

INSTRUCTIONAL PLANNING PRACTICES
OF RURAL, MULTI-GRADE TEACHERS:
A CASE STUDY

by

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ABSTRACT

Multi-grade teachers must consider numerous factors when planning for instruction. The challenges of meeting content standards for several grade levels, teaching numerous subjects, and managing student behaviors contribute to a complex process. The purpose of this study is to investigate the methodologies used for long and short-term instructional planning in multi-grade classrooms, including organization of students and subject areas. Qualitative case-study research was conducted on three rural Montana teachers who teach multiple grade levels. Interviews, classroom observations, and planning documents were used to construct descriptions of the participants' yearly, unit, weekly, and daily planning. Goals of planning, resources used, planning formats, evaluation of planning effectiveness, and alignment to planning models were also compared. The multi-grade teachers relied on previous plans, knowledge of students, and curriculum guides as primary resources to meet their planning goal of effective content coverage. Notable differences existed in planning format, organization of instruction, and use of curricular integration between the least experienced teacher and more experienced teachers. Teachers also relied on executive planning routines to manage their planning duties. The teachers' planning strategies could be applied to general education settings as a model for differentiating instruction for diverse student populations. Additionally, pre-service teacher education programs could benefit from adding courses focused on realistic planning methods rather than theoretical models. Finally, multi-grade teachers could benefit from peer-mentoring programs and structured opportunities to share and reflect upon their own practices.

CHAPTER ONE

INTRODUCTION

To many, the quintessential one-room schoolhouse is viewed as a fading image of America's past, preserved only in the pages of *Little House on the Prairie* and in photographs on the walls of our nation's museums. However, for many educators in Montana, this teaching situation is a modern-day reality. Relatively unnoticed by the mainstream realm of educational research, the rural, multi-grade teacher is challenged with juggling numerous roles: teacher, administrator, guidance counselor, technology coordinator, curriculum planner, and in many cases, she is responsible for many other duties outside of school. The motivation fueling this research comes from my own position as a teacher new to multi-grade teaching; at the time of this study, I was approaching completion of my first year as the only full-time teacher in a rural Montana school with six students, ranging from kindergarten to seventh grade. All educators who teach diverse student populations can gain valuable insight by examining the practices of educators who effectively approach long and short-term planning in this setting.

Background and Purpose of Study

Rural, multi-grade teachers are faced with the task of planning instruction that not only meets grade-level standards for each student, but also addresses unique classroom management needs. Additional challenges, such as a lack of preparatory periods for planning time, additional administrative duties that are required of one and two-room

school teachers, and a shortage of resources also contribute to the load of a multi-grade teacher (Harmon & Morton, 2010). Furthermore, the majority of teacher education programs do not contain coursework specifically designed for training teachers in multi-grade pedagogy (Mulryan-Kyne, 2007).

While multi-grade settings in the United States have declined steadily over the past century, the model is prevalent in developing nations as an organizational structure for broadening access to education, and also comprises a quarter of the schools in Canada, Europe, and Australia (Mulryan-Kyne, 2007). In Montana, the most recent data illustrates that 62 one-room schools were operational in 2007 (Morton, 2007), where teachers could be responsible for teaching up to nine different grade levels from kindergarten to eighth grade. Teachers responsible for meeting the needs of students in this setting need to be highly effective when planning and implementing instructional objectives. While instructional planning for single-grade and single-subjects has been explored, a very small body of research exists regarding the planning processes of the multi-grade teacher (Anderson, 1996).

The purpose of this qualitative study is to explore effective strategies used for instructional planning in multi-grade classrooms. Teaching is a unique and individual process. Varying levels of experience, student grade levels, administrative requirements, teaching philosophies, educational background, and other factors may contribute to differences among the three participants of this case study research. However, common themes may surface related to aspects of long and short-term instructional planning methods used by the teachers involved in the study.

Research Questions

1. What methodologies do rural, multi-grade teachers use to plan for instruction?
2. How do multi-grade teachers organize student groupings and subjects when planning for instruction?

Limitations

The percentage of multi-grade classrooms is small compared to single-grade classrooms, which limits this study to a specific subset of teachers and students. However, with a broad range of student abilities and levels within a single-grade classroom, as well as the call for differentiation of instruction as a result, methodologies of multi-grade teachers can be applied to single-grade teachers as a means of addressing the diverse spectrum of student needs in both settings. Due to the limitations of access to classrooms, the participants in this study are clustered in a specific geographic area, which can hinder generalizability. One way that this study aims to counteract this effect is by including teachers with a large variance in multi-grade teaching experience.

Delimitations

The primary focus of this qualitative research is to capture the process that multi-grade teachers undergo when conducting various levels of instructional planning, which includes annual, term, unit, weekly, daily, and hourly levels. The research does not intend to connect teacher planning to student achievement, nor does it attempt to evaluate the broader umbrella of standards or curriculum planning and selection. Additionally, the

purpose of this research is not to make judgments or evaluations of the perceived effectiveness of each participant's methods.

Significance

No matter the setting, *all* teachers engage in a planning process for both short and long-term levels. Teachers engage in a thinking process while planning; the thoughts made during this time are usually a precursor to teacher behavior and action (Hall & Smith, 2006; Sardo-Brown, 1988; Yinger, 1980). Multi-grade, rural teachers face further complexities when approaching the planning process. For example, teachers in multi-grade classrooms have to account for content standards at numerous grade levels, decide how to manage independent, small group, and direct instructional activities, and organize all of the necessary resources and materials. Compared to single-grade teachers in larger schools, multi-grade teachers often are responsible for teaching subjects normally taught by specialists, such as art, library, classroom guidance, music, P.E., and foreign language, with limited or no prep time during the school day. This study aims to capture the thought processes and outcomes of experienced multi-grade teachers as they tackle their planning decisions. While this case study is limited to a very specific set of educators, the methods and strategies used by the participants could be applied by any educator aiming to plan for the unique needs of a diverse group of students: special education teachers, single-grade classroom teachers with a wide range of student abilities, as well as those preparing to teach multiple grades in developing countries where the occurrence of multi-grade classrooms is more frequent.

CHAPTER TWO

LITERATURE REVIEW

Introduction

Since the focus of this study revolves around the act of instructional planning, this review aims to define a multi-grade classroom and describe its prevalence as an educational setting and discuss the prevailing planning models and frameworks in the existing literature, as well as relate planning specifically to multi-grade settings. Foundational studies related to instructional planning, as well as more current research are also discussed.

Definition of Multi-Grade

Multi-grade teaching is characterized by the existence of students in at least two grade levels in one classroom with one teacher (Little, 2001). Most multi-grade settings are a necessary solution to address low student enrollment or uneven class sizes, while a much smaller portion of schools deliberately utilize the organizational structure (Veenman, 1995). Public schools with low enrollment in remote areas are the most likely to require a multi-grade teacher (Ramrathan & Ngubane, 2013; Vincent, 1999). Multi-grade classrooms usually follow grade-specific curriculum and standards simultaneously (Mulryan-Kyne, 2007). The term *multi-grade* in this study is not synonymous with the term *multi-age*, which refers to the grouping of students based on ability level rather than

grade for pedagogical reasons to achieve a perceived educational benefit (Veenman, 1995).

Prevalence of Multi-Grade Classrooms

The occurrence of multi-grade classrooms has declined over time in the United States; while 190,000 one-room schools existed in 1919, fewer than 400 exist today (Ellis, 2005). Multi-grade teaching is used by a larger proportion of school populations in areas such as Europe, Canada, and Australia (Mulryan-Kyne, 2007). In other countries, multi-grade schools make up the majority of public schools; in Peru, 78 percent of public schools consisted of multi-grade classrooms (Hargreaves, Montero, Chau, Sibli, & Thanh, 2001). Additionally, the use of multi-grade classrooms is being used as a means to increase education in developing countries (Little, 2001). In many African countries, multi-grade settings are viewed as the best way to provide equal access to education (Taole, 2014). Hence, the issue of instructional planning for multi-grade teachers is not limited to rural areas in the United States, but is rather one that reaches globally and is of international importance.

Multi-grade Education in Montana

Montana has more one-room schools than any other state in the nation (Ellis, 2005). While exact numbers of the number of multi-grade classrooms and teachers in Montana are not recorded, the Montana Office of Public instruction documented 64 schools in the 2014-2015 school year that were operational with one or fewer full time employees; teachers in this setting could be responsible for teaching up to nine different

grade levels from kindergarten to eighth grade (MT OPI, 2016). In 2007, 141 Montana school districts were identified as “frontier” schools, which are defined as a school with fewer than 200 students in an area with 5 or fewer people per square mile (Morton, 2010). It is likely that most or all of these schools utilize some type of multi-grade model to address low student enrollment or budget needs, and could benefit from research on multi-grade planning.

Preparation of Teachers for Multi-Grade Teaching

The Northwest Regional Educational Laboratory (NREL; Vincent, 1999) published one of the more comprehensive reviews of research of rural, multi-grade education in the U.S. addressing the lack of training and resources available for multi-grade teachers. In order to be prepared to teach at the multi-grade level, the NREL (1999) concluded several key practices teachers in this setting should employ. Compared to single-grade, a larger range of instructional strategies, a broader range of knowledge of child development, and the ability to explain multi-grade practices to parents and other community members is also important (Vincent, 1999.) Unfortunately, most teacher education programs do not include specific instruction on multi-grade teaching (Mulryan-Kyne, 2007). One exception is the University of Montana-Western, which has a Rural Schools program that engages pre-service teachers in multi-grade lesson planning and execution for students from nearby rural schools. Research-based pedagogy is needed for both pre-service and practicing teachers of multi-grade assignments.

Instructional Planning

Planning for instruction can be defined as the process of teacher decision-making and judgment for the future (Martin, 1990). Teachers engage in various levels of short and long-term planning, including yearly (annual), term, unit, weekly, and daily planning (Yinger, 1980). Planning can also be defined as the thought processes and action taken to carry out course objectives in order to achieve learning (Johnson, 2007); this study assumes the cognitive theory that teacher thought is a precursor to action (Hall & Smith, 2006).

Planning Models

Multiple models describing teachers' approaches to instructional planning exist, but most can be grouped into two main types: traditional linear models and cyclical process models (Doyle & Holm, 1998; Sardo-Brown, 1988). One of the most dominant linear models in the literature is the rational-choice model explored by Tyler (1950). This model describes four sequential steps taken by teachers when planning, including specifying objectives, selecting learning activities, organizing learning activities, and identifying evaluation procedures. This way of thinking can be comparable to the scientific method, and can be applied to long-term and short-term planning (Yinger, 1980).

The linear model first propelled by Tyler (1950) has been adapted and expanded by others, such as in the Madeline Hunter Model, which is taught in many teacher education programs for developing short-term lesson plans (Sardo-Brown, 1988). Sardo-

Brown (1990) researched the instructional planning practices of experienced teachers whose administration required them to utilize the Madeline-Hunter model. Sardo-Brown found that teachers tended to follow a pattern of “nested decision making” which involved making decisions about content at a long-term or yearly level, then broke this material into smaller units of time such as unit and weekly levels.

Another linear planning framework developed by Grant Wiggins and Jay McTighe (1998) is laid out in their book, *Understanding by Design*. It is frequently taught in teacher education programs and utilized by school districts. Also known as “backwards design,” this type of planning follows a broad to narrow approach, and is typically used in unit plan development, as well as for approaching school improvement. The framework for *Understanding by Design* includes three main stages: identifying learning goals and essential questions aligned with content standards, collecting and analyzing multiple sources of assessment data to evaluate the attainment of those goals, and implementing action in the form of learning activities to meet the goals (McTighe & Thomas, 2003).

Yinger (1980) established a baseline for current-day research on instructional planning, but defined the process as cyclical rather than linear. Yinger conducted a case study of a teacher who taught a first and second grade combination class, which included five months of participant observation. Yinger concluded that five main levels of teacher planning exist, including yearly, term, unit, weekly, and daily decision-making. Consistent with all levels of planning were four dimensions: goals of planning, sources of information, format of the plan, and criteria for judging the effectiveness of the plan.

Contrary to Tyler's (1950) objectives-first linear model, Yinger found that teacher planning involves a much more cyclical process of three main components: (1) Problem Finding, which usually consisted of an instructional activity that needed further planning; (2) Problem Formulation/ Solution, where a teacher elaborates and considers possible solutions; and (3) Implementation, Evaluation, and Routinization, in which the teacher actually does the planned activity, makes a judgment on its effectiveness, and decides if it should become a regular action in the classroom. Yinger found planning usually involves seven considerations: location, structure and sequence, duration, participants, acceptable student behavior, teacher instructional moves, and content and materials. Additionally, he concluded that a teacher makes use of four types of routines to regulate activities and simplify planning: (1) *Activity Routines*: Includes established, fixed activities, (2) *Instructional Routines*: Methods and procedures established for questioning, monitoring, giving instructions, etc., (3) *Management Routines*: procedures established by teacher to control and coordinate classroom organization and behavior, and (4) *Executive Planning Routines*: established thought patterns when teacher is not teaching. These patterns developed by Yinger seem applicable to all planning processes, no matter the setting, and serve as an observation guideline for this research.

Evaluating Teacher Planning: The Danielson Framework

One of the more recent tools used by educational institutions to evaluate teacher planning and implementation of instruction is the Danielson Group Framework for Teaching (2013). The Framework is a "research-based set of components" that includes

four domains of teaching responsibility: Planning and Preparation, The Classroom Environment, Instruction, and Professional Responsibilities. Domain One, which includes several smaller components, can be used to observe and evaluate teacher planning. The Danielson Framework is used by the state of Montana as a model for evaluation, known as the Montana Educator Performance Appraisal System (Montana EPAS) (Montana OPI, 2013). Domain One of the Framework includes selecting instructional goals, designing coherent instruction, demonstrating knowledge of content, pedagogy, and students, and designing student assessments. I collected evidence of these components used by the participants during the interview and observation portion of the study.

Long and Short-Term Planning

Schumm and Vaughn (1992) linked several planning models into a sequence of planning phases, including preplanning, interactive planning, which is done during teaching, and post planning (post-active), which describes revising current plans for the future. Yinger (1980) also used this structure when conducting his case study. More recently, Venn and McCollum (2002) examined the short and long-term planning practices of Head Start teachers, following the five levels of planning established by Schumm and Vaughn (1992) and Yinger (1980). Across all levels of planning, teachers in the study tended to center their purpose for planning around the calendar, classroom environment, and classroom activities (Venn & McCullom, 2002). Common resources used by these teachers for planning were curriculum books, teaching files, and other staff members.

Expert Versus Novice Planning

One of the differing factors of participants in this study is their amount of experience teaching in multi-grade. This variable is important and will be evaluated in this study to compare to previous findings, as novice and experienced teachers tend to plan differently (Johnson, 2007). In an analysis of 85 research studies related to instructional planning, Johnson (2007) found novice teachers tend to keep more detailed plans, but are less likely to adapt them to student need. This condition contrasts with experienced teachers whose plans are less detailed, but tend to be more relevant to the curriculum (Johnson, 2007). While the reviewed studies did not address multi-grade settings, they can be applied to defining instructional planning in general terms.

Similarly, Westerman (1991) compared the thought processes of five novice, student teachers to their five expert cooperating teachers planning and carrying out lessons. She concluded that the expert teachers considered learning from a student point of view and adapted their lesson tasks to the needs of students during teaching; in contrast, the novice teachers used more rigid approaches, sticking to specific lesson objectives from more structured lesson plans. Additionally, Westerman (1991) revealed that expert teachers used *integration of knowledge* far more than the novice teachers. Integration of knowledge, as defined by the study, includes the connection of new content with prior knowledge, and other subjects in the curriculum. The expert teachers in the study also considered the lessons in a more comprehensive manner than the novice teachers, considering student behavior and interests, as well as how they fit into the broader curriculum.

Experience levels of teachers can also relate to alignment with planning models. In a review of literature regarding characteristics of novice and experienced teachers, Tsui (2003) discussed that while many teacher education programs teach an objectives-first, linear model of planning proposed by Tyler (1950), research on planning practices of experienced teachers indicates they rarely use this model. Instead, Tsui concluded, “they consider first aspects such as materials and resources, students’ interests and abilities. Aims and purposes are considered last.” (p.23). Tsui notes that this does not mean expert teachers do not consider objectives when planning, but did so mentally rather than in written format. While all of the teachers in this study have experience and were chosen for their perceived effectiveness, the difference in their experience levels could provide insight into their diverse methodologies.

Importance of Instructional Planning

A relevant and organized instructional plan, which is then carried out, can directly affect student learning and achievement. In a study of a Midwest classroom with five different grade levels, Dodendorf (1983) found that students in the rural schools performed on par with their urban peers, but that success was highly dependent upon the teacher of the school to plan instruction that fostered cooperation, independence, and student motivation. Numerous studies that compared student achievement in single-grade classrooms with multi-grade classrooms also concluded that student achievement is more dependent upon the quality of the teaching rather than the grouping of grade levels (Mulryan-Kyne, 2007). Veenman and Raemaekers (1995) found a significant treatment effect for teachers who participated in a training program geared toward “dealing” with

multi-grade education measured by the “time-on-task levels of the pupils in the multi-grade classes and for the instructional and classroom management skills of the teachers” (p. 167). Accordingly, a teacher’s ability to plan and implement instruction at proper student levels can have a direct impact on student achievement, which justifies the need for effective teacher planning.

Multi-grade Instructional Planning

While various publications regarding strategies for planning for multi-grade teaching exist, specific research-based methods or models are not readily available. Additionally, curriculum documents and materials are typically designed for single-grade classrooms, requiring multi-grade teachers to adapt these materials to fit their unique setting (Smith 2016). Bandy (1980) surveyed 500 teachers and 50 principals in rural areas and conducted follow-up interviews with 32 principals who oversaw multi-grade classrooms. The overarching conclusion of principal comments was that the most significant contributor to a multi-grade teacher’s success was her ability to plan and organize instruction. Additionally, Miller (1991) found that one of the key dimensions to effective multi-grade teaching is organization of instruction and curriculum in order to maximize learning time for students in different grade levels. An environment that fosters self-directed learning is also crucial to the multi-grade classroom; students need the motivation and academic skillset to guide their own learning when not under direct supervision of the teacher (Vincent, 1999).

Multi-grade planning can be complex because it often involves preparing for grade-level core classes, as well as subjects such as health enhancement, foreign

language, guidance, library, art, and music that may normally be taught by a specialist in a larger school. Accordingly, multi-grade teachers rely on grouping practices to connect similar topics relevant across different grade levels (Miller, 1991), as well as use curricular integration (Vincent, 1999) to combine subject matter.

Through analysis of 276 teachers in one-and two-room schoolhouses in Seventh Day Adventist schools in North America, Anderson (1996) concluded that multi-grade teachers in this setting used individualized and small group instruction as the most prevalent strategies for planning instruction. With additional subjects and grade levels to prepare for, the time spent on planning increases for the multi-grade classroom, and practices that are efficient yet effective are needed. Additional research into the practices of multi-grade teachers could support the development of a planning model that can be applied in the unique multi-grade level setting.

Curricular Integration

While many other similar terms exist, such as interdisciplinary learning or cross-curricular planning, for this purpose, curricular integration can be defined as providing instruction that connects or spans across various subject matters in a meaningful way, relevant to student surroundings (Shoemaker, 1989). Integration of curriculum can exist in various forms. Burns and Drake (2004) explain three approaches to integration of curriculum.

Multidisciplinary integration involves organizing standards from different disciplines around a common theme (Drake and Burns, 2004). Examples of

multidisciplinary integration could include service learning, theme-based units, and learning centers that combine different subjects to focus on the same concept.

Interdisciplinary integration focuses on teaching skills, for example, literacy, research skills, and thinking skills, across different disciplines. For example, identifying cause-effect relationships is a skill that can be applied in multiple subjects. Finally, in *transdisciplinary integration*, teachers plan the curriculum around student inquiries and concerns in real-life contexts. Project-based learning is a classroom application of transdisciplinary learning; students and teachers choose a topic of study based on local resources and standards, then guides the student to develop questions and gather information, followed by a culminating project by the student (Drake & Burns, 2004).

The Next Generation Science Standards (NGSS) include connections to the Common Core Standards in Math and English Language Arts by listing related standards with every strand. The NGSS includes a component titled “Cross-Cutting Concepts” that include patterns, similarity, and diversity; cause and effect; scale, proportion and quantity; systems and system models; energy and matter; structure and function; stability and change. These concepts can link various science domains (National Research Council, 2013). Furthermore, the crosscutting concepts allow for connections to other disciplines (NRC, 2013). Similarly, the College, Career, and Civic Life (C3) Framework for teaching social studies also makes connections to the Common Core for English Language Arts. (National Council for Social Studies, 2013). Research on integration shows that teachers may often lack pedagogical knowledge related to planning multidisciplinary science instruction and struggled to connect concepts across disciplines,

which indicates a need professional development in the area (Douville, Pugalee, & Wallace, 2003). The use of curricular integration by the teachers in this study is investigated through interview questions and classroom observations.

Summary

While multi-grade teachers are confronted with a unique challenge related to instructional planning, the planning processes that teachers traditionally follow for single-grade classroom settings can be applied across a multitude of settings. Even though the bulk of research on instructional planning has occurred several decades ago, the literature tends to circle back to the foundational work of Yinger's (1980) process model for planning and Tyler's (1950) linear model, although adapted to include today's changing paradigms in education, specifically the standards movement and linking classroom activities to specific state standards. While multi-grade classrooms in the United States are becoming less prevalent, they continue to be an international model for education, supporting a rationale for studying this population.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this case study is to explore instructional planning methods of multi-grade teachers, including how these teachers group students and organize subject areas. The procedures used to conduct this study were modeled off of examples of prior instructional planning research (Sardo-Brown, 1988; Vern & McCullom, 2002; Yinger, 1980). The data collection was organized into three main components in order to align with the preactive, interactive, and postactive phases of instructional planning first described by Yinger (1980) and Schumm and Vaughn (1992). More contemporary planning models, including the Danielson Framework, specifically Domain One, and the Understanding by Design model (Wiggins and McTighe) , were also used to collect and analyze data. Participants were three female teachers who had varying levels of multi-grade teaching experience.

Participants and Sampling Procedure

Purposive sampling was used to select participants based on the following requirements: experience teaching in multi-grade classrooms, a current teaching assignment in a multi-grade classroom setting, and either a recommendation from the county superintendent of schools (who acts as a supervisor for two of the participants) or a recommendation from the director of the Montana Small Schools Alliance as an

effective teacher. Gay et al. (2012) define convenience sampling as the process of including participants who happen to be available at the time of the study. Convenience sampling was used in that all three of the teachers had school on days when I was available to conduct the observation, and taught in different school districts with geographical locations that were within driving distance of my school. All three participants are female, which is relatively representative of the general population of teachers. Subjects have varying levels of experience teaching in multi-grade positions. This variety of teaching experience among the participants was deliberate so that comparisons of teacher practice could be made as related to experience. Names of participants have been replaced with pseudonyms in this report in order to maintain confidentiality standards. Pseudonyms were generated using the most common first names for women and the most common surnames in the United States. The three participants and I all belonged to a professional organization aimed at providing professional development for small rural schools in Montana. I approached the teachers suggested from the county superintendent and director of the professional development organization about potential interest in participating in the project; the targeted participants were all able to participate. See Table 1 for demographics of the participants.

Once interest was confirmed, I sent each participant a consent form, which contained information about the study. Participants were asked to clear the research with their school boards as necessary and return the signed consent forms. Finally, the interview and observations were scheduled upon consent and school approval.

Table 1. Participant Demographics

Teacher Pseudonym	Total Years Teaching	Years Teaching Multi-grade	Current Number of Students	Current Grade Levels Taught
A: Mary Smith	30	20	5	K, 2, 3, 5, 8
B: Patricia Johnson	17	16	5	1, 4, 6
C: Linda Williams	6	6	7	4,5,7,8

Profiles of Teachers

Due to the intimate nature of case study research, it is important to attempt to know each teacher's personality and style. The next section attempts to portray a holistic view of each participant through their direct quotations and descriptions of their classrooms. Classroom photos from each teacher with captions are in Appendix C.

Teacher A: Ms. Smith Ms. Smith is the most practiced teacher of the group, with 30 years of teaching experience. Prior to my study, I attended a workshop in which she presented a science process model she uses to teach students across multiple grade levels. When describing my research project to the Executive Director of the Montana Small Schools Alliance, a professional organization of which I belong, he suggested I observe Ms. Smith as an exemplary teacher. After approaching her at another conference to inquire upon her interest in the study, Ms. Smith agreed and I proceeded.

When Ms. Smith began teaching at her current school, it had a larger enrollment with two full-time teachers, but is now down to just five students. The most notable observation upon entering Ms. Smith's school is that she has transformed the second classroom, which is no longer needed for teaching space, into an impressive garden, with approximately an eight by ten foot area covered with two large planter tables, complete

with lights, fans and a watering system. Many of the plants, mostly vegetables, were reaching maturity and beginning to produce fruits at the time of my observation. When children first arrived for the day, they immediately began checking and watering their sections of the garden while Ms. Smith applied the end of an electronic toothbrush to some of the plants to mimic bee pollination. The only interruption to this process was when the 5th grade student excitedly exclaimed she had spotted a species of bird she hadn't seen before flapping around the outside feeder, which was visible from the "garden" window. Ms. Smith immediately encouraged the 5th grader to record this observation in her science journal. Ms. Smith explained in her pre-observation interview,

If I want to spend the whole day on science I can. You have that ability. If lunch is going to be early or late, you don't have to worry about the cafeteria staff or the art teacher, music teacher, P.E. teacher...if I want my day to be backwards, it can be backwards!

This self-described adaptive yet spontaneous style was also portrayed when I asked Ms. Smith for a copy of a daily or weekly schedule. She chuckled and stated, "There is no schedule. Just recess and lunch at the same time. Everything else depends on the kids."

While Ms. Smith has taught at this school for 12 years, she has also taught in a multi-grade setting in other states. "When I taught in New Hampshire I taught in one of the last remaining one-room school houses that was built in 1780, four years after the signing of the Declaration of Independence."

Ms. Smith's classroom was colorful and busy, cluttered with the many materials necessary for teaching multiple grade levels. Posters of animals and maps covered most of the wall spaces, and teacher guides and student workbooks were scattered about on a

shelf behind her worktable. Student desks were in rows facing forward, each accompanied by a whiteboard easel that contained their supplies. Ms. Smith's classroom included a document camera, interactive whiteboard, and laptop cart.

Teacher B: Ms. Johnson Ms. Johnson has been teaching for 17 years, 16 of which occurred in her current school. Ms. Johnson and I teach in nearby school districts and she has become known by me as someone who is tech savvy and always in the know of the most current resources, including I-pad apps, computer programs, and ideas for field trips. Ms. Johnson also showed me her on-line lesson plan book she uses at a fall professional development conference. In addition to teaching, Ms. Johnson coaches her students in track and basketball, and is also responsible for various administrative duties as the only staff member at her school. My county superintendent, who conducts teacher observations, recommended I observe Ms. Johnson for this study.

I observed Ms. Johnson near the end of her school year, and her students had just returned from a two-day camping trip to Lewis and Clark Caverns. They were also in the midst of preparing for their end of year play and musical production. During the interview, Ms. Johnson was direct and to the point in her responses, but also routinely provided explanations and rationales to her instructional methods. Ms. Johnson plans her year out using themed units in science, social studies, and literature. She could be regarded as a teacher with a reflective and dynamic nature.

Consistent with her adaptive teaching style, Ms. Johnson made over her classroom this past school year, using design ideas from Pinterest and Teachers Pay Teachers to create a learning space that is neat and stylish, yet presents a homey

atmosphere. She has designated areas in her classroom: a computer/ technology area, calendar corner, classroom library, teacher station, student desks, and a quiet corner. She organizes many of her materials in color-coordinated crates and binders. Her classroom walls are adorned with reading strategy posters, student work samples, Bloom's Taxonomy levels, and behavior expectations. Ms. Johnson conducts most of her lessons from a large group table, which faces a small interactive whiteboard that she uses frequently. Her school has seen decreases in student enrollment, so dropped from two full time teachers to one full time teacher this year. Despite the challenges in student motivation that can occur at the end of the year, Ms. Johnson maintained a patient and nurturing demeanor throughout her interactions with her students.

Teacher C: Ms. Williams Ms. Williams has been teaching multi-grade for six years, five of which are in her current school. Her school has the largest enrollment of the three participants; she had seven students in grades four through eight, while a second teacher had three primary-aged students in a separate classroom. The school also employs a part-time aide. Ms. Williams gets one preparatory period per week when a non-certified community member comes in on Wednesdays to teach music. Otherwise, she is responsible for teaching all subjects to her students, and has head teacher's administrative duties, including organizing events such as Back to School Night, winter and spring music programs, a Halloween parade and potluck, the spring field trip, and coaching track. During the week of my observation, Ms. Williams was busy preparing for a spaghetti feed meant to raise funds for a rural school group trip to Washington,

D.C., as well as organizing the annual rural school track meet. Calm and reserved, she appeared to be able to juggle all of these duties with grace and confidence.

Ms. Williams' classroom was remarkably tidy; her desk was absent of the ubiquitous stacks of papers awaiting attention that usually adorns most teacher workspaces. She changes the decorations and design of her classroom every other year; during my observation it was thoughtfully decorated in a carnival theme, complete with a reading area that resembled a mini circus tent, colorful flags strung across the ceiling, and a prize wheel. Upon arrival, I couldn't help but comment about her evident organizational systems that enabled such a clean classroom so late in the school year.

Prior to beginning our interview, Ms. Williams wrote a simple instruction to her students on the board: *Work on animal reports*. As students began to filter in, after a quiet greeting, they immediately began working on a long-term project without any further directions from Ms. Williams. When reviewing our interview, I felt this excerpt provides a nice snapshot of Ms. Williams approach as she explained her weekly planning agenda, which she makes in an Excel spreadsheet. Ms. William's provides a highly structured learning environment for her students, and her lesson plans reflect those of careful, diligent preparation.

Research Design

This qualitative research uses a case study approach. Case study research focuses on a unit of study known as a bounded system (Gay, Mills, & Airasian, 2012). The context of this research is bounded to the unique setting of a rural, multi-grade classroom

because it is here that planning for instruction can become so complex. The overall goal of this case study research is to descriptively capture the psychological thought processes teachers in this system use to plan and relate them to outcomes in the actual classroom. Theoretical planning frameworks, such as linear and cyclical models, are then used to put the data into context of existing systems. In this case, the descriptions of teacher planning were compared to planning models and components developed by foundational planning studies by Yinger (1980), Tyler's (1950) linear model, as well as more contemporary models: Wiggins and McTighe's Understanding by Design (1998) and The Framework by Danielson (2013).

Data Collection

Data collection involved three main interactions with the research participants. First was the pre-active planning interview, which was scheduled for 30 minutes. I audio-recorded teacher responses using a recording application on an I-Pad. Oral responses were also recorded in tabled sections of an interview and observation note-taking guide, which is in Appendix A. First, I asked questions related to teaching background and current classroom setting. I then used a set of interview questions with a corresponding recording form, which were modified from Sardo-Brown's (1988) interview questions in her multi-case study research of 12 middle school teachers' planning and Yinger's (1980) thematic findings on teacher planning levels, dimensions, and routines. Since Yinger determined that planning typically takes place on five levels (yearly, term, unit, weekly, and daily), I asked each participant to describe her planning

process on each of these five levels by providing a general overview of her approach. Follow-up interview questions inquired about four dimensions of planning (Yinger, 1980): goals of planning, sources of information, format of plan, and criteria for judging effectiveness of the plan at each of these five levels. I asked for the teacher to provide examples of plans from the levels used by the teacher, as well as a weekly schedule, and any other documents used when planning. Interview questions also asked the teacher to provide details related to grouping of students, organization of instruction, and curricular integration.

Next, I described both foundational and contemporary planning models, and asked the teacher to compare and contrast her own methods to the models. The linear model presented by Tyler (1950) was described to teachers as an objectives- first model that includes four main steps: (1) Specify objectives□, (2) Select learning activities (□3) Organize learning activities and (□4) Specify evaluation procedures. Yinger's (1980) process model was described as a cyclical progression involving three stages: problem identification, which would typically be a planning task, usually a potential instructional idea that needs further planning. Stage two is called problem formulation/ solution design, which is a design cycle where "the initial idea is repeatedly elaborated and tested mentally until a satisfactory solution is found" (p. 116). The third stage of the Yinger process model is called Implementation, Evaluation, and Routinization; here, the activity is carried out in the classroom and the teacher evaluates its effectiveness to decide if it should be modified and repeated, or if it should be rejected.

Wiggins and McTighe's (1998) *Understanding by Design* model was described as

a more standards-based approach that includes three stages, beginning with identifying learning goals and essential questions aligned with content standards, collecting and analyzing multiple sources of assessment data to evaluate the attainment of those goals, and implementing action in the form of learning activities to meet the goals. Finally, I described Domain One of the Danielson Framework (2013), titled Planning and Preparation, using its six components: demonstrating knowledge of content, pedagogy, students, and resources; setting instructional outcomes, designing coherent instruction, and designing student assessments. I also invited the teacher to describe her own model if none of the selected models seemed to fit.

Immediately following the pre-active planning interview, I spent one classroom day observing the teacher. I informed the participants that the intent of the observation was to view them in their natural teaching environment, without changes made to their regular practices, which is standard practice for qualitative research (Gay et al., 2012). Nonparticipant observation, where the researcher does not participate directly with the situation (Gay et al., 2012) was utilized in order to maintain objectivity and keep from disrupting the regular actions in the classroom.

Field notes were taken in written form using two graphic organizers as a means to follow specific observations protocol (Gay et al., 2012). The first graphic organizer had two columns and was used to record descriptive information related teacher actions, as well as my personal reactions and thoughts in order to capture simultaneous responses to the classroom events. Another organizer was used to gather evidence of planning implementation related to teacher routines as described by Yinger (1980), including

activity routines, instructional routines, management routines, and executive planning routines. Finally, student grade-level groupings, student centers or rotations, the structure of activities, curricular integration, and evidence of alignment to the four main planning models mentioned previously were recorded using tables to describe each feature. The data collection forms used can be found in Appendix A.

Once the students were dismissed at the end of the school day, I conducted phase three of data collection with the teacher participant, a post-active reflection. First, I shared her field notes with the teacher, and asked her to clarify or add to any of the sections that she thought she did that day or in usual practice that I may have omitted. The post-active interview asked the teacher participant to analyze the effectiveness of the plan, explain any deliberate and other changes to the intended outcomes of the instructional plan, as well as describe what she may do differently in the future. I also asked follow-up questions in order to gain insight on any information from the observation that needed clarification or explanation. I obtained copies of any other planning documents, as well as materials used by the students and teachers during the day. Finally, I took photographs of the physical layout of the classroom in order to be able to relate the physical environment to the instructional plans of each teacher.

Data Analysis

The data collected from each teacher, in the form of interview transcripts, notes included in the interview and observation graphic organizers, short and long-term planning documents, and classroom photographs, were analyzed by organizing the

information into themed, comparative tables. These tables were formatted in a manner similar to the data collection tables described earlier, but included space for the responses for each teacher, and can be viewed in the results section.

I employed features of Guba's (1981) "Criteria for Assessing the Trustworthiness of Naturalistic Inquiries" as described in Gay et al. (2012) to establish trustworthy data. When interviewing the participants, I recorded their responses in tables (described in the data collection section) in handwritten form. Upon completion of all the observations and interviews, I typed my handwritten material into an electronic version of the tables into a word document for each teacher. Next, I replayed the audio recordings from the interviews and added to, edited, or omitted any information that was not accurate or clear from my handwritten notes. Some of the information was rephrased for brevity in the tables, but the content was upheld. I also transcribed the responses of the teachers word for word to gather quotations for the results section. After I compiled the responses of the teachers into electronic format, I sent each teacher her individual document to review and check for accuracy, which intended to support Guba's (1981) suggestion to conduct member checks of the data. Finally, I referenced the teacher's planning documents, the interview notes, transcription, and classroom photographs when writing my analysis, which employs the practice of triangulation, or the process of multiple collection strategies and data sources to cross-check information (Gay et al., 2012). These steps were taken in order to establish accurate portrayals of teacher responses and foster credibility of the study.

To compare responses from all of the participants, I copied the headings and format of the tables I had created to record data from the interviews and observations (Appendix A), but expanded the tables so that all three teacher responses could be recorded side-by side rather than in isolation. For example, the first table included the four levels of short and long-term planning used by the teachers with four dimensions: goals of planning, sources of information, format, and effectiveness criteria. Then, I reviewed each cell in the data that had the teacher responses for similar phrases and key terms. For example, when describing long-term planning goals, all teachers used the word “student” followed by nouns such as assessment, progress, and performance. I considered this to be a similarity because the teachers used the same word followed by a term that is similar in connotation. Differences in teacher methods and practices were noted if there were not overlapping terms used in the participants’ responses within each category.

When summarizing the analysis of each research question, I organized the first section, methods used by teachers to plan, by Yinger’s (1980) observed dimensions of planning (goals, resources, format, and effectiveness criteria) and then by long and short-term levels of planning (yearly, unit, weekly, and daily). Within each of those sections, I used the information from the data collection tables to provide a descriptive narrative of each teacher’s approach. For the second research question, which addressed student grouping and use of curricular integration, I viewed each teacher’s responses to the questions regarding these areas and summarized them using a table and an account of examples discussed by each teacher. I also reviewed the transcripts from the teacher

interviews to supplement the analyses with direct quotations or examples from the participants.

Summary

The methods used in this qualitative case study most emulated those used by researchers who developed frameworks for gathering data on instructional planning (Sardo-Brown, 1988; Schumm & Vaughn, 1992; Yinger, 1980). Data was collected in three phases in the form of pre and post-observation interviews, a one-day observation, and planning documents used by the teacher. Information was sorted into categories and then summarized using descriptive analysis.

CHAPTER FOUR

RESULTS

This qualitative case study sought to explore the planning used by multi-grade teachers with varying amounts of teaching experience. The teachers included in the study included one with 30 years of experience, one with 17 years of experience, and one with 6 years of experience. This chapter highlights the findings of the study as aligned with several popular models for planning. Main areas of short and long-term teacher planning investigated in this study included goals of planning, resources used, format of plan, and criteria for judging planning effectiveness. Table 2 summarizes these four features of yearly, unit, weekly, and daily planning. Since all three teachers stated that term planning was not a level they incorporated, this level was omitted from the results. This study also explored teacher planning routines, organization of student groups, and use of curricular integration.

Goals of Planning

During the pre-observation interview, I asked teachers to describe their goals of planning at the various levels of planning, which included long-term plans such as yearly and unit planning, as well as weekly and daily short-term plans.

Long Term Planning

The three teachers involved in this research expressed very similar goals for yearly, or long-term planning. Since all teachers had multiple years of experience, they

all communicated content coverage as a primary focus of long-term planning. The one-room school warrants that teachers have the same students for multiple years; accordingly the teachers in the study had an intimate knowledge of what content was covered in depth versus what may have been skimmed or overlooked. Accordingly, the teachers were able to plan for future years to address any conceptual gaps from previous years. For example, Ms. Williams stated that she will be reversing the order of how she teaches the main science domains for next year, explaining that when she started with life science, she usually did not have as much time for physical science. This switch will allow her to incorporate topics missed in the previous year. Below, Ms. Johnson provides a summary of how she approaches her yearly planning,

The first thing that I do is I decide on my main units for the year. That's pretty easy for me now because I am in a rotation, like every four years I'll teach this unit. First of all I need to figure out why I chose the topic. Are we going on a field trip that's going to connect to it? For example, we're looking at caverns and caves right now because we just went to Lewis and Clark Caverns. We only spent a couple days on it. We didn't need to spend a lot more time on it than that because I know from their background and what I've already taught what they already know, and that's a huge advantage of a rural school. I can skip stuff that if I were teaching kids that I didn't know very well I would go over just to be sure. When I do an activity, I'll write a sticky note on it saying what year I taught it to keep track of my rotations.

As stated above, all three participants did not feel they had to account for term planning, other than reporting grades at those times. When asked why they did not use term planning, the general response was that it was not applicable because student learning does not fit into a regimented time frame, and they did not have to coordinate with other staff members.

Unit Planning

The three participants seemed to carry diverse goals for unit planning. When discussing unit planning, the participants primarily referenced doing so for science and social studies, as they tended to follow the scope and sequence from textbooks for math and reading. Ms. Smith heavily emphasized the use of unit planning in science as a tactic to reach realistic applications in students' lives. During my observation, the students in Ms. Smith's classroom were concluding a science unit on watersheds. They had met with community members to learn about the watershed in their area, and all students had created their own model of a watershed. Ms. Smith had an end-of-year field trip planned that would also incorporate concepts surrounding watersheds by visiting a major river in Montana. Ms. Johnson took a similar, yet more "themed" approach as a goal of her unit planning, specifically to link science and social studies to reading material. For example, during my observation the current classroom theme was *Bees, Bats, and Pollinators*. The students read several non-fiction texts about bees at their individual grade levels during reading, but also were studying bees in science class. Finally, Ms. Williams, who stated she relies more on the basal textbooks in science and social studies, referenced teacher-created novel studies as her primary form of unit planning, with the goal to create reusable resources that would save time later. "When I'm doing novel units, planning takes a lot longer the first time I'm doing a novel. Once I have the plan it's like a piece of gold to me then."

Short-Term Planning Goals

Weekly and daily planning goals also varied greatly among the three participants. None of the teachers were required to submit their plans to an administrator, so the goals of short-term planning could all be considered to be intrinsic. Ms. Smith felt a responsibility to the community and taxpayers to have plans. She also explained that having these plans would enable her to increase teaching time and use every possible moment. Ms. Johnson felt that weekly plans would help her correlate grade-level topics, specifically in science. She explained that aligning content among the different grade levels would maximize instructional time and allow for collaborative work among students. Ms. Williams expressed a more organization-focused goal for weekly planning. She felt her weekly plans required enough detail so that if she needed to be absent unexpectedly, a substitute teacher would be successful in following her intended plans. She also noted that her weekly plans give herself and students structure and accountability, help alleviate student anxiety because they know what to expect, and provide an effective means of communicating to students make-up work if they are absent. When asked about the goals of her weekly plans, she explains,

I decided with my classroom, I didn't want to be just *my* classroom, I wanted it to be the students' classroom. And, if I were not here, to be able to carry out the lessons, I didn't want a substitute (teacher) having to try to figure it out. The students get a copy of the agenda (plans) every Monday. It goes in their homework binder, so they always know what they can work on for the day. This is pretty well the game plan in my classroom.

All three teachers in the study incorporated daily planning into their weekly lesson plans, with only slightly different goals for their daily plans. One notable difference among the three teachers was that Ms. Smith rarely viewed her lesson plan

book during the day, while Ms. Johnson and Ms. Williams had their lesson plans visible and referenced them for each activity. Ms. Johnson had a goal of tracking her fourth-grade math standards in her daily lesson plans so that she knew which Common Core Math standards she had covered; she chose 4th grade since three of her five students were in this grade level. Tracking standards was a feature in her online-plan book software that she hoped to apply more frequently. Ms. Williams felt that her daily plans helped students prioritize their work; for example, if a student had a test to take on his daily agenda, he knew that was of a higher priority to finish than silent reading. She explains her use of transparency in planning as a benefit for students:

I do this to hold myself accountable because the students also have a copy. If I was completely going off on my own lesson-wise and not following this, they can hold me accountable. A lot of times I don't think kids see a teacher's lesson plan book. They just know that at this scheduled time is math, and this one's reading. My first year teaching here I actually had a parent come in that said this (agenda) was a big deal to their student because their child used to always be so anxious coming to school, because they didn't know what to expect, and now she knows.

Clearly, Ms. Williams keeps her students in mind when planning for instruction.

Resources Used

Participants in this study were asked to describe and provide examples of common resources they used for the various levels of planning. Specific resources varied greatly among the teachers, but commonalities existed.

Long-Term Planning Resources

All three teachers observed had a yearly calendar posted in their classrooms. These calendars were established by their school board or district clerk and served as a reference for many levels of planning, but mainly contributed to yearly planning. Ms. Smith, whose passion for science has led her to take on a leadership role in the Montana Science Teachers Association, described her annual planning for science in her interview. She relies on science standards planning documents, such as the Next Generation Science Standards, to focus on specific science themes and domains. Ms. Smith also described professional development, parent and community resources, and area geography as contributing factors when deciding how her year will pan out in science. Ms. Johnson, who has taught at her same school for 16 years, uses notes from previous lesson plans to create a rotation of themed units throughout the year. She tries not to repeat units for four to five years. Ms. Johnson noted that she plans her year around major annual events, such as holidays, the rural school science fair, and field trips. Both Ms. Johnson and Ms. Williams stated that they use student assessment data from the Measures of Academic Progress (MAP) test to locate student deficits and make sure address any gaps in skills or knowledge found from previous years.

Unit Planning Resources

All three teachers referenced their use of unit planning taking place primarily in science and social studies. They relied on the scope and sequence of teacher guides and student textbooks for teaching math and language arts, unless compiling a novel study. Ms. Smith had several plastic tubs with science units packaged in them, including science

equipment, student activities, lab materials, textbooks, and teacher guides. She has collected and added to these tubs over several years, and uses the scientific process of inquiry, specifically the POETRY model (predict, observe, explain, think, reflect, yearn) as a framework for planning her science units. Ms. Smith also stressed the importance of using student-generated ideas in planning and conducting investigations as a source of content in her science unit plans:

I'm the type of person who's always looking for a teachable moment to try to pull in as much of the world into each lesson as I possibly can, and a lot of times, that is student generated, where they'll say a comment and it starts another investigation. If a student says, "What if we try this?" I'm going to grab it. Let's go for it. What do we need? It's that kind of flexibility that allows you and your students to grow. I'll get a lot of kids from other school districts who say, "that's the first time a teacher's ever liked my idea and used it." Then they start feeling proud and taking ownership. I find that a lot of discipline problems start to dissolve because they (the students) find that they have worth, and their ideas are important, and I can't rob them of that.

This elaboration of Ms. Smith's motivation for using students as a resource in unit planning seems to capture a major philosophy in her teaching.

Ms. Johnson has a collection of plastic crates and cloth bags that contain a collection of resources, including posters, books, teacher guides, and file folders with activities to compile her unit themes. Ms. Johnson stated that she also looks at topics in other curricula, and tries to update her units with additional resources that will connect ideas and meet newer, more rigorous content standards,

Sometimes I'll find some things (resources) that are better than what I had planned. A lot of my resources are 10 or 12 years old and just aren't rigorous enough. I used this stuff (for a current unit) and the kids liked it but they really probably wouldn't get out what they could get out of it if I do it in a different way.

While it may be easier to just repeat what has already been done in the past, Ms. Johnson chooses to spend the time to revamp her previous units.

When forming novel-study units, Ms. Williams compiles various resources from printed teacher guides, on-line documents, teacher-created resources, materials from professional development, and activities she creates herself into a spiral-bound notebook with a cardstock cover.

For a lot of it I made pages of vocabulary, comprehension questions, and character analysis. We have students that are classified as migrants because they come in and out of the school each year, so we can order reading units from the Migrant Education Program (a U.S. Department of Education program that provides funding for migratory children). So I'll pull stuff from there, Teachers Pay Teachers if I find good enough resources, and I combine it all. I bind it, and that way I can use it for future years. I don't really like to use just one resource for the novel studies.

Ms. Williams says she plans her science and social studies units to take four to five weeks, using primarily student textbooks and teacher guides as a basis for the sequence.

Short-Term Planning Resources

All three teachers observed use the materials from their unit plans to create sequences of activities for weekly and daily plans. For math, the three teachers all described using the lesson sequences out of their selected math textbooks and student workbooks. Ms. Williams and Ms. Johnson both used a computer-based math program called ALEKS math as a station for students to work at when providing direct instruction to other students. ALEKS stands for Assessment and Learning in Knowledge Spaces, and is an adaptive math program for students and assessment management program for

teachers that assesses student knowledge in various math domains, provides learning modules, and tracks progress (Johnson, 2006). Ms. Williams and Ms. Johnson were more similar in their approaches in the use of a rotation model between direct teacher-instruction, independent or partner work, and computer math.

All three teachers also described using formative student assessments to help them with weekly planning. For example, Ms. Johnson said if she notices a student struggles with a math assignment, she may choose to reteach that topic the next day. All of the teachers also used textbooks as a basis for their reading instruction. Ms. Johnson mentioned the use of supplemental materials such as videos, interactive websites, and sites such as Teachers Pay Teachers that provide downloadable activities to add to the regular curricular materials. Ms. Williams regularly incorporated silent reading, and computer-based reading comprehension programs called STAR Math and Read Naturally into her reading rotations.

Format of Plan

The three teacher participants used different methods of recording their planning, but likenesses existed, especially in long-term planning. Since the teachers had been working at their current schools for at least five years, all of them relied on their plans from previous years for future planning. Long-term plan formats can be considered to be informal for the three teachers. Ms. Smith said she does not write down a long-term plan for annual or unit planning; rather, her plans existed physically in her bins and tubs of resources. Ms. Johnson explained that she uses a desktop calendar with sticky notes as a

format for her to lay out her unit themes over the course of the year, but she does not record it in another format. Mrs. Williams did say she keeps notes on previous years and references them when planning out science and social studies units, but a formal annual or unit plan does not materialize until she records a more detailed weekly plan.

Short-term planning documents, which included weekly and daily plans, were collected from each teacher and were all in written or typed form. Ms. Smith, who has been teaching for 30 years and currently has five grade levels, used a handwritten teacher plan book, published by Scholastic, to record her weekly and daily lesson plans. Each page had vertical columns with the days of the week, and horizontal columns labeled with the subject areas: spelling, math, reading, English, science, and a blank column that included different specials such as writing, computer time, music, and social studies projects. Ms. Smith had a separate column for her kindergarten student in order to be more specific with his plans. An image of Ms. Smith's plans can be viewed in Appendix B. For math, spelling, reading, and English, Ms. Williams recorded the grade level of the student, followed by either the unit or lesson number, assignment pages, and story titles if applicable. The science and the blank column had non-specific tasks recorded, such as "finish petroglyphs" or had students' names and activities they were working on. The kindergartener column had specific reading topics, such as "Letter L" and math lesson numbers recorded.

Ms. Williams, who has taught for six years and has four different grade levels, creates a detailed, typed Excel spreadsheet every week for each grade level she teaches to

record her weekly and daily plans. When I first arrived, she explained the format of her plan,

On the left side, this is how our day runs. I designed this the first year (I taught) because I had a really hard time with the large lesson plan book that they (the County Superintendent Office) give you. I didn't feel I had enough room, and asked, how am I going to use this for future years? So, I finally made up this table.

The spreadsheet has a weekly date range and grade level labeled at the top. It is organized into rows that have the daily schedule with times and subject areas, and columns for each day of the week. The first column includes details about rotation stations in math and reading, as well as notes about social studies and science grade-level groupings, and a place for announcements. The subject rows include daily opener, recess and novel read-aloud, reading/language arts, recess and lunch, character count (classroom guidance), Science/ Social studies, PE, spelling, a row for varying specials: art, music, writing, and library, and a daily closing. In each intersecting box, the teacher lesson, page numbers, and student seatwork is recorded for math, reading, and science/social studies, while spelling has a unit number and page number listed. P.E. included the main topic, while the specials boxes had project titles, such as "Animal Report." The novel read-aloud row included the title of the novel and the page numbers read aloud for each day. Mrs. Williams creates a separate spreadsheet for each grade level every week and provides students with a copy on Monday mornings so that they can follow her plan and know their assignments. Ms. Williams kept her plan book in front of her during all of her lessons and crossed off each activity as it was completed. An example of Ms. Williams' weekly plan is also located in Appendix B.

Ms. Johnson, who has taught for 17 years and has three different grade levels, uses an on-line plan book with the website *planbook.com*. Within the plan book, a weekly format includes the days of the week in columns and subjects with times in rows. In the first few rows of her plan book, Ms. Johnson records daily tasks she needs to complete before instruction begins in the morning, including memos/reminders, attendance, holidays and unit planning, anchor chart, handouts, and centers prep. Then, her rows proceed with student activities and subjects, including calendar corner, math stations, science, recess/show and tell, story or poetry, spelling and handwriting, reading, lunch, read-aloud, English/writing, social studies, P.E., art/music/ Indian studies, and end of day routine and jobs. When Ms. Johnson is working in her plan book, she approaches one subject at a time, and typically will map out a sequence of days that cover the necessary content and skills of the unit until she reaches the assessment day, which could range from a few days to a few weeks. When grouping grade levels, such as she does for 4th and 6th grade science, she can select the two classes that she is working on at the same time and schedule each grade's vocabulary, review, and test days simultaneously in her plan book. Ms. Johnson can also view her plans in a daily view, which shows details that she has typed into each section. For example, she has four inputs for math on one day, which include the topic and number of the math lesson for a particular grade level. The descriptions in her plan book appear to be reminders to her, and while they are more specific in math and reading with topics and occasionally page numbers, the other subjects include broader terms, such as the topics like "Butterflies" or "Journal Writing." Occasionally, Ms. Johnson inserts links to websites or documents she needs to access that

accompanied her corresponding activity. *Planbook.com* also allows its users to search and input state and national standards into each activity. Ms. Johnson said her goal for this past school year was to do this in 4th grade math, which she did. Finally, the online plan book allows her to “bump” or move activities to the next day as needed, pushing all of the other activities scheduled for that subject to the next day. Ms. Johnson frequently accessed her plan book throughout the day on either her desktop computer or I-Pad. Appendix B contains images of Ms. Johnson’s daily and weekly plan. Weekly and daily plans provide a typical schedule followed by the teachers in this study. *Figure 1* shows the schedule observed for each teacher.

Criteria for Judging Effectiveness of Plan

Teachers utilized three main criteria for judging the effectiveness of both their long and short-term plans: content coverage, adherence to state standards, and student performance. On an annual level, they examined what topics they were able to cover and determine which were not covered; this analysis helped all teachers make plans for the future. By reflecting on what knowledge students were lacking from previous years, these three multi-grade teachers were able to adjust the methodology as well as the content of their long-term plans. Ms. Williams was the only teacher to mention that visiting with former students who are now in high school as a means for evaluating her long-term plans. For example, she learned through a former student that he was expected to diagram sentences and apply parts of speech in freshman English class. This finding spurred Ms. Williams to change how she approached grammar instruction with her eighth grade students. For unit planning, both Ms. Smith and Ms. Williams described using

student performance for evaluating the effectiveness of their plans, making notes to adjust for future years. Ms. Johnson noted that she found herself re-evaluating her unit plans to make sure they met the rigor of the Common Core State Standards. For short-term planning, all three teachers stated that student performance and progress on class assignments and tests served as an indicator for measuring the effectiveness of their daily and weekly plans. All teachers described modifying their plans based on this feedback. Table 2 summarizes the goals, sources, format, and criteria for each level of planning.

Planning Routines

Routines made up a large part of the teachers' day and planning process, which was consistent with Yinger's (1980) description of teacher planning. Through observation and the follow-up interview, teacher routines were recorded in four areas. Activity routines, which include established daily or weekly student activities, were used similarly by all teachers as a way to start or end the day, as well as encourage student independence during work time. Each teacher utilized unique instructional routines: methods and procedures established for questioning, monitoring, and giving instructions. Management routines are procedures established by the teacher to control and coordinate classroom organization and behavior. Each teacher used different means of organizing classroom procedures and rewarding students. Finally, executive planning routines, which are established thought patterns used when the teacher is not teaching, were somewhat varied among the three teachers in how and when they approached planning. Table 3 summarizes these routines.

Figure 1: Observed multi-grade schedules

Multi-grade Schedule A: Ms. Smith

8:15	Students arrive, water plants, check-in with teacher, raise flag
8:30	School Begins- Student Jobs, Pledge of Allegiance
8:40	On this Day in History- Teacher says the date and reads aloud events in history
8:50	Phonics Review with jumping jacks
8:55	Students turn in homework, teacher checks for completion and provides award
9:00	Spelling
9:15	Math- teacher met with kindergartener while other students took math test
10:15	Snack, recess/ P.E.
10:50	Reading
11:45	Teacher Read-Aloud while students free-draw
12:00	Lunch and Recess
1:00	Reading
1:45	Recess
2:00	Science- All students working on same project
3:00	Student Dismissal

Multi-grade Schedule B- Ms. Johnson

8:05	School Begins; Calendar for 1 st and 4 th grade, Computer math for 6 th
8:20	Math Rotations
9:15	Science
9:50	Recess, Snack, Show and Tell
10:15	Story, Poetry, or Morning work time
10:30	Spelling
10:50	Reading
11:50	Social studies
12:10	Lunch/ Recess
12:50	Read-Aloud
1:00	English or Writing block
1:25	Social Studies/ Current Events
2:10	P.E./ Structured recess
2:30	Art, Geography, Library, Indian Studies, or Free Time
3:05	End of Day Routines/ Jobs
3:15	Student Dismissal

Multi-grade Schedule C- Ms. Williams

8:30	School begins; Pledge of Allegiance, Daily Math and Language Practice
9:00	Math Rotations
10:00	Recess, Snack, Novel read aloud
10:20	Math Continued
10:45	Reading/ Language Arts rotations
11:50	Recess/ Lunch
12:30	Classroom Guidance
12:50	Reading/ Language, continued
1:30	Science or Social Studies, Music on Thursdays
2:00	P.E.
2:30	Science or social studies; Library, music, art, writing, or spelling
3:20	Work Time and Daily Closing
3:45	School Dismissed

Table 2. Summary of Goals, Sources, Format, and Criteria for Four Levels of Planning

Level of Planning	Goals of Planning	Sources of Information	Format of Plan	Criteria for judging effectiveness of Plan
<u>Yearly</u>				
Teacher A Ms. Smith	content coverage; student growth; be flexible to take advantage of opportunities	NGSS Science Standards; professional development; students, parents and community resources or opportunities that arise, area geography	collection of resources, placed into plastic tubs	reflection on students, including knowledge they are lacking
Teacher B Ms. Johnson	Cover content students haven't done; pacing; make sure all content is covered	rotation of previous units; structure around field trips, assessment data; special events such as holidays, science fair, track meet	calendar map for the year with sticky notes	Reads reflective notes on past units, makes adjustments based on past years
Teacher C Ms. Williams	Cover content that wasn't addressed in prior years; follow basal reader	NWEA Maps testing results- lets her find student deficits; MONTCas science test results	notes from previous years	student results on tests feedback from students who are in high school
<u>Unit</u>				
Teacher A Ms. Smith	Address student misconceptions; develop realistic applications in themes, relate content to field trips, teachable moments for student growth and ownership	science inquiry; textbooks (teacher and student); Saxon Math, Harcourt Reading, student ideas- to meet their interest in planning and carrying out investigations.	3-ring binders, collections of materials, not day-specific, science process model (POETRY)	monitor discipline issues, student engagement, performance assessments; classroom observations, student application of ideas in other contexts
Teacher B Ms. Johnson	Pick what is appropriate to each student; align with reading program	collection of books, folders with activities compiled in a crate; look at what was done last year, topics in other curricula	crate, binder, or bag with resources collected into themes	see if plans are rigorous enough in comparison to new standards and adjust as needed
Teacher C Ms. Williams	Compile resources used to reuse in future years and save time	novel studies, teacher-constructed activities, Teachers Pay Teachers , professional development materials	bound paper journals, binders	student performance on assignments; final exams

Table 2. Summary of Goals, Sources, Format, and Criteria for Four Levels of Planning

Level of Planning	Goals of Planning	Sources of Information	Format of Plan	Criteria for judging effectiveness of Plan
<u>Weekly</u>				
Teacher A Ms. Smith	hold up to community expectations and taxpayers; use every possible moment; guide for self, let students work at their own pace	teacher guides and student textbooks for math and reading, themes for other subjects, learning opportunities that present themselves; Saxon Math	handwritten lesson plan book with separate tasks for each grade level in math, reading, and spelling	student progress and familiarity with material
Teacher B Ms. Johnson	correlate grade-level topics in science, keep track of Bloom's Taxonomy levels being addressed, guide for teacher	student textbooks, student performance assessments, curriculum guides, supplementary materials	on-line planner-Planbook.com with separate grade/subject plans; links to resources	student performance on assessments bump lessons forward or back as needed
Teacher C Ms. Williams	provide structure, hold self accountable, students also know what needs to be done, helps with student anxiety, tracking class and make-up work, available for substitute to use if needed	previous plans, teacher guides, basal textbooks for science and social studies; grade-level textbooks in math and reading	separate table in excel spreadsheet for each grade level with weekly and daily schedule and activities	assessing if any topics need to be accelerated, which is based on student grades from work
<u>Daily</u>				
Teacher A Ms. Smith	same as weekly, but adjusts to meet student needs	incorporated into weekly plans, but makes flexible decisions	handwritten plan book	how well students understand each lesson
Teacher B Ms. Johnson	Keep track of all standards taught for math	supplemental resources from Teachers Pay Teachers, online videos and interactive	on-line plan book-Planbook.com	student performance on assessments; moves lessons as needed
Teacher C Ms. Williams	Make sure students prioritize their daily tasks	same as weekly plans, but includes teacher activities, student work assignments, Excel Math, Accelerated Reader, Read Naturally	daily schedule and activities are incorporated into weekly plan	crosses off daily tasks as when completed, accelerates or remediates lessons based on student completion

Table 3. Teacher Planning Routines

Routine	A- Ms. Smith	B- Ms. Johnson	C- Ms. Williams
Activity Routines	students have classroom jobs, turn in homework into tray at beginning of day, have routines for independent work time, teacher discusses expectations for student routines throughout year	students record assignments in planners; Daily News combines grammar and current events and has a repetitive structure; math rotations, calendar, spelling sequence of activities	Morning routine-seatwork followed by Pledge; students move to next task in agenda independently when finished; daily schedule is consistent; students have classroom jobs; all assignments are kept in grade-level binders and color coded for students to access
Instructional Routines	teacher always reminds students of materials needed for each lesson; calendar time; when meeting with one student for lesson, others are always working on long-term project or previous assignments; in math, teacher introduces vocabulary early to prepare them for future years	Structure in math: warm-up on computer, problems with teacher, then an assignment In science and social studies, each lesson takes three days and follows same sequence: uses phrase "Check please" to cue student errors during read alouds	Teacher provides students with weekly agenda so they all know what to expect; reviews previous lesson, always bookmarks spot in teacher's guide; teacher reads aloud lesson content and previews assignment with student; does guided practice before independent practice; does 4-5 week rotation of science and social studies blocks
Management Routines	Students have temporary walls to put up for minimizing distractions; all students have easels with necessary materials; teacher uses countdown to help younger students follow directions, students wait quietly to be acknowledged by teacher if she is working with another student; students raise hands	Students earn rewards for performance on tests or outstanding effort on assignments; a quiet zone in classroom is used to minimize distractions; expectation levels are set for each assignment	Students always line up at recess, ask to use bathroom and get hall pass, know to wait for teacher acknowledgement before speaking if she is working with another student, classroom reward system based on behavior and work completion; students know where to get materials for next assignment

Table 3. Teacher Planning Routines

Routine	A- Ms. Smith	B- Ms. Johnson	C- Ms. Williams
Executive Planning Routines	opens math binder with next lesson on top for easy access; gets materials for future tasks ready while student is working, thinks about upcoming events and unfinished student work and puts these into plans; plans two weeks in advance in plan book whenever she has a spare moment	teacher writes memos and completes to-dos on her list before school starts each morning, checks e-mail at recess, stays after school to plan units, grade papers, and print handouts; grades papers during lunch and enters into grade book after school; looks at next week's plans each Sunday night at home; does annual calendar in August and orders materials	teacher crosses off assignments in plan book as soon as completed; copies plans from previous plan book, does planning during prep time on Wednesdays and makes copies every Friday afternoon, previews current events videos, grades papers after school and adjusts plans as needed; all teacher materials kept in grade-level crates

Activity Routines

Similarities among the three teachers' classrooms included the existence of student jobs, procedures for turning in completed work, the use of student planners, and expectations for independent work time. All students in each class seemed to carry a responsibility to complete a task and then start on a new one. The greatest contrast was that Ms. William's students had an agenda with their next task listed, so they did not have to interrupt their teacher to ask what to do next if she was meeting with another grade level. Conversely, Ms. Smith's and Ms. Johnson's students had to wait for instructions from the teacher after finishing an assignment, which often times required an interruption of the direct lesson.

Instructional Routines

On a spectrum of instructional organization, it seemed the more experienced teacher had the least amount of structure, while the least experienced teacher had the most amount of structure in terms of following an established plan. For example, Ms. Williams and Ms. Johnson habitually referred to their plan books, whereas Ms. Smith rarely referenced hers. Ms. Williams followed her scheduled plan very closely, but when asked for a daily schedule, Ms. Smith expressed that there was none; they work to the students' progress rather than a clock. Ms. Johnson could be said to lie in the middle of these two ends, having a consistent schedule but altering it throughout the day for various reasons. However, all teachers followed a similar means of meeting with students in each grade level to provide direct instruction while other students worked independently for math and reading. Within these independent meetings, the three teachers tended to follow a comparable method: review previous concepts, introduce new concept with guided practice, and preview the student's independent assignment. Teacher style, personality, and relationship with students also appeared to contribute to how she approached her instruction.

Management Routines

A common theme across all classrooms included quiet work zones for students. With another lesson going on in a different grade level, all three teachers recognized and provided a way for students to minimize distractions when working independently, including the option to work in another space or room. Additionally, each teacher had

taught students a procedure for what to do when finished with an assignment, as well as how to communicate with the teacher when she was occupied with another student. All students knew the rules for asking to go to the bathroom or leave the classroom for any reason. Finally, each teacher had established a behavior incentive program within her classroom. Ms. Smith rewarded students with either candy or a small prize for completing daily homework. Ms. Johnson included larger rewards for producing outstanding assignments as well as cumulative positive behavior in a points system. Ms. Williams had an individual and group-based reward system in which students worked to earn a class reward. Besides occasional off-task behavior and the need for redirections, no major discipline issues were apparent during observations. While non-academic, these management routines set up norms for daily student behavior and were carefully planned by each teacher.

Executive Planning Routines

The multi-grade teachers in this study were responsible for supervising students at nearly every moment of the day, leaving very little time for planning during school hours. Each teacher expressed using every possible moment throughout the day to work in planning such as during testing and lunchtime. Accordingly, each teacher used time before and after school to plan and prepare for lessons. Throughout the school day, I observed Ms. Smith locate and ready materials for the next activity as soon as she had students occupied. Ms. Smith also kept each grade's math binder open to the next lesson for easy and efficient access. Ms. Johnson maximized her prep time by making to-do lists in her weekly plans for when students were not present, as well as spending time on

Sundays making photocopies for the week's lessons. Ms. Williams uses her sole preparatory period on Wednesdays when her students are in music class to type her agendas for the next week, but waits until Friday afternoons to finalize them in case she needs to adjust. She then always makes her photocopies for the following week on Friday afternoons after school so that they are all prepared. Additionally, Ms. Williams keeps all of her teacher manuals and materials organized into color-coded plastic crates separated by grade level with bookmarks on each page so that she can locate all of her materials quickly. Ms. Williams says she has become more efficient with her planning process because she is now able to replicate many plans from former years. Previous teaching experience appears to be a prominent factor in these teacher's planning routines.

Alignment to Planning Models

In order to make claims about an overarching planning methodology for each teacher, I asked them to identify similarities and differences to compare their own practices to foundational and more contemporary planning models. While Ms. Smith noted that she didn't feel any of the models really captured her approach, she did see some association between her unit planning approach and Yinger's (1980) process model. Ms. Johnson identified similarities in aspects of her planning with all of the models depending on the task, while Ms. Williams related mostly to the Danielson Framework. Table 4 summarizes the teacher's self-identification with the planning models.

Table 4. Alignment to Planning Models

Type of Model	Description	
<u>Linear (Tyler, 1950)</u>	Objective → Activities → Evaluation	
Ms. Smith	<u>Similarities</u> Math and reading tend to follow this format	<u>Differences</u> makes activities based on student interest and misconceptions using long and short-term projects
Ms. Johnson	Uses textbooks for support, and these follow this model	
Ms. Williams		Doesn't have time to select objectives for each grade level/subject, so goes off of objectives in books
<u>Cyclical Process (Yinger, 1980)</u>	Problem identification → Define Problem and Develop Solution → <u>Implement, evaluate, make it a routine or change</u>	
	<u>Similarities</u>	<u>Differences</u>
Ms. Smith	forms activities based on materials available and ideas from students	
Ms. Johnson	Does this more with themed units, finds what works and proceeds with it	
Ms. Williams		Sticks to content in the textbooks rather than just finding an activity
<u>Understanding by Design (Wiggins & McTighe, 1998)</u>	Establish Learning Goals → Assessment Plan → Take Action (Learning <u>Activities</u>)	
	<u>Similarities</u>	<u>Differences</u>
Ms. Smith		Does not identify with this model
Ms. Johnson	Would use this more for a project or to prepare for the MAPS test	
Ms. Williams		Does not identify with this model

Table 4. Alignment to Planning Models

Type of Model	Description
Danielson Framework: <u>Domain 1 (2013)</u>	Knowledge of: Content, Students, <u>Instructional Outcomes, Resources, Coherent Instruction (flow), Assessments</u>
	<u>Similarities</u> Ms. Smith Uses knowledge of students frequently Ms. Johnson knowledge of students helps push curriculum further, relates to her practice because she checks what students know, then moves on to concepts as needed. Ms. Williams Plans content-based lessons, uses knowledge of students frequently from assessments, identifies most with this style <u>Differences</u> rural school has unique components

Student Groupings

Teachers in the study were asked to describe how and why they group students when planning for different subjects. All three teachers utilized student groupings for various reasons. A commonality among them was the grouping of students in the same grade levels, as well as for special subjects, including art, music, P.E., Library, and occasionally writing. Teachers expressed that these subjects are easily adaptable to different grade levels and make logistical sense when scheduling the day. Ms. Johnson noted that in writing, the six traits of writing and the writing process also allow for working on the same types of writing while expecting different grade-level skills. Ms. Williams groups her 7th and 8th graders for grammar because she felt the concepts were

very similar at those levels. Ms. Smith and Ms. Johnson choose to group all students together for science by finding corresponding topics.

Ms. Smith noted that the Next Generation Science Standards include Disciplinary Core Ideas that build across grade levels with varying depth of skill and content, which makes for rational student groupings in this area. For example, the watershed project her students were working on could fall under the Earth Science Disciplinary Core Idea ESS2C: The Role of Water in Earth's Surface Processes, which includes a different skill set for each grade level. In science, Ms. Williams grouped her 5th and 7th graders together, because their curriculum topics aligned, but taught separate lessons to the 4th and 8th graders. Similarly, Ms. Johnson noted that some topics, such as money, overlap in her math curriculum, so she will plan to rearrange the order of her math units in order to group primary grades students together to teach the concept rather than in isolation.

Since the grade span is large in each of the classrooms, all of the teachers will occasionally partner an older student with a younger student to provide each other with an audience for reading and encourage peer teaching; however, none of the teachers felt that a peer could substitute for a teacher-given lesson. The rationale for peer grouping in this way is to allow the teacher to have uninterrupted direct teaching time with another grade level. Finally, when preparing for a field trip or school performance, all teachers noted students working together to reach a unified outcome.

Curricular Integration

Curricular integration is defined as the purposeful connection of two or more subjects through activities. Teachers were asked to describe what curricular areas they were most likely to integrate. All three teachers utilized curricular integration, described in Table 5.

Prior to answering any interview questions, Ms. Smith pointed out a large student-created mural that resembled American Indian pictographs, or rock wall paintings, which was hanging in the school entryway. She then launched into an unsolicited description of her school's upcoming four-day field trip,

We're going to this place called Bear Gulch Pictographs outside of Lewistown. This is supposed to be the largest concentration of pictographs and petroglyphs in the United States. It's on this ranch, and this woman who lives on the ranch, grew up on the ranch and her family were the original homesteaders. It's this whole wall of rock full of pictographs, and then of course, some of the kids, that were kids of the homesteaders, also put their names on the rocks. So you get the homesteader history and the Native American history, and it is *amazing*. Then, we will stay at the KOA campground outside of Billings right on the Yellowstone River. Here they (the students) can be outside and have campfires, cookouts...journaling at night. We're going to go to the Battle of Little Bighorn and do tombstone rubbings. All the students have digital cameras that they're going to take to document it (the trip) and do PowerPoint presentations when we get back. We'll also go to Zoo Montana and Chief Plenty Coups State Park. He was really big on education, and he had a vision that "we're not going to defeat white men, the only way you can is through education." So he was really adamant on getting his tribal members an education. So we're going to go there where he is buried and his homestead was.

When I asked if she had been planning this field trip for a while, Ms. Smith casually replied, "actually this is our second time we've been," indicating she has already spent the time previously planning out such an ambitious trip. Ms. Smith frequently mentioned her use of the Next Generation Science Standards' cross cutting concepts as a means to integrate. For example, the concepts of patterns and scales are easily relatable

to mathematics. Clearly, Ms. Smith works deliberately to provide authentic learning experiences for her students with her students that also fulfill standards.

Table 5 Curricular Integration

Teacher	Subjects Integrated	Description, Purpose, or Examples
<u>Ms. Smith</u>	Art with science and social studies	Students studied pictographs and petroglyphs in social studies, then created their own pictograph mural to prepare for a field trip to Bear Gulch Pictographs
	Music into Science and Math	Use songs to help remember difficult concepts, such as organism taxonomy
	Science into Math	Next Generation Science Standards cross-cutting concepts connect to math, such as patterns
	Social studies and reading/ writing	5 th grader reads a non-fiction text about Chief Joseph, then create a graphic organizer and writes a biography
	Art into reading	3 rd Grader read <i>Mixed up Chameleon</i> by Eric Carle, had student cut out pictures of animals from National Geographic Magazine to create her own mixed up animals; does this to help students process the story
<u>Ms. Johnson</u>	Social Studies and Language Arts	read texts in reading to support social studies topics; for example, Dr. Seuss' <i>And to Think That I Saw it on Mulberry St.</i> and Immigration incorporates grammar into current events
	Art with social studies and writing	Students studied Polynesians in social studies, wrote a play about the goddess Pele, then created stage decorations and props
<u>Ms. Williams</u>	Art and Writing	Students researched an animal and wrote a report about it, then created an art piece to accompany written work
	Social Studies and Literature	Class read-aloud usually incorporates Indian Education for All concepts, such as text <i>Sacajawea</i>

While curricular integration in Ms. Williams' classroom was evident in her current animal report and art project, she described her typical use of curricular integration as coincidental rather than practical. She responds,

A lot of times, I can make connections with our reading and science or social studies. We're reading *Saguaro Cactus* with the 5th grade student, and we did our biomes in science not too long ago, so that helps us go, remember when we did biomes? I do a lot of tie-ins just based on what we can recall. When I do my novel units that we can cross a little bit easier. It's more so I get excited when all of a sudden it really connects, I don't really try to plan to have it.

The practice of combining subject areas was evident in all three classrooms; however the process and rationale of curricular integration was unique to each teacher.

Post-Active Teacher Reflection

Following the classroom observation, the teachers were asked to analyze their effectiveness of their daily plan, explain any deliberate and other changes to their intended outcomes, and describe future changes they will make to their planning next year. All three teachers expressed they felt pleased with how their daily plans were applied and said they always anticipate changes.

Both Ms. Smith and Ms. Johnson had students absent on the day of my observation, which caused changes to their intended plan. Ms. Smith explained that her students' absence allowed her to work in extra direct instruction time with her kindergartner who needed it, so she was able to benefit from this change. Ms. Johnson had to adapt her play practice because of students being absent. Also, since one of the students who was absent was in the same grade level as present students, Ms. Johnson had to adjust a 4th grade poetry activity in reading. Ms. Johnson noted that a deliberate change to her yearly plan was to incorporate more vocabulary in order to meet national

and state testing expectations better. Ms. Williams had to push some of her reading lessons into time period later in the day because she felt she needed more direct instruction time with a student who was struggling with the lesson's concept. She noted she has adjusted her daily schedule each year in order to better meet the reality of how it plays out with students rather than how it looks on paper.

When asked to describe future changes to their planning processes, both Ms. Smith and Ms. Williams answered they would like to check the alignment of their current math programs with the Common Core standards. Ms. Johnson noted that she hopes to organize her supplemental materials better so that she can use them more effectively next year. She also noted that she never does anything the same; she has to adapt plans each year. Ms. Smith also referenced changing her plans based on which students she will have next year. These three teachers have years of experience in their classroom setting, but were quick to reply with adjustments and ideas for next school year.

Summary

Interviews and a day of observation provided a glimpse into the regular planning practices of these three multi-grade teachers. While the teachers varied in their goals and formats of planning, they used similar types of resources and means for evaluating their plans. The schedule and amount of structure and organization was quite varied in each classroom; accordingly, each teacher had an individual approach to planning instruction to meet the needs of their wide range of students. All teachers employed a rotation type of model for math and reading in order to provide direct instruction for each grade level,

yet chose to combine grade levels with other subjects. Routines played a prominent role in the classrooms, and curricular integration was evident in teacher descriptions and student work. The rural multi-grade teacher is faced with a multitude of challenges when planning for instruction, and the educators in this case study demonstrated flexibility and constant reflection to meet these challenges.

CHAPTER FIVE

DISCUSSION

Introduction

The purpose of this qualitative study was to investigate the planning practices of rural, multi-grade teachers. One primary focus included the methods teachers in this setting apply to their long and short-term planning, including the goals of their planning, resources used, format of the plan, and how they evaluate the effectiveness of their planning for future adjustments. The second research question concentrated on how teachers organize students of different grades as well as subject matter in this unique setting.

The three teachers observed for this case study had varying levels of experience, yet were viewed by county and regional supervisors as effective multi-grade teachers, which qualified them for the study. Data was collected through interviews, collection of planning documents, one day of classroom observation, and teacher reflection. Comparative tables were used to compare and contrast the information gathered from each participant. Conclusions regarding the planning methods of these teachers were made by referencing the data to relevant existing research to answer the research questions.

Conclusions

This study aimed to answer the question: What methodologies do rural, multi-grade teachers use to plan for instruction? To capture and refine “methodologies”, data was collected regarding identified levels of short and long-term planning, including yearly, unit, weekly, and daily. These increments were then examined using the constructs established by previous studies on teacher planning (Sardo Brown, 1988; Yinger, 1980) to include goals of planning, resources used, format of plan, and criteria for judging effectiveness of a plan. Teachers were also asked to describe their planning routines, as well as show examples of their plans as available. The second research question inquired: How do multi-grade teachers organize student groupings and subjects when planning for instruction? This chapter discusses the results further and relates the findings to the greater body of research.

Goals of Planning

Teachers described content coverage as a goal for planning to ensure students are receiving sufficient instruction in all curricular areas in a scheduled time frame. These results were consistent with Yinger’s (1980) review of planning research in that teachers spend the most amount of planning time making decisions about content. The teachers in this study tended to focus more on students’ long-term exposure to content and experiences rather than narrowing in on specific objectives. All three teachers relied on curriculum guides in math and reading; since most structured programs tend to include objectives for each lesson, teachers may not have felt the need to create their own in these

areas. Crafting written objectives can be a time-intensive process, especially with so many subjects and grade levels to consider. Teachers may view the objectives as part of the content or skills that they are planning for rather than a separate entity; they also may incorporate objectives into their mental cognitive processes without doing so explicitly. Additionally, standards in math, English Language Arts, and other core areas are often written in an objective format using action verbs such as “analyze, read, and interpret” (Montana Office of Public Instruction, 2011). While objectives-first based planning or understanding by design may be taught in teacher education programs (Clark & Dunn, 1991), these teachers did not seem to apply these models into their planning.

Resources for Planning

Student assessment data, textbooks, professional development, online resources, curriculum guides, place-based education, teacher-created resources, and student interests were used as resources for planning. Long-term relationships with students and knowledge of what was taught in previous years were also prevalent sources of information. Assessment data on the MAP (Measures of Academic Progress) test was used by Ms. Williams and Ms. Johnson as a primary resource for long-term planning. The MAP test reports student performance in an objectives-based format to reflect levels of student mastery of Common Core Standards in math, reading, and language. All three teachers in the case study referenced students and their performance on formative and summative assessments as a key resource in their planning.

The practice of using student assessment data to inform instruction is widely supported as effective pedagogy (Hamilton et al., 2009) although teachers require a

spectrum of knowledge to apply this data successfully, often through specific trainings and professional development (Datnow & Hubbard, 2015). The fact that the teachers use assessment data to influence their planning suggests they could benefit from additional trainings or workshops on data-based decision making. When properly using and interpreting data, teachers tend to use better pedagogical strategies to meet instructional goals, provide more specific feedback, and modify student programs more frequently (Fuchs, Fuchs, & Stecker, 1989) and in turn can improve their ability to meet student needs (Institute of Education Sciences, 2009; Mokhtari, Rosemary & Edwards, 2007). With so few pupils, the teachers chose to apply feedback from student achievement immediately and adjust their short and long-term plans accordingly.

Format of Plans

Consistent with Sardo Brown's (1988) findings in her examination of twelve middle school teachers' planning, the format of long-term plans by these teachers tended to be less defined and either in mental or in an outline format. Short-term plans were recorded in written form and more definitive, yet depended on the long-term plans. Teachers used collections of resources in tubs, crates, or binders for unit plans. Hand-written, on-line, or typed weekly planners were used most prevalently for short-term planning. Daily plans were incorporated into weekly plans, but executive planning decisions and improvisation were used to adjust plans as needed.

At the most detailed level, the study participants' lesson plans typically included specific lesson or page numbers, topics, titles, and resources. Again, teachers did not choose to specify objectives in their lesson plans, which is similar to several studies on

teacher planning (Sardo Brown, 1990; Yinger, 1980; Young, Reiser, and Dick, 1998). Hatch (2015) also concluded in his study on planning practices of five expert rural teachers that “the process of planning had less to do with documentation of instructional decisions and had more to do with knowing the needs of the students and improvising based on student responses as they related to curriculum goals and learning objectives.” Previous research helps explain why the most experienced teachers in the study seemed to readily adapt their plans each year, rather than repeat past plans without modifications.

Standards-Based Planning

One common theme that contributed to the teachers’ planning methods was the consideration of state and national standards. Ms. Smith emphasized her use of the National Resource Council’s (NRC) Next Generation Science Standards (NGSS) as a vital resource to her science instruction design. The state of Montana has not yet adopted the NGSS, however it played a key role in the standards’ development. The NGSS Framework will be considered during the current revision of Montana science standards (Montana Office of Public Instruction (MT OPI), 2015).

Ms. Johnson made a professional goal of aligning her current math curriculum with the Montana Common Core State Standards in math. Meanwhile, Ms. Williams used results from the MAP test, which displays student results in the context of Common Core standards for Math and English Language Arts, as a primary resource for her long-term planning. While foundational planning models such as Tyler’s (1950) linear model and Yinger’s (1980) process model can still be applied, these foundational models are lacking the inclusion of standards in an era of teacher accountability through student test

results. Ms. Johnson's use of an online plan book facilitates coverage of content standards by having them readily available to insert them into her digital lesson plans. While single-grade teachers usually have to focus on just one grade-level band of standards, the multi-grade teacher has the challenge and benefit of unpacking standards across grade levels, which could provide a more comprehensive understanding of their progression.

Prioritization of Planning Efforts

Clearly, the multi-grade teachers have to prioritize which content areas to focus on rather than attempting to tackle all at once. Ms. Williams, the youngest educator, has placed her emphasis on unit planning of novel studies, while relying on pre-developed resources in the other content areas. Ms. Smith noticeably chose science as an avenue to develop professionally; her frequent references to the Next Generation Science Standards and examples of how she applies them supports her focus in this content area; yet, she continues to rely on curriculum guides for math and reading. Meanwhile, Ms. Johnson chooses specific goals each year. Vocabulary development was her priority this school year, while standards correlation and organization of supplemental resources make up her future plans. Recognizing the improbability of reaching perfection all at once, these three hard-working teachers seem to apply self-improvement strategies in practical rather than theoretical instances.

Use of Competency-Based Learning

The presence of multiple grade levels for one teacher established an environment in which teachers used individual student performance to guide their instructional planning. In the classrooms observed for this case study, students were able to work at their own pace, and had their learning objectives accelerated or remediated based on their teacher's assessment of their prior knowledge and completion of tasks. For example, Ms. Williams provides students with a weekly agenda that helps students prioritize essential learning activities, but also includes extension activities and long-term projects that are student-centered. Ms. Smith also had students working on independent projects that they must complete prior to moving on, but these projects were completed at the students' rate. Additionally, all three teachers noted formative and summative student assessments as primary resources for their planning. This practice aligns with a recent paradigm shift, primarily being made in higher education settings, toward competency-based learning, which is also known as performance or proficiency-based learning. *Competency* can be defined as a "combination of skills, abilities, and knowledge needed to perform a specific task" (U.S. Department of Education, 2001, p.1). Correspondingly, competency-based education is "an approach that empowers students to demonstrate mastery of a wide range of knowledge and skills at their own pace." (Pace, 2013, p. 5). As of 2013, elementary and secondary school districts in at least 40 states had elementary and secondary have made a shift toward competency- based education models that use flexible learning environments that focus on content-standard mastery (Pace, 2013).

Rather than measuring students by how much time they have spent in the classroom (grade-level designations), multi-grade teachers in this study were able to teach directly to their students' proficiency level. For example, Ms. Smith's kindergartner was working from a first grade reading series because he had demonstrated the necessary mastery of reading skills to work at that level. One of Ms. Johnson's students was working above his grade-level for math, but on grade-level for other subjects. While single-grade classrooms face greater challenges in applying this model due to logistical and institutional challenges, multi-grade teachers have the ability and autonomy to plan their instruction based on this method.

Experience and Planning Methods

Notable differences among the teachers' approaches to planning can be tied to their varying levels of teaching experience. The planning practices of Ms. Smith, who has taught for 30 years, varied substantially from Ms. Williams, who was finishing her sixth year of teaching at the time of the study. Ms. Williams, who had the least amount of teaching experience, had the most detailed lesson plans of the three participants. Ms. Smith's written plans were less specific in written form; for instance, the phrase "finish petroglyphs and pictographs" was recorded as her social studies plan for all students. Ms. Smith's plans did not include any corresponding times or daily schedule, and to the outside observer her classroom could be perceived as disorganized and cluttered. However, she seemed to incorporate more authentic learning experiences, especially in science. The presence of a garden in her classroom is just one example of her real-life applications. Even though Ms. Smith seemed to lose instructional time with students

because she had to stop her lesson with one student in order to instruct others what to do next, or to search for materials, her students appeared to be rather enthusiastic about their independent tasks, which often included projects generated from student-selected topics, such as her fifth grader's choice to study bird species identification.

In contrast, Ms. Williams' classroom appeared to be far more organized, structured, and efficient, yet relied more on teacher guides and student textbooks for learning activities. For example, Ms. Williams' social studies plans for fifth grade stated "Chapter 7, Lesson 3: The Jamestown Colony; Read pg. 178-185, do workbook p. 40," on Monday and continued in this manner, naming a reading section and workbook page for each day, leading up to a test. This format was consistent across all of her grade levels. These plans are likely relevant to her social studies curriculum and her exemplary organization ensures proper content coverage; however, they may be lacking in student-centered, meaningful learning experiences. As a newer teacher, Ms. Williams likely uses this approach as a way to manage her incredible planning load and extra-curricular responsibilities.

Ms. Johnson, with 16 years of experience, seemed to fall in the middle of the other two teachers in terms of structure and organization of plans. She relied on textbooks, but supplemented much of the material through the use of unit themes and student interest to connect grade levels and subjects intentionally. For example, the motivation of her students' end of year play and musical on Pele, the Hawaiian goddess, came from her sixth grade student's choice to study Polynesians as part of a social studies project. She also made use of technology to create lesson plans that were specific to her

needs. Ms. Johnson has seemed to find a balanced juxtaposition of standards-based content and skills coverage with student-generated ideas and authentic, multidisciplinary themes.

Differences in instructional planning due to teaching experience are substantiated by previous research studies. In a review of research on novice and expert teachers, Tsui (2003) found that novice teachers tend to follow the objectives and activities more closely as described in the teaching guide because they “lacked the confidence from what was prescribed;” whereas expert teachers use mental plans that have richer detail, exercise greater autonomy, and improvise more greatly to meet the needs of students. In the study, Ms. Williams explained that she really follows the basal curriculum guide in science and social studies, while Ms. Smith changes her topics each year based on student interest, their end of year field trip, and community resources. The fact that Ms. Williams had the most thorough plans is consistent with Johnson’s (2007) conclusions that newer teachers tend to have more detailed plans than more experienced teachers.

Alignment to Planning Models

As part of the planning interview, I described prevailing planning models (Tyler’s linear model, Yinger’s process model, *Understanding by Design*, and the Danielson Framework) and asked the research participants to identify similarities and differences of their own practices to the models. While Ms. Smith expressed her belief that the distinctiveness of the one-room school setting kept her from identifying fully with any of the described models, I noticed that her descriptions of unit planning, especially for science, fit with Yinger’s (1980) cyclical process model. In the problem-finding stage,

Ms. Smith is presented with an idea for an activity, either from a student, a community member, or a professional development course. She then redefines the problem, exploring resources she currently has or needs, as well as gathering information on prior student knowledge. Then, she makes a plan for how to teach the concept in an authentic way, which relates to Yinger's step two, problem formulation/ design. Finally, she carries out her unit and evaluates it to determine if her idea should be repeated in future years, which relates to Yinger's stage three: implementation, evaluation, and routinization. Ms. Smith's unit on watersheds that I observed in science was a prime example of this: she combined a place-based topic relevant to the geographic location of the school, and partnered with community resources to develop the idea further. Next, she determined existing student knowledge of watersheds in their area and used their misconceptions to guide her unit. In future years she will return to the watershed unit and decide if it will become a routine aspect of her science instruction. The observation that Ms. Smith has the most experience and tends to plan more cyclically rather than following an objectives-first model corresponds with previous research on planning of veteran teachers.

Interestingly, Ms. Johnson identified with several of the planning models. She felt that Tyler's (1950) model applied to her planning when she used textbooks and teacher guides as a main resource, because they typically follow an objectives, activities, and evaluation sequence. Ms. Johnson explained that Yinger's (1980) process model applied when she was planning her themed units, because she would usually begin with an idea for an activity or a resource to build from. For example, a free resource guide she

received on Montana noxious weeds and ecosystems precipitated her current unit theme of Bats, Bees, and Pollinators in her classroom. McTighe and Thomas' backwards design model applied to her teaching when designing projects or preparing for curriculum-based assessments: for instance, when readying students for the MAPS (Measure of Academic Progress) benchmark tests, she knows which academic goals in math and reading students are lacking in from previous tests, so she designs learning activities to meet these goals. With projects, she has an end result in mind, then designs activities to get students to the desired endpoint. Finally, Ms. Johnson, whose supervisor uses the Danielson Framework for her observations, felt that the component of knowledge of students helps her push her curriculum further, because she can "check what students know and move on to concepts as needed." Evidently, Ms. Johnson is a dynamic teacher who has realized the specific subject area or type of learning task can require various planning approaches.

More recently out of a teacher education program than the other two teachers, Ms. Williams identified most strongly with the Danielson Framework when describing how she approaches planning. Much like Tsui's (2003) findings on beginning teachers, Ms. Williams said Tyler's objectives-first model does not apply to her because she "doesn't have time to select objectives for each grade level and subject, so I go off the objectives in the books." Additionally, Ms. Williams supposed Yinger's process model did not fit because she usually sticks to the content in the textbooks rather than just finding an activity on her own. Domain One of the Danielson Framework, titled Planning and Preparation, includes demonstrating knowledge of content, students, and resources,

setting instructional outcomes, and designing coherent instruction and assessments (Danielson Group, 2013). Ms. Williams is observed by her county superintendent with the Danielson framework as an evaluation tool and has to complete a reflection and make an action plan for each Danielson Domain. Perhaps this factor and her relatively more recent experience with a teacher education program contributes to her identification with this design.

Importance of Routines

Each teacher utilized routines as a way of increasing planning efficiency as well as streamlining student activities. Ms. Williams uses plans from previous years and her spreadsheet template to cut, copy and paste her plans each week, then photocopies all materials every Friday afternoon, sorting them into color-coordinated grade-level binders. Ms. Johnson uses her four-year cycle of themed units to make long-term planning efficient and easy. Furthermore, Ms. Smith frequently applies her profound understanding of science processes and standards to develop dynamic unit plans based on student interests. The use of routines and habits in planning for instruction reduces the cognitive load of teacher decision-making (Borko & Niles, 1987; Yinger, 1979). With so many subjects and grade levels to manage, the teachers in this study also relied heavily on teaching activity and procedural routines to students to facilitate their independence. Students in all of the classrooms illustrated this finding when carrying out classroom jobs, turning in assignments, and transitioning from one task to the next. Without these routines in place, multi-grade teachers would have a more stressful environment due to all of the decision-making that comes without habituation of daily processes.

Student Grouping

The teachers in this study shared a common practice of teaching separate grade-level lessons for math and reading, and then choosing to combine grade levels for various other subjects. Ms. Williams' use of a structured rotation model to allow for differentiated, direct instruction in math and reading is a very similar organizational scheme one would find in single-grade classroom that uses ability grouping in these core curricular areas. Students rotate among stations to include a direct lesson with the teacher, independent seatwork, sustained silent reading, and a reading comprehension and fluency program on the computer. This format allows single-grade teachers to differentiate instruction for a larger class of students, but is applicable for the multi-grade teacher because it allows for specific grade-level lessons with the teacher while the other students are occupied.

Ms. Johnson and Ms. Williams used a similar rotation model for math, in that they had students working on either an assignment, computation fluency activities, or using an adaptive computer math program while meeting with another grade level. Ms. Smith had long-term projects or previous assignments as tasks for independent work time. While differing in structure, all three of these techniques required students to perform tasks on an individual basis prior to moving on and be self-directed learners. Multi-grade classrooms necessitate an environment in which students apply their own goal setting, time management, and attention monitoring without constant guidance from their teacher (Vincent, 1999). These strategies could be applied to single-grade

classrooms, but managing student on-task behavior might prove to be more difficult with increased numbers of pupils.

The three teachers in this case study also employed mixed grade-level grouping for a variety of subjects. This practice allows for increased teacher contact time, and can be advantageous to the multi-grade classroom because it encourages cooperation and builds student relations (Vincent, 1999). Ms. Smith described that she will have younger students grouped with older students as a means of collaboration and mentorship, but not as a substitute for the teacher. Ms. Smith's rationale for peer grouping is important because it demonstrates that she considers the impact it has on students rather than just doing so out of convenience. Ms. Smith and Ms. Johnson chose to teach science to all grade levels using the same topics, but requiring different outputs of students, while Ms. Williams combined two of the grades because their content seemed to align in their textbooks, but had other grades work on separate assignments. The three teachers chose to group all students together for P.E., art, and music because they considered these subjects to be more skills based and easier to differentiate; also, teachers combined students for these areas to meet scheduling restraints. Multi-grade teachers consider factors such as logistics, grade-level standards alignment, student capabilities, and the opportunity for student collaboration when making decisions about student grouping.

Curricular Integration

Curricular integration, or the connection of subject areas, was used frequently by the multi-grade teachers but in different ways. Ms. Smith and Ms. Johnson seemed to plan more deliberately to link subject areas through the use of unit themes and long-term

projects. For instance, Ms. Smith linked concepts of watersheds, petroglyphs and pictographs, and American Indian history in a multi-disciplinary unit to prepare students for their upcoming field trip to Bear Gulch Pictographs, the Yellowstone River, and the site of the Battle of Little Big Horn. Ms. Johnson demonstrated *interdisciplinary integration*, which required students to use collaborative group skills, writing skills, and speaking and listening skills to produce a school play and musical about the legend of Pele, a Polynesian goddess. Alternatively, Ms. Williams mentioned that her use of curricular integration was primarily coincidental other than her novel studies. She noted when themes in content areas overlapped, she worked to help her students make connections between them. For example, if a story in a student's basal reader related to a topic they had covered in science or social studies, Ms. Williams would prompt the student to recall his prior knowledge of the topic. The teachers' use of curricular integration to link topics across grade levels is consistent with previous research on multi-grade teachers' instructional practices (Miller, 1991; Vincent, 1999). By grouping subject areas, the teachers in this study were able to establish constructs that students had to work together toward a common goal, as well as link their coursework to authentic learning experiences such as field trips, school performances or collaborative projects.

Implications of Findings

The methodologies of multi-grade teachers in this case study can be extended to the broader population of educators because they enable differentiation for a vast spectrum of student achievement. Single-grade and multi-grade teachers alike can

benefit from learning purposeful, reflective planning strategies. A huge shift in how teacher education programs approach instructional planning may be needed to address the discrepancy between the theoretical, objectives-first (Tyler) model of planning versus what experienced, practicing teachers are realistically able to apply.

Student assessment data and interests were used as a significant source of information for these multi-grade teachers' planning. The application of knowledge of students, which is a component of Domain One in the Danielson Framework, could be emphasized in teacher education programs and professional development focused on planning methods. The multi-grade teachers in this study all had the advantage of knowing what content and skills were taught from previous years and considered this information carefully when making future plans; single-grade teachers could also benefit from this knowledge of students by establishing systems of communication among grade level teachers.

Lesson plan formats from this study could also be used as a bridge between the real world of teaching to the theoretical world of teacher preparation programs as practical samples. While many pre-service teachers are required to formulate detailed short-term lesson plans for a single grade and subject, the challenge of long term and even weekly planning is a crucial skill that may not be taught explicitly in their programs. Specific courses with a focus on differentiation could be added to teacher education programs that address how to use math and reading rotation structures to meet the needs of diverse learners, whether they are in a multi-grade setting or a single-grade classroom with a broad range of student academic levels.

Standards-based lesson planning is an element that the teachers in this study incorporated at different levels. Professional development for practicing teachers surrounding the use of online plan books that contain databases of state and national standards, such as Ms. Johnson utilized, could also provide multi and single grade teachers with a means to include objectives and standards in their planning without tremendous extra time. Additionally, the use of common themes, such as the Next Generation Science Standards' crosscutting concepts used by Ms. Smith, could be examined by curriculum developers as a way to link science instruction across grade levels to produce resources for multi-grade teachers.

Executive planning routines consist of established thought patterns when a teacher is not teaching. The use of executive planning routines is a practice that the multi-grade teachers in this case study all relied upon, but may not be included as a topic in pre-service teacher education programs or professional development courses. The direct instruction of organizational habits and strategies used by practicing teachers when planning could provide future teachers with a toolbox of ideas for how to organize their own classroom and approach planning in a systematic, efficient manner.

One practical implication of this study would be to set up a system of peer mentorship for multi-grade teachers. Ms. Williams expressed that she would love to be able to observe other multi-grade teachers in order to expand her own practices, but is limited in doing so due to her school's isolation and her responsibility to her students. While teachers in larger school districts have the opportunity to have grade-level or departmental team meetings on a regular basis, multi-grade teachers are typically limited

in access to such professional learning communities. The Montana Small Schools Alliance, which is a professional organization focused on providing professional development for rural schools in Montana, could consider adding peer mentoring as a component of their programming. Additionally, multi-grade teachers could benefit from round-table discussions with one another to describe their own practices in order to generate trial-tested ideas.

As a teacher new to the multi-grade setting, the information gleaned from my observations and interviews resulted in multiple personal implications for my own teaching. First, I would like to apply Ms. Smith's practice of using the strands from the Next Generation Science standards to develop annual rotations of science units. I was also inspired by her method of student-selected, long-term projects as an option for students to work on when finished early with a task. I was also envious of Ms. Williams' level of organization. I appreciate the idea of providing older students with a copy of a weekly agenda and teaching them to prioritize their tasks to encourage autonomy and self-directed learning. By preparing all materials ahead of time and providing older students agendas in the way that Ms. Williams does, I feel I could greatly increase on-task learning time. This structure could reduce the frequency of interruptions of direct instruction lessons because students would already have the directions and materials needed to complete their next task when working independently. Finally, I felt Ms. Johnson's use of themed units in order to connect curricular topics is a meaningful way to link subject areas and facilitate collaborative learning across grade levels. Ms. Johnson's use of an online plan book to track standards is a manageable way to record skill and

content coverage of so many grade levels and subjects that I could also explore. While varying in experience and method, studying all three teachers' approach to planning has provided new insights to me as an inexperienced multi-grade educator.

Limitations

Planning is a complex process that cannot be fully captured in one interview or one classroom observation day. The results of this case study are limited by the short scope of data collection, as well as self-report of the participants. While I had the participants describe their planning process, actual thoughts and actions done in my absence could only be inferred. Broad generalizations on teacher planning cannot be made from this study due to the narrow, specific population of these teachers. Additionally, statements about identification with existing planning models are based on the teachers' and my own perceptions, and could be open for different interpretation. Finally, the planning practices of the teachers in this study were not linked to student achievement; accordingly, statements about effectiveness of these teacher's methodologies are not substantiated by quantitative evidence.

Future Research

To generate a more accurate portrayal of teacher planning in multi-grade settings, further research could be conducted that spends a greater amount of time with the participants. For example, the days prior to school beginning in the fall, when the teacher is either mentally or physically crafting a long-term plan, would be an ideal time to

conduct a think-aloud to capture the process in real time. Additionally, asking teachers to talk through their process as they actually write their weekly plans would provide additional insight. As mentioned in the limitations section, this study did not consider the planning models and methods used by the teacher in comparison to their student achievement. Further quantitative research that uses a larger population of multi-grade teachers could be conducted to explore causality of planning methods and student performance. Then, these results could be applied to develop coursework for teacher education programs that focus on research-based pedagogy to use for either a multi-grade setting or a single-grade class with a broad spread of student abilities. As the prevalence of multi-grade schools continues to dwindle, current research pertaining to this setting becomes more of a rarity; however, the study of multi-grade schools is important because it is used as a model for developing education in rural areas globally.

Summary

The purpose of this qualitative case study was to determine the planning methods used by rural, multi-grade teachers and explore their organization of student groups and curriculum. The multi-grade teachers in this study had varying levels of experience that impacted their methods and decisions when planning for instruction. The professional demands of the rural multi-grade teachers in this case study necessitated intensive, reflective planning with a plethora of factors to consider; however, their unique position facilitated autonomy in planning, including opportunities for authentic, student-centered experiences. Unlike larger schools, where multiple teachers have to coordinate schedules

and staff members, these multi-grade teachers are able to employ greater flexibility to adapt to the needs of their individual students. The teachers involved all chose to teach separate, grade-level lessons in math and reading, but combined grade levels for other subjects due to common themes in content and skills. Teachers used curricular integration both purposefully and coincidentally to maximize teacher contact time, create experiential learning activities through field trips, and encourage collaborative grouping. Planning for instruction is a precursor to teacher action, which impacts student activities, learning and achievement. While multi-grade teachers in the United States are few and far between, the relevance of their planning practices cannot be ignored due to the potential applications of their methods to global education development as well as single-grade classrooms with a wide range of student abilities.

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APPENDICES

APPENDIX A

INTERVIEW AND OBSERVATION RECORDING FORM

**Phase 1: Pre-active
Teacher Interview**

Part 1: Demographics

1. Please describe your teaching background:

Question 1 Follow-Up:

Educational Background:	B.S. M.S.
Number of Years teaching total:	
Number of years teaching multi-grade:	
Number of years teaching in this school:	
Current Grade Levels taught	
Number of students	
Subjects taught	
Additional duties to plan for	

Part 2: Instructional Planning Methods

2. Planning can take place on several levels. For example, long-term might include yearly, term, and unit plans, whereas short-term planning would involve weekly and daily plans. Please describe how you approach each level of planning, including any routines you have related to this type of planning, planning required by your school's administration, time you usually spend on this type of planning, when you do this planning, and how you record your planning. Please provide any documents you have related to these levels of planning.

Level of Planning	Description
Yearly	
Term	
Unit	
Weekly	
Daily	

Question 2 Follow-Up: Please describe your planning of each level using the following four dimensions:

Level of Planning	Goals of Planning	Sources of Information	Format of Plan	Criteria for judging effectiveness of plan
Yearly				
Term				
Unit				
Weekly				
Daily/ Lesson				

3. Part Three: Types of Planning

Several models of planning exist. Please listen to the following descriptions of the different models and explain how your process of planning compares and contrasts to each type:

Type of Planning Model	Description	Similarities	Differences
Linear (Tyler)	Objective → Activities → Evaluation→		
Cyclical (Yinger)	Problem identification → Define Problem and Develop Solution →Implement, evaluate, make it a routine or change		
Understanding by Design (Wiggins and McTighe)	Establish Learning Goals → Assessment Plan→ Take Action (Learning Activities)		
Danielson Framework: Domain 1	Knowledge of: Content, Students, Instructional Outcomes, Resources, Coherent Instruction (flow), Assessments		

Other:			
--------	--	--	--

Which of these models is most similar to the way you approach your planning?

Part 4: Organizing Student Groupings

Please describe how you group your students for the different subjects you teach.

Description of grouping	Rationale- Why do you do this?

What routines and procedures are important to successful student groupings?

Part 5: Integration of Subject Matter

Curricular integration is defined as the purposeful connection of two or more subjects through activities. When you are planning for instruction, what curricular areas are you most likely to integrate? Please explain and provide some examples.

Subjects Integrated	Description, Purpose, and Examples

**Phase 2: Interactive
Classroom Observation**

Part 1: Observation Protocol

Teacher/ Student Actions	Researcher Response

Part 2: Evidence of Planning Implementation

Feature of Planning	Description and Example from Observation
Daily Routines (from Yinger, 1980)	<i>Activity Routines:</i> Includes established, fixed activities
	<i>Instructional Routines:</i> Methods and procedures established for questioning, monitoring, giving instructions, etc.
	<i>Management Routines:</i> procedures established by teacher to control and coordinate classroom organization and behavior
	<i>Executive Planning Routines:</i> established thought patterns when teacher is NOT teaching
Student Groupings	

Resources Used	
Curricular Integration	
Evidence of Alignment to planning models	

Phase 3: Post-Active Teacher Reflection

Reflective prompt	Teacher response
Analyze effectiveness of the plan	
Explain any deliberate and other changes to the intended outcomes	
Describe future changes	

APPENDIX B

TEACHER LESSON PLANS

Ms. Smith's weekly lesson plans, page 1 of 2

Week of <u>April 25</u>		Remember:	
Monday <u>25</u>	<i>Certificate to Child 3rd or Book-Reading!</i> <u>Spelling</u> 8 U 4 Alpha Order 5 U 5 pg. 20, do pg. 21 3 U 35 pg. 150 do pg. 151 2 U 35 pg. 179, do pg. 180	<u>Math</u> 8 <u>Testing</u> 5 <u>Testing</u> 3 2 L 127	<u>Reading</u> 8 Read 533-535 together 5 d. 23-Jaws of Dragon King Read in Room pg. 538-541 wkbk 135 3 Visitors From Space. Vocab-power pg. 400-401 wkbk pg. 6-8 2 3rd gr. Book - Read Officer Buckle Vocab power pg. 14-15 wkbk 1
Tuesday <u>26</u>	8 wksts 5 pg. 23 "Unit Words" 3 pg. 153 "This Week's Words" over directions! 2 do pg. 182	8 5 L 113 3 L 121 2 L 128	8 5 Read story pg. 593 3 Read story - Visitors From Space 2 Read Officer Buckle - Book
Wednesday <u>27</u>	8 5 3 <u>Word finds</u> 2	8 5 <u>Testing</u> 3 2 L 129	8 Read pgs. 536 Quick Write and read Tell Tale Heart 5 wkbk 136, 137 3 wkbk pgs. 69-70 Teach both! 2 wkbk pg. 2+3
Thursday <u>28</u>	8 > 8x each 5 3 > 5x each 2	8 5 L 114 ✓ 3 L 122 2 L 130 Part I	8 Reread Tell Tale Heart to Questions 1-4 5 Reread story of Savana wkbk 139 3 Reread story + 2 Reread Officer Buckle
Friday <u>29</u>	8 5 3 2 > <u>Test</u>	8 5 Test 21 3 L 123 2 L 130 Part 2 Test	8 Go over 1-4 homework + do 5-8 5 Test 3 Test Visitors from Space 2 Officer Buckle Test!

Ms. Smith's weekly lesson plans, page 2 of 2

<u>Science</u> Print Copies Macro Creative Draw + Label the Science Notebook. Questions about Macro: Fall movement, eating habits perception, sensitivity, and type on automatic key → cards Letter Quality		Reading ^{workbook 21, 22, 23} Letter J Math L # 67	Notes: u words Math "Jeopardy" Older students will love playing multiplication "Jeopardy," a game that is easy to organize. Give the answer: 42. Select the first student or team to come up with a correct question: "What is 6 x 7?" Give bonus points if the team can think of more than one equation for the correct answer ("...and what is 3 x 14?"). This is a great way to build number family skills. For younger students, the same thing can be done with addition: When you say, "The answer is 10" students respond with an appropriate question such as, "What is 6 + 4?" The product is 24. What is 8 x 3? ...and what is 6 x 4?
Finish pictographs		Reading - Reread Spelling Letter K Math - L 68	
Water Quality		Reading - Reread Spelling Letter L + M words + spelling	
Finish macro drawing		Math - L 69 Reading Letter N	
Finish Pictographs + petroglyphs		Math & TO part 1	
	1-2 pm Computer		
PH - vinegar, oil, bleach, water		Letter O Math & TO part 2	

Ms. Johnson's Weekly Lesson Plans from Planbook.com

5/20/2016	4 Science 9:15am-9:30am	Recess/Show and Tell 9:50am-10:15am	4 Science 9:15am-9:30am	Recess/Show and Tell 9:50am-10:15am	6th Science Instruction 9:05am-9:35am
	1 Science 9:31am-9:40am	Story /Poetry/Morning Work Time 10:15am-10:30am	1 Science 9:31am-9:40am	Sp Test/New Unit 10:30am-10:50am	May be independent or review work for 4th or 6th or both May be STEM time
	Recess/Show and Tell 9:50am-10:15am	SP 4-6 HW/ 1st Spell Help 10:30am-10:50am	Recess/Show and Tell 9:50am-10:15am	1st Unit Test # 1st New Unit # 4th Unit Test # 4th New Unit # 6th Unit Test # 6th New Unit #	4 Science 9:15am-9:30am
	Story /Poetry/Morning Work Time 10:15am-10:30am	4-6 Handwriting/Typing 1st Spelling Unit Support	Story /Poetry/Morning Work Time 10:15am-10:30am	Tests and lists independent as I will have Sci or SS groups	May be independent or review work for 4th or 6th or both May be STEM time
	SP 6th Instruct/1st HW/ 4th Spell City 10:30am-10:50am	1 READING/4-6 RN or Independent Reading 10:50am-11:05am	SP 1st hand/ Word Families 1-6/ 1=Sp City 10:30am-10:50am	Geography/Maps 10:35am-10:55am	
	6th Spelling Lesson: 4th finish 2 pages and check in before Spelling Games		1st Handwriting Instruction Word Families for older students	1 READING/4-6 RN or Independent Reading 10:50am-11:05am	1 Science 9:31am-9:40am
	1st Handwriting				Recess/Show and Tell 9:50am-10:15am
	1 READING/4-6 RN or Independent Reading 10:50am-11:05am	4 Read/1ABC/STAR/L RN or Independent F 11:06am-11:30am	1 READING/4-6 RN or Independent Reading 10:50am-11:05am	4 Read/1ABC/STAR/L RN or Independent F 11:06am-11:30am	Story /Poetry/Morning Work Time 10:15am-10:30am
	4 Read/1ABC/STAR/L RN or Independent F 11:06am-11:30am	1 Word Work 11:50am	4 Read/1ABC/STAR/L RN or Independent F 11:06am-11:30am	6th Read/ 4RN/ Independent/1st Star/ABC/Independe 11:31am-11:50am	Poetry:
	6th Read/ 4RN/ Independent/1st Star/ABC/Independe 11:31am-11:50am	1 Social Studies 11:51am-12:05pm	6th Read/ 4RN/ Independent/1st Star/ABC/Independe 11:31am-11:50am	1 Word Work 11:50am	SP 1st Lesson/ 4th Lesson and 6 SP City 10:30am-10:50am
	1 Word Work 11:50am	Islands	1 Word Work 11:50am	1 Social Studies 11:51am-12:05pm	1st New Unit Lesson::
	1 Social Studies 11:51am-12:05pm	Lunch 12:08pm-12:45pm	1 Social Studies 11:51am-12:05pm	Lunch 12:08pm-12:45pm	6th unit check before Spelling Games
	swimming with humans	READ ALOUD 12:50pm-1:00pm	Lunch 12:08pm-12:45pm	READ ALOUD 12:50pm-1:00pm	1 READING/4-6 RN or Independent Reading 10:50am-11:05am
					4 Read/1ABC/STAR/L RN or Independent F 11:06am-11:30am

5/20/2016	Lunch 12:08pm-12:45pm	1 English 1:00pm-1:20pm	Writing Block/Sci or SS group 1:00pm-1:25pm	1 English 1:00pm-1:20pm	6th Read/ 4RN/ Independent/1st Star/ABC/Independe 11:31am-11:50am
	READ ALOUD 12:50pm-1:00pm	258-260 drafting instructional writing	1 Minute Timed Writing:	publish instructional writing	1 Word Work 11:50am
	1 English 1:00pm-1:20pm	Writing Block/Sci or SS group 1:00pm-1:25pm	news 1:18pm-1:20pm	English 6th and 4th 1:25pm-1:40pm	1 Social Studies 11:51am-12:05pm
	254-257 instructional writing	Journal Writing	6th Social Studies 1:45pm-2:05pm	end the year photo album project and slideshows	Squeeze in Lesson or independent work
	English 6th and 4th 1:25pm-1:40pm	English 6th and 4th 1:25pm-1:40pm	4 Social Studies 1:50pm-2:10pm		Lunch 12:08pm-12:45pm
	end the year photo album project and slideshows	end the year photo album project and slideshows	PE/Structured recess 2:10pm-2:30pm	6th Social Studies 1:45pm-2:05pm	READ ALOUD 12:50pm-1:00pm
	4 Social Studies 1:45pm-2:05pm	6th Social Studies 1:45pm-2:05pm	Library/Assembly Rotate 2:30pm-3:05pm	4 Social Studies 1:50pm-2:10pm	1 English 1:00pm-1:20pm
	6th Social Studies 1:45pm-2:05pm	4 Social Studies 1:50pm-2:10pm	End Routine/ Jobs 3:05pm-3:15pm	PE/Structured recess 2:10pm-2:30pm	Writing Block/Sci or SS group 1:00pm-1:25pm
	4th grade independent work	6th Independent work	Parent/Board/other contact record 4:11pm-4:12pm	End Routine/ Jobs 3:05pm-3:15pm	Journal Writing
	PE/Structured recess 2:10pm-2:30pm	PE/Structured recess 2:10pm-2:30pm		Parent/Board/other contact record 4:11pm-4:12pm	4 Social Studies 1:25pm-1:40pm
	Art 2:30pm-3:05pm	Geography/Maps 2:30pm-2:45am			English 6th and 4th 1:25pm-1:40pm
	End Routine/ Jobs 3:05pm-3:15pm	End Routine/ Jobs 3:05pm-3:15pm			6th Social Studies 1:45pm-2:05pm
	Parent/Board/other contact record 4:11pm-4:12pm	Parent/Board/other contact record 4:11pm-4:12pm			Free Time Friday 1:55pm-2:10pm
					PE/Structured recess 2:10pm-2:30pm
					MUSIC 2:30pm-3:05pm

Ms. William's weekly plans for Grade 5

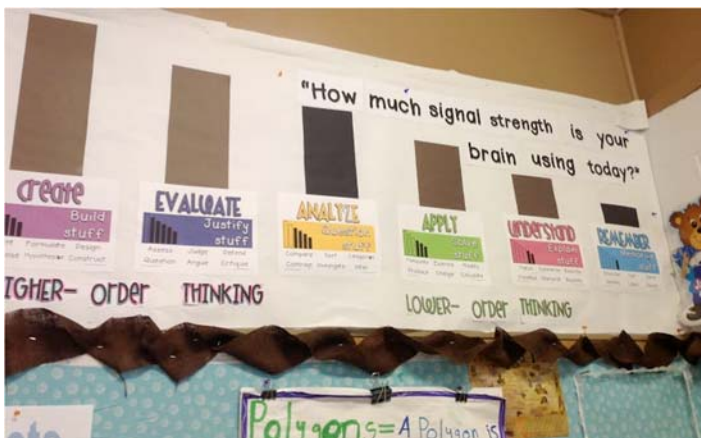
May 2 nd - May 6 th					
5 th Grade Agenda	Monday	Tuesday	Wednesday	Thursday	Friday
8:30 School Begins 8:30-8:50 Daily Opener • Homework/Agenda/Daily Practice	Daily Math Practice & Daily Language Practice	Daily Math Practice & Daily Language Practice	Daily Math Practice & Daily Language Practice	Daily Math Practice & Daily Language Practice	Animal Report & Animal Art Activity
9:00-10:00 & 10:20-10:45 Math (4 Stations/ ~20 min. each) - Teach Time - Seatwork - ALEKS Computer Math - EXCEL Math/Math Game	TT- Les. 7.8 Geometric Patterns p. 356-378 SW-WB 60 # 1-6 EXCEL- #72	TT- Les. 7.9 Congruence p. 362-364 SW-WB 61 # 1-9 EXCEL- #73	TT- Les. 7.10 Transformation p. 365-368 SW-WB 62 # 1-7 EXCEL- #73	TT- Les. 7.11 Symmetry p. 369-372 SW-WB 63 # 1-10 EXCEL- #74	TT- Les. 7.12 Tessellations p. 373-375 SW-WB 64 # 1-8 EXCEL- #74
10:00-10:10 Recess & Snack/ Novel Read	Sacajawea p. 100-104	p. 105-110	p. 111-117	p. 117-120	p. 121-124
10:20-10:45 Math Continued					
10:45-11:45 & 12:50-1:30 Reading/Lang (4 Stations/ ~20 min. each) - Teach Time - Seatwork - Read Naturally - Accelerated Reader	TT- 'Frindle' Read p. 566-574 Do Vocab Notes SW- Vocab & Notes	TT- 'Frindle' Think & Respond p. 574 # 1-4 SW- p. 574 # 1-4	TT- 'Frindle' Principal Parts Verbs TE 581G-581H Grammar p.162-163 SW- WB p. 105 & 106	TT- 'Frindle' Story Retell Vocab Review SW-WB 104	TT- 'Frindle' Selection TEST SW- TEST
11:50-12:00 Recess 12:00-12:20 Lunch					
12:30-12:50 Character Count/Channel 1	Motivation Mon.	Teamwork Tues.	Wellness Wed.	Thoughtful Thurs.	Friendship Fri.
12:50-1:30 Reading/Language Continued					
1:30-2:00 & 2:30-3:20 Science/Social Studies (4-5 Week Rotation) 4 th Grade Group 5 th Grade Group 7 th & 8 th Grade Group Soc Studies~ 4-5 weeks Science~ 4-5 weeks	5 th Grade Social Studies- Chpt. 7 Les. 3 The Jamestown Colony Read p. 178-185 SW- WB p. 40	5 th Grade Social Studies- Chpt. 7 Les. 4 The Plymouth Colony Read p. 186-191 SW- WB p. 41	Music with Mr. [REDACTED] 1:00 - 2:00 and 2:45-3:30	5 th Grade Social Studies- Chpt. 7 Review p. 194-195 Think About Facts # 1-4 SW- WB p. 42	5 th Grade Social Studies- Chpt. 7 Early American Settlements of North America TEST SW- TEST
2:00-2:30 PE	Track Practice	Track Practice		Track Practice	Track Practice
Spelling (Work on throughout the day)	Unit 33 Pre-Test	Unit 33 p. 205		Unit 33 p. 206	Unit 33 TEST
Library/Music/Art/Writing Activity Library- Mon. 2:50-3:20 (Tentatively) Music- Wed. 1:00-3:30 (Tentative Monthly Rotation) Art- 2 weeks Writing Activity- 2 weeks	Mother's Day Activity Plant Flowers Animal Report	Father's Day Finish Tin Man Activity Animal Report		Mother's Day / Father's Day Activity Animal Report	Mother's Day / Father's Day Activity Animal Report
3:20-3:35 Work Time and Daily Closing • Homework Binders/Clean Up 3:45 School Dismissed					
Announcements					Observation

worked on during reading

APPENDIX C

CLASSROOM PHOTOS

Teacher A: Ms. Smith's classroom**Layout and materials found in Ms. Smith's classroom**

Teacher B: Ms. Johnson's Classroom

Teacher C: Ms. Williams' Classroom

