School administrators must be designers of the enabling structures and processes that support inquiring, sustaining, and partnering conversations.
- School administrators must be teachers of the board, community, district staff, and leadership teams about teaching and teaming and dimensions of community.
- School administrators must be learners with the board, community, district staff, and students. They must listen, converse, reflect, and make sense of the world in interaction with new ideas, information, and other people.
- School administrators must be participants in the array of reciprocal processes that give texture to the culture of collaborative inquiry that is growing in the school, district, and community. They must recognize that roles such as steward, designer, and teacher are shared by many co-leaders and that they are multi-dimensional (Senge, 1990).

Second, this study reinforces the position taken by Darling Hammond in which she stated that "the foundation of genuine accountability ... is the capacity of individual schools to organize themselves to prevent students from falling through the cracks; to create means for continual collegial inquiry, in which hard questions are posed regarding what needs to change in order for individuals and groups of students to succeed; and to use authority responsibly to make the changes necessary... It will occur only if we build an inquiry ethic, a community of discourse in the school that is focused on students and their needs rather than on the implementation of rules and procedures" (Reframing the School Reform Agenda: Developing Capacity for School Transformation, 1993). The findings from this study imply that the responsibility for building the kind of capacity for self-monitoring, for investigating innovative methods to address the problems of time and resources, and for nurturing an ethic of inquiry is perhaps the most challenging function of a professional learning community. Capacity-building through time allotment and resources allocation as well as personnel commitment and accountability are not exclusive school or district functions. They are significant examples of people-based roles and responsibilities that must be "owned" fully by administrators and certified staff members at each level of the school learning community. Specifically, in each classroom, in each school, and between individuals in a complex and interconnected web of reciprocal relationships in which all interactive processes depend on one another.

Third, the lack of opportunity for peer review and feedback in the three sample high schools that surfaced in this study indicates that personnel policies and practices must be developed that nurture the continuous development of all staff members.

Comprehensive professional development programs must start with selection and incorporate staff development, supervision, and evaluation in a seamless process. Activities and strategies must have a collegial feel, but they must also promote self-analysis and self-direction with the flavor of autonomy. In addition, information gathering and processing systems must be developed and utilized that supports but is not dominated by administrative and accountability functions. Attention must be given to the vital dimension of communication networking among teachers, teams of teachers, principals and other school leaders, and school networks. The district must set priorities to make certain that the information system serves effectively to support informed decision-making, to build a culture of inquiry that is informed by data as well as driven by values. A professional learning community requires/demands a continuing inflow of information that is freshening, renewing, and reinventing the way things are perceived, the way things are done.

Fourth, the questionnaire data on aspects of democratic decision-making and shared vision within the context of a professional learning community infers that policies, procedures, processes, and structures must continually be redesigned and refined. This process must support the decentralization essential to a system of interdependent teaming communities. Policies and practices must be made consistent with a commitment to informed innovation and direct access to the channels and tools of communication. In a professional learning community, that means access not just to a telephone, but also to a fax machine, E-mail, the Internet, electronic bulletin boards, and so forth. Moreover, the content that goes through these channels must be varied ideas, questions, suggestions,

critiques, feedback, but also data. For a school vision to be shared and accepted, schools as professional learning communities need to be linked by a technology format that makes accessible multiple forms of data about students (attendance, test scores, performances), families, graduates, the community, and business needs and requirements. Moreover, while technology is an increasingly vital information vehicle, the most significant communication channel in a professional learning community culture must be personal and relational driven conversations, peer coaching, study groups, protocol sessions, and reciprocal team coaching (Lambert and Walker, 2002).

Fifth, this study implies that promotion of and support for collegial and collaborative strategies are essential at all high school levels. The professional learning community staff must model this stance in their own interactions by modeling examples of cooperative learning, collaborative planning and teaching, peer coaching, and leadership mentoring/teaming that reinforces the collaborative processes needed to sustain a professional learning community. In short, school personnel must create a professional learning community that creates a climate of expectancy and provides opportunities for staff to "walk the talk" of democratic collaboration.

Sixth, in her book, The Work of Restructuring Schools (1995), Lieberman stated that providing ways for teachers to discuss with each other about their work reduces the isolation of teachers and mobilizes them to commit themselves to making major changes in how they participate in the school. Darling-Hammond (1993) insisted that teachers need to have opportunities to share what they know, to consult with peers about problems of teaching and learning, and to observe peers teaching in order to deepen teachers'

professional understanding and acceptance to change. The findings from this study support the notion that a professional learning community must assign high priority to the promotion of the strategies and processes that create professionalism in a culture of inquiry. Attaching substantial resources to professional development undertakings and moving major decision-making authority concerning activities and programs to the school-site level are significant enabling strategies. So too are the modeling and promotion of inquiring, sustaining, and partnering conversations; reflective journals; narrative and stories, protocols, rituals and ceremonies that promote and celebrate collegiality and professionalism (Lambert & Walker, 2002). Ensuring that schools have access to coherent and substantive programs for team development and for sharpening the skills that are essential to maintaining student needs at the center of focus in all instructional programs, to reciprocal and general communication processes, to problem analysis, to rapport and trust-building, to mediation and conflict resolution is a function for which the professional learning community must retain major responsibility (Hord, 1997). Whether the selected sample of Montana Class "AA" high schools serve as barriers or as facilitators for this type of change depends on their own development as professional learning communities. If the sample high schools are to move further along, the continuum in developing into professional learning communities, building administrators and certified staff personnel must rediscover, redefine and refocus their organizational roles, interactions, and structures.

Recommendations for Further Research

The following recommendations for further research are offered based on the analyses of the data collected and conclusions drawn from this study.

1. It is recommended that further studies be conducted among the remaining Montana Class "AA" high schools to see if patterns of professional learning community development emerge among building administrators and certified staff personnel that corroborate or contradict the findings of this study.
2. It is recommended that further studies be conducted among the three selected sample high schools to explore the apparent differences that emerged in this study. In other words, what is it about School "A" that makes the perception of its building administrators and certified staff personnel as to the extent that professional learning community components exist different as opposed to School "B" or School "C"?
3. It is recommended that further studies be conducted among Montana Class "A," "B," and "C" high schools to see if patterns of professional learning community development emerge among building administrators and certified staff personnel that corroborate or contradict the findings of this study.
4. It is recommended that further studies be conducted among educational professionals involved in educational leadership programs at Montana State University and the University of Montana to ascertain levels of understanding as to the components of professional learning communities and strategies to

implement those components within Montana high school organizational structures. By using this knowledge, educational policy makers should gain valuable insights as they seek to create professional learning communities in their own high schools.

5. It is recommended that further research be done to seek more descriptive examples on how professional learning communities function and how contextual variables influence what they look like and what they do, including a school's neighborhood community and the public at large.

Summary

Dr. Merrill L. Meehan, in his monograph, "Field Test of an Instrument: Measuring the Concept of Professional Learning Communities in Schools," stated that the targets of education reform have shifted dramatically over the past four decades. Specifically, since 1983, with the publication of the book, A Nation at Risk (National Commission on Excellence in Education, 1983), the reform target has shifted to that of the school itself. This shift to the school as the target of reform efforts continues with interest in the concept of a professional learning community in educational reform efforts (1997).

Numerous studies have indicated the value to both students and staff from the existence of professional learning community components within the context of a high school setting. In fact, Dr. Linda Vrooman Peterson, Director of the School Improvement Division of the Montana Office of Public Instruction, stated that it is the position of the Montana Office of Public instruction that a study designed to identify the inherent

components of professional learning communities and the degree to which Montana high school structures use those components would indeed benefit Montana school districts as well as a the Office of Public Instruction and the Montana Board of Public Education. The collection, analysis, and interpretation of data from such a study would have strong implications for the statewide professional development initiative that would be a collaborative effort of the Montana education community and would be designed to assist districts in implementing standards and assessment.

There is little information as to what extent the components inherent in professional learning communities exist within a selected sample of Montana "AA" high schools. From the available research, the suggestion was made that understanding and applying the components to an organizational structure could provide a positive benefit for both students and staff. This strongly suggested a need for a study that addressed the extent that components of professional learning communities existed within a selected sample of Montana Class "AA" high schools and whether perceptions of certified staff members and building level administrators on the extent of existence was influenced by selected characteristic variables. Understanding the extent that components of a professional learning community exist and the extent that personal characteristics interact on that understanding should help educational policy makers gain valuable insights as they begin to develop professional learning communities within their own high schools.

The purpose of this study was to determine the extent that components of professional learning communities exist within a selected sample of Montana "AA" high schools. Using the questionnaire, "Descriptors of Professional Learning Communities"

developed in 1996 by Dr. Shirley Hord in conjunction with the two regional educational laboratories, this study sought to answered the following questions:

1. To what extent do the five professional learning community components exist within the selected sample of Montana "AA" high schools?
2. Is there a difference between the perceived extent that professional learning community components exist within the selected sample of Montana "AA" high schools among and between building administrators and certified staff personnel?

Using three methods of statistical inference (a) independent t tests of significance, (b) Analysis of Variance (ANOVA), and (c) Multiple Linear Regression, collected data from three selected sample Montana Class "AA" high schools was analyzed. It is the position of the author that the collected data adds to the body of knowledge surrounding the extent that components of professional learning communities exist within the selected sample of Montana Class "AA" high schools and that perception was influenced by a set of independent variables among and between building level administrators and certified staff personnel.

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APPENDICES

APPENDIX A

LETTERS ON THE EXTENT OF PREVIOUS RESEARCH INTO MONTANA PROFESSIONAL LEARNING COMMUNITIES

HELLGATE ELEMENTARY SCHOOL

DISTRICT NO. 4
2385 FLYNN LANE
MISSOULA, MONTANA 59802

K-2 PRINCIPAL 721-2160
3-5 PRINCIPAL 549-6109
6-8 PRINCIPAL 721-2452

SUPERINTENDENT 728-5626
BUSINESS OFFICE 728-5626
FAX NO. 406-728-5636

February 23, 2001

Office of Public Instruction
C/o Superintendent Linda McCulloch
Box 202501
Helena, Montana 59620-2501

Dear Superintendent McCulloch:

I am currently finishing a doctoral dissertation on elements of professional learning communities and the degree of implementation of the elements of such communities within Montana high schools. Given the heightened public scrutiny on Montana public schools I believe it to be important for the school community to know, if, in fact, our high schools are implementing elements inherent in learning communities, which from the research can positively impact staff and student performance.

My purpose in writing to you is to ascertain if you, or anyone in your organization is aware of any centralized study on the extent of the elements of professional learning communities have been implemented in Montana high school organizational systems. It is my belief that no centralized study has been conducted and as such information on what elements are inherent in professional learning communities and the degree in which Montana high school structures utilize those elements may be beneficial for school districts to know in light of the professional development program component emphasis undertaken by the Office of Public Instruction.

Superintendent McCulloch, if you, or someone in your office, could let me know as to the existence of a centralized study, or lack thereof, I would be most grateful.

Sincerely,

Douglas Reisig
Superintendent

OFFICE OF PUBLIC INSTRUCTION
PO BOX 202501
HELENA MT 59620-2501
www.metnet.state.mt.us
(406) 444-3680
888-231-9393

Linda McCulloch
Superintendent

May 31, 2001

Douglas Reisig, Superintendent
Hellgate Elementary School
2385 Flynn Lane
Missoula, Montana 59808

Dear Douglas Reisig:

This letter is in response to your request for information or knowledge of any centralized study on the extent that Montana high school organizational systems have implemented the elements of professional learning communities.

Although several Montana school districts and individual schools have implemented elements of professional learning communities, the Office of Public Instruction is not aware of a centralized Montana study. It is our belief, however, that a study designed to identify the inherent elements of professional learning communities and the degree to which Montana high school structures use these elements would indeed benefit Montana school districts as well as the Office of Public Instruction and the Montana Board of Public Education.

The collection, analysis, and interpretation of data from such a study have strong implications for the statewide professional development system. The statewide professional development system is a collaborative effort of the Montana education community and is designed to assist districts in implementing standards and assessment.

The Office of Public Instruction is encouraged by the concept of your proposed study and we believe that several benefits will result from this work. Thank you for your commitment to Montana education.

Sincerely,

Linda Vrooman Peterson, Ph.D.
School Improvement Division

HELLGATE ELEMENTARY SCHOOL

DISTRICT NO. 4
2385 FLYNN LANE
MISSOULA, MONTANA 59802

K-2 PRINCIPAL 721-2160
3-5 PRINCIPAL 549-6109
6-8 PRINCIPAL 721-2452

SUPERINTENDENT 728-5626
BUSINESS OFFICE 728-5626
FAX NO. 406-728-5636

February 23, 2001

Montana Board of Public Education
C/o Dr. Wayne Buchanan, Executive Director
Box 200601
Helena, Montana 59620-0601

Dear Dr. Buchanan:

I am currently finishing a doctoral dissertation on elements of professional learning communities and the degree of implementation of the elements of such communities within Montana high schools. Given the heightened public scrutiny on Montana public schools I believe it to be important for the school community to know, if, in fact, our high schools are implementing elements inherent in learning communities, which from the research can positively impact staff and student performance.

My purpose in writing to you is to ascertain if you, or anyone in your organization is aware of any centralized study on the extent of the elements of professional learning communities have been implemented in Montana high school organizational systems. It is my belief that no centralized study has been conducted and as such information on what elements are inherent in professional learning communities and the degree in which Montana high school structures utilize those elements may be beneficial for school districts to know in light of the professional development program component emphasis undertaken by the Office of Public Instruction, the Montana Board of Public Education, the School Administrators of Montana, and the Montana School Boards Association.

Dr. Buchanan, if you, or someone in your office, could let me know as to the existence of a centralized study, or lack thereof, I would be most grateful.

Sincerely,

Douglas Reisig
Superintendent

State of Montana

Board of Public Education

2500 Broadway
PO Box 200601
Helena, Montana 59620-0601
(406) 444-6576
mtbpe@bpe.montana.edu
www.montana.edu/~wwwbpe

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Commissioner of
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Linda McCulloch,
Superintendent of
Public Instruction

Judy Martz, Governor

EXECUTIVE SECRETARY:

Dr. Wayne Buchanan, Ph.D.

May 31, 2001

Douglas Reisig
Superintendent
Hellgate Elementary
2385 Flynn Lane
Missoula, MT 59808

Dear Doug:

Your letter to Kirk Miller reminded me of my oversight in responding to your February 23, 2001 letter. I'm afraid the problem that caused me to delay in February (and to subsequently let it slip through the cracks during the busy legislative session) is still with me.

My difficulty then and now is that I am not familiar with the phrase "elements of centralized learning communities." Accordingly, I guess the appropriate answer is the one you suggest in your letter to Kirk: I am not aware of any such state-wide centralized study. It's possible that there is such a study, perhaps under a different title, that has been done. In any event, I probably wouldn't have knowledge of it.

I think your best bet would be to contact a school of education at one or more of the university units. I apologize for my ignorance and the fact that I was not able to provide a timely answer to your question. I hope your quest is successful elsewhere. My best personal regards to you.

Sincerely,

Wayne

Wayne Buchanan

HELLGATE ELEMENTARY SCHOOL

DISTRICT NO. 4
2385 FLYNN LANE
MISSOULA, MONTANA 59802

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3-5 PRINCIPAL 549-6109
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SUPERINTENDENT 728-5626
BUSINESS OFFICE 728-5626
FAX NO. 406-728-5636

February 23, 2001

Montana School Boards Association
C/o Lance Melton, Executive Director
One South Montana Avenue
Helena, Montana 59601

Dear Mr. Melton:

I am currently finishing a doctoral dissertation on elements of professional learning communities and the degree of implementation of the elements of such communities within Montana high schools. Given the heightened public scrutiny on Montana public schools I believe it to be important for the school community to know, if, in fact, our high schools are implementing elements inherent in learning communities, which from the research can positively impact staff and student performance.

My purpose in writing to you is to ascertain if you, or anyone in your organization is aware of any centralized study on the extent of the elements of professional learning communities have been implemented in Montana high school organizational systems. It is my belief that no centralized study has been conducted and as such information on what elements are inherent in professional learning communities and the degree in which Montana high school structures utilize those elements may be beneficial for school districts to know in light of the professional development program component emphasis undertaken by the Office of Public Instruction, the Board of Public Education, the School Administrators of Montana, and the Montana School Boards Association.

Mr. Melton, if you, or someone in your office, could let me know as to the existence of a centralized study, or lack thereof, I would be most grateful.

Sincerely,

Douglas Reisig
Superintendent

MSBA
MONTANA SCHOOL BOARDS ASSOCIATION

"...fostering excellence in public education through school board leadership."

June 4, 2001

Mr. Douglas Reisig
Superintendent
Hellgate Elementary School
District No. 4
2385 Flynn Lane
Missoula, Montana 59808

Dear Doug:

My apologies for the delay in responding to your original letter. I am sure Lance passed the request along to me.

As the former trustee representative to the Certification Standards and Practices Advisory Council (CSPAC), which is an advisory panel to the Board of Public Education and is directly involved in educational research, I am familiar with most areas of centralized study in education in Montana. Through conversations with MEA-MFT, School Administrators of Montana, and the Office of Public Instruction, I am not aware of any centralized study on the extent to which elements of professional learning communities have been implemented in Montana high schools.

Again, I am sorry for the delay in responding. If there is any further information I can provide, please do not hesitate to call me at (406) 442-0045.

Sincerely,

Bob Vogel
Director of Governmental Relations
Montana School Boards Association

c: Lance Melton, MSBA Executive Director

Montana School Boards Association
Lance L. Melton, Executive Director
One South Montana Ave. Helena, MT 59601 * (406) 442-2180 * FAX (406) 442-2194 * www.mtsba.org

HELLGATE ELEMENTARY SCHOOL

DISTRICT NO. 4
2385 FLYNN LANE
MISSOULA, MONTANA 59802

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BUSINESS OFFICE 728-5626
FAX NO. 406-728-5636

February 23, 2001

School Administrators of Montana
C/o Loren Frazier, Executive Director
1134 Butte Avenue
Helena, Montana 59601

Dear Mr. Frazier:

I am currently finishing a doctoral dissertation on elements of professional learning communities and the degree of implementation of the elements of such communities within Montana high schools. Given the heightened public scrutiny on Montana public schools I believe it to be important for the school community to know, if, in fact, our high schools are implementing elements inherent in learning communities, which from the research can positively impact staff and student performance.

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Mr. Frazier, if you, or someone in your office, could let me know as to the existence of a centralized study, or lack thereof, I would be most grateful.

Sincerely,

Douglas Reisig

Douglas Reisig
Superintendent

HELLGATE ELEMENTARY SCHOOL

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February 23, 2001

School Administrators of Montana
C/o Loren Frazier, Executive Director
1134 Butte Avenue
Helena, Montana 59601

~~Dear Mr. Frazier:~~

I am currently finishing a doctoral dissertation on elements of professional learning communities and the degree of implementation of the elements of such communities within Montana high schools. Given the heightened public scrutiny on Montana public schools I believe it to be important for the school community to know, if, in fact, our high schools are implementing elements inherent in learning communities, which from the research can positively impact staff and student performance.

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~~Mr. Frazier, if you, or someone in your office, could let me know as to the existence of a~~ centralized study, or lack thereof, I would be most grateful.

Sincerely,

Douglas Reisig
Superintendent

Doug I'm Not Aware of any Centralized studies – Loren
Sorry I am late in responding
Maybe we should do a Centralized study of the legislative process

APPENDIX B

SURVEY INSTRUMENT

SCHOOL PROFESSIONAL STAFF AS LEARNING COMMUNITY

DIRECTIONS: This questionnaire concerns your perceptions about your school staff as a learning community. There are no right or wrong responses. Please consider where you believe your school is in development of each of the five numbered descriptors shown in bold-faced type on the left. Each sub-item has a five-point scale. On each sub-item circle the number that best represents the degree to which you feel your school has developed.

Date: _____

School: _____

1. School administrators participate democratically with teachers sharing power, authority, and decision making

1a

5 4 3 2 1

Although there are some legal and fiscal decisions required of the principal, school administrators consistently involve the staff in discussing and making decisions about most school issues.

Administrators invite advice and counsel from the staff and then make decisions themselves.

Administrators never share information with the staff nor provide opportunities to be involved in decision making.

1b

5 4 3 2 1

Administrators involve the entire staff.

Administrators involve a small committee, council, or team of staff.

Administrators do not involve any staff.

2. The staff shares visions for school improvement that have an undeviating focus on student learning, and are consistently referenced for staff work.

2a

5 4 3 2 1

Visions for improvement are discussed by the entire staff such that consensus and a shared vision results.

Visions for improvement are not thoroughly explored; some staff agree and others do not.

Visions for improvement held by the staff are widely divergent.

2b

5 4 3 2 1

Visions for improvement are always focused on students, learning, and teaching.

Visions for improvement are sometimes focused on students, teaching, and learning.

Visions for improvement do not target students, teaching, and learning.

2c

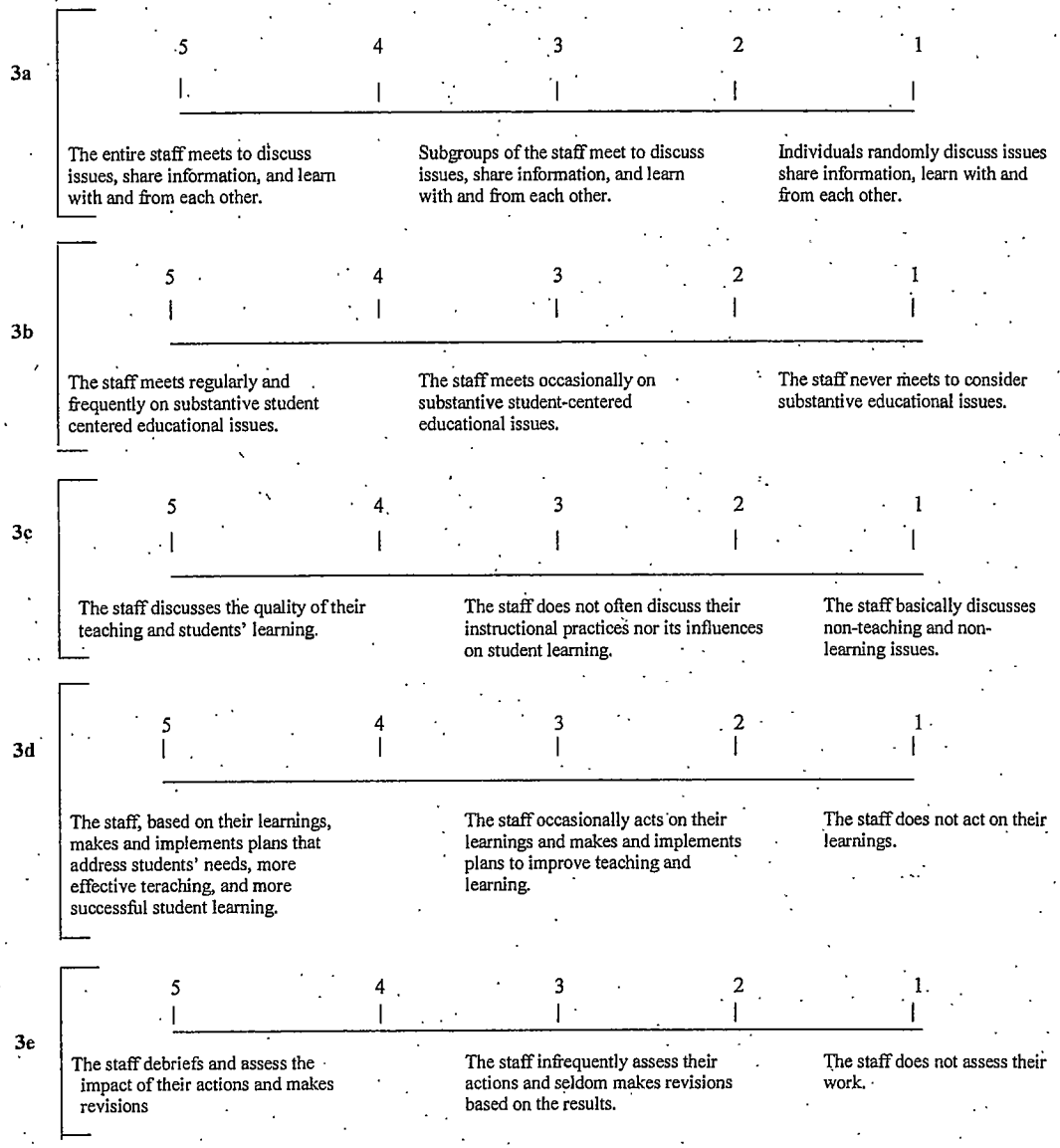
5 4 3 2 1

Visions for improvement target high quality learning experiences for all students.

Visions for improvement address quality learning experiences in terms of students' abilities.

Visions for improvement do not include concerns about the quality of learning experiences.

3. The staff collective learning and application of the learning (taking action) create high intellectual learning tasks and solutions to address student needs.



4. Peers review and give feedback based on observing each other's classroom behaviors in order to increase individual and organizational capacity.

4a

5	4	3	2	1
Staff regularly and frequently visit and observe each other's classroom teaching.		Staff occasionally visit and observe each other's teaching.		Staff never visit their peers' classroom.

4b

5	4	3	2	1
Staff provide feedback to each other about teaching and learning based on their classroom observations.		Staff discuss non-teaching issues after classroom observations.		Staff do not interact after classroom observations.

5. School conditions and capacities support the staff arrangement as a professional learning organization.

5a

5	4	3	2	1
Time is arranged and committed for whole staff interactions.		Time is arranged but frequently the staff fails to meet.		Staff cannot arrange time for interacting.

5b

5	4	3	2	1
The size, structure, and arrangements of the school facilitate staff proximity and interaction.		Considering the size, structure, and arrangements of the school, the staff are working to maximize interaction.		The staff takes no action to manage the facility and personnel for interaction.

5c

5	4	3	2	1
A variety of processes and procedures are used to encourage staff communication.		A single communication method exists and is sometimes used to share information.		Communication devices are not given attention.

5. School conditions and capacities support the staff arrangement as a professional learning organization (continued)

5d

5	4	3	2	1
Trust and openness characterizes all the staff.		Some of the staff are trusting and open.		Trust and openness do not exist among the staff.

5e

5	4	3	2	1
Caring, collaborative, and productive relationships exist among the staff.		Caring and collaboration are inconsistently demonstrated among the staff.		Staff is isolated and work alone at their tasks.

*The School Professional Staff As Learning Community Questionnaire was designed by Dr. Shirley Hord in 1996 in conjunction with the Southwest Educational Development Laboratory.

PLEASE COMPLETE THE FOLLOWING (as appropriate to your specific situation):

YOUR GENDER

Male_____ Female_____

NUMBER OF YEARS WORKING IN EDUCATION
(Please place an X in the appropriate space)

0 – 5 _____
6 – 10 _____
11 – 15 _____
16 – 20 _____
21 – 25 _____
26 – 30 _____
30 –35 _____
35+ _____

POSITION HELD IN SCHOOOL STRUCTURE
(Please place an X in the appropriate space)

Administrator_____ Staff Member_____

HOW MANY YEARS HAVE YOU BEEN IN A POSITION SIMILAR TO THE ONE YOU HAVE NOW
(Please place an X in the appropriate space)

0 – 5 _____
6 – 10 _____
11 – 15 _____
16 – 20 _____
21 – 25 _____
26 – 30 _____
30 –35 _____
35+ _____

POST BACCALAUREATE ATTAINMENT:
(Please place an X in the appropriate space)

BA _____
BA+10 _____
BA+15 _____
BA+20 _____
BA+30 _____
BA+40 _____
BA+50 _____
MA _____
MA+10 _____
MA+15 _____
MA+20 _____
MA+30 _____
MA+40 _____
MA+50 _____
EdD _____
Other _____

APPENDIX C

ANOVA POST-HOC TUKEY MULTIPLE COMPARISON

School "A": Hypothesis #3 Statistical Results: Educational Experience

Table 1: ANOVA Tukey Multiple Comparison with years of employment experience and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.654	0.600	0.283	0.700	0.583	0.167
6 - 10 years	-0.654		-0.054	-0.371	0.046	-0.071	-0.487
11 - 15 years	-0.600	0.054		-0.317	0.100	-0.017	-0.433
16 - 20 years	-0.283	0.371	0.317		0.417	0.301	-0.116
21 - 25 years	-0.700	-0.046	-0.100	-0.417		-0.117	-0.533
26 - 30 years	-0.583	0.071	0.017	-0.301	0.117		-0.417
31 - 35 years	-0.167	0.487	0.433	0.116	0.533	0.417	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.654	0.500	0.239	0.300	0.833	-0.167
6 - 10 years	-0.654		-0.154	-0.415	-0.354	0.179	-0.821
11 - 15 years	-0.500	0.154		-0.261	-0.200	0.333	-0.667
16 - 20 years	-0.239	0.415	0.261		0.061	0.594	-0.406
21 - 25 years	-0.300	0.354	0.200	-0.061		0.533	-0.467
26 - 30 years	-0.833	-0.179	-0.333	-0.594	-0.533		-1.000
31 - 35 years	0.167	0.821	0.667	0.406	0.467	1.000	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.577	0.850	0.065	0.833	0.917	-0.389
6 - 10 years	-1.577		-0.727	-1.512*	-0.744	-0.660	-1.966*
11 - 15 years	-0.850	0.727		-0.785	-0.017	0.067	-1.239
16 - 20 years	-0.065	1.512*	0.785		0.768	0.851	-0.454
21 - 25 years	-0.833	0.744	0.017	-0.768		0.083	-1.222
26 - 30 years	-0.917	0.660	-0.067	-0.851	-0.083		-1.306
31 - 35 years	0.389	1.966*	1.239	0.454	1.222	1.306	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.141	0.933	0.268	0.500	0.750	-0.278
6 - 10 years	-1.141		-0.208	-0.873	-0.641	-0.391	-1.419*
11 - 15 years	-0.933	0.208		-0.665	-0.433	-0.183	-1.211*
16 - 20 years	-0.268	0.873	0.665		0.232	0.482	-0.546
21 - 25 years	-0.500	0.641	0.433	-0.232		0.250	-0.778
26 - 30 years	-0.750	0.391	0.183	-0.482	-0.250		-1.028
31 - 35 years	0.278	1.419*	1.211*	0.546	0.778	1.028	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.679	0.833	0.572	0.967	0.917	0.056
6 - 10 years	-1.679		-0.846	-1.107	-0.713	-0.763	-1.624*
11 - 15 years	-0.833	0.846		-0.261	0.133	0.083	-0.778
16 - 20 years	-0.572	1.107	0.261		0.394	0.344	-0.517
21 - 25 years	-0.967	0.713	-0.133	-0.394		-0.050	-0.911
26 - 30 years	-0.917	0.763	-0.083	-0.344	0.050		-0.861
31 - 35 years	-0.056	1.624*	0.778	0.517	0.911	0.861	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.474	0.417	0.254	0.300	0.417	-0.722
6 - 10 years	-0.474		-0.058	-0.221	-0.174	-0.058	-1.197
11 - 15 years	-0.417	0.058		-0.163	-0.117	0.000	-1.139
16 - 20 years	-0.254	0.221	0.163		0.046	0.163	-0.976
21 - 25 years	-0.300	0.174	0.117	-0.046		0.117	-1.022
26 - 30 years	-0.417	0.058	0.000	-0.163	-0.117		-1.139
31 - 35 years	0.722	1.197	1.139	0.976	1.022	1.139	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.885	0.900	0.674	0.433	0.583	-0.278
6 - 10 years	-0.885		0.015	-0.211	-0.451	-0.301	-1.162
11 - 15 years	-0.900	-0.015		-0.226	-0.467	-0.317	-1.178*
16 - 20 years	-0.674	0.211	0.226		-0.241	-0.091	-0.952
21 - 25 years	-0.433	0.451	0.467	0.241		0.150	-0.711
26 - 30 years	-0.583	0.301	0.317	0.091	-0.150		-0.861
31 - 35 years	0.278	1.162	1.178*	0.952	0.711	0.861	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.808	0.900	0.283	0.367	0.750	0.056
6 - 10 years	-0.808		0.092	-0.525	-0.441	-0.058	-0.752
11 - 15 years	-0.900	-0.092		-0.617	-0.533	-0.150	-0.844
16 - 20 years	-0.283	0.525	0.617		0.084	0.467	-0.227
21 - 25 years	-0.367	0.441	0.533	-0.084		0.383	-0.311
26 - 30 years	-0.750	0.058	0.150	-0.467	-0.383		-0.694
31 - 35 years	-0.056	0.752	0.844	0.227	0.311	0.694	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.385*	1.100	0.522	0.533	0.833	0.333
6 - 10 years	-1.385*		-0.285	-0.863	-0.851	-0.551	-1.051
11 - 15 years	-1.100	0.285		-0.578	-0.567	-0.267	-0.767
16 - 20 years	-0.522	0.863	0.578		0.012	0.312	-0.188
21 - 25 years	-0.533	0.851	0.567	-0.012		0.300	-0.200
26 - 30 years	-0.833	0.551	0.267	-0.312	-0.300		-0.500
31 - 35 years	-0.333	1.051	0.767	0.188	0.200	0.500	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.487	0.883	-0.014	-0.133	0.000	-0.333
6 - 10 years	-0.487		0.396	-0.502	-0.621	-0.487	-0.821
11 - 15 years	-0.883	-0.396		-0.898*	-1.017*	-0.883	-1.217*
16 - 20 years	0.014	0.502	0.898*		-0.119	0.014	-0.319
21 - 25 years	0.133	0.621	1.017*	0.119		0.133	-0.200
26 - 30 years	0.000	0.487	0.883	-0.014	-0.133		-0.333
31 - 35 years	0.333	0.821	1.217*	0.319	0.200	0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.013	0.417	0.210	0.500	0.417	-0.389
6 - 10 years	-0.013		0.404	0.197	0.487	0.404	-0.402
11 - 15 years	-0.417	-0.404		-0.207	0.083	0.000	-0.806
16 - 20 years	-0.210	-0.197	0.207		0.290	0.207	-0.599
21 - 25 years	-0.500	-0.487	-0.083	-0.290		-0.083	-0.889
26 - 30 years	-0.417	-0.404	0.000	-0.207	0.083		-0.806
31 - 35 years	0.389	0.402	0.806	0.599	0.889	0.806	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.590	0.667	0.536	0.667	0.667	0.556
6 - 10 years	-0.590		0.077	-0.054	0.077	0.077	-0.034
11 - 15 years	-0.667	-0.077		-0.130	0.000	0.000	-0.111
16 - 20 years	-0.536	0.054	0.130		0.130	0.130	0.019
21 - 25 years	-0.667	-0.077	0.000	-0.130		0.000	-0.111
26 - 30 years	-0.667	-0.077	0.000	-0.130	0.000		-0.111
31 - 35 years	-0.556	0.034	0.111	-0.019	0.111	0.111	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.962	0.500	0.109	0.233	0.917	0.056
6 - 10 years	-0.962		-0.462	-0.853	-0.728	-0.045	-0.906
11 - 15 years	-0.500	0.462		-0.391	-0.267	0.417	-0.444
16 - 20 years	-0.109	0.853	0.391		0.125	0.808	-0.053
21 - 25 years	-0.233	0.728	0.267	-0.125		0.683	-0.178
26 - 30 years	-0.917	0.045	-0.417	-0.808	-0.683		-0.861
31 - 35 years	-0.056	0.906	0.444	0.053	0.178	0.861	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.449	0.533	-0.384	-0.433	0.000	-0.389
6 - 10 years	-0.449		0.085	-0.833	-0.882	-0.449	-0.838
11 - 15 years	-0.533	-0.085		-0.917*	-0.967*	-0.533	-0.922
16 - 20 years	0.384	0.833	0.917*		-0.049	0.384	-0.005
21 - 25 years	0.433	0.882	0.967*	0.049		0.433	0.044
26 - 30 years	0.000	0.449	0.533	-0.384	-0.433		-0.389
31 - 35 years	0.389	0.838	0.922	0.005	-0.044	0.389	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.564	0.433	0.029	-0.267	0.417	-0.111
6 - 10 years	-0.564		-0.131	-0.535	-0.831	-0.147	-0.675
11 - 15 years	-0.433	0.131		-0.404	-0.700	-0.017	-0.544
16 - 20 years	-0.029	0.535	0.404		-0.296	0.388	-0.140
21 - 25 years	0.267	0.831	0.700	0.296		0.683	0.156
26 - 30 years	-0.417	0.147	0.017	-0.388	-0.683		-0.528
31 - 35 years	0.111	0.675	0.544	0.140	-0.156	0.528	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.231	0.300	0.000	0.333	-0.667	-0.667
6 - 10 years	0.231		0.531	0.231	0.564	-0.436	-0.436
11 - 15 years	-0.300	-0.531		-0.300	0.033	-0.967	-0.967
16 - 20 years	0.000	-0.231	0.300		0.333	-0.667	-0.667
21 - 25 years	-0.333	-0.564	-0.033	-0.333		-1.000	-1.000
26 - 30 years	0.667	0.436	0.967	0.667	1.000		0.000
31 - 35 years	0.667	0.436	0.967	0.667	1.000	0.000	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.128	0.717	0.101	0.200	-0.167	-0.111
6 - 10 years	-0.128		0.588	-0.027	0.072	-0.295	-0.239
11 - 15 years	-0.717	-0.588		-0.615	-0.517	-0.883	-0.828
16 - 20 years	-0.101	0.027	0.615		0.099	-0.268	-0.213
21 - 25 years	-0.200	-0.072	0.517	-0.099		-0.367	-0.311
26 - 30 years	0.167	0.295	0.883	0.268	0.367		0.056
31 - 35 years	0.111	0.239	0.828	0.213	0.311	-0.056	

* The mean difference is significant at the .05 level

School "B": Hypothesis #3 Statistical Results: Educational Experience

Table 2: ANOVA Tukey Multiple Comparison with years of employment experience and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.239	1.283*	0.783	0.390	0.390	-0.356
6 - 10 years	-0.239		1.044	0.544	0.151	0.151	-0.595
11 - 15 years	-1.283*	-1.044		-0.500	-0.893	-0.893	-1.639*
16 - 20 years	-0.783	-0.544	0.500		-0.393	-0.393	-1.139
21 - 25 years	-0.390	-0.151	0.893	0.393		0.000	-0.746
26 - 30 years	-0.390	-0.151	0.893	0.393	0.000		-0.746
31 - 35 years	0.356	0.595	1.639*	1.139	0.746	0.746	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.204	1.124*	0.267	-0.019	0.124	-0.400
6 - 10 years	0.204		1.328*	0.471	0.185	0.328	-0.196
11 - 15 years	-1.124*	-1.328*		-0.857	-1.143*	-1.000	-1.524*
16 - 20 years	-0.267	-0.471	0.857		-0.286	-0.143	-0.667
21 - 25 years	0.019	-0.185	1.143*	0.286		0.143	-0.381
26 - 30 years	-0.124	-0.328	1.000	0.143	-0.143		-0.524
31 - 35 years	0.400	0.196	1.524*	0.667	0.381	0.524	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.624	1.621*	0.550	0.657	0.800	-0.089
6 - 10 years	-0.624		0.998	-0.074	0.034	0.176	-0.712
11 - 15 years	-1.621*	-0.998		-1.071	-0.964	-0.821	-1.710*
16 - 20 years	-0.550	0.074	1.071		0.107	0.250	-0.639
21 - 25 years	-0.657	-0.034	0.964	-0.107		0.143	-0.746
26 - 30 years	-0.800	-0.176	0.821	-0.250	-0.143		-0.889
31 - 35 years	0.089	0.712	1.710*	0.639	0.746	0.889	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.561	1.945*	1.183	0.767	0.981	0.711
6 - 10 years	-0.561		1.384*	0.623	0.206	0.420	0.150
11 - 15 years	-1.945*	-1.384*		-0.762	-1.179	-0.964	-1.234
16 - 20 years	-1.183	-0.623	0.762		-0.417	-0.202	-0.472
21 - 25 years	-0.767	-0.206	1.179	0.417		0.214	-0.056
26 - 30 years	-0.981	-0.420	0.964	0.202	-0.214		-0.270
31 - 35 years	-0.711	-0.150	1.234	0.472	0.056	0.270	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.012	1.350*	0.433	0.529	0.457	0.267
6 - 10 years	-0.012		1.338*	0.422	0.517	0.445	0.255
11 - 15 years	-1.350*	-1.338*		-0.917	-0.821	-0.893	-1.083
16 - 20 years	-0.433	-0.422	0.917		0.095	0.024	-0.167
21 - 25 years	-0.529	-0.517	0.821	-0.095		-0.071	-0.262
26 - 30 years	-0.457	-0.445	0.893	-0.024	0.071		-0.190
31 - 35 years	-0.267	-0.255	1.083	0.167	0.262	0.190	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.125	0.826	0.517	0.148	0.219	-0.400
6 - 10 years	0.125		0.952*	0.642	0.273	0.345	-0.275
11 - 15 years	-0.826	-0.952*		-0.310	-0.679	-0.607	-1.226*
16 - 20 years	-0.517	-0.642	0.310		-0.369	-0.298	-0.917
21 - 25 years	-0.148	-0.273	0.679	0.369		0.071	-0.548
26 - 30 years	-0.219	-0.345	0.607	0.298	-0.071		-0.619
31 - 35 years	0.400	0.275	1.226*	0.917	0.548	0.619	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.243	0.898	1.017	0.005	0.219	-0.178
6 - 10 years	0.243		1.141*	1.260*	0.248	0.462	0.065
11 - 15 years	-0.898	-1.141*		0.119	-0.893	-0.679	-1.075
16 - 20 years	-1.017	-1.260*	-0.119		-1.012	-0.798	-1.194
21 - 25 years	-0.005	-0.248	0.893	1.012		0.214	-0.183
26 - 30 years	-0.219	-0.462	0.679	0.798	-0.214		-0.397
31 - 35 years	0.178	-0.065	1.075	1.194	0.183	0.397	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.055	1.574*	0.967	0.395	0.324	0.244
6 - 10 years	-0.055		1.519*	0.912	0.340	0.269	0.190
11 - 15 years	-1.574*	-1.519*		-0.607	-1.179*	-1.250	-1.329*
16 - 20 years	-0.967	-0.912	0.607		-0.571	-0.643	-0.722
21 - 25 years	-0.395	-0.340	1.179*	0.571		-0.071	-0.151
26 - 30 years	-0.324	-0.269	1.250	0.643	0.071		-0.079
31 - 35 years	-0.244	-0.190	1.329*	0.722	0.151	0.079	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.263	1.626*	1.233*	0.590	-0.124	0.289
6 - 10 years	-0.263		1.363*	0.971	0.328	-0.387	0.026
11 - 15 years	-1.626*	-1.363*		-0.393	-1.036*	-1.750*	-1.337*
16 - 20 years	-1.233*	-0.971	0.393		-0.643	-1.357	-0.944
21 - 25 years	-0.590	-0.328	1.036*	0.643		-0.714	-0.302
26 - 30 years	0.124	0.387	1.750*	1.357	0.714		0.413
31 - 35 years	-0.289	-0.026	1.337*	0.944	0.302	-0.413	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.071	1.436*	0.317	0.400	0.114	0.178
6 - 10 years	0.071		1.506*	0.387	0.471	0.185	0.248
11 - 15 years	-1.436*	-1.506*		-1.119*	-1.036	-1.321	-1.258*
16 - 20 years	-0.317	-0.387	1.119*		0.083	-0.202	-0.139
21 - 25 years	-0.400	-0.471	1.036	-0.083		-0.286	-0.222
26 - 30 years	-0.114	-0.185	1.321	0.202	0.286		0.063
31 - 35 years	-0.178	-0.248	1.258*	0.139	0.222	-0.063	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.243	0.433	0.350	-0.067	0.219	-0.178
6 - 10 years	0.243		0.676	0.593	0.176	0.462	0.065
11 - 15 years	-0.433	-0.676		-0.083	-0.500	-0.214	-0.611
16 - 20 years	-0.350	-0.593	0.083		-0.417	-0.131	-0.528
21 - 25 years	0.067	-0.176	0.500	0.417		0.286	-0.111
26 - 30 years	-0.219	-0.462	0.214	0.131	-0.286		-0.397
31 - 35 years	0.178	-0.065	0.611	0.528	0.111	0.397	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.204	0.552	0.600	-0.090	0.410	0.044
6 - 10 years	0.204		0.756	0.804	0.113	0.613	0.248
11 - 15 years	-0.552	-0.756		0.048	-0.643	-0.143	-0.508
16 - 20 years	-0.600	-0.804	-0.048		-0.690	-0.190	-0.556
21 - 25 years	0.090	-0.113	0.643	0.690		0.500	0.135
26 - 30 years	-0.410	-0.613	0.143	0.190	-0.500		-0.365
31 - 35 years	-0.044	-0.248	0.508	0.556	-0.135	0.365	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.114	0.676	0.200	-0.324	0.533	-0.578
6 - 10 years	0.114		0.790	0.314	-0.210	0.647	-0.464
11 - 15 years	-0.790	-0.476		-1.000	-0.143	-1.254	
16 - 20 years	-0.200	-0.314	0.476		-0.524	0.333	-0.778
21 - 25 years	0.324	0.210	1.000	0.524		0.857	-0.254
26 - 30 years	-0.533	-0.647	0.143	-0.333	-0.857		-1.111
31 - 35 years	0.578	0.464	1.254	0.778	0.254	1.111	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.353	1.179*	0.333	0.714	0.857	0.778
6 - 10 years	-0.353		0.826	-0.020	0.361	0.504	0.425
11 - 15 years	-1.179*	-0.826		-0.845	-0.464	-0.321	-0.401
16 - 20 years	-0.333	0.020	0.845		0.381	0.524	0.444
21 - 25 years	-0.714	-0.361	0.464	-0.381		0.143	0.063
26 - 30 years	-0.857	-0.504	0.321	-0.524	-0.143		-0.079
31 - 35 years	-0.778	-0.425	0.401	-0.444	-0.063	0.079	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.227	1.102	0.650	0.067	-0.362	-0.267
6 - 10 years	0.227		1.330*	0.877	0.294	-0.134	-0.039
11 - 15 years	-1.102	-1.330*		-0.452	-1.036	-1.464	-1.369
16 - 20 years	-0.650	-0.877	0.452		-0.583	-1.012	-0.917
21 - 25 years	-0.067	-0.294	1.036	0.583		-0.429	-0.333
26 - 30 years	0.362	0.134	1.464	1.012	0.429		0.095
31 - 35 years	0.267	0.039	1.369	0.917	0.333	-0.095	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.208	1.267*	0.183	0.410	0.124	-0.067
6 - 10 years	-0.208		1.059*	-0.025	0.202	-0.084	-0.275
11 - 15 years	-1.267*	-1.059*		-1.083	-0.857	-1.143	-1.333*
16 - 20 years	-0.183	0.025	1.083		0.226	-0.060	-0.250
21 - 25 years	-0.410	-0.202	0.857	-0.226		-0.286	-0.476
26 - 30 years	-0.124	0.084	1.143	0.060	0.286		-0.190
31 - 35 years	0.067	0.275	1.333*	0.250	0.476	0.190	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.098	1.262*	-0.083	0.476	-0.095	-0.444
6 - 10 years	-0.098		1.164*	-0.181	0.378	-0.193	-0.542
11 - 15 years	-1.262*	-1.164*		-1.345*	-0.786	-1.357	-1.706*
16 - 20 years	0.083	0.181	1.345*		0.560	-0.012	-0.361
21 - 25 years	-0.476	-0.378	0.786	-0.560		-0.571	-0.921
26 - 30 years	0.095	0.193	1.357	0.012	0.571		-0.349
31 - 35 years	0.444	0.542	1.706*	0.361	0.921	0.349	

* The mean difference is significant at the .05 level

School "C": Hypothesis #3 Statistical Results: Educational Experience

Table 3: ANOVA Tukey Multiple Comparison with years of employment experience and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.923*	-0.400	1.171	1.100	0.989	1.145*
6 - 10 years	-0.923*		-1.323*	0.249	0.177	0.066	0.223
11 - 15 years	0.400	1.323*		1.571*	1.500*	1.389*	1.545*
16 - 20 years	-1.171	-0.249	-1.571*		-0.071	-0.183	-0.026
21 - 25 years	-1.100	-0.177	-1.500*	0.071		-0.111	0.045
26 - 30 years	-0.989	-0.066	-1.389*	0.183	0.111		0.157
31 - 35 years	-1.145	-0.223	-1.545*	0.026	-0.045	-0.157	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.752	-0.367	0.871	0.800	0.522	0.936
6 - 10 years	-0.752		-1.118*	0.120	0.048	-0.229	0.185
11 - 15 years	0.367	1.118*		1.238*	1.167	0.889*	1.303*
16 - 20 years	-0.871	-0.120	-1.238*		-0.071	-0.349	0.065
21 - 25 years	-0.800	-0.048	-1.167	0.071		-0.278	0.136
26 - 30 years	-0.522	0.229	-0.889*	0.349	0.278		0.414
31 - 35 years	-0.936	-0.185	-1.303*	-0.065	-0.136	-0.414	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.939*	-0.138	2.386*	1.850	1.433	2.464*
6 - 10 years	-1.939*		-2.077*	0.447	-0.089	-0.505	0.525
11 - 15 years	0.138	2.077*		2.524*	1.988	1.571*	2.602*
16 - 20 years	-2.386*	-0.447	-2.524*		-0.536	-0.952	0.078
21 - 25 years	-1.850	0.089	-1.988	0.536		-0.417	0.614
26 - 30 years	-1.433	0.505	-1.571*	0.952	0.417		1.030
31 - 35 years	-2.464*	-0.525	-2.602*	-0.078	-0.614	-1.030	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.135	0.390	1.343	0.950	1.144	1.655*
6 - 10 years	-1.135		-0.745	0.207	-0.185	0.009	0.519
11 - 15 years	-0.390	0.745		0.952	0.560	0.754	1.264
16 - 20 years	-1.343	-0.207	-0.952		-0.393	-0.198	0.312
21 - 25 years	-0.950	0.185	-0.560	0.393		0.194	0.705
26 - 30 years	-1.144	-0.009	-0.754	0.198	-0.194		0.510
31 - 35 years	-1.655*	-0.519	-1.264	-0.312	-0.705	-0.510	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.842*	0.052	2.243*	1.600	1.822*	2.373*
6 - 10 years	-1.842*		-1.790*	0.401	-0.242	-0.020	0.531
11 - 15 years	-0.052	1.790*		2.190*	1.548	1.770*	2.320*
16 - 20 years	-2.243*	-0.401	-2.190*		-0.643	-0.421	0.130
21 - 25 years	-1.600	0.242	-1.548	0.643		0.222	0.773
26 - 30 years	-1.822*	0.020	-1.770*	0.421	-0.222		0.551
31 - 35 years	-2.373*	-0.531	-2.320*	-0.130	-0.773	-0.551	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.990	0.890	1.414	1.700	1.256*	1.882*
6 - 10 years	-0.990		-0.100	0.424	0.710	0.265	0.891
11 - 15 years	-0.890	0.100		0.524	0.810	0.365	0.991
16 - 20 years	-1.414	-0.424	-0.524		0.286	-0.159	0.468
21 - 25 years	-1.700	-0.710	-0.810	-0.286		-0.444	0.182
26 - 30 years	-1.256*	-0.265	-0.365	0.159	0.444		0.626
31 - 35 years	-1.882*	-0.891	-0.991	-0.468	-0.182	-0.626	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.723	-0.029	0.971	1.400	0.678	1.764*
6 - 10 years	-0.723		-0.751	0.249	0.677	-0.045	1.041*
11 - 15 years	0.029	0.751		1.000	1.429	0.706	1.792*
16 - 20 years	-0.971	-0.249	-1.000		0.429	-0.294	0.792
21 - 25 years	-1.400	-0.677	-1.429	-0.429		-0.722	0.364
26 - 30 years	-0.678	0.045	-0.706	0.294	0.722		1.086
31 - 35 years	-1.764*	-1.041*	-1.792*	-0.792	-0.364	-1.086	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.303	0.019	0.257	0.400	0.844*	1.127*
6 - 10 years	-0.303		-0.284	-0.046	0.097	0.541*	0.824*
11 - 15 years	-0.019	0.284		0.238	0.381	0.825*	1.108*
16 - 20 years	-0.257	0.046	-0.238		0.143	0.587	0.870*
21 - 25 years	-0.400	-0.097	-0.381	-0.143		0.444	0.727
26 - 30 years	-0.844*	-0.541*	-0.825*	-0.587	-0.444		0.283
31 - 35 years	-1.127*	-0.824*	-1.108*	-0.870*	-0.727	-0.283	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.955*	-0.019	1.029	0.850	0.767	0.600
6 - 10 years	-0.955*		-0.974*	0.074	-0.105	-0.188	-0.355
11 - 15 years	0.019	0.974*		1.048	0.869	0.786	0.619
16 - 20 years	-1.029	-0.074	-1.048		-0.179	-0.262	-0.429
21 - 25 years	-0.850	0.105	-0.869	0.179		-0.083	-0.250
26 - 30 years	-0.767	0.188	-0.786	0.262	0.083		-0.167
31 - 35 years	-0.600	0.355	-0.619	0.429	0.250	0.167	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.103*	0.295	1.200*	0.950	1.422*	1.836*
6 - 10 years	-1.103*		-0.808*	0.097	-0.153	0.319	0.733*
11 - 15 years	-0.295	0.808*		0.905*	0.655	1.127*	1.541*
16 - 20 years	-1.200*	-0.097	-0.905*		-0.250	0.222	0.636
21 - 25 years	-0.950	0.153	-0.655	0.250		0.472	0.886
26 - 30 years	-1.422*	-0.319	-1.127*	-0.222	-0.472		0.414
31 - 35 years	-1.836*	-0.733	-1.541*	-0.636	-0.886	-0.414	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.171	-0.271	-0.129	-0.200	-0.367	-0.336
6 - 10 years	-0.171		-0.442	-0.300	-0.371	-0.538	-0.507
11 - 15 years	0.271	0.442		0.143	0.071	-0.095	-0.065
16 - 20 years	0.129	0.300	-0.143		-0.071	-0.238	-0.208
21 - 25 years	0.200	0.371	-0.071	0.071		-0.167	-0.136
26 - 30 years	0.367	0.538	0.095	0.238	0.167		0.030
31 - 35 years	0.336	0.507	0.065	0.208	0.136	-0.030	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.577	0.186	0.329	-0.600	0.400	-0.282
6 - 10 years	-0.577		-0.392	-0.249	-1.177	-0.177	-0.859
11 - 15 years	-0.186	0.392		0.143	-0.786	0.214	-0.468
16 - 20 years	-0.329	0.249	-0.143		-0.929	0.071	-0.610
21 - 25 years	0.600	1.177	0.786	0.929		1.000	0.318
26 - 30 years	-0.400	0.177	-0.214	-0.071	-1.000		-0.682
31 - 35 years	0.282	0.859	0.468	0.610	-0.318	0.682	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		2.129*	0.762	2.143*	2.250*	2.389*	1.455
6 - 10 years	-2.129*		-1.367*	0.014	0.121	0.260	-0.674
11 - 15 years	-0.762	1.367*		1.381	1.488	1.627*	0.693
16 - 20 years	-2.143*	-0.014	-1.381		0.107	0.246	-0.688
21 - 25 years	-2.250*	-0.121	-1.488	-0.107		0.139	-0.795
26 - 30 years	-2.389*	-0.260	-1.627*	-0.246	-0.139		-0.934
31 - 35 years	-1.455	0.674	-0.693	0.688	0.795	0.934	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.813	0.295	1.057	1.200	1.200*	1.564*
6 - 10 years	-0.813		-0.518	0.244	0.387	0.387	0.751
11 - 15 years	-0.295	0.518		0.762	0.905	0.905*	1.268*
16 - 20 years	-1.057	-0.244	-0.762		0.143	0.143	0.506
21 - 25 years	-1.200	-0.387	-0.905	-0.143		0.000	0.364
26 - 30 years	-1.200*	-0.387	-0.905*	-0.143	0.000		0.364
31 - 35 years	-1.564*	-0.751	-1.268*	-0.506	-0.364	-0.364	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.384*	0.995*	1.043	1.400	1.678*	1.536*
6 - 10 years	-1.384*		-0.389	-0.341	0.016	0.294	0.152
11 - 15 years	-0.995*	0.389		0.048	0.405	0.683	0.541
16 - 20 years	-1.043	0.341	-0.048		0.357	0.635	0.494
21 - 25 years	-1.400	-0.016	-0.405	-0.357		0.278	0.136
26 - 30 years	-1.678*	-0.294	-0.683	-0.635	-0.278		-0.141
31 - 35 years	-1.536*	-0.152	-0.541	-0.494	-0.136	0.141	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.242	-0.262	0.071	0.500	0.444	1.773*
6 - 10 years	0.242		-0.020	0.313	0.742	0.686	2.015*
11 - 15 years	0.262	0.020		0.333	0.762	0.706	2.035*
16 - 20 years	-0.071	-0.313	-0.333		0.429	0.373	1.701*
21 - 25 years	-0.500	-0.742	-0.762	-0.429		-0.056	1.273
26 - 30 years	-0.444	-0.686	-0.706	-0.373	0.056		1.328
31 - 35 years	-1.773*	-2.015*	-2.035*	-1.701*	-1.273	-1.328	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Years of Experience: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.468	-0.595	-0.071	0.250	0.667	1.591*
6 - 10 years	0.468		-0.127	0.396	0.718	1.134*	2.059*
11 - 15 years	0.595	0.127		0.524	0.845	1.262	2.186*
16 - 20 years	0.071	-0.396	-0.524		0.321	0.738	1.662*
21 - 25 years	-0.250	-0.718	-0.845	-0.321		0.417	1.341
26 - 30 years	-0.667	-1.134*	-1.262	-0.738	-0.417		0.924
31 - 35 years	-1.591*	-2.059*	-2.186*	-1.662*	-1.341	-0.924	

* The mean difference is significant at the .05 level

School "A"

Table 4: ANOVA Tukey Multiple Comparison with years in similar employment position and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.735	0.764	0.988	0.588	0.354	1.188
6 - 10 years	-0.735		0.029	0.252	-0.148	-0.381	0.452
11 - 15 years	-0.764	-0.029		0.223	-0.177	-0.410	0.423
16 - 20 years	-0.988	-0.252	-0.223		-0.400	-0.633	0.200
21 - 25 years	-0.588	0.148	0.177	0.400		-0.233	0.600
26 - 30 years	-0.354	0.381	0.410	0.633	0.233		0.833
31 - 35 years	-1.188	-0.452	-0.423	-0.200	-0.600	-0.833	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.420	0.563	0.663	0.463	0.229	0.563
6 - 10 years	-0.420		0.143	0.243	0.043	-0.190	0.143
11 - 15 years	-0.563	-0.143		0.100	-0.100	-0.333	0.000
16 - 20 years	-0.663	-0.243	-0.100		-0.200	-0.433	-0.100
21 - 25 years	-0.463	-0.043	0.100	0.200		-0.233	0.100
26 - 30 years	-0.229	0.190	0.333	0.433	0.233		0.333
31 - 35 years	-0.563	-0.143	0.000	0.100	-0.100	-0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.009	0.668	0.488	0.538	-0.229	-0.063
6 - 10 years	-1.009		-0.341	-0.521	-0.471	-1.238	-1.071
11 - 15 years	-0.668	0.341		-0.181	-0.131	-0.897	-0.731
16 - 20 years	-0.488	0.521	0.181		0.050	-0.717	-0.550
21 - 25 years	-0.538	0.471	0.131	-0.050		-0.767	-0.600
26 - 30 years	0.229	1.238	0.897	0.717	0.767		0.167
31 - 35 years	0.063	1.071	0.731	0.550	0.600	-0.167	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.813	0.928	0.463	0.213	-0.188	-0.188
6 - 10 years	-0.813		0.115	-0.350	-0.600	-1.000	-1.000
11 - 15 years	-0.928	-0.115		-0.465	-0.715	-1.115	-1.115
16 - 20 years	-0.463	0.350	0.465		-0.250	-0.650	-0.650
21 - 25 years	-0.213	0.600	0.715	0.250		-0.400	-0.400
26 - 30 years	0.188	1.000	1.115	0.650	0.400		0.000
31 - 35 years	0.188	1.000	1.115	0.650	0.400	0.000	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.304*	0.952	1.125	0.675	-0.125	0.375
6 - 10 years	-1.304*		-0.352	-0.179	-0.629	-1.429	-0.929
11 - 15 years	-0.952	0.352		0.173	-0.277	-1.077	-0.577
16 - 20 years	-1.125	0.179	-0.173		-0.450	-1.250	-0.750
21 - 25 years	-0.675	0.629	0.277	0.450		-0.800	-0.300
26 - 30 years	0.125	1.429	1.077	1.250	0.800		0.500
31 - 35 years	-0.375	0.929	0.577	0.750	0.300	-0.500	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.173	0.279	0.525	-0.175	-0.208	0.125
6 - 10 years	-0.173		0.106	0.352	-0.348	-0.381	-0.048
11 - 15 years	-0.279	-0.106		0.246	-0.454	-0.487	-0.154
16 - 20 years	-0.525	-0.352	-0.246		-0.700	-0.733	-0.400
21 - 25 years	0.175	0.348	0.454	0.700		-0.033	0.300
26 - 30 years	0.208	0.381	0.487	0.733	0.033		0.333
31 - 35 years	-0.125	0.048	0.154	0.400	-0.300	-0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.235	0.303	0.638	-0.013	-0.146	0.188
6 - 10 years	-0.235		0.068	0.402	-0.248	-0.381	-0.048
11 - 15 years	-0.303	-0.068		0.335	-0.315	-0.449	-0.115
16 - 20 years	-0.638	-0.402	-0.335		-0.650	-0.783	-0.450
21 - 25 years	0.013	0.248	0.315	0.650		-0.133	0.200
26 - 30 years	0.146	0.381	0.449	0.783	0.133		0.333
31 - 35 years	-0.188	0.048	0.115	0.450	-0.200	-0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.548	0.923*	0.500	0.200	0.833	0.000
6 - 10 years	-0.548		0.375	-0.048	-0.348	0.286	-0.548
11 - 15 years	-0.923*	-0.375		-0.423	-0.723	-0.090	-0.923
16 - 20 years	-0.500	0.048	0.423		-0.300	0.333	-0.500
21 - 25 years	-0.200	0.348	0.723	0.300		0.633	-0.200
26 - 30 years	-0.833	-0.286	0.090	-0.333	-0.633		-0.833
31 - 35 years	0.000	0.548	0.923	0.500	0.200	0.833	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.673	0.510	0.425	0.225	-0.375	-0.375
6 - 10 years	-0.673		-0.163	-0.248	-0.448	-1.048	-1.048
11 - 15 years	-0.510	0.163		-0.085	-0.285	-0.885	-0.885
16 - 20 years	-0.425	0.248	0.085		-0.200	-0.800	-0.800
21 - 25 years	-0.225	0.448	0.285	0.200		-0.600	-0.600
26 - 30 years	0.375	1.048	0.885	0.800	0.600		0.000
31 - 35 years	0.375	1.048	0.885	0.800	0.600	0.000	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.280	0.683	0.075	-0.225	0.042	-0.125
6 - 10 years	-0.280		0.403	-0.205	-0.505	-0.238	-0.405
11 - 15 years	-0.683	-0.403		-0.608	-0.908	-0.641	-0.808
16 - 20 years	-0.075	0.205	0.608		-0.300	-0.033	-0.200
21 - 25 years	0.225	0.505	0.908	0.300		0.267	0.100
26 - 30 years	-0.042	0.238	0.641	0.033	-0.267		-0.167
31 - 35 years	0.125	0.405	0.808	0.200	-0.100	0.167	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.378	-0.034	-0.087	0.113	-0.854	-0.188
6 - 10 years	0.378		0.344	0.290	0.490	-0.476	0.190
11 - 15 years	0.034	-0.344		-0.054	0.146	-0.821	-0.154
16 - 20 years	0.087	-0.290	0.054		0.200	-0.767	-0.100
21 - 25 years	-0.113	-0.490	-0.146	-0.200		-0.967	-0.300
26 - 30 years	0.854	0.476	0.821	0.767	0.967		0.667
31 - 35 years	0.188	-0.190	0.154	0.100	0.300	-0.667	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.271	0.024	0.063	0.163	-0.604	0.563
6 - 10 years	0.271		0.295	0.333	0.433	-0.333	0.833
11 - 15 years	-0.024	-0.295		0.038	0.138	-0.628	0.538
16 - 20 years	-0.063	-0.333	-0.038		0.100	-0.667	0.500
21 - 25 years	-0.163	-0.433	-0.138	-0.100		-0.767	0.400
26 - 30 years	0.604	0.333	0.628	0.667	0.767		1.167
31 - 35 years	-0.563	-0.833	-0.538	-0.500	-0.400	-1.167	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.143	0.192	-0.100	-0.700	-0.667	0.000
6 - 10 years	0.143		0.335	0.043	-0.557	-0.524	0.143
11 - 15 years	-0.192	-0.335		-0.292	-0.892	-0.859	-0.192
16 - 20 years	0.100	-0.043	0.292		-0.600	-0.567	0.100
21 - 25 years	0.700	0.557	0.892	0.600		0.033	0.700
26 - 30 years	0.667	0.524	0.859	0.567	-0.033		0.667
31 - 35 years	0.000	-0.143	0.192	-0.100	-0.700	-0.667	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.110	0.563	0.163	-0.438	0.729	1.063
6 - 10 years	-0.110		0.452	0.052	-0.548	0.619	0.952
11 - 15 years	-0.563	-0.452		-0.400	-1.000	0.167	0.500
16 - 20 years	-0.163	-0.052	0.400		-0.600	0.567	0.900
21 - 25 years	0.438	0.548	1.000	0.600		1.167	1.500
26 - 30 years	-0.729	-0.619	-0.167	-0.567	-1.167		0.333
31 - 35 years	-1.063	-0.952	-0.500	-0.900	-1.500	-0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.310	0.385	0.700	-0.100	0.167	1.500
6 - 10 years	-0.310		0.075	0.390	-0.410	-0.143	1.190
11 - 15 years	-0.385	-0.075		0.315	-0.485	-0.218	1.115
16 - 20 years	-0.700	-0.390	-0.315		-0.800	-0.533	0.800
21 - 25 years	0.100	0.410	0.485	0.800		0.267	1.600
26 - 30 years	-0.167	0.143	0.218	0.533	-0.267		1.333
31 - 35 years	-1.500	-1.190	-1.115	-0.800	-1.600	-1.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.286	0.192	-0.100	-0.200	0.000	-0.500
6 - 10 years	0.286		0.478	0.186	0.086	0.286	-0.214
11 - 15 years	-0.192	-0.478		-0.292	-0.392	-0.192	-0.692
16 - 20 years	0.100	-0.186	0.292		-0.100	0.100	-0.400
21 - 25 years	0.200	-0.086	0.392	0.100		0.200	-0.300
26 - 30 years	0.000	-0.286	0.192	-0.100	-0.200		-0.500
31 - 35 years	0.500	0.214	0.692	0.400	0.300	0.500	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.402	0.159	-0.338	-0.188	-0.354	-1.188
6 - 10 years	0.402		0.560	0.064	0.214	0.048	-0.786
11 - 15 years	-0.159	-0.560		-0.496	-0.346	-0.513	-1.346
16 - 20 years	0.338	-0.064	0.496		0.150	-0.017	-0.850
21 - 25 years	0.188	-0.214	0.346	-0.150		-0.167	-1.000
26 - 30 years	0.354	-0.048	0.513	0.017	0.167		-0.833
31 - 35 years	1.188	0.786	1.346	0.850	1.000	0.833	

* The mean difference is significant at the .05 level

School "B"

Table 5: ANOVA Tukey Multiple Comparison with years in similar employment position and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.309	1.574*	0.378	0.609	-0.106	0.609
6 - 10 years	-0.309		1.266*	0.069	0.300	-0.414	0.300
11 - 15 years	-1.574*	-1.266*		-1.196*	-0.966	-1.680*	-0.966
16 - 20 years	-0.378	-0.069	1.196*		0.231	-0.484	0.231
21 - 25 years	-0.609	-0.300	0.966	-0.231		-0.714	0.000
26 - 30 years	0.106	0.414	1.680	0.484	0.714		0.714
31 - 35 years	-0.609	-0.300	0.966	-0.231	0.000	-0.714	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.135	1.435*	-0.104	0.292	-0.137	0.435
6 - 10 years	-0.135		1.300*	-0.238	0.157	-0.271	0.300
11 - 15 years	-1.435*	-1.300*		-1.538*	-1.143	-1.571*	-1.000
16 - 20 years	0.104	0.238	1.538*		0.396	-0.033	0.538
21 - 25 years	-0.292	-0.157*	1.143	-0.396		-0.429	0.143
26 - 30 years	0.137	0.271	1.571	0.033	0.429		0.571
31 - 35 years	-0.435	-0.300	1.000	-0.538	-0.143	-0.571	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.733	1.645*	0.398	0.783	0.068	0.449
6 - 10 years	-0.733		0.912	-0.335	0.050	-0.664	-0.283
11 - 15 years	-1.645*	-0.912		-1.247*	-0.862	-1.576*	-1.195
16 - 20 years	-0.398	0.335	1.247*		0.385	-0.330	0.051
21 - 25 years	-0.783	-0.050	0.862	-0.385		-0.714	-0.333
26 - 30 years	-0.068	0.664	1.576*	0.330	0.714		0.381
31 - 35 years	-0.449	0.283	1.195	-0.051	0.333	-0.381	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.624	1.864*	0.943	1.031	0.460	1.174
6 - 10 years	-0.624		1.240*	0.319	0.407	-0.164	0.550
11 - 15 years	-1.864*	-1.240*		-0.920	-0.833	-1.404*	-0.690
16 - 20 years	-0.943	-0.319	0.920		0.088	-0.484	0.231
21 - 25 years	-1.031	-0.407	0.833	-0.088		-0.571	0.143
26 - 30 years	-0.460	0.164	1.404*	0.484	0.571		0.714
31 - 35 years	-1.174	-0.550	0.690	-0.231	-0.143	-0.714	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.439	1.498*	0.816	0.596	0.168	0.739
6 - 10 years	-0.439		1.059	0.377	0.157	-0.271	0.300
11 - 15 years	-1.498*	-1.059		-0.682	-0.901	-1.330	-0.759
16 - 20 years	-0.816	-0.377	0.682		-0.220	-0.648	-0.077
21 - 25 years	-0.596	-0.157	0.901	0.220		-0.429	0.143
26 - 30 years	-0.168	0.271	1.330	0.648	0.429		0.571
31 - 35 years	-0.739	-0.300	0.759	0.077	-0.143	-0.571	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.293	0.975*	0.505	0.043	-0.528	0.377
6 - 10 years	-0.293		0.681	0.212	-0.250	-0.821	0.083
11 - 15 years	-0.975*	-0.681		-0.469	-0.931	-1.502*	-0.598
16 - 20 years	-0.505	-0.212	0.469		-0.462	-1.033	-0.128
21 - 25 years	-0.043	0.250	0.931	0.462		-0.571	0.333
26 - 30 years	0.528	0.821	1.502*	1.033	0.571		0.905
31 - 35 years	-0.377	-0.083	0.598	0.128	-0.333	-0.905	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.237	1.259*	0.548	0.230	-0.342	0.420
6 - 10 years	-0.237		1.022*	0.312	-0.007	-0.579	0.183
11 - 15 years	-1.259*	-1.022*		-0.711	-1.030	-1.601*	-0.839
16 - 20 years	-0.548	-0.312	0.711		-0.319	-0.890	-0.128
21 - 25 years	-0.230	0.007	1.030	0.319		-0.571	0.190
26 - 30 years	0.342	0.579	1.601*	0.890	0.571		0.762
31 - 35 years	-0.420	-0.183	0.839	0.128	-0.190	-0.762	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.285	1.607*	0.512	0.149	0.149	0.768
6 - 10 years	-0.285		1.322*	0.227	-0.136	-0.136	0.483
11 - 15 years	-1.607*	-1.322*		-1.095*	-1.458*	-1.458*	-0.839
16 - 20 years	-0.512	-0.227	1.095*		-0.363	-0.363	0.256
21 - 25 years	-0.149	0.136	1.458*	0.363		0.000	0.619
26 - 30 years	-0.149	0.136	1.458*	0.363	0.000		0.619
31 - 35 years	-0.768	-0.483	0.839	-0.256	-0.619	-0.619	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.215	1.531*	0.642	0.280	-0.435	0.565
6 - 10 years	-0.215		1.316*	0.427	0.064	-0.650	0.350
11 - 15 years	-1.531*	-1.316*		-0.889	-1.251	-1.966*	-0.966
16 - 20 years	-0.642	-0.427	0.889		-0.363	-1.077	-0.077
21 - 25 years	-0.280	-0.064	1.251	0.363		-0.714	0.286
26 - 30 years	0.435	0.650	1.966*	1.077	0.714		1.000
31 - 35 years	-0.565	-0.350	0.966	0.077	-0.286	-1.000	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.428	1.340*	0.786	0.193	-0.236	0.478
6 - 10 years	-0.428		0.912	0.358	-0.236	-0.664	0.050
11 - 15 years	-1.340*	-0.912		-0.554	-1.148	-1.576*	-0.862
16 - 20 years	-0.786	-0.358	0.554		-0.593	-1.022	-0.308
21 - 25 years	-0.193	0.236	1.148	0.593		-0.429	0.286
26 - 30 years	0.236	0.664	1.576*	1.022	0.429		0.714
31 - 35 years	-0.478	-0.050	0.862	0.308	-0.286	-0.714	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.100	0.586	0.154	-0.143	0.286	0.000
6 - 10 years	0.100		0.686	0.254	-0.043	0.386	0.100
11 - 15 years	-0.586	-0.686		-0.432	-0.729	-0.300	-0.586
16 - 20 years	-0.154	-0.254	0.432		-0.297	0.132	-0.154
21 - 25 years	0.143	0.043	0.729	0.297		0.429	0.143
26 - 30 years	-0.286	-0.386	0.300	-0.132	-0.429		-0.286
31 - 35 years	0.000	-0.100	0.586	0.154	-0.143	0.286	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.009	0.874	0.314	-0.037	0.820	-0.275
6 - 10 years	0.009		0.883	0.323	-0.029	0.829	-0.267
11 - 15 years	-0.874	-0.883		-0.560	-0.911	-0.054	-1.149
16 - 20 years	-0.314	-0.323	0.560		-0.352	0.505	-0.590
21 - 25 years	0.037	0.029	0.911	0.352		0.857	-0.238
26 - 30 years	-0.820	-0.829	0.054	-0.505	-0.857		-1.095
31 - 35 years	0.275	0.267	1.149	0.590	0.238	1.095	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.389	0.946	0.278	-0.404	0.311	-1.261
6 - 10 years	-0.389		0.557	-0.112	-0.793	-0.079	-1.650
11 - 15 years	-0.946	-0.557		-0.668	-1.350	-0.635	-2.207*
16 - 20 years	-0.278	0.112	0.668		-0.681	0.033	-1.538
21 - 25 years	0.404	0.793	1.350	0.681		0.714	-0.857
26 - 30 years	-0.311	0.079	0.635	-0.033	-0.714		-1.571
31 - 35 years	1.261	1.650	2.207*	1.538	0.857	1.571	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.557	1.129*	0.649	0.242	0.814	0.623
6 - 10 years	-0.557		0.572	0.092	-0.314	0.257	0.067
11 - 15 years	-1.129*	-0.572		-0.480	-0.887	-0.315	-0.506
16 - 20 years	-0.649	-0.092	0.480		-0.407	0.165	-0.026
21 - 25 years	-0.242	0.314	0.887	0.407		0.571	0.381
26 - 30 years	-0.814	-0.257	0.315	-0.165	-0.571		-0.190
31 - 35 years	-0.623	-0.067	0.506	0.026	-0.381	0.190	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.280	1.337*	-0.100	-0.298	-0.298	-0.536
6 - 10 years	-0.280		1.057*	-0.381	-0.579	-0.579	-0.817
11 - 15 years	-1.337*	-1.057*		-1.438*	-1.635*	-1.635*	-1.874
16 - 20 years	0.100	0.381	1.438*		-0.198	-0.198	-0.436
21 - 25 years	0.298	0.579	1.635*	0.198		0.000	-0.238
26 - 30 years	0.298	0.579	1.635*	0.198	0.000		-0.238
31 - 35 years	0.536	0.817	1.874	0.436	0.238	0.238	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.424	1.036*	0.174	0.174	-0.540	-0.159
6 - 10 years	-0.424		0.612	-0.250	-0.250	-0.964	-0.583
11 - 15 years	-1.036*	-0.612		-0.862	-0.862	-1.576*	-1.195
16 - 20 years	-0.174	0.250	0.862		0.000	-0.714	-0.333
21 - 25 years	-0.174	0.250	0.862	0.000		-0.714	-0.333
26 - 30 years	0.540	0.964	1.576*	0.714	0.714		0.381
31 - 35 years	0.159	0.583	1.195	0.333	0.333	-0.381	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.254	1.201*	-0.157	0.019	-0.267	-0.362
6 - 10 years	-0.254		0.947	-0.412	-0.236	-0.521	-0.617
11 - 15 years	-1.201*	-0.947		-1.358*	-1.182	-1.468	-1.563
16 - 20 years	0.157	0.412	1.358*		0.176	-0.110	-0.205
21 - 25 years	-0.019	0.236	1.182	-0.176		-0.286	-0.381
26 - 30 years	0.267	0.521	1.468	0.110	0.286		-0.095
31 - 35 years	0.362	0.617	1.563	0.205	0.381	0.095	

* The mean difference is significant at the .05 level

School "C"

Table 6: ANOVA Tukey Multiple Comparison with years in similar employment position and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.824*	1.106*	1.625*	0.675	1.454*	0.375
6 - 10 years	-0.824*		0.282	0.801	-0.149	0.630	-0.449
11 - 15 years	-1.106*	-0.282		0.519	-0.431	0.348	-0.731
16 - 20 years	-1.625*	-0.801	-0.519		-0.950	-0.171	-1.250
21 - 25 years	-0.675	0.149	0.431	0.950		0.779	-0.300
26 - 30 years	-1.454*	-0.630	-0.348	0.171	-0.779		-1.079
31 - 35 years	-0.375	0.449	0.731	1.250	0.300	1.079	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.944*	0.841	1.438*	0.888	1.003*	0.688
6 - 10 years	-0.944*		-0.103	0.494	-0.056	0.059	-0.256
11 - 15 years	-0.841	0.103		0.596	0.046	0.162	-0.154
16 - 20 years	-1.438*	-0.494	-0.596		-0.550	-0.434	-0.750
21 - 25 years	-0.888	0.056	-0.046	0.550		0.116	-0.200
26 - 30 years	-1.003*	-0.059	-0.162	0.434	-0.116		-0.316
31 - 35 years	-0.688	0.256	0.154	0.750	0.200	0.316	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.620*	1.851*	2.938*	1.513	1.839*	1.313
6 - 10 years	-1.620*		0.231	1.317	-0.108	0.219	-0.308
11 - 15 years	-1.851*	-0.231		1.087	-0.338	-0.012	-0.538
16 - 20 years	-2.938*	-1.317	-1.087	-	1.425	-1.099	-1.625
21 - 25 years	-1.513	0.108	0.338	1.425		0.326	-0.200
26 - 30 years	-1.839*	-0.219	0.012	1.099	-0.326		-0.526
31 - 35 years	-1.313	0.308	0.538	1.625	0.200	0.526	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.284*	1.361*	2.063*	0.638	1.595*	0.938
6 - 10 years	-1.284*		0.077	0.779	-0.646	0.312	-0.346
11 - 15 years	-1.361	-0.077		0.702	-0.723	0.235	-0.423
16 - 20 years	-2.063*	-0.779	-0.702		-1.425	-0.467	-1.125
21 - 25 years	-0.638	0.646	0.723	1.425		0.958	0.300
26 - 30 years	-1.595*	-0.312	-0.235	0.467	-0.958		-0.658
31 - 35 years	-0.938	0.346	0.423	1.125	-0.300	0.658	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.811*	1.606*	2.875*	0.975	2.428*	0.875
6 - 10 years	-1.811*		-0.205	1.064	-0.836	0.617	-0.936
11 - 15 years	-1.606*	0.205		1.269	-0.631	0.822	-0.731
16 - 20 years	-2.875*	-1.064	-1.269		-1.900	-0.447	-2.000
21 - 25 years	-0.975	0.836	0.631	1.900		1.453	-0.100
26 - 30 years	-2.428*	-0.617	-0.822	0.447	-1.453		-1.553
31 - 35 years	-0.875	0.936	0.731	2.000	0.100	1.553	

*The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.910*	0.885	1.250	1.500	1.342*	-0.500
6 - 10 years	-0.910*		-0.026	0.340	0.590	0.432	-1.410
11 - 15 years	-0.885	0.026		0.365	0.615	0.457	-1.385
16 - 20 years	-1.250	-0.340	-0.365		0.250	0.092	-1.750
21 - 25 years	-1.500	-0.590	-0.615	-0.250		-0.158	-2.000
26 - 30 years	-1.342*	-0.432	-0.457	-0.092	0.158		-1.842
31 - 35 years	0.500	1.410	1.385	1.750	2.000	1.842	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.768	0.716	1.438*	1.163	1.299*	0.563
6 - 10 years	-0.768		-0.051	0.670	0.395	0.532	-0.205
11 - 15 years	-0.716	0.051		0.721	0.446	0.583	-0.154
16 - 20 years	-1.438*	-0.670	-0.721		-0.275	-0.138	-0.875
21 - 25 years	-1.163	-0.395	-0.446	0.275		0.137	-0.600
26 - 30 years	-1.299*	-0.532	-0.583	0.138	-0.137		-0.737
31 - 35 years	-0.563	0.205	0.154	0.875	0.600	0.737	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.346	0.500	0.375	0.900*	1.237*	0.000
6 - 10 years	-0.346		0.154	0.029	0.554	0.891*	-0.346
11 - 15 years	-0.500	-0.154		-0.125	0.400	0.737*	-0.500
16 - 20 years	-0.375	-0.029	0.125		0.525	0.862*	-0.375
21 - 25 years	-0.900*	-0.554	-0.400	-0.525		0.337	-0.900
26 - 30 years	-1.237*	-0.891*	-0.737*	-0.862*	-0.337		-1.237
31 - 35 years	0.000	0.346	0.500	0.375	0.900	1.237	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.095*	0.736	1.438*	0.813	0.707	0.313
6 - 10 years	-1.095*		-0.359	0.343	-0.282	-0.387	-0.782
11 - 15 years	-0.736	0.359		0.702	0.077	-0.028	-0.423
16 - 20 years	-1.438*	-0.343	-0.702		-0.625	-0.730	-1.125
21 - 25 years	-0.813	0.282	-0.077	0.625		-0.105	-0.500
26 - 30 years	-0.707	0.387	0.028	0.730	0.105		-0.395
31 - 35 years	-0.313	0.782	0.423	1.125	0.500	0.395	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.806*	0.524	1.063*	0.863	1.641*	1.063
6 - 10 years	-0.806*		-0.282	0.256	0.056	0.835*	0.256
11 - 15 years	-0.524	0.282		0.538	0.338	1.117*	0.538
16 - 20 years	-1.063*	-0.256	-0.538		-0.200	0.579	0.000
21 - 25 years	-0.863	-0.056	-0.338	0.200		0.779	0.200
26 - 30 years	-1.641*	-0.835*	-1.117*	-0.579	-0.779		-0.579
31 - 35 years	-1.063	-0.256	-0.538	0.000	-0.200	0.579	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.006	-0.212	0.000	-0.150	-0.697*	-0.250
6 - 10 years	0.006		-0.205	0.006	-0.144	-0.691	-0.244
11 - 15 years	0.212	0.205		0.212	0.062	-0.486	-0.038
16 - 20 years	0.000	-0.006	-0.212		-0.150	-0.697	-0.250
21 - 25 years	0.150	0.144	-0.062	0.150		-0.547	-0.100
26 - 30 years	0.697*	0.691	0.486	0.697	0.547		0.447
31 - 35 years	0.250	0.244	0.038	0.250	0.100	-0.447	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.553	0.553	0.563	0.138	-0.326	0.938
6 - 10 years	-0.553		0.000	0.010	-0.415	-0.879	0.385
11 - 15 years	-0.553	0.000		0.010	-0.415	-0.879	0.385
16 - 20 years	-0.563	-0.010	-0.010		-0.425	-0.888	0.375
21 - 25 years	-0.138	0.415	0.415	0.425		-0.463	0.800
26 - 30 years	0.326	0.879	0.879	0.888	0.463		1.263
31 - 35 years	-0.938	-0.385	-0.385	-0.375	-0.800	-1.263	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.979	0.620	2.063*	1.713	1.207	0.313
6 - 10 years	-0.979		-0.359	1.083	0.733	0.228	-0.667
11 - 15 years	-0.620	0.359		1.442	1.092	0.587	-0.308
16 - 20 years	-2.063*	-1.083	-1.442		-0.350	-0.855	-1.750
21 - 25 years	-1.713	-0.733	-1.092	0.350		-0.505	-1.400
26 - 30 years	-1.207	-0.228	-0.587	0.855	0.505		-0.895
31 - 35 years	-0.313	0.667	0.308	1.750	1.400	0.895	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		0.311	0.413	0.625	0.875	1.243*	-0.625
6 - 10 years	-0.311		0.103	0.314	0.564	0.933*	-0.936
11 - 15 years	-0.413	-0.103		0.212	0.462	0.830	-1.038
16 - 20 years	-0.625	-0.314	-0.212		0.250	0.618	-1.250
21 - 25 years	-0.875	-0.564	-0.462	-0.250		0.368	-1.500
26 - 30 years	-1.243*	-0.933*	-0.830	-0.618	-0.368		-1.868
31 - 35 years	0.625	0.936	1.038	1.250	1.500	1.868	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		1.138*	0.702	1.125*	1.225	1.414*	0.125
6 - 10 years	-1.138*		-0.436	-0.013	0.087	0.277	-1.013
11 - 15 years	-0.702	0.436		0.423	0.523	0.713	-0.577
16 - 20 years	-1.125*	0.013	-0.423		0.100	0.289	-1.000
21 - 25 years	-1.225	-0.087	-0.523	-0.100		0.189	-1.100
26 - 30 years	-1.414*	-0.277	-0.713	-0.289	-0.189		-1.289
31 - 35 years	-0.125	1.013	0.577	1.000	1.100	1.289	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.599	0.144	-0.375	0.575	1.375*	-0.125
6 - 10 years	0.599		0.744*	0.224	1.174*	1.974*	0.474
11 - 15 years	-0.144	-0.744*		-0.519	0.431	1.231*	-0.269
16 - 20 years	0.375	-0.224	0.519		0.950	1.750*	0.250
21 - 25 years	-0.575	-1.174*	-0.431	-0.950		0.800	-0.700
26 - 30 years	-1.375*	-1.974*	-1.231*	-1.750*	-0.800		-1.500
31 - 35 years	0.125	-0.474	0.269	-0.250	0.700	1.500	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Years in Similar Employment Position: Mean Difference

	Category Years						
Categories	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 35
0 - 5 years		-0.540	-0.130	-0.313	0.563	1.668*	0.063
6 - 10 years	0.540		0.410	0.228	1.103	2.208*	0.603
11 - 15 years	0.130	-0.410		-0.183	0.692	1.798*	0.192
16 - 20 years	0.313	-0.228	0.183		0.875	1.980*	0.375
21 - 25 years	-0.563	-1.103	-0.692	-0.875		1.105	-0.500
26 - 30 years	-1.668*	-2.208*	-1.798*	-1.980*	-1.105		-1.605
31 - 35 years	-0.063	-0.603	-0.192	-0.375	0.500	1.605	

* The mean difference is significant at the .05 level

School "A": Hypothesis #3 Statistical Results: Educational Attainment

Table 7: ANOVA Tukey Multiple Comparison with years in educational attainment and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.955	0.063	0.263	0.541	-0.237
BA+30	-0.955		-0.892	-0.692	-0.415	-1.192*
BA+50	-0.063	0.892		0.200	0.478	-0.300
MA	-0.263	0.692	-0.200		0.278	-0.500
MA+30	-0.541	0.415	-0.478	-0.278		-0.778
MA+50	0.237	1.192*	0.300	0.500	0.778	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.725	-0.004	0.196	0.263	-0.181
BA+30	-0.725		-0.728	-0.528	-0.462	-0.906
BA+50	0.004	0.728		0.200	0.267	-0.178
MA	-0.196	0.528	-0.200		0.067	-0.378
MA+30	-0.263	0.462	-0.267	-0.067		-0.444
MA+50	0.181	0.906	0.178	0.378	0.444	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.818	-0.639	0.428	-0.161	-0.272
BA+30	-0.818		-1.456*	-0.390	-0.979	-1.090
BA+50	0.639	1.456*		1.067	0.478	0.367
MA	-0.428	0.390	-1.067		-0.589	-0.700
MA+30	0.161	0.979	-0.478	0.589		-0.111
MA+50	0.272	1.090	-0.367	0.700	0.111	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.883	-0.379	0.421	0.199	-0.135
BA+30	-0.883		-1.262*	-0.462	-0.684	-1.017
BA+50	0.379	1.262*		0.800	0.578	0.244
MA	-0.421	0.462	-0.800		-0.222	-0.556
MA+30	-0.199	0.684	-0.578	0.222		-0.333
MA+50	0.135	1.017	-0.244	0.556	0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.980	-0.056	0.677	-0.012	-0.289
BA+30	-0.980		-1.036	-0.303	-0.991	-1.269
BA+50	0.056	1.036		0.733	0.044	-0.233
MA	-0.677	0.303	-0.733		-0.689	-0.967
MA+30	0.012	0.991	-0.044	0.689		-0.278
MA+50	0.289	1.269	0.233	0.967	0.278	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.389	0.291	0.358	0.269	0.158
BA+30	-0.389	-0.097	-0.031	-0.120	-0.231	
BA+50	-0.291	0.097		0.067	-0.022	-0.133
MA	-0.358	0.031	-0.067		-0.089	-0.200
MA+30	-0.269	0.120	0.022	0.089		-0.111
MA+50	-0.158	0.231	0.133	0.200	0.111	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.466	0.225	0.491	-0.009	0.325
BA+30	-0.466		-0.241	0.026	-0.474	-0.141
BA+50	-0.225	0.241		0.267	-0.233	0.100
MA	-0.491	-0.026	-0.267		-0.500	-0.167
MA+30	0.009	0.474	0.233	0.500		0.333
MA+50	-0.325	0.141	-0.100	0.167	-0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.028	-0.172	-0.105	0.006	-0.272
BA+30	0.028		-0.144	-0.077	0.034	-0.244
BA+50	0.172	0.144		0.067	0.178	-0.100
MA	0.105	0.077	-0.067		0.111	-0.167
MA+30	-0.006	-0.034	-0.178	-0.111		-0.278
MA+50	0.272	0.244	0.100	0.167	0.278	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.211	-0.323	0.344	-0.178	-0.234
BA+30	-0.211		-0.533	0.133	-0.389	-0.444
BA+50	0.323	0.533	0.667	0.144	0.089	
MA	-0.344	-0.133	-0.667		-0.522	-0.578
MA+30	0.178	0.389	-0.144	0.522		-0.056
MA+50	0.234	0.444	-0.089	0.578	0.056	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.004	-0.358	-0.358	-0.658	-0.380
BA+30	0.004		-0.354	-0.354	-0.654	-0.376
BA+50	0.358	0.354		0.000	-0.300	-0.022
MA	0.358	0.354	0.000		-0.300	-0.022
MA+30	0.658	0.654	0.300	0.300		0.278
MA+50	0.380	0.376	0.022	0.022	-0.278	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.073	0.491	0.225	0.436	0.213
BA+30	0.073		0.564	0.297	0.509	0.286
BA+50	-0.491	-0.564		-0.267	-0.056	-0.278
MA	-0.225	-0.297	0.267		0.211	-0.011
MA+30	-0.436	-0.509	0.056	-0.211		-0.222
MA+50	-0.213	-0.286	0.278	0.011	0.222	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.381	0.425	0.225	-0.064	0.158
BA+30	0.381		0.805	0.605	0.316	0.538
BA+50	-0.425	-0.805		-0.200	-0.489	-0.267
MA	-0.225	-0.605	0.200		-0.289	-0.067
MA+30	0.064	-0.316	0.489	0.289		0.222
MA+50	-0.158	-0.538	0.267	0.067	-0.222	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.907	-0.165	0.568	0.424	0.091
BA+30	-0.907		-1.072	-0.338	-0.483	-0.816
BA+50	0.165	1.072		0.733	0.589	0.256
MA	-0.568	0.338	-0.733		-0.144	-0.478
MA+30	-0.424	0.483	-0.589	0.144		-0.333
MA+50	-0.091	0.816	-0.256	0.478	0.333	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.121	-0.196	0.270	-0.374	-0.430
BA+30	-0.121		-0.318	0.149	-0.496	-0.551
BA+50	0.196	0.318		0.467	-0.178	-0.233
MA	-0.270	-0.149	-0.467		-0.644	-0.700
MA+30	0.374	0.496	0.178	0.644		-0.056
MA+50	0.430	0.551	0.233	0.700	0.056	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.623	0.582	0.382	0.038	-0.462
BA+30	-0.623		-0.041	-0.241	-0.585	-1.085*
BA+50	-0.582	0.041		-0.200	-0.544	-1.044*
MA	-0.382	0.241	0.200		-0.344	-0.844
MA+30	-0.038	0.585	0.544	0.344		-0.500
MA+50	0.462	1.085*	1.044*	0.844	0.500	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.360	0.081	-0.319	0.003	-0.164
BA+30	0.360		0.441	0.041	0.363	0.197
BA+50	-0.081	-0.441		-0.400	-0.078	-0.244
MA	0.319	-0.041	0.400		0.322	0.156
MA+30	-0.003	-0.363	0.078	-0.322		-0.167
MA+50	0.164	-0.197	0.244	-0.156	0.167	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.065	0.140	-0.060	-0.137	0.085
BA+30	0.065		0.205	0.005	-0.073	0.150
BA+50	-0.140	-0.205		-0.200	-0.278	-0.056
MA	0.060	-0.005	0.200		-0.078	0.144
MA+30	0.137	0.073	0.278	0.078		0.222
MA+50	-0.085	-0.150	0.056	-0.144	-0.222	

* The mean difference is significant at the .05 level

School "B": Hypothesis #3 Statistical Results: Educational Attainment

Table 8: ANOVA Tukey Multiple Comparison with years in educational attainment and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.125*	-0.125	-0.250	0.375	0.208
BA+30	-2.125*		-2.250*	-2.375*	-1.750*	-1.917*
BA+50	0.125	2.250*		-0.125	0.500	0.333
MA	0.250	2.375*	0.125		0.625	0.458
MA+30	-0.375	1.750*	-0.500	-0.625		-0.167
MA+50	-0.208	1.917*	-0.333	-0.458	0.167	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.917*	-0.208	-0.208	0.125	0.167
BA+30	-1.917*		-2.125*	-2.125*	-1.792*	-1.750*
BA+50	0.208	2.125*		0.000	0.333	0.375
MA	0.208	2.125*	0.000		0.333	0.375
MA+30	-0.125	1.792*	-0.333	-0.333		0.042
MA+50	-0.167	1.750*	-0.375	-0.375	-0.042	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.063*	-0.525	0.000	0.542	-0.042
BA+30	-2.063*		-2.588*	-2.063*	-1.521*	-2.104*
BA+50	0.525	2.588*		0.525	1.067	0.483
MA	0.000	2.063*	-0.525		0.542	-0.042
MA+30	-0.542	1.521*	-1.067	-0.542		-0.583
MA+50	0.042	2.104*	-0.483	0.042	0.583	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.354*	-0.608	-0.021	1.042	0.417
BA+30	-2.354*		-2.963*	-2.375*	-1.313*	-1.938*
BA+50	0.608	2.963*		0.588	1.650	1.025
MA	0.021	2.375*	-0.588		1.063	0.438
MA+30	-1.042	1.313*	-1.650	-1.063		-0.625
MA+50	-0.417	1.938*	-1.025	-0.438	0.625	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.125*	-0.525	-0.563	0.708	0.208
BA+30	-2.125*		-2.650*	-2.688*	-1.417*	-1.917*
BA+50	0.525	2.650*		-0.038	1.233	0.733
MA	0.563	2.688*	0.038		1.271*	0.771
MA+30	-0.708	1.417*	-1.233	-1.271*		-0.500
MA+50	-0.208	1.917*	-0.733	-0.771	0.500	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.313*	-0.650	-0.375	0.083	-0.042
BA+30	-1.313*		-1.963*	-1.688*	-1.229*	-1.354*
BA+50	0.650	1.963*		0.275	0.733	0.608
MA	0.375	1.688*	-0.275		0.458	0.333
MA+30	-0.083	1.229*	-0.733	-0.458		-0.125
MA+50	0.042	1.354*	-0.608	-0.333	0.125	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.583*	-0.667	-0.417	0.333	0.292
BA+30	-1.583*		-2.250*	-2.000*	-1.250*	-1.292*
BA+50	0.667	2.250*		0.250	1.000	0.958
MA	0.417	2.000*	-0.250		0.750	0.708
MA+30	-0.333	1.250*	-1.000	-0.750		-0.042
MA+50	-0.292	1.292*	-0.958	-0.708	0.042	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.792*	-0.758	-0.208	0.042	0.208
BA+30	-1.792*		-2.550*	-2.000*	-1.750*	-1.583*
BA+50	0.758	2.550*		0.550	0.800	0.967
MA	0.208	2.000*	-0.550		0.250	0.417
MA+30	-0.042	1.750*	-0.800	-0.250		0.167
MA+50	-0.208	1.583*	-0.967	-0.417	-0.167	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.208*	-0.242	-0.042	0.375	0.417
BA+30	-2.208*		-2.450*	-2.250*	-1.833*	-1.792*
BA+50	0.242	2.450*		0.200	0.617	0.658
MA	0.042	2.250*	-0.200		0.417	0.458
MA+30	-0.375	1.833*	-0.617	-0.417		0.042
MA+50	-0.417	1.792*	-0.658	-0.458	-0.042	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.833*	-0.617	-0.292	0.000	0.000
BA+30	-1.833*		-2.450*	-2.125*	-1.833*	-1.833*
BA+50	0.617	2.450*		0.325	0.617	0.617
MA	0.292	2.125*	-0.325		0.292	0.292
MA+30	0.000	1.833*	-0.617	-0.292		0.000
MA+50	0.000	1.833*	-0.617	-0.292	0.000	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.938*	-0.800	0.125	0.333	0.208
BA+30	-0.938*		-1.738*	-0.813*	-0.604*	-0.729*
BA+50	0.800	1.738*		0.925*	1.133*	1.008*
MA	-0.125	0.813*	-0.925*		0.208	0.083
MA+30	-0.333	0.604*	-1.133*	-0.208		-0.125
MA+50	-0.208	0.729*	-1.008*	-0.083	0.125	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.271*	-1.167*	0.208	0.417	0.458
BA+30	-1.271*		-2.438*	-1.063*	-0.854*	-0.813
BA+50	1.167*	2.438*		1.375*	1.583*	1.625*
MA	-0.208*	1.063*	-1.375*		0.208	0.250
MA+30	-0.417	0.854	-1.583*	-0.208		0.042
MA+50	-0.458	0.813	-1.625*	-0.250	-0.042	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.167*	-1.683*	-0.021	0.083	-0.042
BA+30	-1.167*		-2.850*	-1.188*	-1.083	-1.208*
BA+50	1.683*	2.850*		1.663*	1.767*	1.642*
MA	0.021	1.188*	-1.663*		0.104	-0.021
MA+30	-0.083	1.083	-1.767*	-0.104		-0.125
MA+50	0.042	1.208*	-1.642*	0.021	0.125	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.354*	-0.533	0.167	0.333	0.375
BA+30	-1.354*		-1.888*	-1.188*	-1.021	-0.979*
BA+50	0.533	1.888*		0.700	0.867	0.908
MA	-0.167	1.188*	-0.700		0.167	0.208
MA+30	-0.333	1.021	-0.867	-0.167		0.042
MA+50	-0.375	0.979*	-0.908	-0.208	-0.042	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.563*	-0.700	-0.125	0.167	0.250
BA+30	-1.563*		-2.263*	-1.688*	-1.396*	-1.313*
BA+50	0.700	2.263*		0.575	0.867	0.950
MA	0.125	1.688*	-0.575		0.292	0.375
MA+30	-0.167	1.396*	-0.867	-0.292		0.083
MA+50	-0.250	1.313*	-0.950	-0.375	-0.083	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.292*	-0.708	-0.271	-0.542	-0.167
BA+30	-1.292*		-2.000*	-1.563*	-1.833*	-1.458*
BA+50	0.708	2.000*		0.438	0.167	0.542
MA	0.271	1.563*	-0.438		-0.271	0.104
MA+30	0.542	1.833*	-0.167	0.271		0.375
MA+50	0.167	1.458*	-0.542	-0.104	-0.375	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.646*	-0.417	-0.104	-0.250	-0.208
BA+30	-1.646*		-2.063*	-1.750*	-1.896*	-1.854*
BA+50	0.417	2.063*		0.313	0.167	0.208
MA	0.104	1.750*	-0.313		-0.146	-0.104
MA+30	0.250	1.896*	-0.167	0.146		0.042
MA+50	0.208	1.854*	-0.208	0.104	-0.042	

* The mean difference is significant at the .05 level

School "C": Hypothesis #3 Statistical Results: Educational Attainment

Table 9: ANOVA Tukey Multiple Comparison with years in educational attainment and the seventeen variable descriptor questions.

Tukey Multiple Comparison: Question 1A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.780*	0.864*	1.364*	0.337	1.094*
BA+30	-1.780*		-0.917*	-0.417	-1.443*	-0.686
BA+50	-0.864*	0.917*		0.500	-0.526	0.231
MA	-1.364*	0.417	-0.500		-1.026*	-0.269
MA+30	-0.337	1.443*	0.526	1.026*		0.757
MA+50	-1.094*	0.686	-0.231	0.269	-0.757	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 1B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.602*	1.061*	1.227*	0.569	0.881*
BA+30	-1.602*		-0.542	-0.375	-1.033*	-0.721*
BA+50	-1.061*	0.542		0.167	-0.491	-0.179
MA	-1.227*	0.375	-0.167		-0.658	-0.346
MA+30	-0.569	1.033*	0.491	0.658		0.312
MA+50	-0.881*	0.721*	0.179	0.346	-0.312	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.879*	1.129	2.045*	0.256	1.276*
BA+30	-2.879*		-1.750*	-0.833	-2.623*	-1.603*
BA+50	-1.129	1.750*		0.917	-0.873	0.147
MA	-2.045*	0.833	-0.917		-1.789*	-0.769
MA+30	-0.256	2.623*	0.873	1.789*		1.020
MA+50	-1.276*	1.603*	-0.147	0.769	-1.020	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.193*	0.568	1.568*	0.739	1.164*
BA+30	-2.193*		-1.625*	-0.625	-1.454*	-1.029*
BA+50	-0.568	1.625*		1.000	0.171	0.596
MA	-1.568*	0.625	-1.000		-0.829	-0.404
MA+30	-0.739	1.454*	-0.171	0.829		0.425
MA+50	-1.164*	1.029*	-0.596	0.404	-0.425	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 2C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		3.197*	1.447*	2.364*	0.943	1.979*
BA+30	-3.197*		-1.750*	-0.833	-2.254*	-1.218*
BA+50	-1.447*	1.750		0.917	-0.504	0.532
MA	-2.364*	0.833	-0.917		-1.421*	-0.385
MA+30	-0.943	2.254*	0.504	1.421*		1.036
MA+50	-1.979*	1.218*	-0.532	0.385	-1.036	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.098*	-0.152	0.598	0.603	1.028*
BA+30	-1.098*		-1.250*	-0.500	-0.496	-0.071
BA+50	0.152	1.250*		0.750	0.754	1.179*
MA	-0.598	0.500	-0.750		0.004	0.429
MA+30	-0.603	0.496	-0.754	-0.004		0.425
MA+50	-1.028*	0.071	-1.179*	-0.429	-0.425	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.682*	1.015*	1.265*	0.577	1.220*
BA+30	-1.682*		-0.667	-0.417	-1.105*	-0.462
BA+50	-1.015*	0.667		0.250	-0.439	0.205
MA	-1.265*	0.417	-0.250		-0.689	-0.045
MA+30	-0.577	1.105*	0.439	0.689		0.644
MA+50	-1.220*	0.462	-0.205	0.045	-0.644	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.455	0.538	0.621	0.349	1.147*
BA+30	-0.455		0.083	0.167	-0.105	0.692*
BA+50	-0.538	-0.083		0.083	-0.189	0.609
MA	-0.621	-0.167	-0.083		-0.272	0.526
MA+30	-0.349	0.105	0.189	0.272		0.798*
MA+50	-1.147*	-0.692*	-0.609	-0.526	-0.798*	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3D/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.564*	0.856*	1.023*	0.404	0.773*
BA+30	-1.564*		-0.708	-0.542	-1.160*	-0.792*
BA+50	-0.856*	0.708		0.167	-0.452	-0.083
MA	-1.023*	0.542	-0.167		-0.618	-0.250
MA+30	-0.404	1.160*	0.452	0.618		0.368
MA+50	-0.773*	0.792*	0.083	0.250	-0.368	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 3E/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.008*	1.424*	1.008*	0.617*	1.706*
BA+30	-1.008*		0.417	0.000	-0.390	0.699*
BA+50	-1.424*	-0.417		-0.417	-0.807*	0.282
MA	-1.008*	0.000	0.417		-0.390	0.699
MA+30	-0.617*	0.390	0.807*	0.390		1.089*
MA+50	-1.706*	-0.699*	-0.282	-0.699	-1.089*	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.367	0.326	0.076	-0.380	-0.591
BA+30	-0.367		-0.042	-0.292	-0.748*	-0.958*
BA+50	-0.326	0.042		-0.250	-0.706*	-0.917*
MA	-0.076	0.292	0.250		-0.456	-0.667
MA+30	0.380	0.748*	0.706*	0.456		-0.211
MA+50	0.591	0.958*	0.917*	0.667	0.211	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 4B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.913*	0.371	0.371	-0.151	0.262
BA+30	-0.913*		-0.542	-0.542	-1.064*	-0.651
BA+50	-0.371	0.542		0.000	-0.522	-0.109
MA	-0.371	0.542	0.000		-0.522	-0.109
MA+30	0.151	1.064*	0.522	0.522		0.413
MA+50	-0.262	0.651	0.109	0.109	-0.413	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5A/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		2.466*	1.341*	1.174*	0.380	2.052*
BA+30	-2.466*		-1.125*	-1.292*	-2.086*	-0.413
BA+50	-1.341*	1.125*		-0.167	-0.961	0.712
MA	-1.174*	1.292*	0.167		-0.794	0.878
MA+30	-0.380	2.086*	0.961	0.794		1.672*
MA+50	-2.052*	0.413	-0.712	-0.878	-1.672*	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5B/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		0.958*	0.583	0.917*	0.316	1.154*
BA+30	-0.958*		-0.375	-0.042	-0.643	0.196
BA+50	-0.583	0.375		0.333	-0.268	0.571
MA	-0.917*	0.042	-0.333		-0.601	0.237
MA+30	-0.316	0.643	0.268	0.601		0.838*
MA+50	-1.154*	-0.196	-0.571	-0.237	-0.838*	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5C/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		1.511*	1.303*	0.886*	0.900*	1.329*
BA+30	-1.511*		-0.208	-0.625	-0.612	-0.183
BA+50	-1.303*	0.208		-0.417	-0.404	0.026
MA	-0.886*	0.625	0.417		0.013	0.442
MA+30	-0.900*	0.612	0.404	-0.013		0.429
MA+50	-1.329*	0.183	-0.026	-0.442	-0.429	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5D/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.640	0.235	0.152	-0.103	0.857
BA+30	0.640		0.875	0.792	0.537	1.497*
BA+50	-0.235	-0.875		-0.083	-0.338	0.622
MA	-0.152	-0.792	0.083		-0.254	0.705
MA+30	0.103	-0.537	0.338	0.254		0.960
MA+50	-0.857	-1.497*	-0.622	-0.705	-0.960	

* The mean difference is significant at the .05 level

Tukey Multiple Comparison: Question 5E/Educational Attainment: Mean Difference

	Category Years					
Categories	BA	BA+30	BA+50	MA	MA+30	MA+50
BA		-0.227	0.273	0.439	0.352	1.619*
BA+30	0.227		0.500	0.667	0.579	1.846*
BA+50	-0.273	-0.500		0.167	0.079	1.346*
MA	-0.439	-0.667	-0.167		-0.088	1.179*
MA+30	-0.352	-0.579	-0.079	0.088		1.267*
MA+50	-1.619*	-1.846*	-1.346*	-1.179*	-1.267*	

* The mean difference is significant at the .05 level

APPENDIX D

FULL MODEL MULTIPLE REGRESSION ANALYSIS WITH BACKWARD CO-EFFICIENT VARIABLE ELIMINATION

School "A": Hypothesis #4 Statistical Results

Question #1A:

Table 1. Full Model Multiple Regression Analysis for Question 1A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.394	5	2.879	2.688*	0.026 (a)
Residual	98.514	92	1.071		
Total	112.908	97			
Regression	14.330	4	3.582	3.380*	0.013 (b)
Residual	98.579	93	1.060		
Total	112.908	97			
Regression	14.275	3	4.758	4.535*	0.005 (c)
Residual	98.634	94	1.049		
Total	112.908	97			
Regression	12.860	2	6.430	6.105*	0.003 (d)
Residual	100.048	95	1.053		
Total	112.908	97			
Regression	10.433	1	10.433	9.774*	0.002 (e)
Residual	102.475	96	1.067		
Total	112.908	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: years in similar employment position, employment position
e. Predictors: position

Regression Summary for Question 1A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.357	0.127	0.080	0.127	2.688
b.	0.356	0.127	0.089	-0.001	0.060
c.	0.356	0.126	0.099	0.000	0.052
d.	0.337	0.114	0.095	-0.013	1.348
e.	0.304	0.092	0.083	-0.021	2.304

a. Predictors: educational attainment, gender, employment position, years in similar position, years of experience
b. Predictors: gender, employment position, years of experience, years in similar position
c. Predictors: gender, years in similar position, employment position
d. Predictors: years in similar position, employment position
e. Predictors: position

Table 2. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 1A

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.246	0.216	0.114	1.139	0.258	(a)
X2	-1.248	0.442	-0.318	-2.826	0.006*	
X3	-0.028	0.090	-0.043	-0.310	0.758	
X4	-0.099	0.089	-0.133	-1.107	0.271	
X5	0.018	0.074	0.030	0.245	0.807	
X1	0.251	0.214	0.116	1.172	0.244	(b)
X2	-1.271	0.430	-0.324	-2.958	0.004*	
X3	-0.018	0.081	-0.029	-0.228	0.820	
X4	-0.098	0.089	-0.131	-1.102	0.273	
X1	0.246	0.212	0.114	1.161	0.249	(c)
X2	-1.229	0.387	-0.313	-3.179	0.002*	
X4	-0.110	0.072	-0.147	-1.521	0.132	
X2	-1.142	0.380	-0.291	-3.005	0.003*	(d)
X4	-0.110	0.072	-0.147	-1.518	0.132	
X2	-1.192	0.381	-0.304	-3.126	0.002*	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, years in similar position
c. Predictors: gender, employment position, years in similar position
d. Predictors: employment position, years in similar position
e. Predictors: employment position

Question #1B:

Table 3. Full Model Multiple Regression Analysis for Question 1B

Multiple Regressions ANOVA for Question 1B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	23.727	5	4.745	5.148*	0.000 (a)
Residual	84.804	92	0.922		
Total	108.531	97			
Regression	23.614	4	5.904	6.466*	0.000 (b)
Residual	84.916	93	0.913		
Total	108.531	97			
Regression	23.488	3	7.829	8.654*	0.000 (c)
Residual	85.043	94	0.905		
Total	108.531	97			
Regression	22.310	2	11.155	12.291*	0.000 (d)
Residual	86.221	95	0.908		
Total	108.531	97			
Regression	19.667	1	19.667	21.246*	0.000 (e)
Residual	88.864	96	0.926		
Total	108.531	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, years of educational experience, employment position
d. Predictors: gender, employment position
e. Predictors: employment position

Regression Summary for Question 1B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.468	0.219	0.176	0.219	5.148
b.	0.466	0.218	0.184	-0.001	0.122
c.	0.465	0.216	0.191	-0.001	0.138
d.	0.453	0.206	0.189	-0.011	1.302
e.	0.426	0.181	0.173	-0.024	2.912

a. Predictors: educational attainment, gender, employment position, years in similar position, years of experience
b. Predictors: gender, employment position, years of experience, years in similar position
c. Predictors: gender, years of experience, employment position
d. Predictors: gender, employment position
e. Predictors: employment position

Table 4. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 1B

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.357	0.201	0.169	1.779	0.079	(a)
X2	-1.877	0.410	-0.488	-4.580	0.000*	
X3	-0.041	0.084	-0.065	-0.492	0.624	
X4	-0.029	0.083	-0.040	-0.354	0.724	
X5	-0.024	0.068	-0.040	-0.350	0.727	
X1	0.350	0.199	0.166	1.763	0.081	(b)
X2	-1.847	0.399	-0.480	-4.631	0.000*	
X3	-0.054	0.075	-0.084	-0.711	0.479	
X4	-0.031	0.082	-0.042	-0.372	0.711	
X1	0.354	0.198	0.168	1.794	0.076	(c)
X2	-1.892	0.378	-0.492	-5.013	0.000*	
X3	-0.070	0.061	-0.110	-1.141	0.257	
X1	0.337	0.197	0.159	1.707	0.091	(d)
X2	-1.755	0.358	-0.457	-4.898	0.000*	
X2	-1.636	0.355	-0.426	-4.609	0.000 *	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, years in similar position
c. Predictors: gender, employment position, years of educational experience
d. Predictors: gender, employment position
e. Predictors: employment position

Question #2A:

Table 5. Full Model Multiple Regression Analysis for Question 2A

Multiple Regressions ANOVA for Question 2A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	19.785	5	3.957	3.004*	0.015 (a)
Residual	121.194	92	1.317		
Total	140.980	97			
Regression	19.764	4	4.941	3.791*	0.007 (b)
Residual	121.215	93	1.303		
Total	140.980	97			
Regression	19.450	3	6.483	5.015*	0.003 (c)
Residual	121.530	94	1.293		
Total	140.980	97			
Regression	18.507	2	9.254	7.178*	0.001 (d)
Residual	122.472	95	1.289		
Total	140.980	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: gender, years of educational experience, employment position
d. Predictors: gender, employment position

Regression Summary for Question 2A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.375	0.140	0.094	0.140	3.004
b.	0.374	0.140	0.103	0.000	0.016
c.	0.371	0.138	0.110	-0.002	0.241
d.	0.362	0.131	0.113	-0.007	0.729

a. Predictors: educational attainment, gender, employment position, years in similar position, years of experience
b. Predictors: educational attainment, gender, employment position, years of experience
c. Predictors: gender, years of experience, employment position
d. Predictors: gender, employment position

Table 6. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2A

Variable	B	Std. Error	Beta	t	Sig.
X1	0.579	0.240	0.240	2.415	0.018* (a)
X2	-1.349	0.490	-0.308	-2.753	0.007*
X3	0.078	0.100	0.108	0.779	0.438
X4	0.013	0.099	0.015	0.127	0.899
X5	-0.040	0.082	-0.060	-0.494	0.623
X1	0.577	0.238	0.239	2.425	0.017* (b)
X2	-1.329	0.463	-0.303	-2.871	0.005*
X3	0.084	0.086	0.117	0.982	0.329
X5	-0.040	0.081	-0.059	-0.491	0.624
X1	0.567	0.236	0.235	2.401	0.018* (c)
X2	-1.283	0.451	-0.293	-2.842	0.005*
X3	0.062	0.073	0.086	0.854	0.395
X1	0.583	0.235	0.242	2.480	0.015* (d)
X2	-1.406	0.427	-0.321	-3.292	0.001

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, educational attainment
c. Predictors: gender, employment position, years of educational experience, years in similar position
d. Predictors: gender, employment position

Question #2B:

Table 7. Full Model Multiple Regression Analysis for Question 2B

Multiple Regressions ANOVA for Question 2B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	26.466	5	5.293	5.973*	0.000 (a)
Residual	81.534	92	0.886		
Total	108.000	97			
Regression	26.048	4	6.512	7.390*	0.000 (b)
Residual	81.952	93	0.881		
Total	108.000	97			
Regression	24.486	3	8.162	9.187*	0.000 (c)
Residual	83.514	94	0.888		
Total	108.000	97			
Regression	23.620	2	11.810	13.296*	0.000 (d)
Residual	84.380	95	0.888		
Total	108.000	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: gender, employment position

Regression Summary for Question 2B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.495	0.245	0.204	0.245	5.973
b.	0.491	0.241	0.209	-0.004	0.471
c.	0.476	0.227	0.202	-0.014	1.773
d.	0.468	0.219	0.202	-0.008	0.974

e. Predictors: educational attainment, gender, employment position, years in similar position, years of experience
f. Predictors: educational attainment, gender, employment position, years in similar position
g. Predictors: gender, years in similar position, employment position
h. Predictors: gender, employment position

Table 8. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2B

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.705	0.197	0.334	3.584	0.001*	(a)
X2	-1.708	0.402	-0.445	-4.251	0.000*	
X3	0.056	0.082	0.089	0.686	0.494	
X4	0.068	0.081	0.094	0.840	0.403	
X5	-0.100	0.067	-0.169	-1.494	0.139	
X1	0.711	0.196	0.337	3.633	0.000*	(b)
X2	-1.787	0.384	-0.466	-4.659	0.000*	
X4	0.096	0.070	0.132	1.377	0.172	
X5	-0.080	0.060	-0.136	-1.332	0.186	
X1	0.680	0.195	0.322	3.482	0.001*	(c
X2	-1.592	0.356	-0.415	-4.474	0.000*	
X4	0.065	0.066	0.090	0.987	0.326	
X1	0.680	0.195	0.322	3.483	0.001*	(d)
X2	-1.562	0.354	-0.407	-4.407	0.000*	

* Significant at the .05 level.

i. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

j. Predictors: gender, employment position, years in similar position, educational attainment

k. Predictors: gender, employment position, years of educational experience, years in similar position

l. Predictors: gender, employment position

Question #2C:

Table 9. Full Model Multiple Regression Analysis for Question 2C

Multiple Regressions ANOVA for Question 2C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.347	5	7.269	5.416*	0.000 (a)
Residual	123.490	92	1.342		
Total	159.837	97			
Regression	36.347	4	9.087	6.843*	0.000 (b)
Residual	123.490	93	1.328		
Total	159.837	97			
Regression	36.343	3	12.114	9.221*	0.000 (c)
Residual	123.494	94	1.314		
Total	159.837	97			
Regression	36.250	2	18.125	13.932*	0.000 (d)
Residual	123.587	95	1.301		
Total	159.837	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, gender, employment position
d. Predictors: gender, employment position

Regression Summary for Question 2C

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.477	0.227	0.185	0.227	5.416
b.	0.477	0.227	0.194	0.000	0.000
c.	0.477	0.227	0.203	0.000	0.003
d.	0.476	0.227	0.211	-0.001	0.07

a. Predictors: educational attainment, gender, employment position, years in similar position, years of experience
b. Predictors: educational attainment, gender, employment position, years of experience
c. Predictors: educational attainment, gender, employment position
d. Predictors: gender, employment position

Table 10. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2C

Variable	B	Std. Error	Beta	t	Sig.
X1	0.879	0.242	0.342	3.631	0.000* (a)
X2	-1.942	0.495	-0.416	-3.926	0.000*
X3	-0.004	0.101	-0.006	-0.043	0.966
X4	0.000	0.100	0.000	-0.004	0.997
X5	-0.016	0.082	-0.023	-0.198	0.843
X1	0.879	0.240	0.342	3.658	0.000* (b)
X2	-1.942	0.467	-0.416	-4.155	0.000*
X3	-0.005	0.087	-0.006	-0.053	0.958
X5	-0.016	0.082	-0.023	-0.200	0.842
X1	0.878	0.239	0.342	3.677	0.000* (c)
X2	-1.938	0.459	-0.416	-4.224	0.000*
X5	-0.019	0.070	-0.026	-0.267	0.790
X1	0.871	0.236	0.339	3.689	0.000* (d)
X2	-1.896	0.429	-0.407	-4.420	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, educational attainment
c. Predictors: gender, employment position, educational attainment
d. Predictors: gender, employment position

Question #3A:

Table 11. Full Model Multiple Regression Analysis for Question 3A

Multiple Regressions ANOVA for Question 3A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.949	5	2.990	3.458*	0.007 (a)
Residual	79.551	92	0.865		
Total	94.500	97			
Regression	14.902	4	3.726	4.353*	0.003 (b)
Residual	79.598	93	0.856		
Total	94.500	97			
Regression	12.536	3	4.179	4.792*	0.004 (c)
Residual	81.964	94	0.872		
Total	94.500	97			
Regression	9.596	2	4.798	5.368*	0.006 (d)
Residual	84.904	95	0.894		
Total	94.500	97			
Regression	7.803	1	7.803	8.640*	0.004 (e)
Residual	86.697	96	0.903		
Total	94.500	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, employment position, years of educational experience
d. Predictors: educational attainment, employment position
e. Predictors: employment position

Regression Summary for Question 3A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.398	0.158	0.112	0.158	3.458
b.	0.397	0.158	0.121	0.000	0.054
c.	0.364	0.133	0.105	-0.025	2.764
d.	0.319	0.102	0.083	-0.031	3.373
e.	0.287	0.083	0.073	-0.019	2.006

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of experience
b. Predictors: educational attainment, gender, employment position, years of experience
c. Predictors: educational attainment, employment position, years of experience
d. Predictors: educational attainment, employment position
e. Predictors: employment position

Table 12. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3A

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.318	0.194	0.161	1.637	0.105	(a)
X2	-1.203	0.397	-0.335	-3.032	0.003*	
X3	0.136	0.081	0.230	1.678	0.097	
X4	-0.019	0.080	-0.028	-0.233	0.816	
X5	-0.153	0.066	-0.276	-2.315	0.023*	
X1	0.321	0.193	0.162	1.663	0.100	(b)
X2	-1.232	0.375	-0.344	-3.283	0.001*	
X3	0.126	0.070	0.213	1.816	0.073	
X5	-0.154	0.066	-0.278	-2.340	0.021*	
X2	-1.094	0.369	-0.305	-2.962	0.004*	(c)
X3	0.129	0.070	0.218	1.836	0.069	
X5	-0.144	0.066	-0.260	-2.183	0.032*	
X2	-1.202	0.369	-0.335	-3.256	0.002*	(d)
X5	-0.081	0.057	-0.146	-1.416	0.160	
X2	-1.031	0.351	-0.287	-2.939	0.004*	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, educational attainment
c. Predictors: employment position, years of educational experience, educational attainment
d. Predictors: employment position, educational attainment
e. Predictors: employment position

Question #3B:

Table 13. Full Model Multiple Regression Analysis for Question 3B

Multiple Regressions ANOVA for Question 3B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.733	5	3.547	4.143*	0.002 (a)
Residual	78.767	92	0.856		
Total	96.500	97			
Regression	17.163	4	4.291	5.034*	0.001 (b)
Residual	79.337	93	0.853		
Total	96.500	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience

b. Predictors: educational attainment, gender, employment position, years of educational experience

Regression Summary for Question 3B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.429	0.184	0.139	0.184	4.143
b.	0.422	0.178	0.142	-0.006	0.666

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience

b. Predictors: educational attainment, gender, employment position, years of educational experience

Table 14. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3B

Variable	B	Std. Error	Beta	t	Sig.
X1	0.397	0.193	0.199	2.055	0.043* (a)
X2	-1.154	0.395	-0.359	-2.923	0.004*
X3	0.176	0.081	0.294	2.181	0.032*
X4	-0.065	0.080	-0.095	-0.816	0.416
X5	-0.162	0.066	-0.290	-2.465	0.016*
X1	0.407	0.193	0.204	2.111	0.037* (b)
X2	-1.255	0.375	-0.346	-3.350	0.001*
X3	0.143	0.069	0.238	2.053	0.043*
X5	-0.165	0.066	-0.294	-2.510	0.014*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years of educational experience, educational attainment

Question #3C:

Table 15. Full Model Multiple Regression Analysis for Question 3C

Multiple Regressions ANOVA for Question 3C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.784	5	1.157	1.279	0.280 (a)
Residual	83.205	92	0.904		
Total	88.990	97			
Regression	5.687	4	1.422	1.587	0.184 (b)
Residual	83.303	93	0.896		
Total	88.990	97			
Regression	5.343	3	1.781	2.002	0.119 (c)
Residual	83.646	94	0.890		
Total	88.990	97			
Regression	5.185	2	2.592	2.939*	0.058 (d)
Residual	83.805	95	0.882		
Total	88.990	97			
Regression	3.515	1	3.515	3.948*	0.050 (e)
Residual	85.475	96	0.890		
Total	88.990	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: gender, years in similar employment position, employment position, years of educational experience
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: gender, employment position
e. Predictors: employment position

Regression Summary for Question 3C

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.255	0.065	0.014	0.065	1.279
b.	0.253	0.064	0.024	-0.001	0.108
c.	0.245	0.060	0.030	-0.004	0.383
d.	0.241	0.058	0.038	-0.002	0.178
e.	0.199	0.039	0.029	-0.019	1.893

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: gender, years in similar employment position, employment position, years of educational experience
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: gender, employment position
e. Predictors: employment position

Table 16. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3C

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.262	0.199	0.137	1.317	0.191	(a)
X2	-0.697	0.406	-0.200	-1.717	0.089	
X3	0.058	0.083	0.101	0.697	0.487	
X4	-0.056	0.082	-0.085	-0.683	0.497	
X5	-0.022	0.068	-0.041	-0.329	0.743	
X1	0.256	0.197	0.134	1.299	0.197	(b)
X2	-0.669	0.395	-0.192	-1.694	0.094	
X3	0.046	0.075	0.080	0.619	0.537	
X4	-0.057	0.082	-0.087	-0.702	0.485	
X1	0.268	0.195	0.140	1.370	0.174	(c)
X2	-0.773	0.356	-0.222	-2.172	0.032*	
X4	-0.028	0.066	-0.042	-0.422	0.674	
X1	0.268	0.194	0.140	1.376	0.172	(d)
X2	-0.786	0.353	-0.226	-2.225	0.028*	
X2	-0.692	0.348	-0.199	-1.987	0.050*	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, years in similar position
c. Predictors: gender, employment position, years in similar position
d. Predictors: gender, employment position
e. Predictors: employment position

Question #3D:

Table 17. Full Model Multiple Regression Analysis for Question 3D

Multiple Regressions ANOVA for Question 3D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	15.690	5	3.138	3.853*	0.003 (a)
Residual	74.932	92	0.814		
Total	90.622	97			
Regression	15.474	4	3.869	4.788*	0.001 (b)
Residual	75.148	93	0.808		
Total	90.622	97			
Regression	15.239	3	5.080	6.334*	0.001 (c)
Residual	75.383	94	0.802		
Total	90.622	97			
Regression	14.773	2	7.387	9.251*	0.000 (d)
Residual	75.849	95	0.798		
Total	90.622	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience
d. Predictors: gender, employment position

Regression Summary for Question 3D

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.416	0.173	0.128	0.173	3.853
b.	0.413	0.171	0.135	-0.002	0.265
c.	0.410	0.168	0.142	-0.003	0.291
d.	0.404	0.163	0.145	-0.005	0.581

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience
d. Predictors: gender, employment position

Table 18. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3D

Variable	B	Std. Error	Beta	t	Sig.
X1	0.739	0.188	0.382	3.923	0.000* (a)
X2	-0.814	0.385	-0.232	-2.114	0.037*
X3	0.042	0.079	0.073	0.540	0.591
X4	0.040	0.078	0.060	0.515	0.608
X5	-0.036	0.064	-0.066	-0.560	0.577
X1	0.734	0.187	0.379	3.915	0.000* (b)
X2	-0.753	0.365	-0.214	-2.064	0.042*
X3	0.063	0.068	0.108	0.929	0.355
X5	-0.034	0.064	-0.064	-0.540	0.591
X1	0.725	0.186	0.375	3.897	0.000* (c)
X2	-0.712	0.355	-0.203	-2.003	0.048*
X3	0.044	0.058	0.076	0.762	0.448
X1	0.736	0.185	0.381	3.979	0.000* (d)
X2	-0.799	0.336	-0.227	-2.376	0.019*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, educational attainment
c. Predictors: gender, employment position, years of educational experience
d. Predictors: gender, employment position

Question #3E:

Table 19. Full Model Multiple Regression Analysis for Question 3E

Multiple Regressions ANOVA for Question 3E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.458	5	2.892	3.521*	0.006 (a)
Residual	75.542	92	0.821		
Total	90.000	97			
Regression	14.454	4	3.613	4.448*	0.002 (b)
Residual	75.546	93	0.812		
Total	90.000	97			
Regression	14.425	3	4.808	5.980*	0.001 (c)
Residual	75.575	94	0.804		
Total	90.000	97			
Regression	13.247	2	6.624	8.198*	0.001 (d)
Residual	76.753	95	0.808		
Total	90.000	97			
Regression	10.678	1	10.678	12.923*	0.001 (e)
Residual	79.322	96	0.826		
Total	90.000	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: gender, years in similar employment position, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience
d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Regression Summary for Question 3E

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.401	0.161	0.115	0.161	3.521
b.	0.401	0.161	0.124	0.000	0.005
c.	0.400	0.160	0.133	0.000	0.036
d.	0.384	0.147	0.129	-0.013	1.465
e.	0.344	0.119	0.109	-0.029	3.180

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: gender, years in similar employment position, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience
d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Table 20. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3E

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.228	0.189	0.119	1.207	0.230	(a)
X2	-1.130	0.387	-0.323	-2.921	0.004*	
X3	0.092	0.079	0.159	1.162	0.248	
X4	0.015	0.078	0.023	0.192	0.848	
X5	-0.004	0.064	-0.008	-0.068	0.946	
X1	0.227	0.187	0.118	1.213	0.228	(b)
X2	-1.124	0.376	-0.321	-2.989	0.004*	
X3	0.089	0.071	0.155	1.258	0.212	
X4	0.015	0.078	0.022	0.190	0.850	
X1	0.225	0.186	0.117	1.210	0.229	(c)
X2	-1.102	0.356	-0.315	-3.097	0.003*	
X3	0.097	0.058	0.168	1.686	0.095	
X2	-1.012	0.349	-0.289	-2.901	0.005*	(d)
X3	0.103	0.058	0.178	1.783	0.078	
X2	-1.206	0.335	-0.344	-3.595	0.001*	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, years in similar position
c. Predictors: gender, employment position, years of educational experience
d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Question #4A:

Table 21. Full Model Multiple Regression Analysis for Question 4A

Multiple Regressions ANOVA for Question 4A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.958	5	0.992	1.368	0.243 (a)
Residual	66.674	92	0.725		
Total	71.633	97			
Regression	4.958	4	1.239	1.729	0.150 (b)
Residual	66.675	93	0.717		
Total	71.633	97			
Regression	4.827	3	1.609	2.264	0.086 (c)
Residual	66.806	94	0.711		
Total	71.633	97			
Regression	4.327	2	2.163	3.054	0.052 (d)
Residual	67.306	95	0.708		
Total	71.633	97			
Regression	1.658	1	1.658	2.274	0.135 (e)
Residual	69.975	96	0.729		
Total	71.633	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, years in similar employment position, employment position, years of educational experience
c. Predictors: educational attainment, years in similar employment position, employment position
d. Predictors: educational attainment, employment position
e. Predictors: employment position

Regression Summary for Question 4A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.263	0.069	0.019	0.069	1.368
b.	0.263	0.069	0.029	0.000	0.001
c.	0.260	0.067	0.038	-0.002	0.183
d.	0.246	0.060	0.041	-0.007	0.703
e.	0.152	0.023	0.013	-0.037	3.767

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, years in similar employment position, employment position, years of educational experience
c. Predictors: educational attainment, years in similar employment position, employment position
d. Predictors: educational attainment, employment position
e. Predictors: employment position

Question #4B:

Table 22. Full Model Multiple Regression Analysis for Question 4B

Multiple Regressions ANOVA for Question 4B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.432	5	1.286	1.099	0.367 (a)
Residual	107.741	92	1.171		
Total	114.173	97			
Regression	6.376	4	1.594	1.375	0.249 (b)
Residual	107.798	93	1.159		
Total	114.173	97			
Regression	5.912	3	1.971	1.711	0.170 (c)
Residual	108.261	94	1.152		
Total	114.173	97			
Regression	4.271	2	2.136	1.846	0.163 (d)
Residual	109.902	95	1.157		
Total	114.173	97			
Regression	1.998	1	1.998	1.709	0.194 (e)
Residual	112.176	96	1.168		
Total	114.173	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, gender, employment position
d. Predictors: gender, employment position
e. Predictors: gender

Regression Summary for Question 4B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.237	0.056	0.005	0.056	1.099
b.	0.236	0.056	0.015	0.000	0.048
c.	0.228	0.052	0.022	-0.004	0.400
d.	0.193	0.037	0.017	-0.014	1.425
e.	0.132	0.017	0.007	-0.020	1.965

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, gender, employment position
d. Predictors: gender, employment position
e. Predictors: gender

Question #5A:

Table 23. Full Model Multiple Regression Analysis for Question 5A

Multiple Regressions ANOVA for Question 5A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.316	5	2.463	1.512	0.194 (a)
Residual	149.858	92	1.629		
Total	162.173	97			
Regression	12.235	4	3.059	1.897	0.117 (b)
Residual	149.938	93	1.612		
Total	162.173	97			
Regression	10.932	3	3.644	2.265	0.086 (c)
Residual	151.241	94	1.609		
Total	162.173	97			
Regression	9.616	2	4.808	2.994	0.055 (d)
Residual	152.557	95	1.606		
Total	162.173	97			
Regression	8.037	1	8.037	5.006*	0.028 (e)
Residual	154.136	96	1.606		
Total	162.173	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, years in similar employment position, employment position
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: gender, years in similar employment position
e. Predictors: gender

Regression Summary for Question 5A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.276	0.076	0.026	0.076	1.512
b.	0.275	0.075	0.036	0.000	0.049
c.	0.260	0.067	0.038	-0.008	0.808
d.	0.244	0.059	0.039	-0.008	0.818
e.	0.223	0.050	0.040	-0.010	0.983

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, years in similar employment position, employment position
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: gender, years in similar employment position
e. Predictors: gender

Table 24. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5A

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.649	0.267	0.251	2.436	0.017*	(a)
X2	-0.647	0.545	-0.138	-1.187	0.238	
X3	-0.025	0.111	-0.032	-0.222	0.825	
X4	0.135	0.110	0.152	1.229	0.222	
X5	-0.065	0.091	-0.089	-0.715	0.476	
X1	0.646	0.265	0.250	2.441	0.017*	(b)
X2	-0.612	0.519	-0.130	-1.179	0.241	
X4	0.123	0.095	0.138	1.301	0.197	
X5	-0.073	0.082	-0.101	-0.899	0.371	
X1	0.617	0.263	0.239	2.351	0.021*	(c)
X2	-0.433	0.479	-0.092	-0.904	0.368	
X4	0.095	0.089	0.106	1.063	0.290	
X1	0.571	0.257	0.221	2.220	0.029*	(d)
X4	0.088	0.089	0.099	0.992	0.324	
X1	0.576	0.257	0.223	2.237	0.028*	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years in similar position, educational attainment
c. Predictors: gender, employment position, years in similar position
d. Predictors: gender, years in similar position
e. Predictors: gender

Question #5B:

Table 25. Full Model Multiple Regression Analysis for Question 5B

Multiple Regressions ANOVA for Question 5B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.881	5	2.976	3.850*	0.003 (a)
Residual	71.119	92	0.773		
Total	86.000	97			
Regression	14.857	4	3.714	4.855*	0.001 (b)
Residual	71.143	93	0.765		
Total	86.000	97			
Regression	14.803	3	4.934	6.515*	0.000 (c)
Residual	71.197	94	0.757		
Total	86.000	97			
Regression	13.374	2	6.687	8.747*	0.000 (d)
Residual	72.626	95	0.764		
Total	86.000	97			
Regression	11.378	1	11.378	14.637*	0.000 (e)
Residual	74.622	96	0.777		
Total	86.000	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, years in similar employment position, employment position, years of educational experience
c. Predictors: years in similar employment position, employment position, years of educational experience
d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Regression Summary for Question 5B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.416	0.173	0.128	0.173	3.850
b.	0.416	0.173	0.137	0.000	0.032
c.	0.415	0.172	0.146	-0.001	0.070
d.	0.394	0.156	0.138	-0.017	1.886
e.	0.364	0.132	0.123	-0.023	2.612

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, years in similar employment position, employment position, years of educational experience
c. Predictors: years in similar employment position, employment position, years of educational experience

d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Table 26. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5B

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.033	0.184	0.017	0.178	0.859	(a)
X2	-0.960	0.375	-0.280	-2.557	0.012*	
X3	0.153	0.077	0.270	1.994	0.049*	
X4	-0.101	0.076	-0.156	-1.335	0.185	
X5	-0.017	0.062	-0.033	-0.278	0.782	
X2	-0.944	0.363	-0.276	-2.599	0.011*	(b)
X3	0.153	0.076	0.271	2.016	0.047*	
X4	-0.102	0.075	-0.157	-1.355	0.179	
X5	-0.016	0.062	-0.031	-0.265	0.792	
X2	-0.926	0.355	-0.271	-2.610	0.011*	(c)
X3	0.145	0.068	0.256	2.118	0.037*	
X4	-0.103	0.075	-0.158	-1.373	0.173	
X2	-1.074	0.339	-0.314	-3.165	0.002*	(d)
X3	0.090	0.056	0.160	1.616	0.109	
X2	-1.244	0.325	-0.364	-3.826	0.000*	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: employment position, years of educational experience, years in similar position, educational attainment
c. Predictors: employment position, years of educational experience, years in similar position
d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Question #5C:

Table 27. Full Model Multiple Regression Analysis for Question 5C

Multiple Regressions ANOVA for Question 5C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	20.816	5	4.163	4.324*	0.001 (a)
Residual	88.571	92	0.963		
Total	109.388	97			
Regression	20.609	4	5.152	5.397*	0.001 (b)
Residual	88.779	93	0.955		
Total	109.388	97			
Regression	19.391	3	6.464	6.751*	0.000 (c)
Residual	89.997	94	0.957		
Total	109.388	97			
Regression	18.395	2	9.198	9.603*	0.000 (d)
Residual	90.992	95	0.958		
Total	109.388	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, years in similar employment position, employment position
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: gender, employment position

Regression Summary for Question 5C

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.436	0.190	0.146	0.190	4.324
b.	0.434	0.188	0.153	-0.002	0.216
c.	0.421	0.177	0.151	-0.011	1.276
d.	0.410	0.168	0.151	-0.009	1.039

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, years in similar employment position, employment position
c. Predictors: gender, years in similar employment position, employment position
d. Predictors: gender, employment position

Table 28. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5C

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.633	0.205	0.298	3.089	0.003*	(a)
X2	-1.021	0.419	-0.265	-2.438	0.017*	
X3	0.040	0.085	0.062	0.464	0.644	
X4	-0.117	0.085	-0.160	-1.385	0.169	
X5	0.057	0.070	0.096	0.821	0.414	
X1	0.638	0.204	0.300	3.129	0.002*	(b)
X2	-1.077	0.399	-0.279	-2.698	0.008*	
X4	-0.097	0.073	-0.133	-1.338	0.184	
X5	0.071	0.063	0.119	1.130	0.262	
X1	0.666	0.203	0.313	3.287	0.001*	(c)
X2	-1.250	0.369	-0.324	-3.386	0.001*	
X4	-0.070	0.069	-0.096	-1.020	0.311	
X1	0.666	0.203	0.313	3.285	0.001*	(d)
X2	-1.282	0.368	-0.332	-3.483	0.001*	

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years in similar position, educational attainment
c. Predictors: gender, employment position, years in similar position
d. Predictors: gender, employment position

Question #5D:

Table 29. Full Model Multiple Regression Analysis for Question 5D

Multiple Regressions ANOVA for Question 5D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.647	5	2.329	2.820*	0.020 (a)
Residual	75.985	92	0.826		
Total	87.633	97			
Regression	11.643	4	2.911	3.562*	0.009 (b)
Residual	75.989	93	0.817		
Total	87.633	97			
Regression	10.866	3	3.622	4.435*	0.006 (c)
Residual	76.767	94	0.817		
Total	87.633	97			
Regression	8.567	2	4.284	5.147*	0.008 (d)
Residual	79.066	95	0.832		
Total	87.633	97			
Regression	7.677	1	7.677	9.218*	0.003 (e)
Residual	79.956	96	0.833		
Total	87.633	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, employment position, years of educational experience
d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Regression Summary for Question 5D

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.365	0.133	0.086	0.133	2.820
b.	0.365	0.133	0.096	0.000	0.005
c.	0.352	0.124	0.096	-0.009	0.952
d.	0.313	0.098	0.079	-0.026	2.814
e.	0.296	0.088	0.078	-0.010	1.069

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, employment position, years of educational experience

d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Table 30. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5D

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.185	0.190	0.097	0.973	0.333	(a)
X2	-1.111	0.388	-0.322	-2.865	0.005*	
X3	0.116	0.079	0.203	1.464	0.147	
X4	0.005	0.078	0.008	0.069	0.945	
X5	-0.113	0.065	-0.212	-1.748	0.084	
X1	0.184	0.188	0.097	0.976	0.332	(b)
X2	-1.103	0.367	-0.319	-3.009	0.003*	
X3	0.119	0.068	0.208	1.745	0.084	
X5	-0.113	0.064	-0.211	-1.756	0.082	
X2	-1.024	0.357	-0.296	-2.864	0.005*	(c)
X3	0.120	0.068	0.211	1.767	0.080	
X5	-0.107	0.064	-0.201	-1.678	0.097	
X2	-0.908	0.354	-0.263	-2.566	0.012*	(d)
X3	0.060	0.058	0.106	1.034	0.304	
X2	-1.022	0.337	-0.296	-3.036	0.003*	(e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, educational attainment
c. Predictors: employment position, years of educational experience, educational attainment
d. Predictors: employment position, years of educational experience
e. Predictors: employment position

Question #5E:

Table 31. Full Model Multiple Regression Analysis for Question 5E

Multiple Regressions ANOVA for Question 5E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.853	5	1.971	2.249	0.056 (a)
Residual	80.606	92	0.876		
Total	90.459	97			
Regression	9.589	4	2.397	2.757*	0.032 (b)
Residual	80.870	93	0.870		
Total	90.459	97			
Regression	8.123	3	2.708	3.091*	0.031 (c)
Residual	82.336	94	0.876		
Total	90.459	97			
Regression	6.577	2	3.289	3.725*	0.028 (d)
Residual	83.882	95	0.883		
Total	90.459	97			
Regression	5.170	1	5.170	5.820*	0.018 (e)
Residual	85.289	96	0.888		
Total	90.459	97			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, years in similar employment position, employment position
c. Predictors: educational attainment, years in similar employment position, employment position
d. Predictors: years in similar employment position, employment position
e. Predictors: employment position

Regression Summary for Question 5E

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change
a.	0.330	0.109	0.060	0.109	2.249
b.	0.326	0.106	0.068	-0.003	0.301
c.	0.300	0.090	0.061	-0.016	1.685
d.	0.270	0.073	0.053	-0.017	1.765
e.	0.239	0.057	0.047	-0.016	1.593

a. Predictors: educational attainment, gender, years in similar employment position, employment position, years of educational experience
b. Predictors: educational attainment, gender, years in similar employment position, employment position
c. Predictors: educational attainment, years in similar employment position, employment position

d. Predictors: years in similar employment position, employment position
e. Predictors: employment position

Table 32. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5E

Variable	B	Std. Error	Beta	t	Sig.
X1	0.247	0.195	0.128	1.265	0.209 (a)
X2	-1.107	0.400	-0.315	-2.770	0.007*
X3	0.045	0.081	0.077	0.549	0.584
X4	0.095	0.081	0.143	1.179	0.242
X5	-0.104	0.067	-0.193	-1.570	0.120
X1	0.253	0.195	0.131	1.298	0.197 (b)
X2	-1.170	0.381	-0.333	-3.070	0.003*
X4	0.118	0.070	0.176	1.692	0.094
X5	-0.089	0.060	-0.164	-1.482	0.142
X2	-1.059	0.373	-0.302	-2.841	0.006* (c)
X4	0.114	0.070	0.171	1.635	0.105
X5	-0.079	0.060	-0.147	-1.329	0.187
X2	-0.877	0.348	-0.250	-2.519	0.013* (d)
X4	0.083	0.066	0.125	1.262	0.210
X2	-0.839	0.348	-0.239	-2.412	0.018* (e)

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years in similar position, educational attainment
c. Predictors: employment position, years in similar position, educational attainment
d. Predictors: employment position, years in similar position
e. Predictors: employment position

School "B": Hypothesis #4 Statistical Results

Question #1A:

Table 33. Full Model Multiple Regression Analysis for Question 1A

Multiple Regressions ANOVA for Question 1A

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	63.679	5	12.736	12.435*	0.000 (a)
Residual	98.321	96	1.024		
Total	162.000	101			
Regression	63.086	4	15.772	15.466*	0.000 (b)
Residual	98.914	97	1.020		
Total	162.000	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

b. Predictors: gender, employment position, years in similar employment position, years of educational experience

Regression Summary for Question 1A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.627	0.393	0.361	0.393	12.435
b.	0.624	0.389	0.364	-0.004	0.579

a. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

b. Predictors: gender, employment position, years employed in similar position, years of educational experience

Table 34. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 1A

Variable	B	Std. Error	Beta	t	Sig.
X1	1.037	0.207	0.405	5.012	0.000* (a)
X2	-2.012	0.407	-0.404	-4.945	0.000*
X3	0.177	0.108	0.252	1.636	0.105
X4	-0.260	0.107	-0.332	-2.443	0.016*
X5	0.054	0.071	0.082	0.761	0.449
X1	1.052	0.205	0.411	5.125	0.000* (b)
X2	-2.028	0.405	-0.407	-5.002	0.000*
X3	0.214	0.097	0.304	2.209	0.030*
X4	-0.257	0.106	-0.328	-2.424	0.017*

*F is significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years of educational experience, years in similar position

Question #1B:

Table 35. Full Model Multiple Regression Analysis for Question 1B

Multiple Regressions ANOVA for Question 1B

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	55.392	5	11.078	13.034*	0.000 (a)
Residual	81.598	96	0.850		
Total	136.990	101			
Regression	54.991	4	13.748	16.263*	0.000 (b)
Residual	81.999	97	0.845		
Total	136.990	101			
Regression	52.045	3	17.348	20.014*	0.000 (c)
Residual	84.945	98	0.867		
Total	136.990	101			
Regression	51.010	2	25.505	29.367*	0.000 (d)
Residual	85.980	99	0.868		
Total	136.990	101			

F is significant at the .05 level

c. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
d. Predictors: gender, employment position, years in similar employment position, years of educational experience
e. Predictors: gender, employment position, years of educational experience
f. Predictors: gender, employment position

Regression Summary for Question 1B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.636	0.404	0.373	0.404	13.034
b.	0.634	0.401	0.377	-0.003	0.472
c.	0.616	0.380	0.361	-0.022	3.485
d.	0.610	0.372	0.360	-0.008	1.194

g. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience
h. Predictors: gender, employment position, years employed in similar position, years of educational experience
i. Predictors: gender, employment position, years of educational experience
j. Predictors: gender, employment position

Table 36. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 1B

Variable	B	Std. Error	Beta	t	Sig.	
X1	1.157	0.188	0.491	6.141	0.000*	(a)
X2	-1.534	0.371	-0.335	-4.138	0.000*	
X3	0.160	0.099	0.248	1.623	0.108	
X4	-0.183	0.097	-0.254	-1.884	0.063*	
X5	0.045	0.065	0.073	0.687	0.494	
X1	1.170	0.187	0.497	6.258	0.000*	(b)
X2	-1.547	0.369	-0.337	-4.191	0.000*	
X3	0.190	0.088	0.294	2.159	0.033*	
X4	-0.181	0.097	-0.250	-1.867	0.065	
X1	1.172	0.189	0.498	6.191	0.000*	(c)
X2	-1.591	0.373	-0.347	-4.266	0.000*	
X3	0.058	0.053	0.090	1.093	0.277	
X1	1.142	0.187	0.485	6.091	0.000*	(d)
X2	-1.677	0.365	-0.366	-4.595	0.000*	

Significant at the .05 level.

k. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

l. Predictors: gender, employment position, years of educational experience, years in similar position

m. Predictors: gender, employment position, years of educational experience

n. Predictors: gender, employment position

Question #2A:

Table 37. Full Model Multiple Regression Analysis for Question 2A

Multiple Regressions ANOVA for Question 2A

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	63.727	5	12.745	10.455*	0.000 (a)
Residual	117.028	96	1.219		
Total	180.755	10			
Regression	62.838	4	15.709	12.923*	0.000 (b)
Residual	117.917	97	1.216		
Total	180.755	101			
Regression	60.244	3	20.081	16.330*	0.000 (c)
Residual	120.511	98	1.230		
Total	180.755	101			
Regression	58.223	2	29.111	23.521*	0.000 (d)
Residual	122.532	99	1.238		
Total	180.755	101			

*F is significant at the .05 level

o. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
p. Predictors: educational attainment, gender, employment position, years in similar employment position
q. Predictors: educational attainment, gender, employment position
r. Predictors: gender, employment position

Regression Summary for Question 2A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.594	0.353	0.319	0.353	10.455
b.	0.590	0.348	0.321	-0.005	0.730
c.	0.577	0.333	0.313	-0.014	2.134
d.	0.568	0.322	0.308	-0.011	1.644

a. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience
b. Predictors: educational attainment, gender, employment position, years employed in similar position
c. Predictors: educational attainment, gender, employment position
d. Predictors: gender, employment position

Table 38. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2A

Variable	B	Std. Error	Beta	t	Sig.
X1	1.271	0.226	0.470	5.633	0.000* (a)
X2	-1.486	0.444	-0.282	-3.349	0.001*
X3	0.101	0.118	0.136	0.854	0.395
X4	-0.190	0.116	-0.230	-1.637	0.105
X5	0.101	0.078	0.144	1.299	0.197
X1	1.248	0.224	0.462	5.579	0.000* (b)
X2	-1.537	0.439	-0.292	-3.501	0.001*
X4	-0.120	0.082	-0.145	-1.461	0.147
X5	0.131	0.070	0.187	1.877	0.063*
X1	1.291	0.223	0.477	5.785	0.000* (c)
X2	-1.511	0.441	-0.287	-3.423	0.001*
X5	0.075	0.059	0.107	1.282	0.203
X1	1.285	0.224	0.475	5.742	0.000* (d)
X2	-1.611	0.436	-0.306	-3.698	0.000*

Significant at the .05 level.

e. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
f. Predictors: gender, employment position, years in similar position, educational attainment
g. Predictors: gender, employment position, educational attainment
h. Predictors: gender, employment position

Question #2B:

Table 39. Full Model Multiple Regression Analysis for Question 2B

Multiple Regressions ANOVA for Question 2B

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	81.569	5	16.314	12.601*	0.000 (a)
Residual	124.284	96	1.295		
Total	205.853	101			
Regression	80.917	4	20.229	15.706*	0.000 (b)
Residual	124.936	97	1.288		
Total	205.853	101			
Regression	78.564	3	26.188	20.162*	0.000
Residual	127.289	98	1.299		
Total	205.853	101			
Regression	73.514	2	36.757	27.497*	0.000
Residual	132.339	99	1.337		
Total	205.853	101			

*F is significant at the .05 level

i. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
j. Predictors: gender, employment position, years of educational experience, years in similar position
k. Predictors: gender, employment position, years in similar position
l. Predictors: gender, employment position

Regression Summary for Question 2B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.629	0.396	0.365	0.396	12.601
b	0.627	0.393	0.368	-0.003	0.503
c	0.618	0.382	0.363	-0.011	1.827
d	0.598	0.357	0.344	-0.025	3.889

m. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
n. Predictors: gender, employment position, years of educational experience, years in similar position
o. Predictors: gender, employment position, years in similar position
p. Predictors: gender, employment position

Table 40. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2B

Variable	B	Std. Error	Beta	t	Sig.	
X1	1.521	0.233	0.527	6.542	0.000*	(a)
X2	-1.367	0.457	-0.243	-2.988	0.004*	
X3	0.109	0.122	0.137	0.892	0.375	
X4	-0.273	0.120	-0.309	-2.281	0.025*	
X5	0.057	0.080	0.076	0.710	0.480	
X1	1.538	0.231	0.533	6.664	0.000*	(b)
X2	-1.384	0.456	-0.246	-3.037	0.003*	
X3	0.147	0.109	0.186	1.352	0.180	
X4	-0.270	0.119	-0.306	-2.264	0.026*	
X1	1.512	0.231	0.524	6.548	0.000*	(c)
X2	-1.492	0.450	-0.266	-3.314	0.001*	
X4	-0.141	0.071	-0.159	-1.972	0.051	
X1	1.567	0.233	0.543	6.737	0.000*	(d)
X2	-1.375	0.453	-0.245	-3.036	0.003*	

Significant at the .05 level.

q. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

r. Predictors: gender, employment position, years of educational experience, years in similar position

s. Predictors: gender, employment position, years in similar position

t. Predictors: gender, employment position

Question #2C:

Table 41. Full Model Multiple Regression Analysis for Question 2C

Multiple Regressions ANOVA for Question 2C

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	66.389	5	13.278	11.984*	0.000 (a)
Residual	106.366	96	1.108		
Total	172.755	101			
Regression	66.372	4	16.593	15.129*	0.000 (b)
Residual	106.383	97	1.097		
Total	172.755	101			
Regression	62.867	3	20.956	18.689*	0.000 (c)
Residual	109.888	98	1.121		
Total	172.755	101			
Regression	60.834	2	30.417	26.905*	0.000 (d)
Residual	111.921	99	1.131		
Total	172.755	101			

*F is significant at the .05 level

u. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience
v. Predictors: educational attainment, gender, employment position, years in similar employment position
w. Predictors: gender, employment position, years in similar employment position
x. Predictors: gender, employment position

Regression Summary for Question 2C

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.620	0.384	0.352	0.384	11.984
b.	0.620	0.384	0.359	0.000	0.016
c.	0.603	0.364	0.344	-0.020	3.196
d.	0.593	0.352	0.339	-0.012	1.814

y. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience
z. Predictors: educational attainment, gender, employment position, years employed in similar position
aa. Predictors: gender, employment position, years employed in similar position
bb. Predictors: gender, employment position

Table 42. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2C

Variable	B	Std. Error	Beta	t	Sig.	
X1	1.274	0.215	0.482	5.920	0.000*	(a)
X2	-1.584	0.423	-0.308	-3.744	0.000*	
X3	0.014	0.113	0.019	0.125	0.901	
X4	-0.175	0.111	-0.216	-1.582	0.117	
X5	0.114	0.074	0.167	1.537	0.127	
X1	1.270	0.213	0.480	5.977	0.000*	(b)
X2	-1.591	0.417	-0.309	-3.815	0.000*	
X4	-0.165	0.078	-0.204	-2.116	0.037*	
X5	0.118	0.066	0.173	1.788	0.077*	
X1	1.291	0.215	0.488	6.015	0.000*	(c)
X2	-1.685	0.418	-0.327	-4.028	0.000*	
X4	-0.089	0.066	-0.110	-1.347	0.181	
X1	1.326	0.214	0.501	6.197	0.000*	(d)
X2	-1.611	0.416	-0.313	-3.868	0.000*	

Significant at the .05 level.

cc. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

dd. Predictors: gender, employment position, years in similar position, educational attainment

ee. Predictors: gender, employment position, years in similar position

ff. Predictors: gender, employment position

Question #3A:

Table 43. Full Model Multiple Regression Analysis for Question 3A

Multiple Regressions ANOVA for Question 3A

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	32.506	5	6.501	7.416*	0.000 (a)
Residual	84.161	96	0.877		
Total	116.667	101			
Regression	32.451	4	8.113	9.345*	0.000 (b)
Residual	84.215	97	0.868		
Total	116.667	101			
Regression	32.044	3	10.681	12.370*	0.000 (c)
Residual	84.623	98	0.864		
Total	116.667	101			
Regression	31.120	2	15.560	18.007*	0.000 (d)
Residual	85.547	99	0.864		
Total	116.667	101			

*F is significant at the .05 level

gg. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

hh. Predictors: educational attainment, gender, employment position, years of educational experience

ii. Predictors: educational attainment, gender, employment position

jj. Predictors: gender, employment position

Regression Summary for Question 3A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.528	0.279	0.241	0.279	7.416
b.	0.527	0.278	0.248	0.000	0.062
c.	0.524	0.275	0.252	-0.003	0.470
d.	0.516	0.267	0.252	-0.008	1.069

kk. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

ll. Predictors: educational attainment, gender, employment position, years of educational experience

mm. Predictors: educational attainment, gender, employment position

nn. Predictors: gender, employment position

Table 44. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3A

Variable	B	Std. Error	Beta	t	Sig.
X1	0.661	0.191	0.304	3.452	0.001* (a)
X2	-1.684	0.376	-0.398	-4.474	0.000*
X3	-0.031	0.100	-0.052	-0.309	0.758
X4	-0.024	0.099	-0.037	-0.248	0.804
X5	0.081	0.066	0.144	1.229	0.222
X1	0.661	0.190	0.304	3.471	0.001* (b)
X2	-1.690	0.374	-0.400	-4.522	0.000*
X3	-0.049	0.071	-0.081	-0.686	0.495
X5	0.080	0.066	0.143	1.227	0.223
X1	0.684	0.187	0.315	3.657	0.000* (c)
X2	-1.658	0.370	-0.392	-4.484	0.000*
X5	0.051	0.049	0.090	1.034	0.304
X1	0.680	0.187	0.313	3.635	0.000* (d)
X2	-1.726	0.364	-0.408	-4.741	0.000*

Significant at the .05 level.

oo. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

pp. Predictors: gender, employment position, years of educational experience, educational attainment

qq. Predictors: gender, employment position, educational attainment

rr. Predictors: gender, employment position

Question #3B:

Table 45. Full Model Multiple Regression Analysis for Question 3B

Multiple Regressions ANOVA for Question 3B

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	36.852	5	7.370	7.571*	0.000 (a)
Residual	93.461	96	0.974		
Total	130.314	101			
Regression	36.797	4	9.199	9.542*	0.000 (b)
Residual	93.517	97	0.966		
Total	130.314	101			
Regression	36.665	3	12.215	12.780*	0.000 (c)
Residual	93.669	98	0.956		
Total	130.314	101			
Regression	36.532	2	18.266	19.283*	0.000 (d)
Residual	93.781	99	0.947		
Total	130.314	101			

*F is significant at the .05 level

ss. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

tt. Predictors: gender, employment position, years in similar employment position, years of educational experience

uu. Predictors: gender, employment position, years in similar employment position

vv. Predictors: gender, employment position

Regression Summary for Question 3B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.532	0.283	0.245	0.283	7.571
b.	0.531	0.282	0.253	0.000	0.057
c.	0.530	0.281	0.259	-0.001	0.158
d.	0.529	0.280	0.266	-0.001	0.118

ww. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

xx. Predictors: gender, employment position, years employed in similar position, years of educational experience

yy. Predictors: gender, employment position, years employed in similar position

zz. Predictors: gender, employment position

Table 46. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3B

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.936	0.202	0.408	4.664	0.000*	(a)
X2	-1.465	0.397	-0.327	-3.688	0.000*	
X3	0.026	0.106	0.042	0.248	0.805	
X4	-0.055	0.104	-0.078	-0.528	0.599	
X5	0.017	0.070	0.028	0.238	0.812	
X1	0.941	0.200	0.410	4.714	0.000*	(b)
X2	-1.468	0.394	-0.328	-3.723	0.000*	
X3	0.037	0.094	0.059	0.397	0.692	
X4	-0.054	0.103	-0.077	-0.523	0.602	
X1	0.935	0.198	0.407	4.718	0.000*	(c)
X2	-1.495	0.386	-0.334	-3.871	0.000*	
X4	-0.021	0.061	-0.030	-0.343	0.732	
X1	0.943	0.196	0.411	4.815	0.000*	(d)
X2	-1.478	0.381	-0.331	-3.877	0.000*	

Significant at the .05 level.

aaa. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

bbb. Predictors: gender, employment position, years of educational experience, years in similar position

ccc. Predictors: gender, employment position, years in similar position

ddd. Predictors: gender, employment position

Question #3C:

Table 47. Full Model Multiple Regression Analysis for Question 3C

Multiple Regressions ANOVA for Question 3C

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	41.480	5	8.296	8.659*	0.000 (a)
Residual	91.980	96	0.958		
Total	133.461	101			
Regression	41.422	4	10.356	10.914*	0.000 (b)
Residual	92.039	97	0.949		
Total	133.461	101			
Regression	38.261	3	12.754	13.129*	0.000 (c)
Residual	95.199	98	0.971		
Total	133.461	101			
Regression	37.258	2	18.629	19.171*	0.000 (d)
Residual	96.203	99	0.972		
Total	133.461	101			

*F is significant at the .05 level

eee. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

fff. Predictors: educational attainment, gender, employment position, years in similar employment position

ggg. Predictors: gender, employment position, years in similar employment position

hhh. Predictors: gender, employment position

Regression Summary for Question 3C

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.557	0.311	0.275	0.311	8.659
b.	0.557	0.310	0.282	0.000	0.061
c.	0.535	0.287	0.265	-0.024	3.331
d.	0.528	0.279	0.265	-0.008	1.033

iii. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

jjj. Predictors: educational attainment, gender, employment position, years employed in similar position

kkk. Predictors: gender, employment position, years employed in similar position

lll. Predictors: gender, employment position

Table 48. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3C

Variable	B	Std. Error	Beta	t	Sig.
X1	1.001	0.200	0.431	5.004	0.000* (a)
X2	-1.205	0.394	-0.266	-3.062	0.003*
X3	0.026	0.105	0.040	0.246	0.806
X4	-0.153	0.103	-0.215	-1.485	0.141
X5	0.105	0.069	0.174	1.517	0.132
X1	0.995	0.198	0.428	5.035	0.000* (b)
X2	-1.218	0.388	-0.269	-3.139	0.002*
X4	-0.135	0.073	-0.190	-1.857	0.066
X5	0.112	0.061	0.187	1.825	0.071
X1	1.015	0.200	0.437	5.081	0.000* (c)
X2	-1.307	0.389	-0.289	-3.357	0.001*
X4	-0.063	0.062	-0.088	-1.016	0.312
X1	1.039	0.198	0.447	5.240	0.000* (d)
X2	-1.255	0.386	-0.277	-3.250	0.002*

Significant at the .05 level.

mmm. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

nnn. Predictors: gender, employment position, years in similar position, educational attainment

ooo. Predictors: gender, employment position, years in similar position

ppp. Predictors: gender, employment position

Question #3D:

Table 49. Full Model Multiple Regression Analysis for Question 3D

Multiple Regressions ANOVA for Question 3D

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	35.846	5	7.169	6.137*	0.000 (a)
Residual	112.154	96	1.168		
Total	148.000	101			
Regression	35.564	4	8.891	7.670*	0.000 (b)
Residual	112.436	97	1.159		
Total	148.000	101			
Regression	34.995	3	11.665	10.116*	0.000 (c)
Residual	113.005	98	1.153		
Total	148.000	101			
Regression	34.615	2	17.307	15.112*	0.000 (d)
Residual	113.385	99	1.145		
Total	148.000	101			

*F is significant at the .05 level

qqq. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

rrr. Predictors: educational attainment, gender, employment position, years in similar employment position

sss. Predictors: educational attainment, gender, employment position

ttt. Predictors: gender, employment position

Regression Summary for Question 3D

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.492	0.242	0.203	0.242	6.137
b.	0.490	0.240	0.209	-0.002	0.241
c.	0.486	0.236	0.213	-0.004	0.491
d.	0.484	0.234	0.218	-0.003	0.330

uuu. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

vvv. Predictors: educational attainment, gender, employment position, years employed in similar position

www. Predictors: educational attainment, gender, employment position

xxx. Predictors: gender, employment position

Table 50. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3D

Variable	B	Std. Error	Beta	t	Sig.	
X1	1.043	0.221	0.426	4.720	0.000*	(a)
X2	-0.995	0.435	-0.209	-2.289	0.024*	
X3	0.057	0.116	0.085	0.491	0.625	
X4	-0.096	0.114	-0.128	-0.841	0.402	
X5	0.042	0.076	0.066	0.551	0.583	
X1	1.030	0.219	0.421	4.713	0.000*	(b)
X2	-1.024	0.429	-0.215	-2.387	0.019*	
X4	-0.056	0.080	-0.075	-0.701	0.485	
X5	0.059	0.068	0.093	0.862	0.391	
X1	1.050	0.216	0.429	4.858	0.000*	(c)
X2	-1.011	0.427	-0.212	-2.366	0.020*	
X5	0.033	0.057	0.052	0.574	0.567	
X1	1.047	0.215	0.428	4.864	0.000*	(d)
X2	-1.055	0.419	-0.221	-2.516	0.013*	

Significant at the .05 level.

yyy. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

zzz. Predictors: gender, employment position, years in similar position, educational attainment

aaaa. Predictors: gender, employment position, educational attainment

Predictors: gender, employment position

Question #3E:

Table 51. Full Model Multiple Regression Analysis for Question 3E

Multiple Regressions ANOVA for Question 3E

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	56.005	5	11.201	12.080*	0.000 (a)
Residual	89.014	96	0.927		
Total	145.020	101			
Regression	55.741	4	13.935	15.140*	0.000 (b)
Residual	89.279	97	0.920		
Total	145.020	101			
Regression	53.565	3	17.855	19.133*	0.000 (c)
Residual	91.454	98	0.933		
Total	145.020	101			
Regression	50.684	2	25.342	26.595*	0.000 (d)
Residual	94.336	99	0.953		
Total	145.020	101			

*F is significant at the .05 level

bbbb. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

cccc. Predictors: educational attainment, gender, employment position, years in similar employment position

dddd. Predictors: educational attainment, gender, employment position

eeee. Predictors: gender, employment position

Regression Summary for Question 3E

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.621	0.386	0.354	0.386	12.080
b.	0.620	0.384	0.359	-0.002	0.285
c.	0.608	0.369	0.350	-0.015	2.364
d.	0.591	0.349	0.336	-0.020	3.088

ffff. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

gggg. Predictors: educational attainment, gender, employment position, years employed in similar position

hhhh. Predictors: educational attainment, gender, employment position

iiii. Predictors: gender, employment position

Table 52. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3E

Variable	B	Std. Error	Beta	t	Sig.	
X1	1.168	0.197	0.482	5.934	0.000*	(a)
X2	-1.396	0.387	-0.296	-3.606	0.000*	
X3	-0.055	0.103	-0.083	-0.534	0.595	
X4	-0.072	0.101	-0.097	-0.710	0.479	
X5	0.157	0.068	0.250	2.309	0.023*	
X1	1.180	0.195	0.487	6.061	0.000*	(b)
X2	-1.368	0.382	-0.290	-3.580	0.001*	
X4	-0.110	0.072	-0.148	-1.537	0.127	
X5	0.141	0.061	0.224	2.322	0.022*	
X1	1.219	0.194	0.503	6.271	0.000*	(c)
X2	-1.344	0.384	-0.285	-3.495	0.001*	
X5	0.090	0.051	0.143	1.757	0.082	
X1	1.212	0.196	0.500	6.172	0.000*	(d)
X2	-1.464	0.382	-0.310	-3.829	0.000*	

Significant at the .05 level.

jjjj. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

kkkk. Predictors: gender, employment position, years in similar position, educational attainment

llll. Predictors: gender, employment position, educational attainment

mmmm. Predictors: gender, employment position

Question #4A:

Table 53. Full Model Multiple Regression Analysis for Question 4A

Multiple Regressions ANOVA for Question 4A

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	11.208	5	2.242	3.493*	0.006 (a)
Residual	61.615	96	0.642		
Total	72.824	101			
Regression	10.998	4	2.749	4.314*	0.003 (b)
Residual	61.826	97	0.637		
Total	72.824	101			
Regression	10.666	3	3.555	5.606*	0.001 (c)
Residual	62.157	98	0.634		
Total	72.824	101			
Regression	10.257	2	5.129	8.115*	0.001 (d)
Residual	62.566	99	0.632		
Total	72.824	101			

*F is significant at the .05 level

nnnn. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

oooo. Predictors: gender, employment position, years in similar employment position, years of educational experience

pppp. Predictors: gender, employment position, years in similar employment position

qqqq. Predictors: gender, employment position

Regression Summary for Question 4A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.392	0.154	0.110	0.154	3.493
b.	0.389	0.151	0.116	-0.003	0.328
c.	0.383	0.146	0.120	-0.005	0.520
d.	0.375	0.141	0.123	-0.006	0.645

rrrr. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

ssss. Predictors: gender, employment position, years employed in similar position, years of educational experience

tttt. Predictors: gender, employment position, years employed in similar position

uuuu. Predictors: gender, employment position

Table 54. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 4A

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.420	0.164	0.245	2.567	0.012*	(a)
X2	-0.951	0.322	-0.285	-2.953	0.004*	
X3	0.077	0.086	0.163	0.898	0.371	
X4	-0.087	0.084	-0.166	-1.033	0.304	
X5	-0.032	0.056	-0.073	-0.573	0.568	
X1	0.411	0.162	0.239	2.531	0.013*	(b)
X2	-0.942	0.321	-0.282	-2.938	0.004*	
X3	0.055	0.077	0.117	0.721	0.473	
X4	-0.089	0.084	-0.169	-1.056	0.294	
X1	0.401	0.161	0.234	2.486	0.015*	(c)
X2	-0.982	0.315	-0.294	-3.122	0.002*	
X4	-0.040	0.050	-0.076	-0.803	0.424	
X1	0.417	0.160	0.243	2.607	0.011*	(d)
X2	-0.949	0.311	-0.284	-3.048	0.003*	

Significant at the .05 level.

vvvv. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

wwww. Predictors: gender, employment position, years of educational experience, years in similar position

xxxx. Predictors: gender, employment position, years in similar position

yyyy. Predictors: gender, employment position

Question #4B:

Table 55. Full Model Multiple Regression Analysis for Question 4B

Multiple Regressions ANOVA for Question 4B

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	11.875	5	2.375	1.904*	0.101 (a)
Residual	119.772	96	1.248		
Total	131.647	101			
Regression	11.252	4	2.813	2.266*	0.068 (b)
Residual	120.395	97	1.241		
Total	131.647	101			
Regression	10.793	3	3.598	2.917*	0.038 (c)
Residual	120.854	98	1.233		
Total	131.647	101			
Regression	9.192	2	4.596	3.716*	0.028 (d)
Residual	122.455	99	1.237		
Total	131.647	101			
Regression	4.790	1	4.790	3.776*	0.055 (e)
Residual	126.857	100	1.269		
Total	131.647	101			

*F is significant at the .05 level

zzzz. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

aaaaa. Predictors: gender, employment position, years in similar employment position, years of educational experience

bbbbb. Predictors: gender, employment position, years in similar employment position

ccccc. Predictors: gender, employment position

ddddd. Predictors: employment position

Regression Summary for Question 4B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.300	0.090	0.043	0.090	1.904
b.	0.292	0.085	0.048	-0.005	0.499
c.	0.286	0.082	0.054	-0.003	0.370
d.	0.264	0.070	0.051	-0.012	1.298
e.	0.191	0.036	0.027	-0.033	3.559

eeeee. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

fffff. Predictors: gender, employment position, years employed in similar position, years of educational experience

ggggg. Predictors: gender, employment position, years employed in similar position

hhhhh. Predictors: gender, employment position

iiiii. Predictors: employment position

Table 56. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 4B

Variable	B	Std. Error	Beta	t	Sig.
X1	0.419	0.228	0.181	1.834	0.070 (a)
X2	-0.884	0.449	-0.197	-1.969	0.052
X3	0.103	0.120	0.162	0.857	0.393
X4	-0.134	0.118	-0.189	-1.137	0.258
X5	-0.056	0.079	-0.093	-0.706	0.482
X1	0.403	0.227	0.174	1.777	0.079 (b)
X2	-0.868	0.447	-0.193	-1.940	0.055
X3	0.065	0.107	0.103	0.608	0.544
X4	-0.136	0.117	-0.193	-1.165	0.247
X1	0.391	0.225	0.170	1.739	0.085 (c)
X2	-0.916	0.439	-0.204	-2.087	0.039*
X4	-0.079	0.069	-0.112	-1.139	0.257
X1	0.422	0.224	0.183	1.887	0.062 (d)
X2	-0.850	0.436	-0.189	-1.950	0.054
X2	-0.857	0.441	-0.191	-1.943	0.055 (e)

Significant at the .05 level.

jjjjj. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

kkkkk. Predictors: gender, employment position, years of educational experience, years in similar position

lllll. Predictors: gender, employment position, years in similar position

mmmmm. Predictors: gender, employment position

nnnnn. Predictors: employment position

Question #5A:

Table 57. Full Model Multiple Regression Analysis for Question 5A

Multiple Regressions ANOVA for Question 5A

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	27.777	5	5.555	4.275*	0.001 (a)
Residual	124.742	96	1.299		
Total	152.520	101			
Regression	27.746	4	6.936	5.392*	0.001 (b)
Residual	124.774	97	1.286		
Total	152.520	101			
Regression	27.624	3	9.208	7.225*	0.000 (c)
Residual	124.896	98	1.274		
Total	152.520	101			
Regression	26.422	2	13.211	10.372*	0.000 (d)
Residual	126.097	99	1.274		
Total	152.520	101			

*F is significant at the .05 level

ooooo. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

ppppp. Predictors: gender, employment position, years in similar employment position, years of educational experience

qqqqq. Predictors: gender, employment position, years of educational experience

rrrrr. Predictors: gender, employment position

Regression Summary for Question 5A

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.427	0.182	0.140	0.182	4.275
b.	0.427	0.182	0.148	0.000	0.024
c.	0.426	0.181	0.156	-0.001	0.095
d.	0.416	0.173	0.157	-0.008	0.943

sssss. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

ttttt. Predictors: gender, employment position, years employed in similar position, years of educational experience

uuuuu. Predictors: gender, employment position, years of educational experience

vvvvv. Predictors: gender, employment position

Table 58. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5A

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.845	0.233	0.340	3.626	0.000*	(a)
X2	-1.161	0.458	-0.240	-2.534	0.013*	
X3	0.044	0.122	0.065	0.361	0.719	
X4	0.037	0.120	0.049	0.311	0.756	
X5	-0.013	0.080	-0.019	-0.156	0.876	
X1	0.841	0.231	0.339	3.647	0.000*	(b)
X2	-1.158	0.455	-0.239	-2.542	0.013*	
X3	0.036	0.109	0.052	0.328	0.744	
X4	0.037	0.119	0.048	0.308	0.759	
X1	0.841	0.230	0.338	3.662	0.000*	(c)
X2	-1.149	0.452	-0.237	-2.540	0.013*	
X3	0.063	0.064	0.092	0.971	0.334	
X1	0.808	0.227	0.325	3.560	0.001*	(d)
X2	-1.241	0.442	-0.257	-2.808	0.006*	

Significant at the .05 level.

wwwww. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

xxxxx. Predictors: gender, employment position, years of educational experience, years in similar position

yyyyy. Predictors: gender, employment position, years of educational experience

zzzzz. Predictors: gender, employment position

Question #5B:

Table 59. Full Model Multiple Regression Analysis for Question 5B

Multiple Regressions ANOVA for Question 5B

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	23.078	5	4.616	5.023*	0.000 (a)
Residual	88.216	96	0.919		
Total	111.294	101			
Regression	22.919	4	5.730	6.289*	0.000 (b)
Residual	88.375	97	0.911		
Total	111.294	101			
Regression	21.704	3	7.235	7.914*	0.000 (c)
Residual	89.590	98	0.914		
Total	111.294	101			

*F is significant at the .05 level

aaaaaa. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

bbbbbb. Predictors: educational attainment, gender, employment position, years of educational experience

cccccc. Predictors: gender, employment position, years of educational experience

Regression Summary for Question 5B

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.455	0.207	0.166	0.207	5.023
b.	0.454	0.206	0.173	-0.001	0.173
c.	0.442	0.195	0.170	-0.011	1.333

dddddd. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

eeeeee. Predictors: educational attainment, gender, employment position, years of educational experience

ffffff. Predictors: gender, employment position, years of educational experience

Table 60. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5B

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.400	0.196	0.188	2.039	0.044*	(a)
X2	-1.450	0.385	-0.351	-3.761	0.000*	
X3	-0.149	0.103	-0.255	-1.449	0.150	
X4	-0.042	0.101	-0.065	-0.416	0.678	
X5	0.079	0.068	0.143	1.163	0.248	
X1	0.400	0.195	0.189	2.052	0.043*	(b)
X2	-1.460	0.383	-0.353	-3.814	0.000*	
X3	-0.179	0.073	-0.307	-2.467	0.015*	
X5	0.078	0.067	0.141	1.155	0.251	
X1	0.423	0.194	0.199	2.175	0.032*	(c)
X2	-1.482	0.383	-0.359	-3.869	0.000*	
X3	-0.124	0.055	-0.212	-2.266	0.026*	

Significant at the .05 level.

ggggggg. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

hhhhhh. Predictors: gender, employment position, years of educational experience, educational attainment

Predictors: gender, employment position, years of educational experience

Question #5C:

Table 61. Full Model Multiple Regression Analysis for Question 5C

Multiple Regressions ANOVA for Question 5C

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	43.808	5	8.762	6.251*	0.000 (a)
Residual	134.545	96	1.402		
Total	178.353	101			
Regression	43.774	4	10.943	7.888*	0.000 (b)
Residual	134.579	97	1.387		
Total	178.353	101			
Regression	43.301	3	14.434	10.474*	0.000 (c)
Residual	135.051	98	1.378		
Total	178.353	101			
Regression	41.615	2	20.807	15.065*	0.000 (d)
Residual	136.738	99	1.381		
Total	178.353	101			

*F is significant at the .05 level

iiiiii. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

jjjjjj. Predictors: educational attainment, gender, employment position, years in similar employment position

kkkkkk. Predictors: gender, employment position, years in similar employment position

llllll. Predictors: gender, employment position

Regression Summary for Question 5C

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.496	0.246	0.206	0.246	6.251
b.	0.495	0.245	0.214	0.000	0.024
c.	0.493	0.243	0.220	-0.003	0.340
d.	0.483	0.233	0.218	-0.009	1.224

mmmmmm. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

nnnnnn. Predictors: educational attainment, gender, employment position, years employed in similar position

oooooo. Predictors: gender, employment position, years employed in similar position

pppppp. Predictors: gender, employment position

Table 62. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5C

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.953	0.242	0.355	3.937	0.000*	(a)
X2	-1.746	0.476	-0.334	-3.670	0.000*	
X3	-0.020	0.127	-0.027	-0.156	0.877	
X4	0.123	0.125	0.149	0.987	0.326	
X5	-0.038	0.083	-0.054	-0.451	0.653	
X1	0.957	0.239	0.356	4.003	0.000*	(b)
X2	-1.736	0.469	-0.332	-3.701	0.00*	
X4	0.109	0.088	0.133	1.242	0.217	
X5	-0.043	0.074	-0.062	-0.583	0.561	
X1	0.949	0.238	0.353	3.991	0.000*	(c)
X2	-1.702	0.464	-0.325	-3.669	0.000*	
X4	0.081	0.073	0.099	1.106	0.271	
X1	0.918	0.236	0.342	3.881	0.000*	(d)
X2	-1.770	0.460	-0.338	-3.845	0.000*	

Significant at the .05 level.

qqqqqq. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

rrrrrr. Predictors: gender, employment position, years in similar position, educational attainment

ssssss. Predictors: gender, employment position, years in similar position

tttttt. Predictors: gender, employment position

Question #5D:

Table 63. Full Model Multiple Regression Analysis for Question 5D

Multiple Regressions ANOVA for Question 5D

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	31.921	5	6.384	5.666*	0.000 (a)
Residual	108.158	96	1.127		
Total	140.078	101			
Regression	31.277	4	7.819	6.971*	0.000 (b)
Residual	108.802	97	1.122		
Total	140.078	101			
Regression	29.153	3	9.718	8.585*	0.000 (c)
Residual	110.925	98	1.132		
Total	140.078	101			
Regression	25.696	2	12.848	11.120*	0.000 (d)
Residual	114.382	99	1.155		
Total	140.078	101			

*F is significant at the .05 level

uuuuuu. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

vvvvvv. Predictors: educational attainment, gender, employment position, years of educational experience

wwwwww. Predictors: educational attainment, gender, employment position

xxxxxx. Predictors: gender, employment position

Regression Summary for Question 5D

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.477	0.228	0.188	0.228	5.666
b.	0.473	0.223	0.191	-0.005	0.571
c.	0.456	0.208	0.184	-0.015	1.893
d.	0.428	0.183	0.167	-0.025	3.054

yyyyyy. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

zzzzzz. Predictors: educational attainment, gender, employment position, years of educational experience

aaaaaaa. Predictors: educational attainment, gender, employment position

bbbbbbb. Predictors: gender, employment position

Table 64. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5D

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.444	0.217	0.187	2.047	0.043*	(a)
X2	-1.699	0.427	-0.366	-3.981	0.000*	
X3	-0.171	0.114	-0.262	-1.507	0.135	
X4	0.084	0.112	0.116	0.756	0.452	
X5	0.164	0.075	0.267	2.196	0.031*	
X1	0.443	0.216	0.186	2.045	0.044*	(b)
X2	-1.677	0.425	-0.362	-3.948	0.000*	
X3	-0.111	0.080	-0.169	-1.376	0.172	
X5	0.166	0.075	0.270	2.227	0.028*	
X1	0.495	0.214	0.208	2.310	0.023*	(c)
X2	-1.604	0.423	-0.346	-3.789	0.000*	
X5	0.098	0.056	0.160	1.748	0.084	
X1	0.487	0.216	0.205	2.252	0.027*	(d)
X2	-1.736	0.421	-0.374	-4.123	0.000*	

Significant at the .05 level.

ccccccc. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

ddddddd. Predictors: gender, employment position, years of educational experience, educational attainment

eeeeeee. Predictors: gender, employment position, educational attainment

fffffff. Predictors: gender, employment position

Question #5E:

Table 65. Full Model Multiple Regression Analysis for Question 5E

Multiple Regressions ANOVA for Question 5E

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	41.416	5	8.283	6.495*	0.000 (a)
Residual	122.427	96	1.275		
Total	163.843	101			
Regression	41.394	4	10.349	8.198*	0.000 (b)
Residual	122.449	97	1.262		
Total	163.843	101			
Regression	41.212	3	13.737	10.978*	0.000 (c)
Residual	122.631	98	1.251		
Total	163.843	101			
Regression	36.415	2	18.208	14.146*	0.000 (d)
Residual	127.428	99	1.287		
Total	163.843	101			

*F is significant at the .05 level

gggggggg. Predictors: educational attainment, gender, employment position, years in similar employment position, years of educational experience

hhhhhhh. Predictors: educational attainment, gender, employment position, years in similar employment position

iiiiiii. Predictors: educational attainment, gender, employment position

jjjjjjj. Predictors: gender, employment position

Regression Summary for Question 5E

Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F change
a.	0.503	0.253	0.214	0.253	6.495
b.	0.503	0.253	0.222	0.000	0.018
c.	0.502	0.252	0.229	-0.001	0.144
d.	0.471	0.222	0.207	-0.029	3.833

kkkkkkk. Predictors: educational attainment, gender, employment position, years employed in similar position, years of educational experience

lllllll. Predictors: educational attainment, gender, employment position, years employed in similar position

mmmmmmm. Predictors: educational attainment, gender, employment position

nnnnnnn. Predictors: gender, employment position

Table 66. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5E

Variable	B	Std. Error	Beta	t	Sig.
X1	0.822	0.231	0.319	3.560	0.001* (a)
X2	-1.575	0.454	-0.314	-3.469	0.001*
X3	-0.016	0.121	-0.023	-0.132	0.895
X4	-0.021	0.119	-0.026	-0.175	0.862
X5	0.135	0.080	0.203	1.699	0.092
X1	0.825	0.228	0.320	3.619	0.000* (b)
X2	-1.567	0.448	-0.313	-3.501	0.001*
X4	-0.032	0.084	-0.040	-0.380	0.705
X5	0.130	0.071	0.196	1.841	0.069
X1	0.837	0.225	0.325	3.716	0.000* (c)
X2	-1.560	0.445	-0.311	-3.503	0.001*
X5	0.116	0.059	0.174	1.958	0.053
X1	0.828	0.228	0.321	3.625	0.000* (d)
X2	-1.714	0.444	-0.342	-3.858	0.000*

Significant at the .05 level.

ooooooo. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

ppppppp. Predictors: gender, employment position, years in similar position, educational attainment

qqqqqqq. Predictors: gender, employment position, educational attainment

rrrrrrr. Predictors: gender, employment position

School "C": Hypothesis #4 Statistical Results

Question #1A:

Table 67. Full Model Multiple Regression Analysis for Question 1A

Multiple Regressions ANOVA for Question 1A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	50.885	5	10.177	18.408*	0.000 (a)
Residual	53.075	96	0.553		
Total	103.961	101			
Regression	50.809	4	12.702	23.181*	0.000 (b)
Residual	53.151	97	0.548		
Total	103.961	101			
Regression	49.655	3	16.552	29.869*	0.000 (c)
Residual	54.306	98	0.554		
Total	103.961	101			

*F is significant at the .05 level

sssssss. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position

ttttttt. Predictors: gender, employment position, years of educational experience, years in similar employment position

uuuuuuu. Predictors: gender, employment position, years in similar employment position

Regression Summary for Question 5B

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.700	0.489	0.463	0.489	18.408
b.	0.699	0.489	0.468	-0.001	0.138
c.	0.691	0.478	0.462	-0.011	2.107

vvvvvvv. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position

wwwwwww. Predictors: gender, employment position, years of educational experience, years in similar employment position

xxxxxxx. Predictors: gender, employment position, years in similar employment position

Table 68. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 1A

Variable	B	Std. Error	Beta	t	Sig.
X1	1.028	0.157	0.497	6.527	0.000* (a)
X2	-1.695	0.340	-0.452	-4.984	0.000*
X3	0.138	0.095	0.270	1.461	0.147
X4	-0.207	0.112	-0.371	-1.855	0.067
X5	-0.025	0.067	-0.043	-0.371	0.711
X1	1.025	0.157	0.496	6.546	0.000* (b)
X2	-1.626	0.283	-0.433	-5.737	0.000*
X3	0.137	0.094	0.266	1.452	0.150
X4	-0.223	0.103	-0.399	-2.173	0.032
X1	0.990	0.156	0.479	6.364	0.000* (c)
X2	-1.696	0.281	-0.452	-6.034	0.000*
X4	-0.087	0.043	-0.156	-2.051	0.043*

* Significant at the .05 level.

yyyyyyy. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

zzzzzzz. Predictors: gender, employment position, years of educational experience, years in similar position

aaaaaaaa. Predictors: gender, employment position, years in similar position

Question #1B:

Table 69. Full Model Multiple Regression Analysis for Question 1B

Multiple Regressions ANOVA for Question 1B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.780	5	6.756	16.094*	0.000 (a)
Residual	40.298	96	0.420		
Total	74.078	101			
Regression	33.526	4	8.381	20.048*	0.000 (b)
Residual	40.553	97	0.418		
Total	74.078	101			
Regression	32.356	3	10.785	25.333*	0.000 (c)
Residual	41.723	98	0.426		
Total	74.078	101			
Regression	32.130	2	16.065	37.913*	0.000 (d)
Residual	41.949	99	0.424		
Total	74.078	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Regression Summary for Question 1B

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.675	0.456	0.428	0.456	16.094
b.	0.673	0.453	0.430	-0.003	0.606
c.	0.661	0.437	0.420	-0.016	2.798
d.	0.659	0.434	0.422	-0.003	0.531

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Table 70. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 1B

Variable	B	Std. Error	Beta	t	Sig.
X1	1.106	0.137	0.633	8.060	0.000* (a)
X2	-0.879	0.296	-0.277	-2.967	0.004*
X3	0.141	0.083	0.325	1.704	0.092
X4	-0.135	0.097	-0.286	-1.384	0.170
X5	-0.045	0.058	-0.093	-0.778	0.438
X1	1.101	0.137	0.631	8.049	0.000* (b)
X2	-0.753	0.248	-0.238	-3.041	0.003*
X3	0.138	0.082	0.318	1.673	0.098
X4	-0.164	0.090	-0.348	-1.827	0.071
X1	1.066	0.136	0.611	7.815	0.000* (c)
X2	-0.823	0.246	-0.260	-3.341	0.001*
X4	-0.027	0.037	-0.058	-0.729	0.468
X1	1.089	0.132	0.624	8.216	0.000* (d)
X2	-0.859	0.241	-0.271	-3.572	0.001*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, years in similar position
c. Predictors: gender, employment position, years in similar position
d. Predictors: gender, employment position

Question #2A:

Table 71. Full Model Multiple Regression Analysis for Question 2A

Multiple Regressions ANOVA for Question 2A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	148.551	5	29.710	26.730*	0.000 (a)
Residual	106.704	96	1.111		
Total	255.255	101			
Regression	148.538	4	37.135	33.753*	0.000 (b)
Residual	106.717	97	1.100		
Total	255.255	101			
Regression	147.956	3	49.319	45.045*	0.000 (c)
Residual	107.298	98	1.095		
Total	255.255	101			
Regression	147.690	2	73.845	67.965*	0.000 (d)
Residual	107.565	99	1.087		
Total	255.255	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Regression Summary for Question 2A

Model Summary Model	R	Model Summary R square	Adjusted R square	R square Change	F change
a.	0.763	0.582	0.560	0.582	26.730
b.	0.763	0.582	0.565	0.000	0.012
c.	0.761	0.580	0.567	-0.002	0.529
d.	0.761	0.579	0.570	-0.001	0.243

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Table 72. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2A

Variable	B	Std. Error	Beta	t	Sig.
X1	2.052	0.223	0.633	9.191	0.000* (a)
X2	-2.499	0.482	-0.425	-5.181	0.000*
X3	-0.014	0.134	-0.018	-0.107	0.915
X4	-0.064	0.159	-0.073	-0.405	0.687
X5	0.069	0.095	0.076	0.728	0.469
X1	2.055	0.219	0.634	9.367	0.000* (b)
X2	-2.493	0.477	-0.424	-5.230	0.000*
X4	-0.078	0.090	-0.089	-0.870	0.387
X5	0.068	0.094	0.076	0.727	0.469
X1	2.062	0.219	0.636	9.426	0.000* (c)
X2	-2.686	0.395	-0.457	-6.801	0.000*
X4	-0.030	0.060	-0.034	-0.493	0.623
X1	2.086	0.212	0.644	9.834	0.000* (d)
X2	-2.726	0.385	-0.463	-7.076	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years in similar position, educational attainment
c. Predictors: gender, employment position, years in similar position
d. Predictors: gender, employment position

Question #2B:

Table 73. Full Model Multiple Regression Analysis for Question 2B

Multiple Regressions ANOVA for Question 2B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	54.815	5	10.963	10.214*	0.000 (a)
Residual	103.038	96	1.073		
Total	157.853	101			
Regression	54.815	4	13.704	12.901*	0.000 (b)
Residual	103.038	97	1.062		
Total	157.853	101			
Regression	54.288	3	18.096	17.124*	0.000 (c)
Residual	103.565	98	1.057		
Total	157.853	101			
Regression	51.666	2	25.833	24.085*	0.000 (d)
Residual	106.187	99	1.073		
Total	157.853	101			
Regression	48.704	1	48.704	44.621*	0.000 (e)
Residual	109.149	100	1.091		
Total	157.853	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, years of educational experience, years in similar employment position
c. Predictors: educational attainment, gender, years in similar employment position
d. Predictors: gender, years in similar employment position
e. Predictors: gender

Regression Summary for Question 2B

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.589	0.347	0.313	0.347	10.214
b.	0.589	0.347	0.320	0.000	0.000
c.	0.586	0.344	0.324	-0.003	0.496
d.	0.572	0.327	0.314	-0.017	2.481
e.	0.555	0.309	0.302	-0.019	2.762

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, years of educational experience, years in similar employment position
c. Predictors: educational attainment, gender, years in similar employment position
d. Predictors: gender, years in similar employment position
e. Predictors: gender

Table 74. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2B

Variable	B	Std. Error	Beta	t	Sig.
X1	1.379	0.219	0.541	6.288	0.000* (a)
X2	0.006	0.474	0.001	0.012	0.990
X3	0.092	0.132	0.145	0.697	0.487
X4	-0.258	0.156	-0.374	-1.655	0.101
X5	0.114	0.093	0.160	1.226	0.223
X1	1.380	0.217	0.541	6.359	0.000* (b)
X3	0.092	0.130	0.145	0.704	0.483
X4	-0.257	0.143	-0.373	-1.803	0.074
X5	0.113	0.077	0.159	1.464	0.146
X1	1.354	0.213	0.531	6.347	0.000* (c)
X4	-0.172	0.075	-0.249	-2.294	0.024*
X5	0.121	0.077	0.170	1.575	0.118
X1	1.341	0.215	0.526	6.245	0.000* (d)
X4	-0.096	0.058	-0.140	-1.662	0.100
X1	1.415	0.212	0.555	6.680	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, years of educational experience, years in similar position, educational attainment
c. Predictors: gender, years in similar position, educational attainment
d. Predictors: gender, years in similar position
e. Predictors: gender

Question #2C:

Table 75. Full Model Multiple Regression Analysis for Question 2C

Multiple Regressions ANOVA for Question 2C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	118.253	5	23.651	17.793*	0.000 (a)
Residual	127.600	96	1.329		
Total	245.853	101			
Regression	118.239	4	29.560	22.468*	0.000 (b)
Residual	127.614	97	1.316		
Total	245.853	101			
Regression	117.897	3	39.299	30.098*	0.000 (c)
Residual	127.956	98	1.306		
Total	245.853	101			
Regression	113.959	2	56.979	42.769*	0.000 (d)
Residual	131.894	99	1.332		
Total	245.853	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Regression Summary for Question 5B

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.694	0.481	0.454	0.481	17.793
b.	0.693	0.481	0.460	0.000	0.011
c.	0.692	0.480	0.464	-0.001	0.260
d.	0.681	0.464	0.453	-0.016	3.016

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Table 76. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 2C

Variable	B	Std. Error	Beta	t	Sig.
X1	1.962	0.244	0.617	8.036	0.000* (a)
X2	-1.526	0.527	-0.264	-2.893	0.005*
X3	0.075	0.147	0.095	0.512	0.610
X4	-0.181	0.173	-0.210	-1.042	0.300
X5	-0.011	0.103	-0.012	-0.103	0.918
X1	1.960	0.243	0.617	8.081	0.000* (b)
X2	-1.496	0.439	-0.259	-3.406	0.001*
X3	0.074	0.146	0.094	0.510	0.611
X4	-0.188	0.159	-0.218	-1.178	0.242
X1	1.942	0.239	0.611	8.129	0.000* (c)
X2	-1.534	0.431	-0.266	-3.556	0.001*
X4	-0.114	0.065	-0.132	-1.737	0.086
X1	2.036	0.235	0.640	8.667	0.000* (d)
X2	-1.686	0.427	-0.292	-3.953	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, years in similar position
c. Predictors: gender, employment position, years in similar position
d. Predictors: gender, employment position

Question #3A:

Table 77. Full Model Multiple Regression Analysis for Question 3A

Multiple Regressions ANOVA for Question 3A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	56.565	5	11.313	17.163*	0.000 (a)
Residual	63.278	96	0.659		
Total	119.843	101			
Regression	56.565	4	14.141	21.677*	0.000 (b)
Residual	63.278	97	0.652		
Total	119.843	101			
Regression	56.262	3	18.754	28.906*	0.000 (c)
Residual	63.581	98	0.649		
Total	119.843	101			
Regression	54.573	2	27.287	41.388*	0.000 (d)
Residual	65.270	99	0.659		
Total	119.843	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, years of educational experience, years in similar employment position
c. Predictors: gender, years of educational experience, years in similar employment position
d. Predictors: gender, years of educational experience

Regression Summary for Question 3A

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.687	0.472	0.444	0.472	17.163
b.	0.687	0.472	0.450	0.000	0.000
c.	0.685	0.469	0.453	-0.003	0.464
d.	0.675	0.455	0.444	-0.014	2.603

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, years of educational experience, years in similar employment position
c. Predictors: gender, years of educational experience, years in similar employment position
d. Predictors: gender, years of educational experience

Table 78. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3A

Variable	B	Std. Error	Beta	t	Sig.
X1	1.303	0.172	0.587	7.578	0.000* (a)
X2	0.003	0.371	0.001	0.009	0.993
X3	-0.268	0.103	-0.485	-2.587	0.011*
X4	0.158	0.122	0.263	1.295	0.198
X5	0.042	0.073	0.067	0.572	0.569
X1	1.303	0.170	0.587	7.663	0.000* (b)
X3	-0.268	0.102	-0.486	-2.619	0.010*
X4	0.159	0.112	0.264	1.419	0.159
X5	0.041	0.061	0.067	0.681	0.497
X1	1.301	0.170	0.586	7.675	0.000* (c)
X3	-0.259	0.101	-0.469	-2.559	0.012*
X4	0.175	0.109	0.292	1.613	0.110
X1	1.321	0.170	0.595	7.748	0.000* (d)
X3	-0.110	0.042	-0.200	-2.604	0.011*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, years of educational experience, years in similar position, educational attainment
c. Predictors: gender, years of educational experience, years in similar position
d. Predictors: gender, years of educational experience

Question #3B:

Table 79. Full Model Multiple Regression Analysis for Question 3B

Multiple Regressions ANOVA for Question 3B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.836	5	10.367	16.858*	0.000 (a)
Residual	59.036	96	0.615		
Total	110.873	101			
Regression	51.835	4	12.959	21.292*	0.000 (b)
Residual	59.037	97	0.609		
Total	110.873	101			
Regression	51.751	3	17.250	28.594*	0.000 (c)
Residual	59.122	98	0.603		
Total	110.873	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years of educational experience

Regression Summary for Question 3B

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.684	0.468	0.440	0.468	16.858
b.	0.684	0.468	0.446	0.000	0.001
c.	0.683	0.467	0.450	-0.001	0.139

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years of educational experience

Table 80. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3B

Variable	B	Std. Error	Beta	t	Sig.
X1	1.268	0.166	0.594	7.636	0.000* (a)
X2	-0.929	0.359	-0.240	-2.589	0.011*
X3	-0.050	0.100	-0.095	-0.502	0.616
X4	-0.039	0.118	-0.067	-0.329	0.743
X5	-0.003	0.070	-0.004	-0.037	0.971
X1	1.268	0.165	0.594	7.682	0.000* (b)
X2	-0.922	0.299	-0.238	-3.085	0.003*
X3	-0.050	0.099	-0.095	-0.507	0.613
X4	-0.040	0.108	-0.070	-0.373	0.710
X1	1.265	0.164	0.592	7.707	0.000* (c)
X2	-0.948	0.289	-0.244	-3.280	0.001*
X3	-0.084	0.041	-0.159	-2.064	0.042*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years of educational experience, years in similar position

c. Predictors: gender, employment position, years of educational experience

Question #3C:

Table 81. Full Model Multiple Regression Analysis for Question 3C

Multiple Regressions ANOVA for Question 3C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.550	5	3.510	11.066*	0.000 (a)
Residual	30.450	96	0.317		
Total	48.000	101			
Regression	17.487	4	4.372	13.898*	0.000 (b)
Residual	30.513	97	0.315		
Total	48.000	101			
Regression	16.523	3	5.508	17.148*	0.000 (c)
Residual	31.477	98	0.321		
Total	48.000	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, gender, employment position

Regression Summary for Question 3C

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.605	0.366	0.333	0.366	11.066
b.	0.604	0.364	0.338	-0.001	0.198
c.	0.587	0.344	0.324	-0.020	3.065

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, gender, employment position

Table 82. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3C

Variable	B	Std. Error	Beta	t	Sig.
X1	0.394	0.119	0.280	3.304	0.001* (a)
X2	-0.713	0.258	-0.279	-2.767	0.007*
X3	-0.032	0.072	-0.091	-0.445	0.658
X4	-0.053	0.085	-0.140	-0.628	0.532
X5	-0.100	0.051	-0.256	-1.985	0.050
X1	0.402	0.117	0.286	3.428	0.001* (b)
X2	-0.700	0.255	-0.274	-2.746	0.007*
X4	-0.084	0.048	-0.221	-1.751	0.083
X5	-0.101	0.050	-0.259	-2.016	0.047*
X1	0.440	0.117	0.313	3.771	0.000* (c)
X2	-0.935	0.219	-0.366	-4.272	0.000*
X5	-0.167	0.034	-0.426	-4.915	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years in similar position, educational attainment

c. Predictors: gender, employment position, educational attainment

Question #3D:

Table 83. Full Model Multiple Regression Analysis for Question 3D

Multiple Regressions ANOVA for Question 3D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	34.646	5	6.929	13.213*	0.000 (a)
Residual	50.344	96	0.524		
Total	84.990	101			
Regression	34.643	4	8.661	16.686*	0.000 (b)
Residual	50.347	97	0.519		
Total	84.990	101			
Regression	33.744	3	11.248	21.510*	0.000 (c)
Residual	51.246	98	0.523		
Total	84.990	101			
Regression	32.765	2	16.382	31.055*	0.000 (d)
Residual	52.225	99	0.528		
Total	84.990	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Regression Summary for Question 3D

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.638	0.408	0.377	0.408	13.213
b.	0.638	0.408	0.383	0.000	0.007
c.	0.630	0.397	0.379	-0.011	1.732
d.	0.621	0.386	0.373	-0.012	1.872

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position
d. Predictors: gender, employment position

Table 84. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3D

Variable	B	Std. Error	Beta	t	Sig.
X1	1.181	0.153	0.631	7.699	0.000* (a)
X2	-1.025	0.331	-0.302	-3.093	0.003*
X3	-0.007	0.092	-0.016	-0.081	0.936
X4	0.124	0.109	0.246	1.142	0.256
X5	-0.085	0.065	-0.163	-1.304	0.195
X1	1.182	0.151	0.632	7.845	0.000* (b)
X2	-1.022	0.327	-0.301	-3.120	0.002*
X4	0.117	0.062	0.232	1.897	0.061
X5	-0.085	0.065	-0.163	-1.316	0.191
X1	1.175	0.151	0.628	7.770	0.000* (c)
X2	-0.782	0.273	-0.230	-2.864	0.005*
X4	0.057	0.041	0.112	1.368	0.174
X1	1.127	0.148	0.603	7.626	0.000* (d)
X2	-0.706	0.268	-0.208	-2.629	0.010*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years in similar position, educational attainment
c. Predictors: gender, employment position, years in similar position
d. Predictors: gender, employment position

Question #3E:

Table 85. Full Model Multiple Regression Analysis for Question 3E

Multiple Regressions ANOVA for Question 3E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	29.297	5	5.859	13.064*	0.000 (a)
Residual	43.056	96	0.449		
Total	72.353	101			
Regression	29.276	4	7.319	16.480*	0.000 (b)
Residual	43.077	97	0.444		
Total	72.353	101			
Regression	28.803	3	9.601	21.604*	0.000 (c)
Residual	43.550	98	0.444		
Total	72.353	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, gender, employment position

Regression Summary for Question 3E

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.636	0.405	0.374	0.405	13.064
b.	0.636	0.405	0.380	0.000	0.047
c.	0.631	0.398	0.380	-0.007	1.065

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, gender, employment position

Table 86. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 3E

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.456	0.142	0.264	3.213	0.002*	(a)
X2	-1.199	0.306	-0.383	-3.913	0.000*	
X3	-0.019	0.085	-0.043	-0.218	0.828	
X4	-0.041	0.101	-0.088	-0.406	0.685	
X5	-0.185	0.060	-0.385	-3.084	0.003*	
X1	0.460	0.139	0.267	3.302	0.001*	(b)
X2	-1.191	0.303	-0.380	-3.933	0.000*	
X4	-0.059	0.057	-0.126	-1.032	0.305	
X5	-0.186	0.060	-0.387	-3.113	0.002*	
X1	0.487	0.137	0.282	3.548	0.001*	(c)
X2	-1.356	0.257	-0.433	-5.267	0.000*	
X5	-0.232	0.040	-0.482	-5.805	0.000*	

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years in similar position, educational attainment

c. Predictors: gender, employment position educational attainment

Question #4A:

Table 87. Full Model Multiple Regression Analysis for Question 4A

Multiple Regressions ANOVA for Question 4A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	15.412	5	3.082	9.406*	0.000 (a)
Residual	31.461	96	0.328		
Total	46.873	101			
Regression	15.352	4	3.838	11.811*	0.000 (b)
Residual	31.520	97	0.325		
Total	46.873	101			
Regression	14.697	3	4.899	14.921*	0.000 (c)
Residual	32.176	98	0.328		
Total	46.873	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position

Regression Summary for Question 4A

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.573	0.329	0.294	0.329	9.406
b.	0.572	0.328	0.300	-0.001	0.182
c.	0.560	0.314	0.293	-0.014	2.017

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: gender, employment position, years of educational experience, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position

Table 88. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 4A

Variable	B	Std. Error	Beta	t	Sig.	
X1	0.442	0.121	0.318	3.643	0.000*	(a)
X2	-0.902	0.262	-0.358	-3.445	0.001*	
X3	-0.105	0.073	-0.303	-1.433	0.155	
X4	0.262	0.086	0.699	3.047	0.003*	
X5	0.022	0.051	0.057	0.427	0.671	
X1	0.444	0.121	0.320	3.683	0.000*	(b)
X2	-0.963	0.218	-0.382	-4.413	0.000*	
X3	-0.103	0.073	-0.299	-1.420	0.159	
X4	0.276	0.079	0.736	3.493	0.001*	
X1	0.470	0.120	0.339	3.924	0.000*	(c)
X2	-0.911	0.216	-0.361	-4.212	0.000*	
X4	0.174	0.033	0.464	5.305	0.000*	

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years of educational experience, years in similar position

c. Predictors: gender, employment position, years in similar position

Question #4B:

Table 89. Full Model Multiple Regression Analysis for Question 4B

Multiple Regressions ANOVA for Question 4B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	13.773	5	2.755	3.916*	0.003 (a)
Residual	67.521	96	0.703		
Total	81.294	101			
Regression	13.741	4	3.435	4.933*	0.001 (b)
Residual	67.553	97	0.696		
Total	81.294	101			
Regression	12.750	3	4.250	6.076*	0.001 (c)
Residual	68.544	98	0.699		
Total	81.294	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position

Regression Summary for Question 4B

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.412	0.169	0.126	0.169	3.916
b.	0.411	0.169	0.135	0.000	0.046
c.	0.396	0.157	0.131	-0.012	1.423

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: gender, employment position, years in similar employment position

Table 90. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 4B

Variable	B	Std. Error	Beta	t	Sig.
X1	0.599	0.178	0.328	3.374	0.001* (a)
X2	-0.908	0.384	-0.274	-2.368	0.020*
X3	-0.023	0.107	-0.050	-0.215	0.831
X4	0.228	0.126	0.460	1.804	0.074
X5	-0.088	0.075	-0.173	-1.176	0.243
X1	0.605	0.175	0.331	3.465	0.001* (b)
X2	-0.899	0.379	-0.271	-2.370	0.020*
X4	0.205	0.072	0.415	2.871	0.005*
X5	-0.089	0.075	-0.175	-1.193	0.236
X1	0.597	0.175	0.326	3.413	0.001* (c)
X2	-0.647	0.316	-0.195	-2.049	0.043*
X4	0.142	0.048	0.287	2.963	0.004*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years in similar position, educational attainment

c. Predictors: gender, employment position, years in similar position

Question #5A:

Table 91. Full Model Multiple Regression Analysis for Question 5A

Multiple Regressions ANOVA for Question 5A

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	62.335	5	12.467	9.224*	0.000 (a)
Residual	129.753	96	1.352		
Total	192.088	101			
Regression	62.138	4	15.535	11.596*	0.000 (b)
Residual	129.950	97	1.340		
Total	192.088	101			
Regression	61.222	3	20.407	15.282*	0.000 (c)
Residual	130.867	98	1.335		
Total	192.088	101			
Regression	56.845	2	28.422	20.806*	0.000 (d)
Residual	135.243	99	1.366		
Total	192.088	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, gender, employment position
d. Predictors: gender, employment position

Regression Summary for Question 5A

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.570	0.325	0.289	0.325	9.224
b.	0.569	0.323	0.296	-0.001	0.146
c.	0.565	0.319	0.298	-0.005	0.684
d.	0.544	0.296	0.282	-0.023	3.278

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, gender, employment position
d. Predictors: gender, employment position

Table 92. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5A

Variable	B	Std. Error	Beta	t	Sig.
X1	1.149	0.246	0.409	4.666	0.000* (a)
X2	-2.426	0.532	-0.475	-4.560	0.000*
X3	-0.057	0.148	-0.081	-0.382	0.703
X4	0.137	0.175	0.180	0.783	0.436
X5	-0.187	0.104	-0.239	-1.795	0.076*
X1	1.163	0.242	0.414	4.803	0.000* (b)
X2	-2.402	0.526	-0.471	-4.567	0.000*
X4	0.082	0.099	0.108	0.827	0.410
X5	-0.189	0.104	-0.241	-1.823	0.071
X1	1.127	0.238	0.401	4.739	0.000* (c)
X2	-2.173	0.446	-0.426	-4.869	0.000*
X5	-0.125	0.069	-0.160	-1.810	0.073
X1	1.189	0.238	0.423	4.998	0.000* (d)
X2	-1.939	0.432	-0.380	-4.488	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years in similar position, educational attainment

c. Predictors: gender, employment position, educational attainment

Question #5B:

Table 93. Full Model Multiple Regression Analysis for Question 5B

Multiple Regressions ANOVA for Question 5B

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	34.036	5	6.807	15.457*	0.000 (a)
Residual	42.278	96	0.440		
Total	76.314	101			
Regression	32.541	4	8.135	18.028*	0.000 (b)
Residual	43.773	97	0.451		
Total	76.314	101			
Regression	31.807	3	10.602	23.345*	0.000 (c)
Residual	44.507	98	0.454		
Total	76.314	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience

Regression Summary for Question 5B

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.668	0.446	0.417	0.446	15.457
b.	0.653	0.426	0.403	-0.020	3.394
c.	0.646	0.417	0.399	-0.010	1.627

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience

Table 94. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5B

Variable	B	Std. Error	Beta	t	Sig.
X1	0.632	0.141	0.357	4.498	0.000* (a)
X2	-1.597	0.304	-0.496	-5.260	0.000*
X3	-0.221	0.085	-0.502	-2.612	0.010*
X4	0.184	0.100	0.384	1.842	0.069
X5	-0.113	0.060	-0.229	-1.900	0.060
X1	0.638	0.142	0.360	4.489	0.000* (b)
X2	-1.378	0.283	-0.428	-4.873	0.000*
X3	-0.093	0.049	-0.211	-1.904	0.060*
X5	-0.071	0.056	-0.144	-1.275	0.205
X1	0.627	0.142	0.354	4.405	0.000* (c)
X2	-1.209	0.251	-0.376	-4.822	0.000*
X3	-0.136	0.035	-0.309	-3.840	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years of educational experience, educational attainment

c. Predictors: gender, employment position, years of educational experience

Question #5C:

Table 95. Full Model Multiple Regression Analysis for Question 5C

Multiple Regressions ANOVA for Question 5C

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.567	5	4.913	6.999*	0.000 (a)
Residual	67.394	96	0.702		
Total	91.961	101			
Regression	24.565	4	6.141	8.839*	0.000 (b)
Residual	67.396	97	0.695		
Total	91.961	101			
Regression	24.545	3	8.182	11.893*	0.000 (c)
Residual	67.416	98	0.688		
Total	91.961	101			
Regression	24.255	2	12.128	17.733*	0.000 (d)
Residual	67.705	99	0.684		
Total	91.961	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, gender, years of educational experience
d. Predictors: gender, years of educational experience

Regression Summary for Question 5C

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.517	0.267	0.229	0.267	6.999
b.	0.517	0.267	0.237	0.000	0.002
c.	0.517	0.267	0.244	0.000	0.029
d.	0.514	0.264	0.249	-0.003	0.421

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: educational attainment, gender, years of educational experience
d. Predictors: gender, years of educational experience

Table 96. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5C

Variable	B	Std. Error	Beta	t	Sig.
X1	0.824	0.177	0.424	4.646	0.000* (a)
X2	0.053	0.383	0.015	0.138	0.891
X3	-0.081	0.107	-0.168	-0.760	0.449
X4	0.006	0.126	0.011	0.046	0.964
X5	-0.035	0.075	-0.065	-0.469	0.640
X1	0.825	0.176	0.424	4.673	0.000* (b)
X2	0.060	0.351	0.017	0.170	0.865
X3	-0.077	0.061	-0.160	-1.274	0.206
X5	-0.034	0.069	-0.063	-0.492	0.624
X1	0.828	0.174	0.426	4.757	0.000* (c)
X3	-0.073	0.055	-0.151	-1.321	0.190
X5	-0.039	0.061	-0.073	-0.649	0.518
X1	0.828	0.174	0.426	4.770	0.000* (d)
X3	-0.095	0.043	-0.197	-2.211	0.029*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment
b. Predictors: gender, employment position, years of educational experience, educational attainment
c. Predictors: gender, years of educational experience, educational attainment
d. Predictors: gender, years of educational experience

Question #5D:

Table 97. Full Model Multiple Regression Analysis for Question 5D

Multiple Regressions ANOVA for Question 5D

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	53.136	5	10.627	18.372*	0.000 (a)
Residual	55.531	96	0.578		
Total	108.667	101			
Regression	52.787	4	13.197	22.908*	0.000 (b)
Residual	55.879	97	0.576		
Total	108.667	101			
Regression	51.240	3	17.080	29.148*	0.000 (c)
Residual	57.426	98	0.586		
Total	108.667	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience

Regression Summary for Question 5D

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.699	0.489	0.462	0.489	18.372
b.	0.697	0.486	0.465	-0.003	0.603
c.	0.687	0.472	0.455	-0.014	2.686

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years of educational experience
c. Predictors: gender, employment position, years of educational experience

Table 98. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5D

Variable	B	Std. Error	Beta	t	Sig.
X1	-0.409	0.161	-0.194	-2.543	0.013* (a)
X2	-1.702	0.348	-0.443	-4.890	0.000*
X3	-0.147	0.097	-0.280	-1.516	0.133
X4	-0.089	0.114	-0.155	-0.776	0.440
X5	-0.083	0.068	-0.140	-1.211	0.229
X1	-0.412	0.161	-0.195	-2.567	0.012* (b)
X2	-1.808	0.319	-0.471	-5.661	0.000*
X3	-0.209	0.055	-0.398	-3.789	0.000*
X5	-0.103	0.063	-0.175	-1.639	0.104
X1	-0.429	0.162	-0.203	-2.649	0.009* (c)
X2	-1.564	0.285	-0.407	-5.488	0.000*
X3	-0.271	0.040	-0.516	-6.748	0.000*

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years of educational experience, educational attainment

c. Predictors: gender, employment position, years of educational experience

Question #5E:

Table 99. Full Model Multiple Regression Analysis for Question 5E

Multiple Regressions ANOVA for Question 5E

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	50.027	5	10.005	12.412*	0.000 (a)
Residual	77.385	96	0.806		
Total	127.412	101			
Regression	49.583	4	12.396	15.449*	0.000 (b)
Residual	77.829	97	0.802		
Total	127.412	101			
Regression	49.193	3	16.398	20.544*	0.000 (c)
Residual	78.219	98	0.798		
Total	127.412	101			

*F is significant at the .05 level

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, employment position, years in similar employment position

Regression Summary for Question 5E

Model Summary

Model	R	R square	Adjusted R square	R square Change	F change
a.	0.627	0.393	0.361	0.393	12.412
b.	0.624	0.389	0.364	-0.003	0.551
c.	0.621	0.386	0.367	-0.003	0.487

a. Predictors: educational attainment, gender, employment position, years of educational experience, years in similar employment position
b. Predictors: educational attainment, gender, employment position, years in similar employment position
c. Predictors: educational attainment, employment position, years in similar employment position

Table 100. Variable Coefficients Model in Multiple Linear Regression with Backward Variable Elimination– Question 5E

Variable	B	Std. Error	Beta	t	Sig.	
X1	-0.152	0.190	-0.067	-0.802	0.424	(a)
X2	-1.162	0.411	-0.279	-2.828	0.006*	
X3	-0.085	0.114	-0.149	-0.742	0.460	
X4	-0.150	0.135	-0.243	-1.114	0.268	
X5	-0.158	0.081	-0.247	-1.955	0.053	
X1	-0.131	0.187	-0.057	-0.698	0.487	(b)
X2	-1.127	0.407	-0.271	-2.768	0.007*	
X4	-0.233	0.077	-0.376	-3.033	0.003*	
X5	-0.160	0.080	-0.251	-1.997	0.049*	
X2	-1.163	0.403	-0.280	-2.888	0.005*	(c)
X4	-0.223	0.075	-0.360	-2.963	0.004*	
X5	-0.163	0.080	-0.255	-2.032	0.045*	

* Significant at the .05 level.

a. Predictors: gender, employment position, years of educational experience, years in similar position, educational attainment

b. Predictors: gender, employment position, years in similar position, educational attainment

c. Predictors: employment position, years in similar position, educational attainment

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