

Classroom Interaction Strategies for Increasing Student Achievement and Retention: Lessons from GRASP

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ABSTRACT:

Faculty often devote considerable time and energy to the content of their classes. They make sure the curriculum for their courses is up to date and addresses the appropriate topics. In contrast to this attention to content, faculty often present the material in the same way they learned the subject matter, and give little additional thought to learning and implementing a variety of teaching strategies.

A typical classroom consists of students with a range of learning styles and, as such, a variety of instructional methods must be employed to maximize student learning and retain students' interest in the course. While most recognize that interacting with faculty is important for student development, research shows that not all students interact with faculty in the same manner. Students can be categorized as having one of four dominant styles; students' academic success is, in part, a function of the extent to which interactions in the classroom fit their dominant interaction style.

This presentation reports on a faculty development program -- Gaining Retention and Achievement for Students Program (GRASP) -- implemented in the NMSU College of Engineering beginning in 1999. Based on observations and data collection from select Engineering classes over a period of several semesters, it is clear that student retention and academic achievement can be improved if faculty are aware of and respond to their student's learning and interaction styles. This paper presents anecdotal evidence from GRASP observers and summary statistics demonstrating the program's effectiveness in terms of retention and academic achievement. The emphasis is on sharing simple strategies that can be applied in the classroom to respond to the needs of students who have different learning and interaction styles.

GRASP and Diversity

GRASP focuses on increasing student achievement and retention through addressing the diversity of learning styles students bring to the classroom. Student diversity is traditionally thought of in terms of the racial, ethnic, and cultural composition of our classes. Certainly this type of diversity is something to be aware of, but there is another type of diversity that is even more relevant in college and university classrooms which, until recently, has been unaddressed. Failure to recognize and respond to diversity of student learning styles creates problems for teachers in maintaining or increasing levels of academic achievement, and retaining students in various courses and programs of study colleges and universities have to offer.

The Problem

Faculty are often frustrated because students drop their classes or do poorly academically. Many students fail assignments and exams, and drop out of classes or entire programs because school does not seem to be fulfilling their needs and expectations. Instructors devote considerable time and energy to the content of their classes and make sure the material they present is up to date and addresses the appropriate topics. Despite this attention to content, many faculty continue to teach the way they learned. Some of the problems with student success can be corrected by learning and implementing a variety of teaching strategies that better match student learning styles with faculty teaching strategies.

Diverse Learning Styles

Students come to the college and university classroom with different levels of maturity, different goals and aspirations, and a variety of learning styles. The average age of incoming freshmen and returning students is on the rise. Older, more mature students bring a plethora of life skills and experiences, and are willing to challenge instructors in their quest to obtain an education and a college degree. These students tend to be more focused on their course work and have a tendency to interact more in the classroom.

Among traditional students, younger students and incoming freshmen who recently graduated from high school, there is an increasing number who may lack a clear vision of what they expect to gain from their post-secondary education experience, and they may lack the skills necessary to succeed. In addition, students fresh out of high school have often been taught to be passive learners, to simply sit respectfully and not disrupt the class while the teacher lectures. For these students the instructor must facilitate a willingness in students to participate, raise questions, and demonstrate they can synthesize the course material. These students may be intimidated by the instructor and the college classroom setting, and they may feel more comfortable interacting with other students.

In addition to the different levels of maturity and the varied focus of students entering college classrooms today, there is also a variety of learning styles individuals possess which dictate how they obtain the skills and knowledge instructors attempt to convey.

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classroom fit their dominate interaction style.

Students must be comfortable learning in the way they feel most confident. Some students report they learn most effectively from interaction with the professor in the classroom. There are other students who assert they learn best from other students. Yet, there is another category of students who learn from reading the material, listening to classroom lecture, and then interacting with the instructor outside the classroom, perhaps during office hours. And finally there is a group of students who learn most effectively by themselves.

The GRASP Approach to Addressing Diverse Learning Styles

To address these different styles of learning, college and university instructors must first assess the learning styles in their classroom. After reviewing the makeup of the body of students in a particular class, instructors can employ a number of strategies to ensure each student gains the most from their experience.

GRASP staff begin a semester by administering a learning style survey to each student in the classes chosen for the project. This learning style data is collected, analyzed and shared with the professors. Classes are observed weekly and data is collected about interactions between faculty and students, between students, and the number of students who meet with the instructor after class. Periodically, GRASP observers meet with the participating professors to provide a summary of their observations and to make suggestions on teaching strategies which will support the learning styles in their classrooms. At the end of the semester, grades and number of students retained in the classes are compared to a previous (pre-GRASP) semester for individual classes and professors to determine the effect of the program.

GRASP staff work with faculty to use alternative teaching and learning strategies which will address the learning styles of their students. One of the most effective strategies in reaching students is to get to know and use their names during class. Students report that this is one technique that makes them feel like an important individual in class, and not just an anonymous face in the crowd. This strategy engages students and gives them the opportunity to participate more actively in their education when they are acknowledged by name inside and outside the classroom.

Another important strategy is to use team learning and problem solving exercises as part of the classroom experience. Student-to-student interaction is important in addressing the needs for students who feel they learn best from other students, and gives all students the opportunity to process new information with other students. If this strategy is employed early in the semester, even as early as the first class, the students get to know each other much sooner and will work together more effectively during the semester.

Team exercises can consist of group problem solving. Early in the semester, students can be given a simple problem to solve which they should be able to complete coming into this particular course. This helps the students to get to know each other, it lets them know from the first day the instructor is serious about academic work, and it helps the instructor assess the skills the students come into the class with. Later in the semester, the class can review quizzes and exams by consulting in teams and demonstrating their problem on the board for class review. This gives students who may not have performed as well on a quiz or exam the opportunity to review the material with students who may have performed better, employing an additional peer review and peer tutoring strategy.

A strategy to help students start their homework is to give an in-class assignment to be completed and turned in at the end of the class period. This can be administered the last few

minutes of class and assists in clearing any questions or problems students may have with new material before they leave the classroom. This also allows students to work with each other as they often learn more effectively from helping each other.

It is also effective to periodically call on individuals to restate the material just presented by the teacher. This helps instructors see if students really understand new material, and engages students in an active learning experience. In addition to this, it is helpful to periodically survey the class, anonymously, on their “muddiest points.” Often students who claim they do not like to ask questions in class, possibly for fear of appearing ignorant or slow, are more than willing to write a question or two on some points about which they are confused. The instructor can collect these “muddiest points” and review them the next class period. This has often created even more discussion and review than normally anticipated.

Another strategy is to give students who may not be performing well in the class a personal invitation to come to the office to discuss any problems they may be having with the course. This is especially effective with students who report they learn best by interactions with the professor outside the classroom, and yet have not taken the opportunity to do so. After reviewing students’ grades early in the semester, the instructor could invite those who may be having problems in the course to meet with them to discuss the course materials. This helps students understand that the teacher is available and dedicated to helping them outside the class.

These are just a few of the many strategies suggested by GRASP which have been successful in improving the interactions which enhance learning inside and outside the classroom.

The Results of the GRASP Experience

Since its inception, GRASP has been implemented in 25 classes. More than 1,700 students have participated in GRASP courses. As a result of the student learning assessment, classroom observations, data collection and meetings with engineering faculty to summarize the classroom behaviors and suggest some more effective strategies, GRASP has realized an average increase in both academic achievement and student retention of four percent for the five semesters the program has been in effect. Some courses with particular instructors have increased student achievement as much as 21 percent after applying the GRASP principles. Similarly, student retention has increased as much 25 percent with the introduction of GRASP in some classes. These dramatic improvements have been achieved through the relatively simple pedagogical changes described earlier. These successes suggest that GRASP principles should be more widely utilized to better meet the needs of students, faculty, academic programs, and institutions of higher education.