

Application of Interventions in Developmental Education

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Abstract: - *Many students who enroll in community colleges are unprepared for college-level work. As a result, community colleges have implemented a variety of interventions that are designed to enable students to perform successfully in college-level courses. This paper is a retrospective analysis of the methodologies applied by instructors of remedial or developmental education in community colleges in the United States in the 20th and 21st centuries to prepare students for college-level work.*

Keywords: - *college-level courses, community college, developmental education, intervention, learning community, remedial, supplemental instruction. Unprepared, writing across the curriculum.*

Many students who enroll in community colleges are unprepared for college-level work. According to Perin (2002), of the many postsecondary institutions that accept unprepared students, the community college has a social and legal mandate to remediate its students. Consequently, community colleges have implemented a variety of interventions that are designed to enable students to be successful in college-level work. Although many of these strategies were implemented several decades ago, they are still effective and applicable today.

Literature Review: Interventions

For several decades, community colleges have instituted a wide range of remedial programs that are designed to prepare their developmental education students for college-level work. Levin and Calcagno (2008) found that although there were a variety of effective approaches implemented,

many community colleges used the “drill-and-skill” approaches to teaching remediation. These approaches are “based on the presentation of concepts, operations, or classification schemes, and they employ repetitive practice ... to master what is being taught” (p. 4). Levin and Calcagno viewed this type of pedagogy as an extension of the style of teaching that was practiced at the high school level, which could have contributed to the students’ initial failure mainly because the drill and skill approach does not engage students in critical thinking and does not require in-depth understanding of the material. As a result, the researchers presented many useful tips to designers of remedial interventions for underprepared students in higher education. Some of these tips included: (1) Motivation: building on the interests and goals of the students and providing institutional credit toward degrees or certificates; (2) Substance: building skills within a substantive or real-world

context as opposed to using a more abstract approach; (3) Inquiry: developing students' inquiry and research skills to allow them to investigate other subjects and areas about which they might be curious; (4) Multiple approaches: using collaboration and teamwork, technology, tutoring, and independent investigation as suited to student needs; (5) High standards: setting high standards and expectations that all students will meet if they exert adequate effort and if they are given appropriate resources to support their learning; (6) Connectiveness: emphasizing the links among different subjects and experiences, and showing how they contribute to learning, rather than seeing each subject and learning experience as isolated and independent; and (7) Supportive context: recognizing that to a large degree, learning is a social activity that thrives on healthy social interaction, encouragement, and support (Levin & Calcagno, 2008, p. 4).

In support of their argument, Levin and Calcagno (2008) cited education experts and practitioners who recommended that basic skills should be taught in conjunction with content course materials so that students could gain experience in transferring these skills to tasks that are perceived to be "real." In other words, students are exposed to the content area material while simultaneously developing their basic skills. Levin and Calcagno further argued that skills taught in isolation were less likely to be applied productively to further coursework. Levin and Calcagno support Glenn's (2005) findings that remedial education provides the academic support underprepared students need to successfully transition to college-level work.

In addition to course offerings, colleges also utilized tutoring and instructional laboratories. The Learning Center at Northampton Community College in Bethlehem, Pennsylvania, was a typical tutoring center. It offered free tutoring services to full- and part-time students who were enrolled in both college-level and remedial courses (Hendriksen et al. (2005). The researchers conducted a study at the Northampton Community College Learning Center to determine how the center assisted students in achieving their desired outcomes. As Hendriksen and her colleagues described, the center's wide range of services included one-on-one appointment tutoring, walk-ins, study groups, supplemental instruction, distance tutoring by email and telephone, computer-aided instruction, and learning strategies development. Because of the success of the Northampton Community College Learning Center, tutoring programs have been established in most community colleges today. For example, the tutoring laboratory in the Department of Education and Academic Literacy at Bronx Community College (BCC) is modeled after the Northampton Community College Learning Center. The reading laboratory provides supplemental tutoring and computer-assisted programs to help students hone their reading skills. There are different configurations of these assistance centers in terms of the types of services they offer (Boylan, 1999; Levin & Calcagno, 2008). However, the primary purpose of these centers is to provide instructional assistance to students to improve their reading, writing, and math skills.

Writing across the curriculum is another approach that many colleges implement to enhance the academic abilities of their students on all academic levels. Writing across the curriculum was developed based on the understanding that writing is a developmental, incremental procedure that is intimately linked to thinking (Foote, 1999). According to Foote, this approach has been adopted by community colleges to help students in developmental education to improve their basic writing skills. Foote also found that the approach is used to incorporate writing tasks as a strategy to help students learn course material as well as to improve students' communication skills. Writing across the curriculum incorporates writing in all content areas--social studies, math, science, business, vocational education, and language arts. Foote further discovered that writing across the curriculum promoted active learning and student-centered, rather than teacher-centered classrooms, and that students benefitted from across the curriculum writing in three ways: students had a resource to better understand content, they practiced techniques that aided retention, and they improved their writing and communication skills.

Foote (1999) described several colleges' experiences to demonstrate how the writing across the curriculum approach is implemented to enhance and supplement learning. One of these colleges was Saint Louis Community College (SLCC) in Missouri. In fall 1994, SLCC developed a process to integrate general education faculty members into the college's tech prep program. Faculty teams from biology, communications, chemistry, English, mathematics, and physics were charged with

determining the current degree of integration between general education and career courses and developing entry and exit competencies for the basic college-level course in their respective departments. Recommendations from the project included developing a procedure to ensure that students have an adequate reading level and instituting a writing-across-the-curriculum program (Foote, 1999). Queens borough Community College (QCC) in New York also used writing-across-the-curriculum in a freshman orientation program to help new students clarify goals, understand the demands of college, and successfully adjust to college (Foote, 1999). The "Introduction to College" program combined a 4-week orientation seminar with a writing-across-the-curriculum approach to help QCC's diverse student population make the transition to college life. The writing component was used as an avenue to help students recognize their self-worth (Foote, 1999). Today, writing across the curriculum continues to be an effective instructional method for students in developmental education. For example, Hawks et al (2015) implemented various writing across the curriculum strategies to improve the writing skills of students in a nursing program. The researchers found that because of the strategies, there was an overall improvement in the students' writing skills (Hawks, et al, 2015).

Another successful intervention implemented by community colleges is supplemental instruction, also known as SI. SI was developed at the University of Missouri-Kansas by Deanna Martin (Boylan, 1999). It was originally designed to help medical school students succeed in their more

difficult courses, but it since has been applied to other areas, including developmental education. In supplemental instruction, students are placed in small groups in which students who have completed the course serve as small-group leaders. The leader attends the course, takes notes, and then meets with groups of students to discuss techniques necessary for success in the course. The student leader acts as a coach for those who are taking the course, offering advice and encouragement on note-taking, test-taking, and other study skills strategies (Boylan, 1999). Research indicates that students who participate in supplemental instruction have a higher retention rate than those who did not (Boylan, 1999).

One of the most effective and popular approaches used by community colleges to help students master basic skills and exit remediation is learning communities. Tinto (1998) referred to learning communities as “a kind of co-registration or block scheduling that enables students to take courses together” (p. 2). Hesse and Mason (2005) described learning communities as “the purposeful restructuring of the curriculum by linking or clustering courses that enroll a common cohort of students” (p. 1). Both definitions are important because together they offer a comprehensive understanding of how the intervention works. Both Tinto and Hesse and Mason described an approach where the learning experience is enhanced as students are enrolled in linked courses. According to research presented by Tinto (1993), the learning community approach to remediation is successful because it is built on the premise that persistence and success in higher education depends on both the

quality of instruction and the integration of students into the social and academic life of the institution.

Learning communities are configured differently, based on the intended outcome(s). For example, in one structure, students enroll together in two courses. In another, students may attend two or more lecture classes with 200 to 300 other students but stay together for a smaller discussion section (Tinto, 1998). In other cases, colleges might organize a community of learning for students to collaborate on a specific project. Once the project is completed, the learning community is dismantled. In other cases, students take three or more courses in which they are the only members of the class (Tinto, 1998). In other words, this cohort of students shares the same faculty and curriculum. The idea of shared curriculum offers two important benefits to students in developmental education. In addition to the social aspect, it “provides students with a coherent interdisciplinary experience that promotes a deeper type of learning than is possible in standalone courses” (Tinto, 1998, p. 3). Hesse and Mason (2005) agreed that the best learning communities are classrooms where students relate to one another and with teachers through meaningful conversations in cooperative groups. Hesse and Mason believed that the existence of good teacher-student relationships encourages healthy discourse and seemingly creates an avenue for students to discuss with their instructors any situation that might hinder their academic progress. By the same token, Hesse and Mason posited that students who discuss classroom material with their peers are generally more successful. Based on observation, a cohort of students who were enrolled

in the same science class and who studied together excelled in that course.

Tinto (1998) and Hesse and Mason (2005) indicated that learning communities are beneficial to students, faculty, and the college at large. According to Tinto, Hesse and Mason, some of these benefits include (1) students in learning communities reported that they created strong bonds with fellow classmates in and out of class; (2) students have the opportunity to share and exchange ideas on varied topics; (3) because students are team-taught, they have the privilege of hearing and integrating different perspectives from different disciplines; (4) learning communities offer faculty the opportunity to share their pedagogical expertise; and (5) learning communities help increase retention rates. The focal point of learning communities, as was pointed out by Hesse and Mason should be to present opportunities for instructors and students to act interdependently to construct meaning and understanding. It is evident from the research that these interventions are crucial to students' success (Boylan, 1999; Foote, 1999; Hendriksen et al. 2005; Tinto, 1993; 1998).

Discussion: Assessing the Effectiveness of Developmental Education

The data overwhelmingly indicated that community colleges implemented effective instructional programs that alleviated the remedial problem and prepared students to successfully advance in their pursuit of a college degree (Boylan, 1999; Foote, 1999; Glen, 2005; Hendriksen et al.2005; Hesse & Mason, 2005; Tinto, 1993; 1998). However, critics such as Attewell, Lavin, Domina, and Levey (2006) and Bailey (2009) argue that remediation is a

hindrance, and that it is too costly. These researchers claim that remedial education causes students to become discouraged and drop out of college causing low graduation rates. They also argue that these students incur loans for courses that do not offer them college credits toward a degree (Mangan, 2016). On the other hand, proponents reason that remediation is necessary for the advancement of students who enroll in higher education without the foundation that is needed to be successful (Glenn, 2005; Levin & Calcagno, 2008).

In assessing the effectiveness of remedial programs, Levin and Calcagno, (2008) reported that Attewell and his colleagues (2006) found that about 70% of students passed the reading and writing remedial courses in which they enrolled; however; only 30% passed their remedial mathematics courses. The data also suggested that students who successfully complete remedial courses have better educational outcomes than similar non-remedial students (Levin and Calcagno, 2008). Additional studies on the outcomes of basic writing programs have concluded overall that these programs are effective (Clay & Southard, 2004). Clay and Southard cited three studies that concluded that students who completed developmental skills courses were more likely to succeed in college-level writing classes than were students who did not complete preparatory work. It is likely that students who enrolled in developmental courses were taught the fundamentals on which they could build as they advanced in their academic careers.

Levin and Calcagno (2008) argued that the degree to which remedial courses improve students'

chances of academic success is virtually unknown because of a lack of rigorous follow-up studies. The researchers reasoned that it is not possible to evaluate the effectiveness of remedial courses and practices without a thorough evaluation design that accounts for student proficiencies and other characteristics. Levin and Calcagno also proposed the establishment of “a central resource at the state level and cooperative efforts with universities to assist community colleges and individual faculty members in creating experimental interventions and provide support for evaluating them” (p. 13). The authors ascertained that most states and colleges do not have exit standards for remedial courses and do not perform systematic evaluations of their programs (Levin and Calcagno, 2008). The researchers stated that different states have different standards by which they assess and determine students’ exit out of remediation.

Conclusion

According to Mangan (2016), approximately two-thirds of students exiting secondary education are under-prepared for college level courses. Formerly, these students were required to enroll in remedial/developmental programs to bolster their basic skills thus offering them an equitable chance of succeeding in college-level courses. Developmental courses and other interventions were designed to provide these students with a solid foundation on which to learn and succeed in college. Today, remedial education has become a controversial issue. State law makers and educational policy makers are in the process of instituting new policies that would eliminate standalone remedial courses. Current trends are

leading toward the removal of remedial education in higher education. Some policy makers advocate that students should be given a choice to enroll in remedial courses or college-level courses, while other states are restricting students to one semester of remedial education (Mangan, 2016).

What will become of our most vulnerable students, those with fundamental academic deficits? Instructors of remedial education understand that these academic deficiencies can best be rectified by the instruction students receive through developmental education. They hope that policy makers will recognize the need for this valuable component in the community college curriculum and alter their positions. This crucial support is essential to the success of underprepared students. The evidence gleaned from the research presented suggests that the application of various instructional interventions were then, and still are, effective means to remedy students’ academic shortcomings. Those interventions that are ineffective should be reviewed and improved, but those that have proven to be effective should be applied to offer underprepared students the academic support they need.

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