The Factors and Results of a Mathematical Learning Community for First-Year Seminar Students

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Retention is an important factor for today’s college students. In order to foster retention, various
types of teaching practices, student motivational techniques, and instructional strategies can be
woven into universities’ learning communities that assist in this process. This session will focus
on a study of a Mathematical Learning Community for First-Year Students. The presenters will
discuss practices, student responses, engagement opportunities, outcomes and results that have
been gleaned from the implementation of this community. The participants will have an
opportunity to engage in a discussion about the angles and dynamics of facilitating this process
with traditional and non-traditional first–year college students in order to gain multiple views.
Introduction

CSU’s Freshman Learning Communities are designed to assist new students in building a foundation for academic success while promoting social, cultural and personal development. Participation in the program improves students’ chances of attempting and completing courses and graduating. While enrolled in these courses, students adjust and become involved in academic and social settings. They also establish joint enterprise within the campus community. According to Wegner (1998), “Joint enterprise is a shared goal, which is informally negotiated between community members, who work within a social network and are mutually accountable to each other for the creation of knowledge within the community.” In learning communities, students connect with faculty and other students to gain a strong sense of belonging and to build a support structure that grounds the student. Information is acquired and assimilated in natural group settings, and a resource network is established in order to give students a deeper educational experience. All of these areas are factors when addressing retention, progression, and graduation.

Literature Review

According to the National Survey for Student Engagement (2007), research indicates that “learning communities with courses or discussion groups designed to help students integrate course material, and those with required out-of-class activities, had consistent positive relationships with a wide range of student engagement and learning outcomes.” When a group of students takes 2 or more core courses together dynamic learning takes place. Students have the opportunity to build foundational skills while promoting social, cultural and personal development. Connections are made to campus and community resources that facilitate college
and career goals. Most importantly, participation in this program increases the students’ chances of staying in college, attempting and completing courses, and graduating on time (Barefoot and Gardner, 2001).

In order for students to adjust, there are various pre-entry elements that must be considered. Family support, academic background, and student expectations play a role in their integration into the university community. Family practices and standards contribute to the demonstration of self-efficacy for traditional students. The foundational skills acquired prior to coming to college can impact achievements and student expectations can affect perceptions and actions. All areas are critical aspects of adjustment. According to Kuh (2010), First Year Communities “create redundant safety nets… to enhance academic performance and adjustment of students.” In order to respond to various needs, the university must provide students with academic and social support structures which consists of services from Tutorial Services, the Counseling Center, Career Services, the Honors Program, Servant Leadership, the Advising Center, Veterans Affairs, and Financial Aid. As the university addresses these needs, students are more likely to progress through their college careers and graduate.

Many factors that impact student persistence include self-efficacy, personal responsibility, accountability, and the environment. Self-efficacy or the belief that one can achieve is a necessary element in student achievement and persistence. This skill can be developed by the formation of relationships with other students in the learning community to form positive peer support and can also be strengthened by connections with support services. Personal responsibility is needed to develop a clear vision of the future. Aspects that should be developed are decision-making skills, healthy communication patterns, physical and spiritual wellness, alcohol and substance awareness, and personal finance skills (Schilling, K.M. and
Schilling, K., 1998). These skills help students to be successful not only at college but are life skills that will impact future careers. The formation of accountability structures is naturally formed through participation in a learning community. Students become aware of peers’ actions and needs; therefore, they form connections and reach out to those who may be struggling. Students can also encourage peers to exhibit ethical behaviors and abide by the University Honor System. Accountability also fosters an awareness of academic responsibilities including completing assignments and attending classes (Schilling, K.M. and Schilling, K., 1998). A non-intimidating, open environment in which students and professors are approachable creates an atmosphere where concerns and suggestions are received. This type of environment helps to validate the student and creates synergy in the exchange of ideas. Confidence and open lines of communication are gained from these experiences and student retention is increased.

There are specific factors that impact learning for non-traditional students. Confidence is a major factor that impacts the learning process for these individuals. When entering the university setting, adult learners need to be re-affirmed that they are capable of achieving stated goals. One way to build confidence is to offer an Adult Re-Entry Refresher Skills Course. This course is composed of Basic Skills in Reading, Writing, Math and Study Skills for adults. This opportunity helps students to sharpen essential academic skills necessary to produce assignments at the university. These students also need to be provided with academic resources tailored to adult needs offered by support services on campus. The Career Services Center, Tutorial Services, the Counseling Center, Veterans Affairs, the Library and the Academic Center for Excellence are all examples of effective campus resources that give needed support to help retain adult students. In classes, professors need to be mindful of adult learning needs. Factors to consider include providing a clear vision of the course’s purpose, stating non-ambiguous
directions, utilizing concrete steps, and implementing predictable procedures. When these aspects are addressed in the college setting, more positive outcomes result for adult learners.

Faculty collaborations also create an effective means for facilitating positive student learning and outcomes. Observation of student patterns and the establishments of lines of communication between faculty members produce a better understanding of the students and their needs. When two or more faculty members have the same students, they can identify and correlate factors that impact student performance. If a student shows need for immediate attention, a report can be filed to the Behavioral Assessment Report Team or when students display a need for attention in less serious areas, faculty may file an academic a report in MapWorks which is a point of contact with student advisors. Early warning systems such as these are critical for campus safety and have been successfully used in numerous institutions as part of retention efforts. (Kuh, Kinzie, Schuh, Whitt, and Associates, 2010) In addition, faculty collaborations facilitate interdisciplinary practices relating from one class to the other. For example, writing assignments from an English course can be related to a U.S. History class. Time management skills learned in a First-Year Seminar class can be applied to deadlines and schedules of connected core classes. These types of skills extend to many real-life scenarios on campus and in the community. According to Kuh(2008), the Association of American Colleges and Universities defines learning as “an understanding and a disposition that a student builds across the curriculum and co-curriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus.” Creating these learning experiences facilitates deep learning by giving students the opportunity for synthesis of material in various situations and better prepares them for future careers.
Methods

The population group of incoming freshmen at our university is primarily first-generation students. Some students have not had the opportunity to develop life skills necessary for the college setting. Therefore, these skills need to be fostered in the first semester of students’ attendance at college. The students in our Learning Community were enrolled in both a First-Year Seminar Class and a Mathematics Class. They had opportunities to interact with faculty, peers, support services and campus resources throughout the semester. Initially, students were given motivational opportunities that included the identification of career goals, personal values, and their purpose for attending college. This information was utilized by students to form a personal mission statement. Giving students an opportunity to reflect on these areas assisted them in creating a clear vision for the semester, their college career and future career endeavors.

Several skills and strategies were implemented to provide students with keys for success in the Mathematics Learning Community. In addition to the academic skills learned in class, other areas were addressed to help assist students succeed and include concentration, student voice, time management, organizational skills and resource management. These are all vital parts in the college career. In order to gain an understanding of Math, students must have strong concentration skills. In the First-Year Seminar class, students practiced sustained attention exercises with numerous assignments to bring an awareness of attention patterns when studying. Student voice is also key when learning Math. They need to feel comfortable and confident asking questions and participating in Math class; therefore, students were provided with opportunities to participate in collaborative activities in the First-Year Seminar class that helped to establish a sense of confidence and comfort needed to speak up and ask questions. Time management skills are also necessary to help students track and manage homework assignments.
The First-Year Seminar class provided students with opportunities to learn how to manage schedules, identify possible procrastination factors, and the black holes that detract from time management (Feldman, 2014). All of these areas are factors that impact the completion of assignments in the Math class and the completion of the courses. Organizational skills important for core and major classes can be strengthened through the acquisition of note-taking skills. Students need to learn how to organize and assimilate class notes with notes from the readings. One effective method implemented was the Cornell Note-Taking Method. This method consists of separating the page into four parts. One part consists of class notes. The next part is located next to the class notes section. In this space, the students add notes from the reading assignments. Then at the bottom of the page, questions that arise are noted and summary statements are added. Students felt that this method helped them to analyze and assimilate material (Feldman, 2014). We found these skills and strategies to be effective tools for traditional and non-traditional students as they pursued their college career and beyond.

**Conclusion**

Freshman Learning Communities afford students exposure to the campus community and provide needed skills to attain their goals. As universities encourage the implementation and participation in Learning Communities, students receive a fuller experience. In addition, students become better equipped to integrate into communities as productive citizens in the workforce. The offering of these types of programs promote student retention, progression, and graduation as demanded by many state legislators. Students persist in courses, the WF rate is lowered, accountability is fostered and positive peer relationships are formed. Thus, retention, progression, and graduation are fostered.
References


