Preparing students for Science, Technology, Engineering, Mathematics, and Healthcare Fields-A two year college approach

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Introduction

The Great Falls College-Montana State University is a two year college located in Great Falls, Montana and is primarily focused on workforce preparation and transfer to four-year universities within the state of Montana.

Currently there is a greater focus on preparing students to enter Healthcare fields as well as Science, Technology, Engineering and Mathematic (STEM) fields. Healthcare programs such as Nursing and Paramedic are competitive entry programs with a limited student enrollment-often with an application process that admits students with the highest GPA based off of required entry courses. STEM programs at four year universities require a great amount of academic rigor to maintain success.

To assist students of various educational backgrounds achieve success in their academic pursuits; the Great Falls College requires new students and transfer students with less than 12 successful transfer credits to take a one credit course called *Becoming a Successful Student.* This study is designed to assess the effectiveness of this course, both the perceived effectiveness by the student and the overall effectiveness as identified by subsequent academic coursework.

This figure represents the percent of students that feel that they have been adequately prepared for future courses in the following areas.


Focus Questions

Primary Question:

* How effective is the course, *Becoming a Successful Student*, in preparing students for the academic rigor of competitive entry health occupation programs or for transfer into a STEM program at a four-year university?

Follow-up questions:

* How do students feel they were prepared for the rigor of advanced classes after taking this course?

* How do students specifically pursuing transfer to a four year university in the STEM fields feel they were prepared by this course?

* How does this course demonstrate retention in adequately preparing students for their respective Healthcare fields?

The following figure outlines the student reported major types by percentage that fall within the parameters of the study.
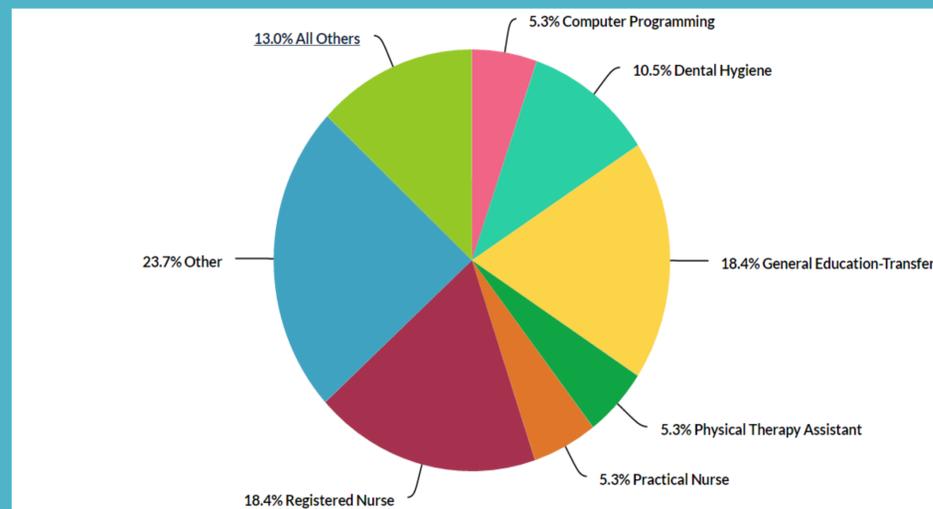

Methods and Data Collection

A standard electronic survey was administered to all students enrolled in the Fall 2016 section of the *Becoming a Successful Student* course at the Great Falls College-MSU. The responses were then sorted to specifically identify those students with a major in Health Sciences or a focus on the STEM fields.

These students then had their GPA tracked from Fall semester and compared to spring semester at mid-term. Mid-term was chosen as a data collection point due to the idea that most students do not consider dropping or withdrawing from a course for academic reasons until mid-term grades are posted. A follow-up survey was then conducted at the mid-term point of spring semester to the students that fell into the study demographic.

The following figure rates the students' perceived confidence in future application to competitive entry and transfer to STEM programs at the completion of the course on a 1-10 scale with 1 being not confident and 10 being very confident.
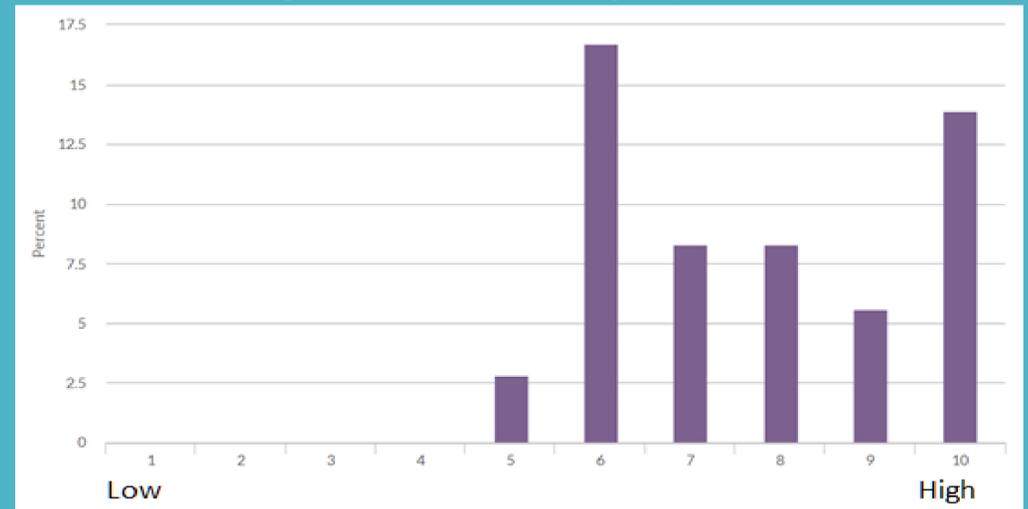
Conclusions

Fascinatingly, students had a greater perception of preparation for future academic coursework and a more positive outlook than the data comparison of grades from semester to semester. Students within the study overall showed a decline in GPA of 0.39 at mid-term and when grades were tracked to the conclusion of the spring semester, an overall drop of 0.46 in GPA was present.

Results from the follow-up survey were positive with students still reporting feeling successful and noting that they had felt the course did have an overall benefit. Since the results from the data yielded a concern for student success in future course work, an evaluation of the workload and evaluative processes within the Becoming a Successful Student course will assist in future course development.

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