

Increasing Student Success by Embedding Effective Academic Support Programs into  
Instruction in Community College Courses

Noreen McGinness Olson  
University of Massachusetts Boston

Processes of Research and Engagement

Professor Peter Taylor

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## **Introduction – The Need for Embedded Academic Support Models**

Last fall I attended a presentation given by Dr. Charmain Sperling entitled an *Audit of Massachusetts Community Colleges Developmental Education Best Policy and Practice*. After the presentation I was intrigued by her proposition that embedded academic support strategies are necessary for improving the completion rates of developmental courses in Massachusetts community colleges. While community colleges offer a wealth of academic support programs for students, Dr Sperling indicated that these programs are not as effective when left for students to find for themselves, but rather must be integrated into instruction to make a difference for students.

While I attended Dr. Sperling's presentation without any expectations, afterward I found myself thinking about my own disappointing course completion rates and how I might improve them by embedding academic support. The course I teach is an introductory freshman computer applications course, however many of my students do not demonstrate the necessary developmental skills (i.e. reading/study skills, writing and math at the college level) to succeed. In my experience, the lack of these basic skills often impedes students' learning of the course topics. Learning about the perceived effectiveness of embedded academic support fueled my desire to improve the successful completion rates of my course by embedding basic skills. This, combined with my belief that these skills are necessary for success in higher education in general, encouraged me to explore more about the range of forms embedded academic support may take, the topic of this report.

### [Subheading?](#)

Understanding how to increase student success by embedding academic support strategies is important to community colleges. The results of research such as this can be of use not only to academic support programs implementing embedded academic support, but also to

individual instructors seeking to improve their students' successful completion rates, as well as to administrators responsible for allocating resources to address topics of basic skills acquisition. In the 21<sup>st</sup> century with more people than ever attending college, promoting the acquisition of basic skills is important for all of higher education, but is of paramount importance for community colleges due to the unique populations they serve.

According to the American Association of Community Colleges (AACC), community colleges serve almost half of the undergraduate students in the United States. What are the characteristics of this large segment of students in higher education? For one, community colleges serve large numbers of non-traditional students. The average age of a community college student is 29, with 47% of the population under 22 years of age and 40% between the ages of 22 and 39. Furthermore, minority students make up 36% of community college student body with 39% of the entire community college population the first generation in their family to attend college (2009).

The aforementioned demographics are consistent with the student population at my community college, Middlesex Community College (MCC) in Massachusetts. According to the MCC Fact Book in 2008, 51% of the MCC student body was over 22 years of age. While these students are chronologically older than traditional students, they are not necessarily as prepared. In that same year at MCC, 74% of incoming students placed into at least one developmental course (2009). Also, as Dr. Sperling explained, it is a sobering reality that only 16% of students placing into developmental courses graduate within three years (2009).

Middlesex, like many other community colleges, struggles to address the learning needs and preferences of a heterogeneous student population. As noted, many are non-traditional, adult learners returning to school after several years in the work force. In addition many students come

from different countries and cultures with English as their second language. Most students are placed into developmental reading and writing courses or English Language Learner (ELL) courses. To make matters more complicated, some students placed in developmental classes also arrive at the community college with a history of unsuccessful academic experiences.

Community colleges maintain an open enrollment policy as a fundamental part of their mission, accepting and developing underprepared students to the level of college level work. And, given the current economic crisis, the special mission of community colleges may never before been as necessary as it is now. As President Obama has stated in Warren MI on July 14, 2009,

*Now is the time to build a firmer, stronger foundation for growth that will not only withstand future economic storms, but one that helps us thrive and compete in a global economy. It's time to reform our community colleges so that they provide Americans of all ages a chance to learn the skills and knowledge necessary to compete for the jobs of the future.*

*- President Barack Obama*

President Obama has put a national focus on community colleges, challenging them through the *American Graduation Initiative* to graduate more students with the skills necessary to respond to the demands of globalization and the evolving workplace. As of July 15, 2009 the American Graduation Initiative proposed to invest 12 billion dollars into community colleges with the objective of graduating 5 million new graduates by 2020 (Shear& Devise, 2009). While, the final bill was approved with only 2 billion dollars for community colleges education and training programs (*Community College Times*, May 18, 2010) the expectations of community colleges and the need to prepare productive workers for the 21<sup>st</sup> century economy have not been diminished.

### **What is Embedded Academic Support?**

Embedded Academic Support (AS) is the incorporation of basic skills instruction into learning activities throughout the semester. Integrated basic skills instruction can take several

forms; for example, learning how to study effectively by assigning a study skills method to a reading assignment. The incorporation of basic skills can be done by a faculty member who has sufficient professional development in this area, in conjunction with academic support personnel or supplemental means. Middlesex Community College's Academic Support Program focus is on student learning. Their goal and mission, stated below, is to help students become autonomous, lifelong learners. The objectives of the department are to teach students the skills to:

- Manage their own learning
- Evaluate their strengths and weaknesses
- Articulate what they have learned
- Formulate and achieve their own educational and vocational goals

Striving to achieve this mission, professional and peer tutors will help students:

- Become aware of their learning styles
- Recognize effective learning strategies and behaviors that lead to academic success
- Build self confidence
- Become self advocates
- Understand class content through reinforcement and supplemental instruction
- Become active learners
- Refine and develop their critical thinking skills

One might assume that for academic support strategies to be embedded in instruction that professors would need to collaborate with academic support specialists, but this is not the case. In fact, I believe that the most effective forms of embedded academic support may come from instructors working independently to incorporate academic skills into the assignments. In this way, teaching academic skills and content are completely overlapped, and the process is seamless to students. One barrier for this model of embedded academic support is the necessary knowledge of success strategies and the specific skills required to teach them as they relate to the

course content. Therefore, it is important to explore the variety of forms of embedded academic support and the kinds of professional development necessary to embed academic support.

### **Types of embedded academic support.**

There are a variety of models for embedded academic support. Each of these models has strengths and weaknesses depending upon the context in which it is used. A look to the literature of the methods used to embed academic support programs revealed a variety of models, including: (1) required writing tutoring appointments for basic writing courses, additional required labs for reading and fundamental math courses, (2) specific in-class workshops, (3) the power of three collaboration between faculty, tutor and students, (4) supplemental instruction (SI), (5) collaborative learning spaces and (6) faculty embed basic skills into course content.

In order to gain a better understanding of the importance of context to the success of any given model of embedded academic support, I spoke with Dr. Hunter Boylan, the director of the Kellogg Institute, a well-known developmental education organization. In a personal interview, I asked Dr. Boylan, under what conditions have academic support strategies been *unsuccessful* and why, in his opinion, were they not effective? Dr. Boylan expressed that there are in certain situations in which it is difficult for an embedded academic support program to be successful. Not surprisingly, this involves the three major stakeholders in the endeavor: the faculty, the support personnel and the students.

According to Dr. Boylan, a potential problem for an effective implementation of embedded academic support comes when faculty are not invested in a program or the tutors providing the services do not truly understand why they are doing so. Moreover, Dr. Boylan also stated, faculty need to bring students into the process of embedding academic support,

letting them know why they are learning a particular method of basic skills instruction (e.g. note taking). Dr. Boylan feels that if students understand and see the value in the process towards their success, they will invest in it.

From my experience teaching at the community college, I agree with Dr. Boylan that students are not likely to value the process of learning any particular skill unless the faculty member is invested and makes clear to the students the usefulness of the skill being taught. This is why it is imperative that institutions of higher education agree on the skills that are important to be embedded and then provide the necessary coordinated professional development opportunities to do so, both formal and informal. Through my research I have identified six different models of embedded academic support strategies that have been demonstrated to be successful in a variety of contexts. Some of the models are well-known in education, some are a combination of models I learned about when attending the Teaching Academic Survival Skills Conference in March of 2010, and others are strategies in use at Middlesex Community College.

*Required labs and required use.*

For many years in developmental education, reading, writing and math programs have required labs or required visits to an academic support center. These programs have proven to be successful in developmental education when there is an integration of the classroom and lab requirement (Boylan, 2002). Given that my interest is in freshmen level community college courses I am not interested in the required lab model since this model is not practical to implement or even necessary for all freshmen courses. Moreover, a required lab associated with a course is sometimes associated by students with the stigma of remedial education. However, required visits for all students to attend to academic support centers is something I feel would be

a valuable tool to improve student writing in any subject. Using this model, faculty can require visits throughout the writing process from brainstorming and thesis development, to outlining, and proofreading a final draft. According to Boylan, programs in which classroom and required visits to tutoring centers are fully integrated have higher successful completion rates (Boylan, 2002).

*In-class workshops.*

In-class workshops are provided when the faculty member invites a tutor or other academic support staff person into the classroom in order to provide assistance with a particular topic. This practice is also indicated to be effective by Dr. Sperling's research, Dr. Boylan and Jo Mucci, Director of Academic Support at MCC. These kinds of workshops can be used to provide basic skills instruction or they can be adjusted to a specific discipline or practice. The format of these workshops may consist of 10-20 minutes of instruction with the rest of the class time used for hands on participation and discussion. During an in-class workshop students are active in their learning. Active learning is important for students to make connections because, as K. Patricia Cross reminds us, "Learning is not so much an additive process, with new learning simply piling up on top of existing knowledge, as it is an active, dynamic process in which the connections are constantly changing and the structure reformatted," (Cross, in Berkas and Pattison, 2006).

This semester I attempted to embed academic support into my course using this model. The workshops provided to my computer applications class was "Writing a Thesis Statement". This is the first semester in which I invited a tutor into the classroom to provide this service, and I found it useful. The workshop reinforced for students the importance of writing a good thesis



statement. Students were engaged, partly I believe, because the information provided came from a perspective other than my own, and partly due to the active nature of the learning process. During the workshop the tutor put students in pairs for a peer review exercise which was effective in making them think about their research topics and processes. The activity reinforced the process of writing a thesis statement by requiring students to think and write their own statement and to think about the process again in the context of providing feedback to others. Students who participated in the in-class workshop model of embedded academic support are given opportunities to be active in their learning by participating in a peer review process. In addition, the in-class workshop structure causes dynamic of the classroom to change, providing new connections and perspectives on the course.

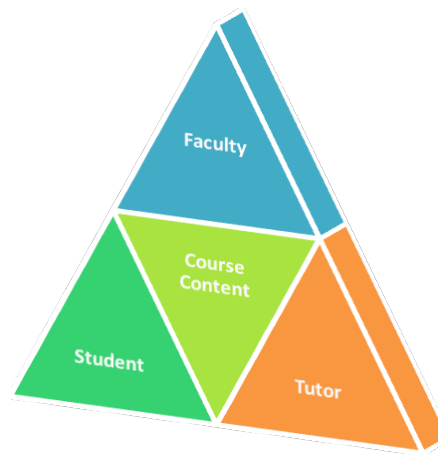
*Learning Power of Three.*

The Learning Power of Three model was introduced to me when I attended the Teaching Academic Survival Skills conference (TASS) in March of 2010. Tina Kondopoulos of Northeastern University described this model as faculty, tutors and students sharing a common understanding of the expectations of student outcomes. At Northeastern, the model provides tutors access to all assignments and handouts before the semester begins through the Blackboard learning management system (LMS), however, this model does not require the use of an LMS. Sharing materials can be done through other electronic means or using paper.

Students are introduced to the tutor in the classroom and know where and how to contact the tutor for help outside the classroom. Students are able to collaborate with the tutor through the LMS or in the academic support centers. In this way, the process of accessing tutoring and the connection to tutors is reframed for students. Students understand that an intrinsic part of

taking the writing course is to work with a tutor. This model is similar to the Required Use model, but in addition provides a connection to a specific tutor who is working in conjunction with the faculty member. In this model it is clear to the students that their instructor is invested in this requirement and communication is open to all.

*Figure 1.1*  
Learning Power of Three Model of  
Faculty–Tutor–Student Collaboration



This model to embed academic support into the curriculum has been successful at Northeastern. The program includes a point person whose role is to disseminate information to the participating faculty and tutors thereby improving communication. The point person also provides professional development for the faculty and tutors. The professional development program follows the guidelines created by the College of Reading and Learning Association (CRLA). The outcomes of the program are: faculty and tutors reported synergy and confidence in the program; students reported they bonded with their tutor, fulfilled their requirements in a seamless procedure, with some attending extra meetings with tutors on their own; the program also saw an increase in the use of other services due to exposure in the classroom; and most importantly, participating courses saw improved student outcomes.

*Supplemental instruction (SI).*

Supplemental Instruction, or SI, offers weekly study sessions to students taking difficult courses that have been determined to have low completion rates. SI sessions are led by peer tutors, or leaders, who attend class and have previously taken the class. The leaders are most often recommended by faculty members and are students who have performed well in the class, traditionally completing the course with a B or better. SI leaders attend classes, participate in class activities, and may even take exams with enrolled students. Leaders never attempt to lecture or re-teach the material or go beyond the content covered in the course. Rather, they work with students using active learning strategies to reinforce course content. Kenneth Hunt of Delaware State University describes SI study sessions used to work with students to interpret what has been read or heard, generate new ideas, and put content-related concepts into perspective. As a result, students were seen to develop better understandings of course content and more effective study habits (Hunt, 2010). The students also learn how to effectively test themselves and take the strategies they learn and apply them to future course work.

It is worth noting that SI is provided for high-risk courses, in contrast to other models of academic support which focus on high risk students. By focusing on courses rather than individuals, the model avoids the remedial stigma often attached to seeking academic assistance (Arendale, 2010). While students may perceive asking for help as a sign of academic weakness, this is not necessarily the case. In conversation with Hunter Boylan, he stated many of the successful models of embedded academic support, including SI, were developed for and found to be successful with honors students. Since these methods have been shown to be effective with both honors students and developmental students, I believe they can and should be used with all students.

[\[make font uniform here – it appears different on my computer\]](#) SI was created by Deanna C. Martin, Ph.D., at the University of Missouri-Kansas City in 1973 to decrease attrition for minorities in the health science professional schools, and has since been extended across the university. The success of this program has demonstrated that the integration of embedded academic support through SI can be useful for all students. Through this model students learn to integrate course content with good study skills while working together in a group. As educators aren't these the skills we want all of our students to possess? This model provides the opportunity to explore alternative strategies outside the classroom with a tutor who has been previously successful in the course and has gained knowledge of effective study strategies.

#### *Collaborative Learning Spaces.*

Collaborative Learning Spaces (CLS) is a project I have been working on for the past year at MCC. The model is based on the Learning Commons model in which students access a variety of support at one location. Traditionally set in an academic library, students access technology, library resources, academic support, and advising in an environment conducive to collaboration. Due to space issues at my school we were unable to create our CLS in the library. The Collaborative Learning Spaces we designed are open, inviting, space-efficient workstations/areas where people feel comfortable and connected and are located in our Academic Support Department. These well-supported spaces are conducive for collaborative learning.

In the past few years at my school there has been an increase in collaborative assignments given to students. This has been largely due to efforts to integrate subject material, promote critical thinking and to get students to learn team skills. Recognizing that these kinds of assignments require specialized work environments for students, Academic Resources and

Technologies Division and the Academic Support Department embarked on a mission to create such spaces. The Collaborative Learning Spaces project provides places for collaboration and access to technological resources to allow students to work together to create integrated multimedia projects and provide connections to other academic support services.

In this model Academic Support personnel work with faculty to recommend multimedia options for inclusion in their specific group assignment. Effective group assignments will require students to address instructional problems using multiple frames of reference, think critically and require students to develop creative solutions. Assignments require students to be metacognitive by developing specific plans and timelines for their group work. Academic Support personnel visit the classroom and to describe the support services, technology tools and available spaces. Students are provided with examples of technology enhanced projects and given a tour of the spaces. Often faculty will build in class time to work on the projects with tutors available to assist students if necessary. Outside the classroom groups using the collaborative learning spaces can request a tutor be available to assist them using the technology. In addition, this model overlaps with the in-class workshop model where tutors or academic support personnel attend class sessions and work directly with students on basic skills or in this case communication skills through the use of technology.

*Faculty embed skills into course content.*

According to Jo Mucci, director of Academic Support at MCC, when faculty embed basic skills instruction into their course content the instruction is more natural and seamless than other methods of embedding support. This strategy is effective because basic skills instruction is integrated into the course so that students are taught the skills they need to complete an

assignment along with the content of the course for a seamless integration. Some of the basic skills strategies are assisting students with learning skills, (e.g. understanding learning styles, textbook organization, note taking, and study methods.) This process is natural and more authentic, however for it to be effective, it is imperative to have faculty commitment in the program. According to Boylan, good developmental education incorporates critical skills into all of its activities (Boylan, 2010). In this model, critical thinking, metacognition and study skills strategies are not taught in isolation, but are integrated into the instruction. “The best developmental programs make it hard for a student to sit in any class or participate in any service without learning how to learn, how to think critically, or how to study effectively,” (Boylan 1999)

Recently, through my experience in taking ~~this class~~, The Processes of Research and Engagement course in the CCT Graduate Program at UMass Boston (Taylor 2010), I have experienced this model of embedded academic support. The course ~~has~~ provided a seamless integration of metacognitive activities into the research and writing process. Professor Taylor ~~has~~ broken down the process of writing a literature review or research report into activities that require metacognitive behavior such as time management, organizational skills and reflection. This level of integration has been suggested to be the most effective form of embedded academic support (Mucci, 2010), and my experience in ~~this the~~ course ~~it has~~ reinforced this. Perhaps it is the nature of ~~this the~~ course to be metacognitive, given the emphasis on the process of research, but in my subjective experiences as a student has been difficult to distinguish between course content and the metacognitive strategies that improved my performance.

[these suggestions follow from the idea that the report's audience is not the professor or fellow 692 students, but a wider audience]

### **Learning strategies training for tutors.**

As mentioned previously, it is important for academic support personnel to know why they are providing the embedded support and to understand fully why strategies they are reinforcing are effective. For example, if tutors, either professional or peer, do not believe knowing your learning style is helpful when studying, then they will not be convincing when providing this information to students. Often tutors, like teachers, know their subject material very well, but do not know a variety of study skill strategies. They may be limited only to the ones that have worked for them personally.

At MCC many of our professional tutors come to us with backgrounds in developmental reading, writing and mathematics, and therefore have been trained in developing study skills, however, many of the models discussed in this paper require the use of peer tutors. Since peer tutors do not have the necessary training in basic skills instruction, they need to be trained in them. Peer tutors are often naturally good students who have learned the discipline they are tutoring, however, they may not be metacognitively aware of their study habits and specifically what study may techniques work best in certain situations. This is why there must be formal training for all tutors to learn tutoring techniques and critically evaluate the effectiveness of the tutoring they provide.

Although I was familiar with about the College Reading and Learning Association (CRLA), I did not realize the training has so much application to higher education. At almost every presentation I attended at the TASS conference, presenters talked about either their membership in the CRLA for tutor certification or how they used the guidelines to train their tutors. The CRLA guidelines for tutor certification Level One include training in the form of

workshops and discussions for a minimum of 6 hours and a minimum of 25 hours of practical tutoring experience. The trainings must include at least 8 of the following topics (CRLA, 2010):

1. Definition of tutoring and tutor responsibilities
2. Basic tutoring guidelines / Tutoring do's / Tutoring don'ts
3. Techniques for successfully beginning and ending a tutor session
4. Adult learners / Learning theory / Learning styles
5. Assertiveness / Handling difficult students
6. Role modeling
7. Setting goals / Planning
8. Communication skills
9. Active listening and paraphrasing
10. Referral skills
11. Study skills
12. Critical thinking skills
13. Compliance with the ethics and philosophy of the tutor program / Sexual harassment / Plagiarism
14. Modeling problem solving

Without a comprehensive training for tutors, we are not serving our students well. In fact, without proper training we may be simply repeating classroom instruction and not addressing the important aspects of embedded academic support such as active learning, learning styles, metacognitive behavior and goal setting.

### **The importance of incorporating effective teaching methods into instruction.**

This paper has focused on the characteristics of embedded academic support programs, but the reality is that for embedded academic support to be truly successful, primary instruction must change to reflect current understandings of how people learn. Some of these well-documented strategies that are based on research in brain-based learning and developments in cognitive science include: active learning, constructivism, students-centered instruction, problem-based learning and discovery/inquiry learning (CITATION). It is crucial for faculty to be educated in these approaches.



Community College professors, like other college professors, are experts in their disciplines, but are often not well-schooled in learning theory, effective teaching methods, and basic skills instruction. Professional development in these areas, similar to the training provided for tutors, is the final important component of a successful embedded academic support implementation. Providing professional development in basic skills instruction, effective teaching, and learning theory will help faculty to understand why these practices are necessary and successful.

### **Notes on Implementation and Conclusion**

Embedded academic support programs have great potential to help us improve course completion rates, improve student learning, and develop the necessary skills for students to succeed in higher education, but such programs cannot be implemented without sufficient support. In order to implement effective embedded academic support programs there needs to be: faculty buy-in; administrative support; access to necessary resources; and demonstrated effectiveness.

According to Boylan, those developing embedded academic support program should take responsibility for creating their own success criteria for their programs, assessing needs systematically, developing, implementing, and evaluating the plan. However, communication and dialog with the major stakeholders is key, and this includes sharing the plan with administrators. He observes that people are more likely to support your data if they are involved in the process in some way (Boylan, 2010). To this end, he recommends involving administrators in the evaluation of embedded academic support programs, "...no matter how scary that may be," (Boylan, 2010).

I believe the following outcomes should be assessed in order to evaluate the effectiveness of an embedded academic support program: student achievement; student persistence; student retention; student knowledge of self as a learner (metacognition), and student self-confidence.

[\[this is Boylan's list, no? If so, cite the source.\]](#) These measures should be evaluated on both quantitative and qualitative scales. On the qualitative side, interviews and focus groups with students and faculty can serve to determine perceived effectiveness of the embedded academic support programs. Quantitative measures might include placement test scores, course grade distributions, and retention rates. In my computer applications course, the most appropriate measures of success of embedded academic support would be related to successful course completion and the quality projects I assign to students. I would expect that embedded academic support would increase the rate of successful course completion and add to the depth and quality of the use of computer programs to address practical real-world needs. [In the semesters ahead I plan to increase the embedded academic support in my own courses, evaluate and document its effectiveness, and promote this approach to my colleagues. \[or insert something else that ties us back to where you started.\]](#)

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