

**Modeling Synthesis: Developing Learning Communities that Enhance  
Academic Success**

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### Abstract

*Learning Communities are not new to education. With a broad spectrum of information, from history to pedagogical theory to current neurological research as the foundation, this article explores what may be considered the “best promise/best practice” for developing learning communities. Essentially, learning communities that are developed in a coordinated, coherent fashion can closely relate content from two or more classes, and show that information from diverse courses can be synthesized and used creatively and critically. Learning communities offer the opportunity to help students better understand the interrelationship between all learning endeavors and to use that revelation in developing positive learning behaviors.*

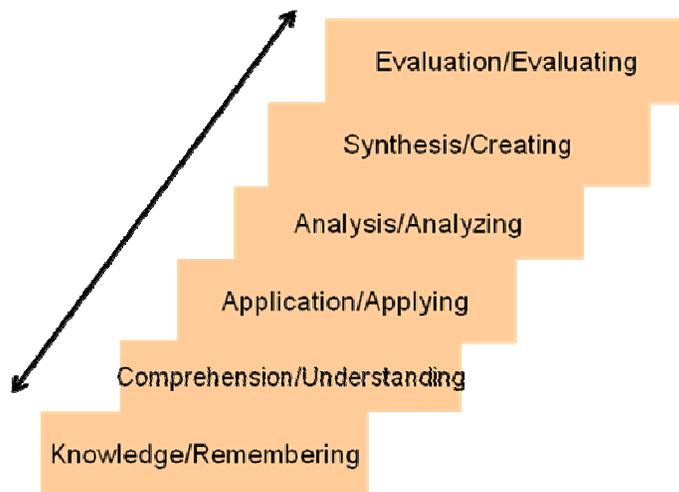
*If developed properly, learning communities offer a strong foundation for the critical and creative thinking skills students will need to be able to adapt to a rapidly changing world. The conjunction of course materials, presented as a collective, organized unit can exemplify the synthesis that is expected from students as they expand their educational horizons. It is the author’s contention that it is the responsibility of the instructors of all the courses presented as a learning community to model precisely those “higher order” thinking skills they hope students will develop.*

## Modeling Synthesis: Developing Learning Communities that Enhance Academic Success

Trying to choose which style an individual student might use to learn is like standing in front of a buffet table with all your favorite foods but being restricted to choosing only one—an almost impossible task. There are numerous ways to describe and discuss how various people learn and process information including learning styles, or modalities, Gardner’s multiple intelligences, or the use of inductive/deductive reasoning (bottom up/top down). Stitching pieces of each theory together to model possible personal learning preferences brings one to the understanding that there are a myriad of ways that people learn. There might be an existential, top down, visual learner who works better alone, or a logical/mathematical, bottom up, auditory learner who works better in a group, or any combination of the styles and modalities that we use to describe how people learn.

One particularly popular model for learning is Bloom’s Taxonomy. The original model—the pyramid—suggests rigidity and a relatively inflexible separation of the levels. I understand the intent was probably not to imply a rigid division of levels, but the lines between each level and surrounding the pyramid shape appear to do just that.

I developed the staircase model that you see below a number of years ago to suggest a more interactive—up and down—interrelationship between the levels, especially as an individual advances into more complex content and develops a broader foundation of knowledge. To me, the lack of boundaries suggests a synergy that will allow a person to work on many levels at the same time in order to obtain a more comprehensive view of the interrelatedness of the materials across the levels. For



instance, should I wish to use the concept of “Quantum Zeno” in an article I might choose to write about learning communities, I would have to operate at a number of different levels of the taxonomy at the same time to find a way to squeeze that information into the flow of the narrative. I might be able to start at the second level of the staircase, “comprehension” (understanding), and, at the same time, have some notion of synthesizing that concept with

ideas about learning. However, that original idea would almost immediately require that I do some amount of research to gain a fuller understanding of Quantum Zeno in order to apply that information to the concept I want to create. I would then, of course, have to analyze the impact of that aside and determine if it served the purpose I hoped it would.

So the thinking that we hope will develop from a learning community entails the use of all levels of the taxonomy and the ability to determine relationships between ideas and draw inferences from concepts that may at times seem unrelated to the central theme. In the learning community, then, it is imperative that the teachers model and facilitate those thinking behaviors they hope students will develop.

Quantum Zeno? Well, it is a concept of quantum physics whereby the continuous examination of some unstable subatomic particle will, perhaps, indefinitely delay the decay of that particle. In human terms, the education of each individual by any given society is an attempt of "the community...to enter into an unconscious conspiracy with itself to keep... tradition alive, to reinforce it in collective memory of a society where collective memory is only the sum of individual's memories, and these have continually to be recharged at all age levels." (Havelock, p. 44) The means by which the tradition is transmitted varies according to the level of technology attained by the society, but there is always a modeling of what is considered to be appropriate belief and behavior.

People can be educated in a number of ways: in a formal setting (schools or educational programs) or in an informal setting on an individual basis (by peers, family, various media). The learning community can be a modeling tool that, while transmitting knowledge in a formal setting, helps students to develop the types of thinking in an informal interactive setting among their peers that will have a significantly positive effect on their ability to access information and use it creatively in any setting. Let's look at some concepts about learning to see how we might begin to use the information that has been gathered to increase the chances for learning.

### **From Preliterate Society to the Present**

Although American culture extols the virtues of the individual, most of the people on the planet, including Americans, see social relationships as an important factor of life and as the basis of accepted behavior. Indeed, each society teaches, through various socialization agencies (media, dress, language, religion, educational opportunities) the "correct" behavior in specified situations. This socialization begins at birth and is, essentially, each person's first exposure to education. Each society hopes to impress upon its members the "proper" way to respond to any given specific environmental stimulus. Today, there are many agencies vying to control how people behave. Political and economic factors have insinuated themselves into the process of socialization and have begun to dictate what and how children will learn. Technologies have begun to take on a life of their own demanding that upgrades be installed at an ever increasing pace. It seems incumbent upon the educators of the country to try to establish a stronger foundation for learning—for developing a method of showing students not only the materials inherent in certain subjects, but the techniques that will allow them to make sense out of the vast array of information that bombards them every day.

In the distant human past, society was held together by the teachings of the elders; their wisdom was solicited by the members of the tribe. Long before writing was invented, this wisdom, the cultural heritage the tribe taught their children, was orally

transmitted. Each member of the society internalized the social perspective, for to disagree or to act in a manner contrary to the dictates of social norms was to face criticism, ostracism and exile. The “locus of control” was held by the society as a whole. The individual was seen as part of that whole and was expected to play a relatively prescribed role in the success of the tribe.

Pre-literate man also discovered art as a means to convey symbolic and sacred ideas among tribal members. The Venus statuettes found at many pre-historic sites across Europe may have symbolized birth or have had some religious meaning. Regardless of their true purpose, they seem to have held significance for the members of the tribes. The discovery of the cave drawings in France and Spain has suggested that pre-literate man was developing abstract ways to convey the tradition and heritage of the tribe by creating vivid paintings on the walls of caves that may have served as the staging grounds for rites of passage of tribe members. The development of these abstractions to help convey tribal culture implies a progression in the cognitive abilities of man as he told the story of the tribe and abstractly depicted those details important to tribal success. (Pfeiffer, p. 143-4) The social ritual gave the initiates a sense of identity and belonging.

Numerous forms of writing had been developed by the time Plato in *Phaedrus* and *The Republic* openly attacked the oral tradition, and Homer, in particular. Homer, of course, was the one of the most famous of all poets whose tales conveyed meaning far beyond the stories themselves. He was the keeper of the tradition, the one to whom people of the time referred when trying to recall how to or what to do in given situations. In *Phaedrus*, Plato has Socrates condemn written transmission of cultural heritage as the first step in the diminution of the human capacity to remember—writing would alter the way people remembered—the way they understood who they were and their place in society.

In *The Republic*, Plato condemned any play that did not portray the characters as noble or heroic. Any action that would instill fear or pity was to be censored. Even though the sagas of Homer were definitely heroic, they were, for Plato, inadequate because one could not begin to understand the true nature of reality through them. Although writing would allow the individual more ability to determine purpose and truth for him- or herself, Plato still hoped to guarantee a tight rein on the freedoms a person might wish to express by strictly controlling the media and limiting what could be expressed and how. Aristotle, though a student of Plato, offered a divergent view from his master in *The Poetics* when he called Homer the greatest of all poets and introduced the concept of catharsis (those emotions of fear and/or pity that are aroused in reaction to the events that befall a given character) as a positive reaction and desirable in good plays. To Aristotle, humans should be offered a broader scope of possibilities.

Socrates, Plato, was right, of course, about the impact of writing. One clue to the change that writing brought about can be found in the early Greek plays. We see the major characters initially responding to the will of the gods with little individual understanding or contemplation of his or her role in performing the acts the authors had them perform. They essentially continued the oral heritage of Homer. Later Greek plays

begin to introduce individual acts of rebellion that originated in the will and desire of the character—*Antigone* comes immediately to mind.

Still later, books allowed people to develop ideas in more concrete detail and in a way that would bear inspection by the reader. “The epistemological impact of printing was noticed only gradually. Europeans were hardly aware of the shift in the quality of knowledge, as the new knowledge format only subtly undermined the older oral world of discourse and rhetoric.” (Heim, p. 45) Knowledge became available to individuals to be perused at their leisure without the intrusion of others, unless that debate was welcomed and invited. The work of reading gave each individual the chance to share ideas with others far removed from a particular location. Their thoughts could be individually examined, and each individual could deeply process huge amounts of information because it could be reviewed whenever necessary. Unlike the oral form of communication, which is local and basically unconscious, writing became the means by which the individual could consciously revise his or her discourse to create a polished product that would better convey, to a potentially broader audience, the intended message.

The literate tradition brought with it the ability to create new ideas and to formulate new abstract concepts, like mathematics, in a format that would allow on-going inspection and reflection. Education, then, became involved with reviewing and understanding the ideas of others, about acquiring new knowledge and skills and about allowing people to analyze and synthesize information—to be critical *and* creative. However, the literate tradition also brought with it a more independent outlook for learning—the individual was able to learn in relative isolation. Some of the social perspective of education was lost.

Modern technology used in education, television and the computer, have continued, somewhat, the isolation of the learner and have further altered the way people approach learning and the depth with which they approach ideas. A number of researchers have questioned the impact that electric circuitry, now morphed into computer technology, has on the ability of people to think critically and creatively. We are even told there is an information overload and that people do not have the capacity to effectively handle it. (Jackson)

Before going too much deeper into our investigation, let’s make sure that the focus and the purpose of this discussion of the historical perspective of education is clear. That is, over three thousand years of human history, the individual slowly earned the right to act as an individual—to be critical of the *status quo* and to be creative in how s/he responded to social or environmental prompts. One might understand that despite the rise of the notion of individualism, correct social behavior is still expected. Each person is still socialized—by the family, by friends, neighbors and the community, by the media. Indeed, Marshall McLuhan (2003) contends that electronic media have created the “global village” that returns people to a more tribal perspective—a more social, global understanding of what it means to be human. It is, perhaps, possible to use this global perspective for good purpose. Learning communities may serve as a tool to integrate this

global point of view and expand the viewpoint of students. By offering a model of, and strategies to, incorporate course content, students may develop pathways to adapt to the changing environment and become adept at joining and using a plethora of information.

### **Applying Good Pedagogical Sense**

The social nature of learning is epitomized in the oral tradition, but also in the socialization processes used in each society to teach what are considered to be appropriate behaviors to given environmental stimuli. “Society,” according to John Dewey (1916), “not only continues to exist by transmission, by communication, but it may fairly be said to exist in transmission, in communication.” (p. 3) Learning communities may be seen as an extension of this social perspective of learning. Not only do they serve as a means to help students understand the relationships between different content areas of the curriculum, but they can be used to help students develop a sense of community with other students, and a sense of the eclectic, or shall I say synthetic, nature of learning.

Dewey (1916) commented on the social nature of education and learning. He believed that learning was a function of “continuity” and “interaction:”

The continuity of any experience, through renewing of the social group, is a literal fact. Education, in its broadest sense, is the means of this social continuity of life. Every one of the constituent elements of a social group, in a modern city as in a savage tribe, is born immature, helpless, without language, beliefs, ideas, or social standards. Each individual, each unit who is the carrier of the life-experience of his group, in time passes away. Yet the life of the group goes on. (p. 2)

Along with the necessity of community and communication, Dewey (1916) saw three general functions of education: direction, control, and guidance. Direction was defined as a “neutral term” that has a range of action somewhere between “guiding assistance” and “regulation.” Control denoted, on the one hand, the process of “subordinating” the “natural impulses” of the individual that are “purely individualistic or egoistic, and thus antisocial;” and on the other hand, “an emphatic form of direction of powers” developed by the individual to accommodate the leadership of others. Guidance was seen as the means to assist “through cooperation” the natural capacities of individuals. (p. 15-16) The instructors of the Learning Community can serve as the guides through the complex relationships of the various course materials they have developed for this particular learning experience. It is the on-going interaction between instructors and students as they discuss and synthesize, together, the content of the courses that “form habits of external adjustment.” (Dewey, p. 22) That interaction can lead to an imitative behavior that will have “meaning and conscious intent only when things are used to produce a result. And the only way one person can modify the mind of another is by using physical conditions, crude or artificial, so as to evoke some answering activity from him.” (Dewey, p. 22)

Elsewhere (Valkenburg 2010), I discussed the constructivist views of Lev Vygotsky. The constructivist contends that people construct their understanding of reality through experience and interaction with members of the society. A social constructivist, Vygotsky discussed the advantages of collaborative learning. While collaborating with others in the educational setting, he suggested, students would be able to gain valuable insight into the materials that were being taught and to gain the skills necessary to lead when circumstances were right. Each student has the potential to be a learner *and* a leader. I found the graphic below on an educational blogspot that seems to have fallen into disuse. However, the graphic offers a wonderfully concise view of the social constructivist perspective.

Vygotsky (1978) described the “Zone of Proximal Development” as the period of time during the learning process when a student has already learned and mastered a certain amount of knowledge (the actual level of development) and can then achieve further mastery when offered appropriate educational support (potential development). It is in this zone of potential development where good pedagogical support can do the most good.

## The Social View of Learning



Jerome Bruner (1960) used Vygotsky’s description of the “Zone of Proximal Development” to develop a system of academic support that has been called “scaffolding.” Scaffolding represents the teaching/learning interactions between educator and student that empower the student to do something beyond his or her independent efforts. A scaffold is a temporary framework that is put up for support and access to meaning and is taken away as needed when the child gains control of information in order to succeed at a task. If I understand Bruner’s point that, “any subject can be taught effectively in some intellectually honest form to any child at any stage of development,” (Bruner, p. 33) then scaffolding is a most effective way to stimulate student learning. In a learning community, the instructor can construct the scaffolding that will allow students the support, energy and stimulus needed to learn the materials in enough detail to be successful.

understanding is socially constructed

In an age of increasing spectatorship, 'motives for learning must be kept from going passive... they must be based as much as possible upon the arousal of interest in what there is to be learned, and they must be kept broad and diverse in expression.' (Bruner, p. 80).

In the field of educational psychology, Jean Piaget described the development of the child as an individual. Piaget focused on the individual learner as s/he advanced through the four stages of cognitive development where s/he would learn to perceive and understand the world. S/he would develop a schema, or world view, against which each new experience would be measured. Each new bit of information would be processed at certain plateaus at which the child would fit the new information into his or her particular schema based on the synthesis between what was already “known” and what was being learned. We will see below that this psychological view is somewhat supported by recent neurological research, and that it is exactly these junctures in learning, described by Piaget, that can help us to understand, synthetically, that the neuron changes after each sensory-cognitive interaction. On a daily basis, these events occur constantly. In the long-term educational setting, they occur as new curricular information is added during the teaching/learning process. However, it is during this ongoing process of learning and processing, of reaching certain levels, plateaus, of understanding by creating synthesis that the instructors of the Learning community can be most effective.

Without social interaction, then, humans would find it difficult to learn and use any of the socially acceptable strategies for living. The culture is a primary determinant of how and what the child will learn. What happens after the initial stages of childhood learning depends on the types of opportunities the student has to learn new methods of processing, accessing and using information. The process of teaching synthesis within the structure of a learning community may serve as the foundation that allows for the ongoing interaction of learned materials *and* the deepening intellectual and cognitive understanding of the interrelatedness of learned content necessary for intellectual and cognitive development. The learning community can serve as the precipitating stimulus that allows students to engage, to participate and to lead.

In *Brain and Culture*, Bruce E. Wexler (2006) talks about the how social environment has an impact on learning. He states that even inborn infant behaviors such as following the eye movements of another individual, for example, can be affected and influenced by social interaction. With respect to developing an individual understanding of reality, Wexler cites Vygotsky, “The function which hitherto was shared between two people [nurturing adult and child] now becomes a method of *internal organization of the psychological process*. From an external, socially [organized educational] situation attention develops the *child’s voluntary attention*, which ... is an internal, self-regulating process. [emphasis Wexler’s]” That is, through a social interaction, the individual can begin to develop a sense of inner control.

Rita Smilkstein (1993) discussed the idea that students require time and opportunity to construct the foundational brain structures that will allow them to learn in a formal educational setting. She contends that in order to overcome the potential gap between students’ potential to learn [proximal development] and their actual level of learning students should be put in situations where they will find it easier to learn. If allowed to focus on and practice a task, and if given proper modeling behaviors, students will develop the ability to learn. Learning communities can offer the structure and correct modeling behaviors that students need to develop critical thinking skills, ask

intelligent questions in the classroom, explore different methods of learning, and understand the process of synthesizing information across artificial disciplinary boundaries.

Smilksteen discussed that as fundamental brain structures mature, the individual can learn more and better if properly motivated. The brain is a dynamic organ that constantly changes in response to environment stimuli. Each mental activity causes topographical changes—the creation of new synapses or the withering away of others. Meaningful, purposeful (mindful) attention to what one is learning and the conscious linking of subject materials to each other plays a significant role in the individual's ability to learn and remember because it creates deeper neural pathways and extended neural communities. Deeper learning means an enhanced ability to think creatively and critically—it allows the individual to take better control of how s/he perceives and relates to his or her surroundings.

Michael Merzenich, who has conducted research on brain plasticity and how it adapts to new stimuli, suggests that, “Your brain has processed the billions of events you have experienced during your lifetime, and it has changed its topography in accordance with the learning and types of behaviors that learning entailed.” (Merzenich, 2004) Jeffery Schwartz has suggested that “plasticity must be a response to experience; after all, the only thing the brain can know and register about some perception is the pattern of neural activity it induces. This neural representation of the event somehow induces physical changes in the brain at the level of neurons and their synapses. These physical changes... *are* the memory.” (Schwartz, p. 108)

In essence, the brain changes each and every time information is processed to and/or from memory. Synapses are created that strengthen the links between neurons that contain information that has been used and related in some fashion. It is a dynamic on-going process that allows the individual to learn in a variety ways from a variety of social and individual contexts. Of course, the individual has to be open to change and willing to look at and understand that new evidence may require the letting go of past belief. The idea that brain plasticity can serve as a powerful tool that can empower the individual to not only learn better but to apply what has been learned is additional evidence that the strong social and pedagogical support recommended by the thinkers noted about can have a positive impact on the ability of the student to better process information and to think creatively and critically. As Jeffery Schwartz points out:

The fact that (even) adults are able to learn and that learning reflects changes in synapses tells us that the brain retains some of its early dynamism and malleability throughout life. The adult has the ability not only to repair damaged regions but also to grow new neurons. Even the adult brain is surprisingly plastic. Thus the power of willful activity to shape the brain remains the working principle not only of early brain development, but also of brain function as an ongoing living process." (p. 130)

James Zull (2002), who supports active teaching/learning experiences in all aspects of education believes that the cycle of the dynamic brain process originates with concrete experience; hence the term *experiential learning*. (p. 17) But experience is *not* the totality of learning. In fact, it is just the beginning. “Learning depends on experience, but it also *requires* reflection, developing abstractions, and the active testing of those abstractions.” (p. 18) One may argue that using a variety of learning formats and actively modeling desired thinking/learning skills will also help the individual to process and synthesize information creatively and critically.

Learning communities offer us a means of using the established social nature of learning *and* allowing the individual to willfully become an independent learner. If instructors plan and deliver the course materials holistically, that is, as potentially divergent ideas synthesized into one larger concept, then students will be better able to understand how they can use these strategies to purposefully and meaningfully apply those strategies in other courses down the road.

### **Why Learning Communities?**

One current definition of Learning Communities is offered on the LaGuardia Community College website: “Learning communities are linked or clustered classes: the same group of students takes two or more classes together; the classes themselves are linked: the teachers have organized readings and other activities around common themes or questions. Sometimes the work in the learning community is related to your major.” (CUNY) This definition fits perfectly with the research noted above.

When I was in high school, I learned about the use of the ellipsis in my English course. Trying to apply something I had learned, I used the ellipsis when responding to a question on a history test. I thought that ending my response to a particular question with the ellipsis would imply that the historical process had not ended and that there was much more that would follow. In class on the day the tests were handed back, the history teacher embarrassed me by telling me, to the delight of the rest of the class, that history had no room for the ellipsis. In a Learning Community, the History instructor and the English instructor would be on the same page, and the rubric for assessment they had mutually designed would allow for student creativity (and, hopefully, the ellipsis).

Students can be encouraged to see the bigger academic picture by getting them to actively engage the materials. Over my thirty years in the classroom, I have discovered that students do not always understand the concepts I present during the lecture. Nearly fifteen years ago, I discovered a nifty classroom tool called the “Muddiest Point.” (Angelo and Cross) The idea of the “muddiest point,” or what I relabeled the “fuzzy notion,” is to ask students to anonymously write down one unclear topic introduced during the class period. Anonymity insures that there is no stigma attached to asking questions. It is interesting to note that there is usually more than one student who has the same question. That’s okay because even redundant questions can be answered numerous times by different students during the answer period.

The fuzzy notion at the end of each class can help the instructor to determine the level of understanding of the students and to prompt more discussion and inclusion in the class. For any anonymous question, any student who understands the principle may be allowed to respond. Since each student may have varying levels of understanding for each bit of information (often based on what s/he knew before the particular section of the class began) different students will most likely respond to different questions asked by other students. That is, using the student's own knowledge base while teaching, each student may be included in the teaching/learning process of the class as a whole. Everyone can be a learner and a leader.

This technique may also be used in a learning community if the instructor of each class reconnects the students with the content discussed for the other class[es] in the community. As the students discuss ideas from the other classes and relate them to the class in which they are sitting, they may begin to develop a holistic perspective of the materials.

In other words, the basic idea is to help students to see the relationship between the content in courses from different disciplines—*synthesis*. For younger students, the principles of brain plasticity suggest that children are very prepared to understand and see relationships in language and content. Children can learn many languages when they are young because their brains are easily adapted to the task of language acquisition, and while they do take some time in learning spatial relationships and object constancy, they can be taught more than current educational design allows. Although technology has been superimposed on the learning environment of today's youth as a "solution" to the inability of many to read or do basic arithmetic, teaching children content across disciplinary boundaries seems a better way to help them learn, and use, information. If we can teach students, from an early age through their college experience (and beyond, for that matter), that it is not only possible but preferable to integrate and synthesize information, we may help the children, adolescents and young adults of our country to be more creative and critical thinkers who may adapt better to an increasingly rapid pace of change.

### **Developing the Community**

Any course can be offered in a learning community: music, math and history, psychology and literature, developmental writing and introduction to political science. Any combination of courses is possible. What is essential, however, is that instructors find common themes that they can integrate in the classes across disciplinary boundaries. A learning community is just that, a community of ideas that must be delivered in concert in order to garner the best learning effect. A learning community should not be seen as two or three courses scheduled together but individually presented without any stringent coordination of content that will allow students to understand the interrelatedness of the ideas. It is incumbent on the instructors, therefore, to develop a joint syllabus, rubrics for common assessment of assignments and a unified strategy for academic support.

The following five steps, developing joint syllabi, developing joint rubrics for assessment, integrating assignments to cover content, modeling synthesis and deciding on academic support strategies, may serve as a guideline for building learning communities that will offer the greatest level of academic success in terms of understanding and the development of creative and critical thinking skills.

### **Developing joint syllabi**

Instructors who hope to develop a learning community that will bring the greatest level of understanding about the interrelatedness of the materials of the participating courses should develop a syllabus that shares the responsibilities for the introduction and discussion of various topics to be presented.

For this purpose, let's create a learning community with Developmental Math, Developmental English and Introduction to Business courses. Intro to Business will be the primary content course around which the English and Math courses should revolve because, in general, developmental level courses do not have an impact of GPA nor do they count toward graduation or transfer. That is, the Principles of Business can be introduced and then supported by both the English and Math instructors who will use the Business ideas as the springboard for the basic concepts they will teach.

Since two of the courses are developmental, one can expect that the students will need to work on vocabulary development, identification of main ideas and locating supporting concepts when reading, sentence structure and developing ideas for writing, and the understanding and application of basic mathematical principles all while learning the foundation of business. But learning basic skills may have more meaning when learned in the context of the goal the student has for the future. If the content of the developmental level courses is embedded with the content from the Business course, the students will be able to apply all newly learned basic skills to the college level course because of the directed interrelatedness established by all of the instructors.

This will require that all instructors develop a joint syllabus that will inform students of the intent of the community and offer a guideline for how content of all three courses will be related. The discussion among the instructors during syllabus construction will allow them to better understand why they are teaching the things they are teaching and using the materials they are using. It gives them a mutual stake in the success of the students in all of the classes of the community.

Keep in mind, however, that some content may be more difficult than others and that a stringent timeline may not be possible. Instructors may wish to build in some flexibility in the syllabus to accommodate more problematic content. It is the joint responsibility of all the instructors to have regular meetings to discuss how their plan is working and to make necessary adjustments to ensure the content is covered and that the students are getting the instruction they need in all of their classes. Frequent meetings will also allow the instructors to collaborate to develop activity based assignments that

will include concepts for all of the classes involved in the learning community as the semester progresses. More about integrated assignments will be discussed below.

### **Developing rubrics for assessment**

In addition to the syllabus, the instructors should decide on how they want to assess student progress and competence. Exactly what will the Business instructor want to see on essays and tests? How well written do written assignments have to be? What content should be in the essay and what level of grammar should be achieved on each assignment as the semester progresses? Since good writing skills in English are learned incrementally over the course of the semester, the Business instructor will have to adapt his or her expectations because the early responses in writing will not be as strong as those later on in the semester. The Business book will probably have a high reading level, so the students will have to learn reading strategies as the semester progresses, and the instructor will have to be more precise in explaining the assignments early on in the semester to accommodate the lower level of reading comprehension. However, since the reading strategies are aligned to a course that a student needs to achieve a goal s/he has established for him-/herself, the strategies may be applied more actively and meaningfully, thereby, enhancing the development of reading skills.

As for mathematics, the Business instructor will have to closely collaborate with the math instructor to ensure that the level of math assigned early in the semester is not beyond the abilities of the students. The basic math principles the math instructor will teach can be related to both English and Business in terms of the syntax and semantics of the languages used. As the business course begins to focus on more complex mathematical applications, the principles of the math course can be more readily applied.

The primary task for the instructors while developing the rubrics is to identify the specific skills that students need for success. Exactly what types of writing will students have to perform? Exactly what mathematical skills will be required? Exactly what types of quizzes and tests will be used, and how will they be structured in terms of the types of questions?

As these skills requirements are identified, and as the specific skills that will be needed for success are identified, it will be easier for the developmental level instructors to develop a plan for teaching and assessing student assignments. Jointly developing a rubric that will clearly state the criteria for success on assignments will allow instructors to determine how to increase the degree of difficulty on successive assignments without inordinately interfering with the chances for student success. The progression can be incremental to follow the learning trajectory for developmental level students while maintaining the standards needed to ensure that the students learn what they need for the Introduction to business course. The rubric will also ensure that there are more objective criteria for assessing student success across the three courses in this community. They will also reduce subjective grading and allow for more precise focus on student accomplishment.

### **Integrating assignments to cover content**

With a common notion of what it will mean to be competent and successful in each of the classes, instructors can begin the much longer and arduous process of integrating the assignments students will be expected to complete during the semester. A rule of thumb might be that what happens in one course should be part of the discussion in all the others. This “rule” will ensure that instructors will apply common themes and meet the established goals of the learning community.

Following our three courses in this learning community, we have seen the necessity of developing a joint syllabus and a common rubric for assessing student assignments. The next step might be to find the means to integrate assignments so that students will use all of the skills they are learning on common assessment tasks.

Business is reading oriented, so it is easy to see how to integrate English into the teaching mix. Generally, the reading level of an Intro to Business class will be around the thirteenth grade. The reading level of developmental level students may range from sixth grade to eighth grade. Therefore, early reading assignments for the reading class will have to take this into consideration, and the developmental English class will have to focus on the Business text to get students through. The focus of the assignments in both classes, then, might focus on definitions, main ideas and how they relate to the overall topic of specific chapters, how to read textbooks and other general reading and writing skills. Starting slowly and reinforcing the reading materials and reading techniques in both the Business and the English courses will allow students the chance to acclimate to the level or reading required. The redundancy of instruction will reinforce each topic covered. But in this model, how will Math fit in?

Math is numbers oriented, so it may be possible to help students understand that Business requires the use of numbers and work out assignments that will show how and why math is necessary for business success. The math assignment at the beginning of the year for both Math and Business can focus on beginning mathematical abilities. The complexity of Math instruction can be mirrored in the Business course as the semester progresses by making the problems more difficult but at the same time reflect the types of math strategies being taught. But how might we integrate Math and English?

Word problems are generally difficult for developmental Math students. My experience has been that a student might be cruising along during the class, but when faced with word problems, begins to fall apart. However, if reading instruction is integrated along with basic math principles while solving a business related essay question, students may get a better handle on the interrelatedness of the three courses and begin to understand the need to use all of the tools being taught in all of the classes—to begin the process of synthesizing information across instructional boundaries..

So what happens in, let’s say, the Math or the Business course where the instructor has to cover a specified amount of content in order to prepare the students for the next level in the sequence? How can the instructors guarantee that all required

materials are covered? That is an issue the instructors have to agree on as they begin the process of building the community. They have to know and agree to the requirements each of them faces in teaching their classes as they apply to and are conveyed during the course of the semester. In addition, instructors can develop activity based assignments that require the direct application of learned materials as a way to model the ability to construct the synthesis they hope students will acquire.

### **Modeling Synthesis**

Neil Postman (1996) has suggested that it is important to help students see the big picture. To do that, he proposes that, "The idea is for students to learn that the terminology of a question determines the terminology of its answer; that questions cannot be answered unless there are procedures by which reliable answers can be obtained; and that the value of a question is determined not only by the specificity and richness of the answers but also by the quantity and quality of the new questions it raises." (p. 186) He goes on to assert that students "simply do not know in what sense in historical fact is different from a biological fact, where mathematical 'truth' is different from the 'truth' of a literary work." (p. 187)

He uses the following tale to exemplify the point that how we ask a question often has a significant impact on the answer we may find. The story goes something like this. A rabbi and a priest are stuck on an important spiritual question—whether or not it is permissible to smoke while praying. They decide to seek the answer from God. When they get together the next week, they discover they received different answers to their question. The priest said that he asked, "Is it permissible to smoke while praying?" To which, God responded, "No, when praying, one must concentrate on one's prayers." The rabbi reported that he asked, "Is it permissible to pray while smoking?" To which, God responded, "Yes, it doesn't matter what you are doing, you may pray at any time." The answers to their questions were different because the primary focus of their questions was different. The form of the question dictated the substance of the response. .

For the learning community, discussion in any class session should allow and stimulate discussion about all of the concepts from all of the classes. From the understanding of student knowledge of content and their willingness to participate in group assignments, instructors can create assignments and activities that will start at the most basic level from which they can introduce and integrate new concepts to the students. Knowing what they know and don't know will serve both the students and the instructors well. Showing the students the difference in the way to ask questions and the meaning of the different answers they may receive, is an important teaching/learning experience that will enhance the students' abilities to think clearly.

Creating an atmosphere where students can ask questions about any topic in any class (for our purpose in the learning community) seems an excellent way to stimulate interest in learning and a desire to investigate and discover evidence in order to answer the most pressing issues of the day. So in our learning community, a student should be

encouraged to ask about Math in the Business course and English in the Math course. The student should be invited to be creative—to use the ellipsis.

Active learning assignments developed across all of the courses will help students to gain a more complete grasp of the interrelatedness of the materials they are being taught. By active I mean exercises where the students have to actually apply the concepts to what may be considered “real life” exercises. Multiple choice questions are nice and neat and easy to score but are not the best means of helping students to deeply process information. When a student has to use a concept, to compare or contrast, to put ideas together to answer complicated questions, to tell not only when but why and to discuss the possible on-going relevance of the concept, then the student begins to make the meaningful connections, not only between ideas but in the deep synaptic changes that will have a long-term impact on the student’s ability to think creatively and critically.

### **Deciding on academic support strategies**

There are a number of support strategies may be used to help students learn and succeed in the learning community. Instructors in the learning community might wish to identify the academic support that they will offer their students. One strategy might be to recommend individual tutoring sessions. Other strategies might include asking students to develop study groups or developing study guides for students to use. The idea of these latter is to get students to work together, to communicate with each other the ideas and concepts of the courses.

Offering study guides to students who wish to participate in small unfacilitated study groups will give students a focus for their study and will bring them to the study table for the explicit purpose of discovering exactly what the instructor believes is important and might ask on the test. As students become actively engaged in their studies—not only in the classroom but outside of class and on their own, they benefit in terms of their ability to communicate and to develop ideas independently—that is, to develop ways to talk about the course materials in their own words and using their own examples while working with others. Along with the focused structure of the learning community, students who work together in small group situations, on their own, should be able to succeed not only in the two or three classes of the learning community but in future classes, as well.

One additional strategy might be for the instructors to develop scaffolding strategies in the classroom to provide students with the added value of instructor expertise in concert with the interaction of others in the courses. The goal of scaffolding, as used by tutors, is to help in the development of independent learners. As Cora Dzubak has put it, “Effective scaffolding is based on the process of setting and resetting individual learning goals. Specifically, the tutor recognizes where the student needs temporary assistance and where he is able to again resume independence. This can be done fairly quickly during face to face tutoring, as contrasted with the classroom where there might or might not be an opportunity to ask a question during lecture.” (Dzubak) I contend, however, that the learning community is an excellent environment for the instructors of each course

within the community to engage scaffolding strategies to improve the chances of student success.

### **Conclusion**

The benefits of learning communities may be seen as the direct result of the coordination between and among the instructors of all the courses included in the community. In general, the process of education occurs within a social environment. However, the goal of education might best be exemplified when a student becomes an independent, life-long learner.

‘Individualism,’ Tocqueville observed, ‘is a novel expression, to which a noble idea has given birth.... Individualism is a mature and calm feeling, which disposes each member of the community to separate himself from the mass of his fellow creatures, and to draw part with his family.’ (Boorstin, p.112)

When the individual can begin to understand that course materials may be related across disciplinary boundaries to create synthesis, we can begin to better measure intellectual success. Synthesis enhances the understanding of new and/or difficult course materials and allows students to develop a broader knowledge base that helps to engender higher order thinking skills. In addition, the collaboration between instructors of a learning community may serve the model for students to follow as they actively participate in discussion and other types of engagement with the course materials. From the collaborative effort between instructors and students, the power of the individual to understand at a different level—to be critical, to be creative.

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