# The Vascular Flora of Collegiate Woods in Zanesville, Muskingum County, Ohio

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**Abstract**

Collegiate Woods is a 70 acre park located to the north side of the Ohio University regional campus in Zanesville in Ohio. The park has had no previous botanical collecting. Making it an urgent need to be inventoried and analyzed in order to identify the endemic, rare, and endangered species to protect them, and to identify the invasive species that harm the local flora so removal of these species can be done properly. This survey documented 68 species in 59 genera in 37 families. The families with the most species were Asteraceae (9), and Apiaceae (5). No State-listed threatened or endangered species were found. Three invasive species were found: *Alliaria petiolata* (M. Bieb.) Cavara & Grande, *Ligustrum vulgare* L., and *Lonicera maackii* (Rupr.) Maxim.

This project represents a successful experience with recruiting undergraduate students in research. The whole project was done and completed by one undergraduate student in three months of summer 2007 and it was her graduate practicum as well.

**Key words:** Collegiate woods, flora, invasive, inventory, Ohio.

## Introduction

Collegiate Woods is a natural area designed and founded by Ohio University—Zanesville in 2001 for local flora protection, low-impact recreation and educational opportunities. The park has had no previous botanical collecting. Therefore, the Park was in urgent need to be inventoried and analyzed in order to identify and document its flora. Moreover, these identified species will be used for educational

purposes for both the students and the public. This inventory makes this park a model for the other parks in the state in general and those in Muskingum County in particular to identify the floral composition of these parks. This project created a focal point that will enhance this park and ensure its ability to provide a successful ecological and educational experience for commuters of the six-county region (Coshocton, Guernsey, Morgan, Muskingum, Noble, and Perry) served by the University.

This project represents the first inventory of the flora of the park. The objectives of this study were to: 1) conduct inventory of the vascular flora of the park in order to identify the endemic, rare, and endangered species to protect them, as well as to identify the invasive species that harm the local flora in order to remove these species properly.; 2) document the vascular flora of the park; and 3) prepare a voucher collection of each species known to occur in the park.

**Study Site**

Collegiate Woods of Ohio University—Zanesville is a 70 acre park located at the north side of the campus in southeastern Ohio, approximately five Km west of downtown Zanesville in Muskingum.

**Materials and Methods**

The park was divided into nine zones based on their ecological system (Ecker and Gelb 2001). The nine ecological zones were edge, ravine, meadow, riparian, upland, upland clearing, disturbed woodland, slope face north, and slope face west. Plant specimens were collected from all these ecological zones in June and July 2007.

The study was done in the herbarium of Ohio University—Zanesville. Plants were identified using Braun (1961 and 1967), Cooperrider (1995), Fisher (1988), Flora of North America Editorial Committee (FNA; 1993), Gleason and Cronquist (1991), and Holmgren (1998). Species nomenclature follow Cooperrider et al. (2001). Family classification of seed plants follows Judd et al. (2002). Family classification in Lycophyta, Sphenophyta, and Pterophyta follows FNA (1993).

**Results**

This survey documented 68 species in 59 genera in 37 families (Appendix A). The families with the most species were Asteraceae (9), and Apiaceae (5). No State-listed threatened or endangered species were found. Three invasive species were found: *Alliaria petiolata* (M. Bieb.) Cavara & Grande, *Ligustrum vulgare* L., and *Lonicera maackii* (Rupr.) Maxim.

**Discussion**

The 70-acre area consists of mostly secondary growth forest, a deep ravine and Joe's Run, a sandy-bottom stream. The predominant issue concerning the area is the abundance of invasive species. The following paragraphs detail the key characteristics and the vegetation for each zone based on this inventory and field assessment made by Ecker and Gelb (2001).

**Edge**

Characterized by thin strips of residual vegetation. Ratio of edge to interior is high. Often associated with fencerows, division between agricultural fields, etc. Characterized by scrub growth, early successional species, and large overstory trees. Significant exposure to sunlight and winds. Common for invasive species to dominate.

Vegetation: *Aesculus glabra*, *Alliaria petiolata*, *Cardamine concatenate*, *Carex normalis*, *Carex rosea*, *Floerkea proserpinacoides*, *Galium aparine* var. *echinospermum*, *Hesperis matronalis*, *Hydrophyllum virginianum* var. *virginianum*, *Juncus tenuis* var. *tenuis, Lonicera maackii*,Ornithogalum *umbellatum*, *Osmorhizalongistylis*, *Podophyllum peltatum*, *Potentilla canadensis*, *Prunus serotina, Sanicula marilandica*, *Quercus palustris*, and *Ulmus rubra*.

**Ravine**

Characterized by steep slopes, dense shade, and well-drained soils with a thin layer organic soil layer. The ravine is a sensitive zone because of its significant sloping terrain. Erosion appears to be affecting its current condition. Adjacent land use is likely influencing local runoff. Increased volume and redirected flow are jeopardizing the

ravine community because of the erosion of the organic soil layer and structural soils. Efforts to protect and enhance near off-site vegetation should be made for preventative purposes.

Vegetation: *Circaea lutetiana, Cornus alternifolia*, *Cornus florida*, *Cynoglossum virginianum*, *Ligustrum vulgare*, *Monarda media*, *Pilea pumila*, *Platanus occidentalis*, *Podophyllum peltatum*, *Polygonum persicaria*, *Sanicula gregaria*, *Verbesina alternifolia*, and *Viburnum lentago*.

**Meadow**

The two areas depicted as meadow are similar in that they are composed primarily of forbs and grasses. The underlying topography is different, however, which heavily influences the vegetation. The larger, western meadow sits on well-drained soil, with full sun. The smaller eastern meadow is tucked up against two other zones. As a result the border where the three zones meet provides greater protection and morning shade. This is more suitable for species like monarda and turtlehead. In addition, the area sits in a slight depression and has less drainage.

Vegetation: *Achillea millefolium*, *Barbarea orthoceras*, *Chrysanthemum leucanthemum*, *Dianthus armeria*, *Equisetum arvense*, *Erigeron philadelphicus*, *Rumex crispus*, *Sisyrinchium angustifolium*, and *Trifolium campestre*.

**Riparian**

The riparian corridor is a dynamic environment. Conditions appear to fluctuate rapidly with weather events. Vegetation suitable for the zone should be capable of withstanding fluctuating water levels.

Vegetation: *Chrysanthemum parthenium*, *Cryptotaenia Canadensis*, *Elymus riparius*, *Erigeron philadelphicus*, *Geranium maculatum*, *Impatiens capensis*, *Lysimachia nummularia*, *Myosotis scorpioides, Pilea pumila*, *Ranunculus repens, Stellaria palustris*, *Symplocarpus foetidus*, *Valerianella umbilicata*, and *Viola canadensis*

**Upland**

The upland is characterized by well-drained soils, greater exposure to sun and wind, fewer overstory trees, and drier conditions.

Vegetation: *Apocynum cannabinum, Asclepias purpurascens, Cornus drummondii, and Lonicera morrowii.*

**Upland Clearing**

The upland clearing is unique because of its previous use as a borrow pit. The openness and steep terrain of the zone make it vulnerable to forceful rain and winds and intense temperatures. The fragile soils have little organic material and are susceptible to erosion as evidenced by washouts and gullies. Efforts to stabilize the soils should continue with the addition of plant material capable of withstanding the harsh conditions.

Vegetation: *Achillea millefolium, Chrysanthemum leucanthemum, Daucus carota, Hypericum perforatum, Lycopus unifloru, Rudbeckia hirta, and Verbena hastate.*

**Disturbed Woodland**

The area is characterized by its significant population of invasive species. The exposure to off-site land use heavily influences its character. The area is thick with multi-flora rose, privet. These suburban landscape species have made their way in to the area through the edges of the woodland. Residual native species are still present but are severely threatened because of the prolific nature of the invasive species.

Vegetation: *Duchesnea indica, Lindera benzoin var. benzoin, Pilea pumila, Polygonum persicaria, Senecio aureus, Verbesina alternifolia, and Vitis riparia.*

**Slope Face-North and Slope Face-West**

Both slope-faces are characterized by significant slope, a mature overstory, and protected microclimate. The northern slope tended to be cooler and moister than the western slope, but both are quite similar in composition. The zones are similar to that of the

disturbed woodland, but have been separated because of level of invasive species present in the disturbed woodland. The slope zones are both situated between wooded zones, which provides an added layer of protection. There are also similarities between the slope zones and the ravine zone. Many of the herbaceous materials occurring in one were found in the other.

Vegetation for Slope Face North: *Eupatorium rugosum, Galium parisiense var. parisiense, Ligustrum vulgare, Lindera benzoin var. benzoin, Polygonum punctatum var. punctatum, Polygonum virginianum, and Verbesina alternifolia.*

Vegetation for Slope Face West: *Blephilia hirsute.*

**Invasive species**

Michael Ecker, a horticulturist from the Dawes Arboretum and Jennifer Gelb from Myers Schmalenberger, conducted a field assessment survey on July 21, 2001. They reported three invasive species*: Lonicera japonica*, *Rosa multiflora*, and *Ligustrum vulgare.* While in this study three species were found *Alliaria petiolata*, *Ligustrum vulgare*, and *Lonicera maackii*.

The management of invasive plant species in Collegiate Woods should be focused on those with the smallest populations, because they can be controlled easily before they spread farther, and complete elimination may be achievable within a few years. Elimination of *Ligustrum vulgare* and *Lonicera maackii* populations would be more feasible than *Alliaria petiolata* populations.

In addition, all invasive plants should be removed from sensitive areas of the park. Removal of invasive plants from along trails, where their seeds are more easily transported to uninfested areas by hikers, horses, and mountain bikes, is also a priority.

**Conclusion**

The engagement of undergraduate students has an enormous impact on scientific research and accumulation of a higher quality of data. I believe that undergraduate research is an important part of a student's education in regional campuses, as they have the opportunity

to acquire skills they would not otherwise attain in the classroom. I have been involved in training and recruiting undergraduate students in research for several years and I have successfully recruited three undergraduate students since I joined Ohio University—Zanesville in 2006. This project was done and completed by one undergraduate student in three months of summer 2007 and it was her graduate practicum as well.

Plant specimens were collected from 100 sites during two field seasons (spring and summer). Each specimen was reviewed by specialists for correct determinations, data entered into site, collection, and taxonomic databases, specimens were labeled, mounted, and filed in the Ohio University—Zanesville herbarium. We will include these specimens in our database, which will be established specifically for this project, including the locations and herbaria of deposition of all specimens collected in the park. This project will have a collaborative network encompassing many partners (Mission Oaks, The Dawes Arboretum, The Wilds, and the Muskingum Valley Park District) as this inventory was the first one to be done to this park.

**Acknowledgment**

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**Appendix A**

The list is arranged alphabetically within major divisions. Species nomenclature follow Cooperrider et al. (2001). Family classification of seed plants follows Judd et al. (2002). Family classification in Lycophyta, and Pterophyta follows FNA (1993). (E) stands for Edge, (M) stands for Meadow, (R) for Ravine, (RN) for Riparian, (U) for Upland, (UC) for Upland Clearing, (W) for Disturbed Woodland, (SN) for Slope Face North, and (SW) for Slope Face West.

**SPHENOPHYTA**

**EQUISETACEAE**

*Equisetum arvense* L., **M**

**ANTHOPHYTA**

**APIACEAE**
*Cryptotaenia canadensis* (L.) DC., **RN**
*Daucus carota* L., **UC**
*Osmorhiza longistylis* (Torr.) DC., **E**
*Sanicula gregaria* E. P. Bicknell, **R**
*Sanicula marilandica* L., **E**

**APOCYNACEAE**
*Apocynum cannabinum* L., **U**

**ARACEAE**
*Symplocarpus foetidus* (L.) Nutt., **RN**

**ASCLEPIADACEAE**
*Asclepias purpurascens* L., **U**

**ASTERACEAE**
*Achillea millefolium* L., **UC**
*Chrysanthemum leucanthemum* L., **UC**
*Chrysanthemum parthenium* (L.) Bernh., **RN**
*Erigeron philadelphicus* L., **RN**
*Eupatorium rugosum* Houttuyn., **SN**
*Rudbeckia hirta* L., **UC**
*Senecio aureus* L., **W**
*Senecio pseudaureus* Rydb., **R**
*Verbesina alternifolia* (L.) Britton, **W**

**BALSALMINACEAE**
*Impatiens capensis* Meerb., **RN**

**BERBERIDACEAE**
*Podophyllum peltatum* L. **R**

**BORAGINACEAE**
*Myosotis scorpioides* L., **RN**
*Cynoglossum virginianum* L., **R**

**BRASSICACEAE**
*Alliaria petiolata* (M. Bieb.) Cavara & Grande, **E**
*Barbarea orthoceras* Ledeb., **M**
*Cardamine concatenata* (Michx) O. Schwarz, **E**
*Hesperis matronalis* L., **E**

**CAPRIFOLIACEAE**
*Lonicera morrowii* A. Gray, **U**
*Viburnum lentago* L., **R**

**CARYOPHYLLACEAE**
*Dianthus armeria* L., M
*Stellaria palustris* Retz., **RN**

**CORNACEAE**
*Cornus alternifolia* L.f.,R
*Cornus drummondii* C. A. Mey., **U**
*Cornus florida* L., R

**CYPERACEAE**
*Carex normalis* Mack. **E**
*Carex rosea* Schkuhr ex Willd., **E**

**FABACEAE**
*Trifolium campestre* Schreb., **M**

**GERANIACEAE**
*Geranium maculatum* L., **SW**

**HIPPOCASTANACEAE**
*Aesculus glabra* Willd., **E**

**HYDROPHYLLACEAE**
*Hydrophyllum virginianum* L. var. *virginianum*, **E**

**IRIDACEAE**
*Sisyrinchium angustifolium* Mill., **M**

**JUNCACEAE**
*Juncus tenuis* Willd. var. *tenuis*, **M**

**LAMIACEAE**
*Blephilia hirsuta* (Pursh) Benth., **SW**
*Lycopus uniflorus* Michx., **UC**
*Monarda media* Willd., **R**

**LILIACEAE**
*Allium vineale* L., **UC**
*Ornithogalum umbellatum* L., **E**

**LIMNANTHACEAE**
*Floerkea proserpinacoides* Willd., **E**

**OLEACEAE**
*Ligustrum vulgare* L., **E**

**ONAGRACEAE**
*Circaea lutetiana* L., **R**

**PLATANACEAE**
*Platanus occidentalis* L., **R**

**POACEAE**
*Elymus riparius* Wiegand., **RN**

**POLYGONACEAE**
*Polygonum persicaria* L., **R**
*Polygonum punctatum* Elliott var. *punctatum*, **SN**
*Polygonum virginianum* L., **SN**
*Rumex crispus* L., **M**

**PRIMULACEAE**
*Lysimachia nummularia* L., **RN**

**RANUNCULACEAE**
*Anemonella thalictroides* (L.) Spach, **R**
*Ranunculus repens* L., **RN**

**ROSACEAE**
*Duchesnea indica* (Andrews) Focke. **W**
*Potentilla canadensis* L., **E**
*Prunus serotina* Ehrh., **E**

**RUBIACEAE**
*Galium aparine* L. var. *echinospermum* (Wallr.) Farw., **E**
*Galium parisiense* L. var. *parisiense*, **SN**

**ULMACEAE**
*Ulmus rubra* Muhl., **E**

**URTICACEAE**
*Pilea pumila* (L.) A. Gray, **RN**

**VALERIANACEAE**
*Valerianella umbilicata* (Sull.) A. W. Wood, **RN**

**VIOLACEAE**
*Viola canadensis* L., **R**

**VITACEAE**
*Vitis riparia* Michx., **W**

**Archives Of Passion: Using Love Letters To Teach The Methods Of Historical Inquiry**

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During the summer of 2007, my chair asked if I would like to come to the Oxford campus in order to teach our department's history methods course called "Introduction to Historical Inquiry." Turns out that research leaves and other issues had resulted in short staffing on that campus for the ensuing fall semester. Since I had never taught this class before, the offer presented an intriguing possibility. I knew that if I were successful, it could well open a path for scheduling the course regularly on the Hamilton campus. While I currently hold an administrative appointment, I always welcome the opportunity to broaden my experience in and approach to teaching. Luckily for me, my campus dean was more than open to this possibility, and so I was listed as an instructor of record on the Oxford campus for the fall semester 2007.

This course, HST 206, carries a catalogue description similar to courses at Ohio State, Ohio University, University of Toledo, University of Cincinnati, and Kenyon College -- among other institutions. Each offers an experience that provides "essential skills in investigating and interpreting the past." Courses like HST 206 stress "active participation, writing, and intensive reading of primary documents and secondary literature." All of them require a series of writing assignments, with many culminating in the production of a substantial undergraduate research paper. They also emphasize class discussion and the building of a history cohort among the ranks of undergraduates. Most of these courses throughout the state use a variety of reading assignments that vary according to the instructor, but in some cases departments use the same texts no matter who teaches the class. All of these courses can fairly be termed "gateway" classes in that they provide a portal through which bright undergraduates can pass on their way to upper-level history offerings and -- if they

choose -- eventually to honors theses and even graduate work. In addition, courses like Miami's HST 206 are designed to help budding or prospective history majors survey the diversity of historical enquiry while beginning to come to grips with the methods that all historians use to understand the past. These classes should be the most popular and best taught in the history undergraduate curriculum because they encourage faculty to showcase their own scholarly interests. Similarly, faculty should look forward to teaching such courses, and their respective syllabi should illuminate the core of each individual faculty member's commitment to the historical profession.

Armed with these assumptions and expectations, I began preparation for my own version of HST 206 by asking to see the syllabi of my colleagues in the Department of History. Our faculty are accomplished and highly regarded teachers and scholars, and so I expected to see and learn much from their courses. I was not disappointed. Each colleague had designed a section of the course that was truly distinctive and spoke directly from what I had always known about him or her. But as I thought more and more about my own version of the course, I decided that the kind of class that would interest me -- and therefore might be of greater interest to students -- was a class on a topic that deviated from the presumed norm of scholarly enquiry. A recurring question in my own professional life has been "why are certain topics usually ignored by scholars?" Historians, for instance, seem content to research and teach on subjects that can be easily defined, documented on an evidentiary basis, and quantified. But what about those topics that are hard to define, often difficult to isolate, and seemingly impossible to quantify? More specifically, why do historians tend to ignore emotions and shy away from exploring their influence on the people and events of the past? Indeed, can a humanistic discipline such as ours continue to discount the feelings of our subjects? And what about that most powerful and widely touted emotion of them all -- love? Is it possible that love can be understood and explained as one of the great forces in civilization?

I decided to tackle these questions head on with the two dozen undergraduates who had enrolled in my section of HST 206. We would be in the truest sense colleagues as I -- no less than they

-- would try to assess the impact of love on historical subjects. The import and implications of love in the lives of individuals as a recurring phenomenon looked to me to have been entirely neglected. Existing courses in history and disciplines like women's studies, literature, religion, and psychology typically deal with love only in terms of its generalized, overall effect on periods and movements [e.g., "Marriage and Sexuality in Medieval Europe"; "Early Modern Love"] or as one of many conventions comprising the institutions that touch everyday life ["Three Approaches to Love: Scientific, Christian, and Buddhist"; "Modern Sex and Modern Love"]. To me, the tendency to focus in scholarly disciplines on love only in terms of its broad and institutional impact seems highly unfortunate given that it appears to be a major pre-occupation and motivator in the daily lives of most people, past and present.

My first concern was a consideration of class texts. I decided that the best readings would be scholarly editions of love letters. Love letters are primary documents and, as such, speak for themselves. They tend to be direct and unrefined. They also convey an immediacy and spontaneity that secondary writings about historical subjects and events simply cannot. Finally, an array of such letters would encourage the class to look at effects of love on people -- and hopefully by implication on events and institutions -- from a diverse range of times, nations, cultures, temperaments, and interests. To make both the subject and readings manageable, the course focused on western history between the twelfth and twentieth centuries. The major texts therefore consisted of five collections of love letters spanning these eight hundred years. They were, in chronological order: the letters of Abelard and Heloise; Henry VIII and Anne Boleyn; John and Abigail Adams; Albert Einstein and Mileva Maric; and the letters of an American cavalry officer from World War II, Lloyd Hunnicutt, and his wife Virginia. In assigning these texts, I tried to be highly focused and fully inclusive at the same time.

My HST 206 syllabus began with a quotation from Mortimer J. Adler:

> There is only one situation I can think in which men and women make an effort to read better than they

> usually do. When they are in love and reading a love letter, they read for all they are worth. They read every word three ways; they read between the lines and in the margins. . . . Then, if never before or after, they read.

Of course, I hoped that my blossoming scholars would read the love letters of the past just as intensely. The course outline continued by connecting the work of historians with common expectations for love in most people's lives: "It is a fair assumption that we seek to probe the past at least in part because we want to have a better understanding of the present so as to lead a more fulfilling life in the future. If so, love would appear to be the ideal topic; most of us believe [or at least are taught] that without love we cannot be happy." I then offered a proposition regarding the relevance of love to other forces in history: "Love [or the absence of it] has undoubtedly influenced the course of politics, economic, religion, and even science." I went on to tie the preceding strands together: "By understanding how those who lived before us loved, we may grasp how our love affects us and those around us today. In the process, we may also gain insight as to how the love we and millions of others seek and hopefully will find is likely to shape the course of events in the future." Finally, I reminded the students that our exploration would of necessity have to take place within a scholarly framework: "our purpose is to examine love as an historical phenomenon that can be documented, analyzed, and discussed."

Notwithstanding my intellectual curiosity about the topic and approach that I had sketched out, I was more than a little skeptical about this particular version of HST 206. Was the topic really as important and meaningful as I thought? Would students actually take to the subject, or for that matter, take it seriously as a scholarly vehicle? Additionally, was there additional, implicit pressure upon me as a regional campus faculty member to meet and even surpass Oxford-based expectations for the class? Indeed, I discovered later that news of my approach had engendered some discussion and misgivings among my Oxford colleagues -- and for very understandable reasons. They had wondered aloud whether or not

love letters -- or love in general -- could generate sufficient scholarly interest from those whom we all wanted and expected to become history majors. At the same time, my colleagues' hesitation confirmed my original assumption that historians as a rule do not study or have much professional interest in emotions. My students, meanwhile, had been talking in their other courses and, as a number of them would later report in one-on-one conversations with me, also had more than a few doubts about the efficacy of my approach. In fact, I now assume that many of them thought I was going through some sort of mid-life [or at least mid-career] crisis!

Undaunted, we pressed on. The first love letters read and discussed were those of Abelard and Heloise who wrote during the High Middle Ages. In some respects, these letters would appear to have been the least promising for beginning the course. After all, the institutions and values of medieval France are far removed from those of modern America. To my surprise and delight, however, students immediately took to the collection. They came to a comprehensive understanding of the fiery and complex relationship between the monk Abelard and the nun Heloise, Abelard's one-time pupil and lover, by showing empathy for their plight. Heloise's letters conveyed a poignancy both immediately recognizable and strikingly distinct. As she wrote to Abelard, "at every stage of my life up to now, as God knows, I have feared to offend you rather than God, and tried to please you more than him. It was your command, not love of God, which made me take the veil" (Radice, 2003, p. 69).

Students were moved that Abelard and Heloise were destined to live apart. In addition, and more significantly for a course like HST 206, students realized that these unvarnished letters [that is, these primary source documents] serve to open a window on the gender roles, religious ideals, and intellectual life of the Middle Ages. Had it not been for the passion between Abelard and Heloise, these exchanges would not have been written, and we would have been deprived of one of our best sources for understanding the medieval world.

The class next turned to the letters of Henry VIII and Anne Boleyn. Theirs is a much shorter collection than that of Abelard and Heloise. Still, the letters' messages came across clearly. Henry VIII

was that English monarch who broke from the Roman Church so as to divorce his first wife, Catherine of Aragon, and marry his would-be lover and prospective queen, Anne Boleyn. Henry and Anne's letters reveal the depth of feeling that compelled Henry to alter the religious institutions of England and, by implication, all of Europe. Henry's courtship of Anne, for instance, was full of the ardent and idealized passion of the age: "I send you, by the bearer of this, a buck killed last night by my own hand, hoping that when you eat of it you may think of the hunter" (Henry and Anne, 2006, p. 6). At the same time, Anne showed she was a match for the greatest political mind of the period, Cardinal Thomas Wolsey, when she simultaneously downplayed her gender while exhorting the great prelate to action in the matter of the king's divorce: "I am so bold to trouble you with my simple and rude writing. . . . I do so long to hear from you news of the [papal] legate" (pp. 18-19). Students came away with an important impression: politics and dogma aside, it was the fervent passion of Henry and brilliant mind of Anne that proved to be decisive in England's change of queen, religion, and church. The love of two people had helped to shape the destiny of millions of others.

After analyzing these letters out of European history, we studied a set that has become part of the canon of American civilization: the exchanges between the patriot [and later president] John Adams and his wife Abigail. Most of the letters concern the period from 1774 to 1783 when John was away from his Massachusetts farm serving as a delegate to the Continental Congresses and then as the first US minister to Great Britain. This large volume encompasses subjects as diverse as the Declaration of Independence, the conduct of the War for Independence, the business concerns of the Adams' farm, and the many the births and deaths in John and Abigail's extended family. These letters have long been recognized as an unsurpassed chronicle of the events of Revolutionary America in that they convey vividly the contours and challenges of life in late-eighteenth century America. And, for the purposes of HST 206, they offered profound insights into a loving marriage destined to endure for many decades.

The juxtaposition of the writings of the two Adamses was

striking. John, the controversial and outspoken patriot, revealed himself to be a man of great sentiment and warmth. As he wrote to Abigail: "be assured, there is not an hour of the day in which I don't think of you as I ought, that is, with every sentiment of tenderness, esteem, and admiration" (Shuffelton, 2004, p. 173). Abigail, who played the anticipated domestic role in sustaining the Adams farm, nevertheless distinguished herself as a firm and farsighted patriot: "difficult as the day is, cruel as this war has been, separated as I am, on account of it, from the dearest connection in life, I would not exchange my country for the wealth of the Indies, or be other than an American, though I might be queen or empress of any nation upon the globe" (p. 331).

Students were captivated by the John-Abigail exchanges. Reactions tended to be divided along gender lines. Female students quickly grasped and articulated the fact that Abigail was easily the intellectual equal of her husband -- a man who on more than one occasion has been praised as having had the best mind of all of the Founding Fathers. Male students, on the other hand, were impressed by the way the obvious bond between the two Adamses helped to sustain and perhaps even enhance John's commitment to the Revolutionary cause. Even those students who subscribed to what they believed were "traditional family values" came to the conclusion that these letters showed that American independence was greatly advanced by the stoicism and hard work of wives, sisters, and mothers like Abigail Adams. In sum, students began to realize that love fueled and sustained the fires of Revolution in America on a very personal and even intimate level.

The class moved on to the letters written by the great physicist Albert Einstein and his first wife Mileva Maric. My original thought was that it would be interesting to explore the influence of love on one of the great scientific minds of modernity. Again, I wondered if students would share my interest. They did. The letters revealed a warm, even playful side of Einstein that none of us had seen before. We also were struck by the way that the intellectually lofty concepts of quantum physics were interspersed in these letters with pet names and other terms of endearment. For example, Einstein closed one of

these letters by saying "If only the mathematically unclear concept of molecular size does not again reveal itself in the formation of the trajectories of molecules closely approaching each other, and if only the molecule could be treated as a center of force. In any case we will get a quite rigorous test of our view. Tender kisses from your 'Johnnie'" (Renn and Schulmann, 1992, p. 47). He freely and repeatedly confessed "when I am not with you I feel as if I'm not whole" (p. 23). Albert also conveyed that his love for Mileva had helped to make him a better and more dedicated scientist.

Mileva, in turn, -- much like Abigail Adams -- proved to be her lover's equal. As she commented in one of her exchanges: "I've been working very hard and must now devote myself to studying [physicist Wilhelm Eduard] Weber. In the meantime, I spend every moment looking forward to Sunday when I can see you and kiss you again in the flesh" (p. 58). Through these letters, those of us in HST 206 recognized an important connection between emotion and science that we heretofore had not perceived. We also sensed that the strong bond between Albert and Mileva served to push each of them to greater intellectual heights.

Finally, the class turned to a collection of letters involving two people who until recently had been absent from the pages of history: American serviceman Lloyd Hunnicutt and his wife Virginia. While their letters lack the eloquence of Abelard and Heloise, the intellectual insights of John and Abigail Adams, and the scientific proficiency of Einstein and Maric, they nevertheless provide a rare and intimate glimpse into the mind and heart of an ordinary soldier in wartime. Hunnicutt served in the Pacific during World War II, and he confessed that notwithstanding the constant and imminent danger, composing and receiving love letters remained the central concern of his life. "Please write every now and then even if you just write and say that you don't love me anymore. This endless wait, wait, wait is the most nerve-wracking torture I have ever encountered in my life" (Hunnicutt, 2005, p. 192). With this insight, the class then considered an important though seldom asked question: "what is the effect of loving relationships on the conduct of war?" Specifically, did Hunnicutt's letters to Virginia serve to make him a better soldier, or

did his emotional investment in their composition somehow distract him from what should have been his ultimate purpose? Put another way, is love ultimately an additional burden to bear for the average GI? The class was evenly divided on this question, but our entire group appeared to have gained a newfound appreciation for the role of passion in the conduct of war.

Taken together, these five collections of letters prompted the class to ask and answer a number of pertinent and important questions. How had love helped to define gender roles? How does love affect major events and movements like war, revolution, religious upheaval, and political change? Individually, can each of us identify with the love of these people who lived many years ago? How does that identification -- or lack of it -- affect our work as scholars? More generally, is love rational? What are the implications for history and society if it is in fact an irrational force? We even considered a more indirect question: why have many smart people apparently done not-so-smart things in the name of love? In the aggregate, we came to the conclusion in our answers to these questions that love in one way or other has greatly affected the people of the past and our own work as scholars.

In addition to our lively class discussions there were, of course, a number of written assignments. Two of these consisted of the standard blue-book exams. Another focused on daily writing prompts that invited students to recall the previous day's discussion, connect it to their readings for that day's class, and prepare to articulate opinion in the discussion to follow. For example, the class was asked to consider the following question out of their readings of the Adams' letters: "Who was the greater patriot, John or Abigail?" Not surprisingly, strong opinions were expressed on both sides. Later in the semester, students compared Albert Einstein and Lloyd Hunnicutt as figures of very different backgrounds and status: "Does the love expressed in their respective letters serve to highlight the differences -- or does the love expressed instead point to similarities -- between the two men?" That is, is love the great equalizer? The answer to this last question was a resounding "yes." On the whole, these short assignments fit perfectly and expanded considerably our considerations

of love letters.

The major written assignment for the course was a research paper. This was very much in keeping with what I had located in syllabi from Miami and other institutions. I decided to keep the model that we used throughout the course and ask each student to focus on a single, loving relationship. Students were invited to choose an important couple [male/female; male/male; female/female] with whom they would want to spend a significant amount of research time and then consider the effects of their love on one another and the period in which they lived. The class elected to study Franklin and Eleanor Roosevelt; Edith and Woodrow Wilson; Napoleon and Josephine; Ferdinand and Isabella; Martin Luther and Katharina von Bora; Nicholas and Alexandra; Richard I of England and Philip II of France; Marie Antoinette and Axel von Fersen; and Flaubert and Colet. Contemporary couples like Bill and Hillary Clinton and Ronald and Nancy Reagan were also in the mix. Students could focus on fictional couples like Romeo and Juliet and Scarlett O'Hara and Rhett Butler, as well, because those pairs also serve to explore the values and implications of love in a given period.

These subjects produced some exceptionally fine--even illuminating--essays. I will mention two. The first of these concerned the intensely loving relationship between Woodrow Wilson and his second wife, Edith Bolling Galt. Notwithstanding the 28th president's reputation as a prude, an examination of his love letters to Edith revealed to this student a tender, passionate man. The bond between Woodrow and Edith was so strong and comprehensive that the president went so far as to seek her advice on sensitive government matters. He shared important State Department documents with her, as well. For example, the president wrote later that Edith's support had been decisive in helping him make the decision to go to war with Imperial Germany. The student concluded that this degree of intimacy between the Wilsons became the basis of and impetus for the first lady's assumption of presidential powers following her husband's debilitating stroke in 1919. So the intense passion between Woodrow and Edith not only strengthened their relationship as man and wife, it facilitated what became a smooth transition of power from president to

first lady when the chief executive could no longer perform the duties of his office. This student found and eloquently recorded how love had influenced the presidency, politics, and international affairs during and immediately following World War I.

The second paper had to do with the extremely complex relationship between Franklin and Eleanor Roosevelt. This particular student discovered, as had many historians before her, that the amorous component of their relationship had been irretrievably damaged by Franklin's extramarital affairs. But my student realized that what developed into Franklin and Eleanor's efficacious partnership as president and first lady in the 1930s and 1940s represented another kind of love that should not be discounted in the pages of history. Moreover, the student came to the conclusion that this kind of dispassionate yet enduring love is also important in understanding the periods and events of the past. I could sense the student's maturation as a scholar as she recognized that Eleanor and Franklin needed to be assessed and remembered on the basis of the parts of their marriage that worked rather than merely on the basis of those components that were dysfunctional.

With the submission of many fine term papers like these, the semester closed. I thought things had turned out well but was somewhat anxious about course evaluations. When I was able to read the anonymous comments the following winter, I was both gratified and pleasantly surprised to see that students had gotten as much out of the class as I. Students gave the class an overall rating of 3.88 on a 4.0 scale (97%), as well as a rating of 3.90 (98%) on whether they had felt engaged with course content. My department chair attached a note saying "extraordinary job." In addition, students offered comments that revealed their acceptance and internalization of the basic premise of the course: "It is a great topic and such a wonderful way to learn history"; "The course gave me a different view on history that I had never truly thought of"; "I thought this was a good spin on the 'normal' history taught,"; "The texts were a refreshing change from the norm"; "This was a topic not often given as much attention in other history courses and therefore shed new light on the past and human nature"; and "the reading of love letters was extremely interesting."

Students also believed that they had acquired important and necessary skills that would make them better scholars: "I learned to read between the lines"; "The course taught me how to analyze primary sources"; "I really learned how to analyze history in primary sources by looking at the broad historical context"; "The discussion format was intellectually stimulating"; "In-class assignments were thought provoking and tended to lead to discussions"; and "I gained definite reading, writing, and analytical skills I had been looking for. It was perfect." Students also universally praised the selection of readings, the discussion format, and even the class assignments. All of my hunches had proven to be correct.

A few months later, a class member who is likely to become an honors student in our department sent along additional observations. With his kind permission, these remarks are offered below:

> The course rightly illustrated how love–or its absence–touches every human life, whether one is the commanding general or just a drop in the sea of soldiers. To overlook one of the foremost emotions that drive the engine of history is a mistake too often made. [The class] has, to say the least, made me aware of an almost untouched (if not underrated) perspective of historical inquiry. It has taught me that to study a life means to study life's parts: not just the outer forces but the inner forces as well. Love is an essential part of human life. To ignore or discredit love is to dehumanize history. Having grasped this point, I will first look to love's forms, exploits, and influences when I seek to understand any historical figure. Without question, taking this course on love has significantly shaped the very way I seek to examine the complex multiplicities of the past.

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Clearly, then, all of us in HST 206 had grown as scholars, and perhaps even as individuals, through our consideration of the love letters of the past.

The teaching of this particular course has had a profound effect on my professional life. First and foremost, it has empowered me to seek and use unconventional topics and methods in my teaching. No longer will I feel constrained by the customs of my discipline or my profession. Second, I recognize that students are at least as open to these unconventional approaches as I. Third, I will never again hesitate to bring a consideration of emotion into either my teaching or research. Fourth, I now see the intrinsic value in all kinds of records and not merely the kinds of formal treatises and documents upon which I had based my research previously. Finally, I appreciate fully the value of having regional campus faculty teach on the main campus and vice versa. Inter-campus pedagogy promotes intellectual cross-pollination among faculty with differing portfolios and experiences and therefore is a real boon to students throughout the University as a whole.

In addition, the study of love's effects on individual lives points toward new lines of inquiry for disciplines beyond history, as well. The letters of Einstein and Maric, for instance, suggest strongly that passion can and does move science to greater effort and more spectacular results. For psychology, the readiness of those in times of conflict--especially soldiers and the people they leave behind--is affected by love or the lack of it. In terms of politics and political theory, the efficacy of government and leadership depends of the emotional pitch and stability of those who would presume to exercise power. Literary works are both created and interpreted through the prism of emotions that move authors and critics. Similarly, engineers and computer programmers are undoubtedly affected in their work by what they bring and take with them emotionally each day. In short, love influences all academic disciplines as it touches all aspects of life. It therefore is worthy of vigorous and independent lines of inquiry in each of these academic areas.

Partly as a result of the outcome of this class, HST 206 will now become a staple on the Hamilton campus, and I will seek out many more opportunities to teach it. I can already envision a number of exciting and hopefully efficacious approaches. My colleagues in Hamilton no doubt have at least as many ideas as I. But no

matter how I next teach the course, I will never forget the two dozen undergraduates who gave me the means and the courage to attempt something completely different. Through a course on love we together discovered just how much each of us loves the scholarly life.

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# Nursing Field Studies: Nursing Students and Service Learning in a Third World Setting

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## Introduction

Nursing education consists of several clinical experiences in a variety of settings. According to Cauley et al. (2001), service learning can be defined as academically based community service, such as a structured learning experience that combines community service with learning opportunities that are intentional and provide periods of reflection (1). Learning through experience opens an opportunity for students to apply the knowledge and skills they have learned in such a manner that not only allows them to utilize their knowledge learned in a clinical setting, but to potentially provide a service to a culturally diverse group of individuals. Seifer and Maurana (2000) state that looking at an assessment of an identified area of need and responding to these concerns is an important aspect of service learning (2). By doing this on an international level, this is an important aspect of a student's learning and application (3). This was the case in a Nursing Field Studies course developed. This course was coordinated with the Office of Education Abroad at a university setting to provide a cultural experience for nursing students to provide healthcare in a clinic setting to an underprivileged population in a Third World country. These students were participants on two medical teams traveling to the Dominican Republic whose aim was to provided screenings, diagnostic testing and assessments, and limited treatment to the poverty village areas surrounding a town in the Dominican Republic. An additional goal was to provide educational experiences to the volunteer healthcare leaders in this community, referred to as healers. This would therefore create an opportunity for continued, even if limited service. As a result, the students gained a sense of professional volunteerism as well as a cultural appreciation for opportunities for healthcare in different settings. This article will

describe the needs assessment that precipitated the creation of the course and the process of gaining approval for the course. It will also discuss the development, the promotion, the clinical implementation, and evaluation of the course.

**Needs Assessment**

Through previous experiences working with the village, it became apparent to the author that the healthcare of the people in the village was inferior, or absent. Basic hygienic needs were not being met, in particular for the children. From these observations, a needs assessment was completed by interested healthcare professionals on the board of a non- profit humanitarian organization. From this information gathered, the medical mission was developed. This provided an expansion of services and demanded the need to recruit medical professionals willing to serve in this capacity in this type of setting.

**Course Approval**

Once the need for healthcare was determined, the process began to create the opportunity for healthcare professionals to travel to this area and provide basic, albeit limited, services in this primitive setting. A faculty member at a university medical college and a nursing faculty member coordinated the development of the medical mission. It was decided to implement this as a Study Abroad Program utilizing medical and nursing students as an educational experience.

Approval of the course was obtained from the Director of the Nursing program. Many of our students have not been exposed to multiple cultures in their experiences. It was felt that this was a significant opportunity for students to experience such a climate and to apply their skills in a very significant and meaningful manner. Administrators also saw this as a strategy to promote the nursing curriculum as a culturally sensitive curriculum by being able to incorporate this as an elective course within the program. Being community oriented is a focus for not only nursing in general, but for this particular program specifically. Being community focused incorporates not only being aware of local or national, but also

international, healthcare issues. The faculty felt that outcomes or experiences from this course can be introduced or discussed when appropriate to the material in various other courses within the nursing curriculum. Thus, there were many advantages to a Nursing Field Studies Course for the university setting.

**Development of Nursing Field Studies**

A proposal was submitted and approved; a budget was created, discussed and approved; and the vision was well on its way to becoming a reality. This was a lengthy process, all in all, with revisions and discussions occurring regularly. The proposal went through the committees to obtain approval. It was a mutually respectful process with all departments keeping in mind the same goal, both from a service standpoint as well as an educational standpoint.

As in developing any nursing course, a syllabus was developed. The syllabus consisted of the course objectives. The course objectives included clinical objectives related to the services which were to be provided. However, the objectives also included gaining an appreciation for the concept of professional volunteerism, and developing a cultural sense of adaptability to a diverse population. These were important issues to discuss as part of this experiential learning.

A Spanish-English medical dictionary of any reputable source was required. Some students chose to purchase an electronic translator, while some opted for the traditional small handbook dictionary. The faculty also provided study sheets of common words, phrases in the Spanish language. This was provided well in advance of the experience. The faculty determined that command of the Spanish language would not be a requirement due to the availability of translators. The translators were the people of the village who had some familiarity of the English language. This method proved to be efficient enough to enable the team to function adequately.

The syllabus also described the method of evaluation, and the class and clinical requirements and activities. The course was a pass/fail course. The primary workload of the course was the nine-day mission trip. This was the clinical portion of the course. Due to the nature of the team, each member had a role to do. It was felt

that the intention of the student to participate in such an experience demonstrated commitment to the mission of providing healthcare to the underserved, and faculty was assured of full participation by the students.

The class activities consisted of pre-departure sessions and activities. A pre-departure session consisted of attending an orientation session held approximately three months prior to the clinical trip. Holding an introductory session early allowed the students to become more thoroughly informed regarding the nature of the mission work and the primitive conditions in which the group would be living, prior to actually registering for the course.

Three weeks prior to leaving, a joint pre-departure meeting was held with all participating members. This included students, both nursing and medical, community healthcare professionals, and faculty. The purpose of this meeting allowed for an opportunity for all members to meet and become familiar with other members of the team prior to departure. Also, pre-departure details and explanations were given to all. By having a joint session and disseminating this information, it provided for a comfort level for the students in having met their colleagues prior to traveling as well as providing an opportunity for answering questions. It is felt that this enhanced camaraderie and teamwork during the experience.

A third pre-departure class activity was to attend a class on campus. This class consisted of completing a self assessment activity of a Cultural Learning Strategies Inventory. This allowed the student to assess their cultural tolerance, adaptability, and to open discussion regarding cultural differences. This exercise proved to be beneficial in retrospect, because the students did not realize how their attitude and openness would be directly influenced by a different cultural. They expressed that they were grateful to have discussed this concept in preparation for the immersion into a different culture. This also allowed for questions by the students, a review of packing needs, review of necessary paperwork yet to be submitted and any other details forthcoming. We also reviewed a PowerPoint presentation on Medicine in a Third World Culture. This class was held about two weeks prior to departure.

After return, the class activity was to attend a Summary Session, where families were also invited to attend. Pictures were gathered and shared digitally at this time. Families were able to experience the cohesiveness that the group achieved from this experience of working and living in close quarters They were also better able to gain a sense of appreciation for and understanding of the stories that they were hearing and the new found friendships the students had formed.

Another class activity after returning was to give a presentation on the mission trip. The purpose of this was to continue to foster an interest in developing professionals with a sense of volunteerism and service. Other purposes included sharing the experience with those in the community who may have financially assisted. Some students presented to community professionals as an information session on what is happening in their community and potential opportunities for involvement.

Clinical activities during the mission trip consisted primarily of participation in the clinics set up in the remote mountain villages. This will be further discussed under the Implementation section of this article. The other clinical activity consisted of journaling. Cohen (2003) speaks of journaling as one of the most significant activities for experiences gained during traveling (4). Students were given guidelines for journaling. Sections of the journals included a description of their personal and professional goals for this experience as well as their thoughts on volunteerism. Students also kept a daily log of their activities. Another section included descriptive content regarding their observations of the cultural habits, the people, the group dynamics throughout the activity, and their adaptation to this. Another important aspect of the journal was the reflective return section. This section allowed the student to reflect on the re-entry to their country. Entries included a pensive reflection of how they have been affected by this experience, what they have learned, and what they would like to share with others. Such a reflection created an outlet for the student to gain much insight into their personal as well as their professional development. Another concept they contemplated as part of their reflection was how they would use what they have learned

from this experience. This last entire section of the personal journal, that of self-evaluation and reflection, proved to be one of the most significant aspects of journaling.

**Promotion of the Nursing Field Studies Course**

The preparation of the Nursing Field Studies class began approximately nine months prior to the actual mission trip, which was to occur in the summer. Experiences gained of the faculty during mission trips to the Dominican Republic and other areas were introduced during the class the faculty taught when appropriate. Topics such as culturally sensitive healthcare, nutrition, and basic needs provided these opportunities for the faculty to share pictures and culturally specific information to the students. Other topics such as professionalism and nursing organizations led into the concept of opportunities for professionals, many of which are learned from professional organizations.

Soon after this, flyers were posted within the university regarding the class and when it would be offered. The flyers also invited any interested students to attend an Information Session to be held early in winter quarter.

During the information session, a slide presentation was held depicting photos of areas where the clinical trip would occur. Other details such as a description of the course, the dates, the fees, and other expenses for immunizations were discussed. Topics regarding housing, safety, food and water, and communication while there were presented. Application packets were distributed at this time.

The participants were selected according to their completion of quarter one of nursing and current status as a student. It was felt that the experiences and skills in which the student would participate have been learned at that point. References, one being from a clinical instructor, were required as part of the application. The Education Abroad application form of the university was utilized.

Those selected then participated in the course as described under class/clinical activities above. This time line proved to allow ample time for retrieval of information from students, preparation for immunizations, etc. A partial financial deposit submitted with the

application initiated the fee process as well as showing a commitment by the student to continue with the application process and coursework.

**Clinical Implementation of Nursing Field Studies**

Through the orientation and pre-departure sessions, the students were informed of the planned activities for the clinical experience. Also there was the caveat of being flexible as plans and clinics may need to be adjusted as to the location and as to the roles of the students, based upon upcoming needs on site. The students were very understanding of this.

The excitement that had grown through the information, orientation and class sessions had heightened when meeting very early at the airport for departure. The uncertainty of the adventure, mixed with the certainty of the scope of the mission, proved for mixed emotions. For many, it was the initiation of flying, the first experience of primitive camping, and the newness of the cultural activities that were just as exciting.

There were 2 medical teams. The nursing students were divided between the teams. They were supervised by nurses on both teams. Their roles at the clinics included registering people, taking vital signs, gathering basic lab values, and assisting wherever else needed. Each student was rotated between these roles, allowing each student to experience each station. At other times, different roles were requested, such as helping with the pharmacy or entertaining the children in the waiting area.

The make-shift clinics were set up by the medical teams themselves in the communities being served. Areas such as schools, churches, community buildings were used. The students provided community based care for an underserved population in a very basic setting. Through this experience, the students observed the diversity of the living conditions as well as extreme poverty.

Interpreters were provided to assist with communication with the townspeople. Medical history cards were initiated at this point and medication for parasites was given to most. The next station for the person to attend was the vital signs station. Students

explained what they were going to do, with the assistance of the interpreters. Temperature, heart rate, respirations, blood pressure and oxygen saturation were taken and documented on the card. The person was then directed to the lab work station. Glucose checks, hemoglobin checks, and urine dipsticks (in a private facility) were done as appropriate according to standing orders from the physicians. The nurses then performed a brief, focused history of the person, concentrating on their chief complaint. They assessed the person accordingly. This documentation on the history and physical card accompanied the person for the physician visit. After being seen by the physician, the person visited the pharmacy when applicable.

Other activities in which the students participated included education sessions for the local healers and first responders. This is a relatively new group of individuals of the country willing to be the first responders and continue basic health care needs for their community. Primarily, the education session consisted of CPR and some first aid. With the clinics taking up a major part of the day, this was done on a limited basis. It is felt that this area will be enhanced for future such expeditions.

**Evaluation of Nursing Field Studies**

Evaluation was an on-going process for the medical teams, as suggestions for improvement arose regarding the traffic flow of the people through the stations. The students gave wonderful suggestions to better enable the use of the local healers and scouts within the stations. Education occurred between the students and the healers to inform them how to use the diagnostic equipment. Hence forth, the nursing students supervised the healers in doing the fingerstick lab work. This was a very satisfying experience for the nursing students.

The last day in the Dominican Republic, the medical teams had the opportunity to evaluate the experience. All were very positive about the experience; some had suggestions for improvement. Some of these suggestions included having the students work more one to one with the nurses. Also, students felt that more time should be devoted to educational sessions with the local healers and scouts, as well as to the clinics instead of the cultural activities. These will be considered

for future endeavors. Also on this day, the teams formally collated the data gathered from the completed medical cards. Demographics were gathered as to the gender, age groups, and diagnostic groups included. Some of those groups included musculoskeletal issues, cardiovascular conditions, and skin disorders.

Students also had the opportunity to formally evaluate the course based on the course objectives. This was completed during the Summary Session held approximately 7 days after the return. Results showed an extremely positive outcome for the course. Comments accompanying the evaluation forms included quotes such as, "This made the first 3 difficult quarters of nursing worth it," "This was an experience of a lifetime," "Thank you for the opportunity to complete this type of mission work, I learned so much about myself in the process," "I walked away with a more open mind and more respect for another culture and feel that I am a better person," "I really want to come back next year and do this as a nurse, thanks for the opportunity of a lifetime."

Faculty review of the submitted journals was completed. This process was very enlightening and students shared many thoughts and emotions (these were the journals completed as part of the course requirements). Students repeated spoke of their humbleness and their increased awareness of cultural diversity and the importance of acceptance. This was personified in this experience, whereas prior to this was not quite as real of a concern to them. Some students spoke of their need to re-evaluate their life's goals. The concept of professional volunteerism was developed from the seed previously planted in the classroom, and many vowed to continue to serve others in some similar capacity.

**Ideas for Future Implementation**

For subsequent nursing mission experiences, a nursing focus was emphasized. The nursing students prepared teaching sessions for the volunteer "healers" in the Dominican Republic. The topics included cardio-pulmonary resuscitation, hand washing, basic assessment skills, obtaining and interpreting basic lab studies, obtaining vital signs, medication administration, wound care and

bandaging, wellness care for infants and children as well as the pregnant. The "healers" are individuals who will be providing first aid and follow up care on an on-going basis. This is a very important aspect to improve the healthcare of the individuals of this area. The students felt that this was the most important aspect of this experience in education of those who would be there to continue with healthy practices.

**Summary**

Two medical teams traveling to a Third World country to provide basic medical assessment and treatment made a difference to the people of that culture. However, another important aspect of this course is the impact that the experience had on the nursing students. Not only did the students gain valuable knowledge of adapting clinical experience to a diverse population, but also worked collaboratively and closely with medical staff to arrive an at appropriate intervention. This community and clinic based care provided the experiential learning that better enables healthcare professionals to apply skills in a similar, albeit very different environment. This exposure to cultural diversity is necessary in today's world of healthcare. The students also self reflected on various aspects, such as the teamwork exhibited, their reactions to situations presented, their adaptability of a different culture, and their overall understanding of volunteerism and an appreciation for their home based culture.

Overall, this was a learning experience on many levels, both personally and professionally. Through their presentations to educational facilities and community groups, the students bring back and pass on their knowledge gained.

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**Building Learning Communities Through Student Organizations**

**Suguna Chundur and Cherie Zieleniewski**
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**Abstract:**

Learning is an integral part of every day life on campus, be it in the classroom or outside the classroom. This paper relates the experience of one college in fostering and encouraging a learning community for information technology students outside the classroom through a student organization. Whether it is through the electronic playground of LAN and game parties or through active participation in programming contests, this student-driven organization is providing a holistic technology experience to the technology-oriented students. This student body can serve as a model to other small colleges to encourage student organizations that benefit Informational Technology students.

**Introduction**

Student Organizations play a pivotal role in campus life. They can also create effective learning communities. On our campus, the IT (Information Technology) student organization plays a special role in furthering the campus experience of students interested in technology. It has received strong institutional support. Its membership is not restricted to technology students alone. It is open to all students who are interested in and want to learn more about technology. Since digital literacy is a key area of competence in higher education (Erstad, 2006), participation of students across different areas of study is encouraged. The organization acts as a forum for students to get together to network and discuss technology related topics of importance to them. It also acts as a self-sustaining support group engaging in various student-initiated activities (Beck, 2007).

**Need for a Student Organization**

"One of the most enduring, yet elusive goals to animate

higher education in recent years has to do with the concept of community-building" (Wiley, 2002). According to Lloyd Jones (1989), the definition of a campus community "is the binding together of individuals toward a common cause or experience." According to Chang (2002), factors such as campus environment, campus resources, and student characteristics affect student participation in campus activities. The campus environment should contain essential social elements that actively engage students in both academic and nonacademic areas. Cheng's (2004) findings indicate, "students' sense of community is closely associated with their feelings of being cared about, treated in a caring way, valued as an individual and accepted as a part of community and the quality social life on campus". Out of classroom campus activities are an important and valid part of student learning and experience.

Our campus is a two-year, open access campus and many of our students are the first-time college attendees in their families. They are also mostly working long hours to pay for college and balancing family, school and work with hardly any time to pick up soft skills such as learning to network with peers, meeting local business and community leaders or having the opportunity to take on leadership roles in the campus environment. As such, the IT faculty felt a real need for a student group that would support and nurture students in a social environment that would also help them acquire soft skills such as networking with peers, professionals and community members. Due to the vast array of skills that the students acquire as members of this student organization, we call it a learning community.

**Formation of Student Organization**

The rules of the University state that: "Students have the right to organize, join, and hold office in associations for their common interests. Membership in student organizations shall be open to all students without respect to race, color, religion, national origin, sex, sex orientation, physical or mental handicap, status as disabled veteran or of the Vietnam era, or age, except for religious qualifications which may be required by organizations whose aims are primarily sectarian. All registered student organizations shall have access to university facilities in accordance with university practice."

The students forming this organization were required to satisfy the following specific rules of the University:

- The organization must fill a need for students not currently being met by an existing organization on campus.
- The constitution of the organization must be consistent with university rules, regulations, or policies.
- The constitution of the organization must be consistent with the constitutional standards established by the group's respective governing body.
- A registration application with a signed compliance form must be submitted with the constitution and submitted annually thereafter.
- All charter members of the organization must be students (full and/or part time).
- The organization must have a minimum of ten student members to qualify for registered status.
- The organization must have a university advisor who is a member of the university faculty, staff or administration.

Pursuant to the above rules, about ten CIS (Computer Information Systems) students started this organization under the guidance and advice of the authors of this paper. The students named the organization "I.T. Pros" (Information Technology Professionals). Our CIS students are encouraged to be active participants of this organization. The main objective of this organization is to have a forum for students interested in technology to interact and network with each other. The organization has an elected President and Treasurer and maintains an online presence on Blackboard, the Learning Management System used by the University. The organization arranges for local business leaders to come in and give talks, organizes computer game parties and other IT related student activities. The UC I.T. Pros has also begun to send students to programming contests held at a local conference in Cincinnati. The voluntary participation by students creates a sense of community among Information Technology users and provides a means through

which the students as a group can create opportunities to further their professional interest and interact with the business community around them.

The privileges of the student organization as per the University rules are as follows:

- Cooperation and assistance of staff.
- Advertisements and notices in official publications.
- Use of university facilities.
- Sponsorship of all-university events.
- Use of the university name in non-commercial not-for-profit applications.
- Scheduling of off-campus speakers.
- Sponsorship of fundraising events.
- Eligibility for university funding (except political, religious, honorary, fraternity or sorority groups).

The group initially received $500 for the first year of its existence. One of the privileges of officially recognized student organizations is the eligibility for funding every academic year to promote interaction and awareness through programs that serve to benefit the entire student body. The amount allocated each year is dependent upon the college budget and the number of groups requesting funding. The Treasurer of the organization submits a request for funding in advance for the following year. The students do engage in fund-raising in a small way, by having a cookie sale or a food stand at the gaming parties.

**Activities of the student organization**

**New Student Orientation and Mentoring**

The IT student organization is an important resource for new students. The organization members help with any technology related questions that new students may have, from creating an email account to setting up the wireless card on their laptops. The members of the organization hold an "IT Clinic" the first week of the quarter, to help

new students with common technology questions. They set up a help desk in the lobby of the main building with a couple of portable notebook computers. The organization found that this term, it had an average of 40-50 students stop by throughout the week to ask technology related questions. Though formal resources for help are available on campus, the immediacy of the student led IT Clinic along with the informality of the setting, helped attract students who may not otherwise find the time or may not be aware of formal resources accessible to students. This peer-to-peer assistance fosters good student relationships and morale. The student organization members provide important mentoring services for new students as regards information technology resources on campus (Dowling, 1998). In this way, freshmen students get to know the advanced students much more quickly than would usually be possible. The organization members also actively volunteer at the tutoring center thus, providing valuable service. This is extremely important in our open access campus where the digital divide is more visible in our student body than in other traditional campuses. Our alumni also share their work experience with our current students and act as a valuable networking resource.

**LAN/Game Parties**

One of the most common problems that educators grapple with is the misuse of computer technology in the classroom. Playing computer games in the classroom is not an appropriate activity but this can become learning and networking activity when the students use the appropriate forum. Our student organization holds regular LAN (Local Area Networks)/game parties in collaboration with our technology department and a local high school. The University provides about five projectors for the occasion while the local high school students bring about fifteen personal computers. The students bring different gaming consoles such as Xbox 360, Wii and Play Station 3 along with controllers. The students network these gaming consoles with the personal computers and projectors creating a small local network, hence the name the LAN party. This event works as a social and learning opportunity. The freshmen get a good start on student life, interact and network with other students immediately. The

collaboration with the local high school helps broaden this learning community. The freshmen in the Simulation and Gaming program are the most pleasantly surprised when they hear about this particular activity sponsored by the IT student organization. Here are some of the attendance numbers from gaming parties of the last three years:

| Quarter | # of students from campus | # of students from the high school |
|---|---|---|
| Fall 2006 | 25 | 12 |
| Spring 2007 | 30 | 10 |
| Spring 2008 | 50 | 15 |

There has been a steady increase in participation over the period of two years. The high school student participation has stayed very stable. A group of very committed students along with their high school instructor has been attending the gaming party regularly.

The students acquire valuable organizing and management experience as they are in charge of the entire process of organizing and conducting the gaming party. As noted in the section on formation of the organization, the University funds the IT Pros. The organization also makes use of the University facilities to organize this event. The faculty advisers and campus staff provide all the help asked of them, though the entire event is student-driven.

**Participation in Programming Contests**

The student organization also sponsors student teams to participate in programming contests in conferences hosted by other local colleges. Participation in such contests is an important learning experience for the student teams. They get the opportunity to interact with students, faculty, professionals from industry and other conference attendees. In fall 2008, the Special Interest Group for Information Technology Education (SIGITE) of the Association of Computing Machinery (ACM) accepted a web-programming project submitted by a team of student programmers for a poster presentation at the SIGITE conference held in Ohio. The student organization sponsored one student from the team to attend and present the poster

at the conference. The student organization plans to encourage and sponsor students to attend local conferences and contests in order to get valuable exposure to new and innovative concepts and ideas in programming and to network with people from other educational institutions and the IT industry.

**Presentations**

The group invites industry professionals and local community members to participate in its activities, by giving speeches, making presentations etc. The next presentation to be sponsored by the group is a presentation by a Microsoft representative on Windows Vista. This will be useful not just for the student organization members but important for all computer users on campus. The presentations are open to all students on campus.

**Conclusion**

The IT student organization has been named the "Student Organization of the Year" by the college. We attribute the success of this organization to the tireless work of its members, along with the support of the institution in providing a vibrant learning community to all technophiles on campus, providing support, mentoring, learning as well as a campus social experience. As faculty members, we see improved camaraderie and collaboration in the classroom because of interaction through the IT Pros outside the classroom. The first batch of students, who actively participated in this organization, is graduating soon. We plan to administer surveys to assess the impact of the IT Pros on the graduates' campus experience, at the time of graduation as well as after the students enter the workforce.

Kuh (1995) states that:

> Institutions seeking to enhance learning productivity should pay more attention to encouraging students to take advantage of existing educational opportunities, many of which are outside the classroom. Colleges cannot force students to participate in organized campus activities or perform leadership roles. However, they can and should be accountable for creating the

> conditions that promote such behavior. Policies and practices should be designed to encourage students to take responsibility for their own affairs, interact frequently with members of different groups in various settings, and apply knowledge gained in the classroom to other areas (for example, employment, community affairs). A key step in enhancing student learning outside the classroom is determining if the institution's ethos values holistic approaches to learning and student participation in all aspects of institutional life.

We found from our experience that the IT organization has played a positive role in overall student development both inside and outside the classroom. It has enhanced student experience as well as fostered learning outside the classroom.

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# The Origins of AURCO, 1993-1995

**Robert A. Cohen**
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## Introduction

On November 12, 2008, AURCO celebrated its fifteenth anniversary. Since the initial organizational meeting in 1993, AURCO has offered fourteen annual conferences, and this issue of the AURCO Journal marks its fifteenth volume. AURCO has touched all 23 regional campuses in Ohio and AURCO conferences have been held at all eight of the university systems with regional campuses. Over 160 regional campus faculty members have had works published in the AURCO Journal.

This historical account of the founding of AURCO is based on examinations of several issues of the *AURCO Journal*, printed and electronic newsletters, agendas from the AURCO Conferences, and seven interviews with six people who played a significant role in AURCO's development. Interviews were conducted with three of the founding members of AURCO: Martin Kich of Wright State University Lake, Gordon Aubrecht of the Ohio State University Marion, and Arthur Molitierno, retired from Wright State University Lake. Interviews were also conducted with three others who played a role in AURCO's early history: Lee Fox-Cardamone of Kent State University Stark, Robert Howell of University of Cincinnati Raymond Walters College, and Dan Evans who served as dean at both Wright State University Lake and Ohio University Southern.

## The Creation of AURCO

In July of 1992, the Ohio Board of Regents released the report of a task force that was charged with devising a strategy to maintain a high degree of quality among Ohio's institutions of higher education, while dealing at the same time with reduced funding from the state. The overall recommendation of the task force was a more systematic approach to planning and coordination, with the Board of

Regents playing a more significant role. Among the many proposals designed to improve efficiencies and eliminate duplication, was one recommendation to create a comprehensive community college system out of the two year colleges and campuses in the state. The Managing for the Future Task force proposed that the state:

> Convert all technical colleges and university regional or branch campuses into comprehensive community colleges. Where this action would result in more than one campus serving a geographical region, the campuses should be consolidated into a multi-campus district with one governing board. All community college districts should be supported with at least a one mil tax levy to secure local financial support. Consolidate university regional or branch campuses and technical colleges in the seven locations in the state where they are co-located, creating comprehensive community colleges with their own governing boards. The seven locations are Canton, Lima, Mansfield, Marion, Newark, St. Clairsville, and Zanesville (Managing for the Future, 1992, p. 51).

People on the regional campuses thought that this spelled the end of their existence as branches of a four-year university. Dr. Martin Kich, an English professor at Wright State Lake Campus, attended the 1992 annual conference of the Ohio Association of Two Year Colleges and saw that those in community colleges were quite excited about the task force's proposals. They were looking forward to expanding their course offerings after the implementation of the task force report (M. Kich, personal interview, October 5, 2007). Dr. Kich saw the threat to Wright State Lake as well as other regional campuses and began talking with colleagues to decide how to respond. After talking with Arthur Molitierno, a colleague from the English Department, they decided to call a meeting of interested regional campus faculty from throughout the state. In an effort to make this effort look like something other than a project of the English Department, they

enlisted Humphrey Gill of the Psychology Department who agreed to add his name to the invitation that would be sent to each of the campuses. Finally, they obtained permission from the dean at Wright State Lake to hold the meeting there.

Invitations went out to the 26 regional campuses that existed at that time, typically addressed to the faculty chairs, and requesting that at least one faculty member attend as a representative of their campus. When the meeting was held on November 12, 1993, it attracted 20 participants from 16 of Ohio's regional campuses:

Dale Schnetzer, Bowling Green State University Firelands
Jon Roncone, Kent State University East Liverpool
Robert Sines, Kent State University Trumbull
Robin Lashey, Kent State University Tuscarawas
Robert Baer, Miami University Hamilton
Allegra DeLaurentiis, Miami University Middletown
Marty Stevens, Miami University Middletown
Gordon Aubrecht, The Ohio State University Marion
F. Lee St. John, The Ohio State University Newark
Jon J. Arnold, Ohio University Zanesville
Karin Billions, University of Akron Wayne College
Cliff Larrabee, University of Cincinnati Clermont College
Linda Long, University of Cincinnati Clermont College
Dick Long, University of Cincinnati Clermont College
Patti Ellison, University of Cincinnati Raymond Walters College
Ken Koehler, University of Cincinnati Raymond Walters College
Humphrey Gill, Wright State University Lake
Martin Kich, Wright State University Lake
Arthur A. Molitierno, Wright State University Lake

Before the meeting ended, the attendees decided to create a formal association they would call the Organization for University Regional Campuses of Ohio. It would not be until 1995 that the name was changed to Association for University Regional Campuses of Ohio because the organizers discovered that the OURCO acronym was already in use (G. Aubrecht, personal interview, October 9, 2007).

The initial meeting in November of 1993 yielded four outcomes. First, a decision was made to create a permanent organization to represent regional campus interests. Second, a slate of officers was elected. Third, a committee was formed to draft a set of bylaws with plans to meet in Marion in January of 1994. Finally, plans were made for future meetings including a second general organizational meeting scheduled for the spring of 1994 at The Ohio State University Marion and a two-day conference that would be open to all regional campus faculty members throughout the state.

The conversation at that first meeting was dominated by concerns about the Managing for the Future Task Force (First OURCO Organizational Meeting, 1994). One of the concerns was the fact that the Task Force did not have any representatives from university regional campuses, but did have a community college president (Initial concerns, 1994). There was also great concern about the linkage of performance toward service expectations with the allocation of instructional subsidy. Those in attendance felt that it was unfair to hold regional campus programs to the same standards as those on central campuses because the regional campuses faced a continual challenge of a limited student population base. These concerns strengthened the attendees' drive to create a mechanism to give voice to the concerns of regional campus faculty.

> Faculty whose primary end is to serve students in the classroom usually do not have the time or resources for considering such administrative and fiscal concerns. Yet clearly such concerns affect the quality of the institutions which faculty serve. For practical purposes it is thus obligatory for the regional campuses to form an organization to promote a public forum for the presentation of ideas related to the educational purposes of regional campuses and how they may continue to flourish and contribute to Ohio's higher educational structure. Such an organization can coherently address the particular differences (regional campuses as opposed to community college, for example) which

> give regional campuses their identity through mission and structure. Additionally, regional campuses need to advance the distinctions which complement the campuses to which they are affiliated. The above and other concerns may be seen as the impetus for forming OURCO, Organization for University Regional Campuses of Ohio (Initial concerns, 1994).

Those in attendance elected a slate of officers for a one and a half year term that would end in July 1995. Subsequent terms were set at two years. Marty Stevens of Miami University Middletown was chosen as President. The Vice President was also designated as President-Elect and this spot was filled by Karin Billions of the University of Akron Wayne College. Arthur Molitierno of Wright State Lake became the Secretary/Treasurer (First items, 1994).

A Governance and Bylaws Committee was formed to write a mission statement and develop governing principles and rules. John Arnold of Ohio University Zanesville and Humphrey Gill of Wright State Lake were named to this committee. A third member was to be designated later, and this slot was filled by Arthur Molitierno (G. Aubrecht, personal interview, October 9, 2007). The Bylaws committee was scheduled to meet on January 14, 1994 with its recommendations presented to the general organizational meeting scheduled for February 18, 1994 (First items, 1994).

The campuses were encouraged to send multiple participants to the second organizational meeting, but it was determined that only two representatives of each campus would be designated to vote (First items, 1994). Martin Kich was appointed chair of the committee that would hold a two-day conference at a yet-to-be-determined date. A tentative agenda for the conference was drafted with a theme of "Educating for the Future." Several panels were planned, including one to discuss the impact of the Managing for the Future Task Force Report; a panel dealing with regional campus issues such as retention, faculty excellence, and cohesion with the broader university community; and a panel highlighting regional campus achievements. In addition, planners scheduled a networking session by discipline (Proposed conference agenda, 1994).

**AURCO Bylaws**

John Arnold and Humphrey Gill met on January 14, 1994 to draft a set of bylaws for what was still called OURCO. Their draft document was then mailed to the participants from the November 1993 meeting and other campus representatives so they could offer their feedback prior to the business meeting that had been scheduled for February 18, 1994 (Proposed OURCO bylaws, 1994). The members at that meeting approved the bylaws, and established an ad hoc committee to organize the first conference, which was now scheduled for the spring of 1995 (Membership approves bylaws, 1994). A request was made for anyone to review the bylaws and make corrections or suggestions. The bylaws for the newly named association, AURCO, would be subsequently re-approved by all in attendance at the first conference on April 22, 1995. The bylaws stipulated provisions for election of officers, establishment of committees, and holding of meetings, and spelled out the intended purposes of AURCO:

A. To pursue a pro-active educational and political direction, stressing the relevant independent educational vision and purpose of regional campuses while at the same time stressing the vital importance of remaining an integral part of their universities.
B. To encourage communication through varied channels among regional campus faculty.
C. To take note of, study, and provide guidance in meeting the special needs of students attending regional campuses.
D. To deepen the commitment of faculty to the educational and cultural well-being of their respective regional campus communities and make the communities aware of the rich resources provided by Ohio's regional campuses (Membership approves bylaws, 1994, p.2).

**The First AURCO Conference**

The First AURCO Conference took place on April 22, 1995, at Kent State Stark, nearly one and a half years after it was announced at the first organizational meeting. Martin Kich of Wright State Lake served as the conference program chair. One month prior, a newsletter went out with the conference agenda, directions, maps, and a

registration form. The registration fee was twenty-five dollars (Ohio's regional campuses, 1995). Attendees were welcomed by Myron S. Henry, Provost of Kent State University, and a keynote address was presented by Howard L. Gauthier of the Ohio Board of Regents.

The 88 paid attendees represented all eight university systems, and 21 regional campuses (only Ohio University Southern and Ohio University Lancaster were not represented). Also present that day were eleven regional campus deans who met separately that afternoon as part of the previously mentioned regional campus deans group OARC (Ohio Association of Regional Campuses). Affiliation of the presenters that day also demonstrated the reach of AURCO throughout all the campus systems. The Fall 1995 issue of the *AURCO Journal* made it a point to publish the institutional affiliations of all 53 conference presenters (see Table 1). This provided visual evidence that the conference brought together Ohio's regional campuses.

Table 1

*Institutional Affiliation of Presenters at the 1995 AURCO Conference*

| Campus | Number of presenters |
|---|---|
| Bowling Green—Firelands | 9 |
| Kent State University—Ashtabula | 9 |
| Kent State University—East Liverpool | 5 |
| Kent State University—Geauga | 4 |
| Kent State University—Salem | 1 |
| Kent State University—Stark | 9 |
| Kent State University—Trumbull | 6 |
| Kent State University—Tuscarawas | 1 |
| Miami University—Hamilton | 3 |
| Miami University—Middletown | 3 |
| The Ohio State University—Marion | 1 |
| The Ohio State University—Newark | 1 |
| Ohio University—Chillicothe | 1 |
| University of Akron—Wayne | 1 |
| University of Cincinnati—Clermont | 1 |
| University of Cincinnati—University College | 1 |
| Wright State University—Lake | 3 |

Note. From "From the Editors' Desks," A. Molitierno and M. Kich, 1995 *AURCO Journal, 2*(1), p. 3, 15.

The Fall 1995 issue of the *Journal* contained the text for sixteen conference presentations, including the welcome and the keynote address. The remaining presentations were published the following year. The entire Spring 1996 issue of the *AURCO Journal* was devoted to 23 presentations from the 1995 AURCO Conference (Molitierno & Kich, 1996). The 1996 issue inaugurated the format for the next several years. It became exclusively a vehicle for reprinting the conference presentations at the previous year's AURCO conferences. A separate newsletter was created to disseminate information about AURCO business and events.

The first AURCO conference was considered a success. Dr. Martin Kich was surprised how well it came off, being the first conference and the first time he had ever organized a program. The crowd was larger than expected. It represented the different systems and individual campuses, and the participation by the regional campus deans was a "plus" (M. Kich, personal interview, October 5, 2007).

**The Threat To Regional Campuses Diminishes**

By 1996, it was becoming clear that the recommendations of the Managing for the Future Task Force were not going to be adopted and that the threat to regional campuses had subsided. AURCO played no direct role in affecting the adoption or non-adoption of the proposals, but the founding members of AURCO encouraged people to show up at hearings that were held around the state. For example, about eight people from Wright State Lake attended a hearing in Lima.

The initial hearings were held in large cities where urban community colleges were supported. But as the hearings moved to more rural areas such as Lima, it became clear that there was a strong preference for the *status quo.* Dr. John Riedl, who at that time was dean of The Ohio State University Mansfield, agreed with this assessment. He was personally responsible for having one of the hearings held in Mansfield, where the testimony was all in favor of the *status quo*. He recalled that students testified that they simply would not have attended college if it were Mansfield Community College instead of The Ohio State University (J. Riedl, personal communication, January 8, 2008).

Dr. Kich pointed out that the 23 regional campuses had at least 23 state representatives eager to preserve any institution in their home district. Adding neighboring state representatives within the campuses' service areas created a bloc of support from nearly one-third of the Ohio General Assembly (M. Kich, personal interview, October 5, 2007). The Report of the Managing for the Future Task Force faded into higher education history.

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**Biographical information**

Dr. Robert Cohen is a lecturer in the School of Communication at The Ohio State University Mansfield where he has taught since 1987. He teaches undergraduate courses in public speaking, communication theory, persuasive communication, and the history of communication. Dr. Cohen earned his PhD in Higher Education from Ohio University, his MBA from Franklin University, and his M.A. in Communication from The Ohio State University. In 1988, he received the *Thomas Evans Excellence in Teaching Award* at The Ohio State University Newark.

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# Classroom Methods that Promote Student Retention and Learning

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**Abstract**

This paper discusses classroom methods that teachers can devise to promote student retention and learning. The two methods explained in some detail include the "Buddy System' and the use of group gaming. The Buddy System fosters retention and learning by building social support, while games such as "Jeopardy" and "General Hospital" also facilitate learning and social networking. Examples of ways to implement these methods are included as well as an appended Buddy Sheet.

## Introduction

Teaching at a regional campus encompasses distinctive challenges for the instructor with regard to student retention and learning. Some teachers may not view retention as part of their academic responsibility, but my experience has been that using methods that improve student retention in my classes also increases the students' learning. This paper will focus on these methods which other teachers can employ to promote both retention and learning. Furthermore, these approaches can help students acquire skills beyond the academic such as development of a social network.

## Methods that Create Classroom Retention and Learning

Students attending Regional Campuses typically do not reside on campus. They often arrive at their first class knowing few, if any, other students. In addition, because many of these students hold full time jobs or have the care of young children, they have limited time to spend before or after class getting to know their fellow students. Hence, at a regional campus, the classroom is often the only opportunity for students to develop social support.

Many students at a regional campus are non-traditional or

first-generation college students, and for them the first day of classes can be particularly stressful. Instructors should aim at creating a sense of social support and community that first day to establish a base on which students can begin developing relationships with one another. Supportive relationships have been shown to help retention by preventing early withdrawal from the course (Wilcox, Winn & Fyview-Gauld 2005, Beder, 1997 and Thomas 2002). In turn, this supportive climate enhances learning. Yorke and Thomas (2003) and Forbes & Wickens (2005) have identified a strong social network as an aid to student retention. Social support is also helpful by attenuating stressful situations or preventing a negative response on the part of individual students (Cohen & Syme, 1985 p. 7).

**The Buddy System**

Use of a "Buddy System," has been noted by several researchers in regard to its success in improving retention and social support (Stone, 2005, Tinto, 1993, Ball State University, 2008, Geckeis, 2002, Moran et al., 2003, Wilson, Ptizer, Bell & White, 2008 and Pedak & Sapin, 2008). I employ the "Buddy System" on the first day of class. Students receive the "Buddy Sheet" (see Appendix A) along with other course materials and during the first few minutes of class, are asked to select three different students to become their buddies. They introduce themselves to one another and learn how to contact each other. They fill out this information on their Buddy Sheet. Next, they are directed to choose one buddy to introduce to the class (they may not introduce themselves) giving information about where their buddy is from and their buddy's interests and career goals. Being introduced to the class by their buddies gives students a sense of belonging and helps establish a climate of welcome. Sharing information about hometowns and career goals leads students to make connections with each other. In some cases, students begin commuting or study sessions with their buddies. The buddy system also enables students to get missed notes and thereby keep current with class material. It also relieves the instructor from having to repeat material in class. I do put a limit to the number of times a student may rely on someone else's notes in order to discourage them from skipping class.

Each student may have up to three buddies and may borrow notes one time only from each buddy.

The last part of the buddy sheet informs students about class protocol- how to contact the instructor and noting the custom of a "courtesy call." Students are asked to call and let the instructor know when they will be absent and when they will return to class. Over the years, this practice has let me to know immediately why students are absent, and I have been able to help them to keep up with class rather than to drop out. For example, one student who has an autistic child suddenly lost her special-needs babysitter. Because she had alerted me to what had happened, I was able to connect her with Student Services who found her an appropriate replacement and she could thus continue class. The parent of another student became terminally ill, and the student was going to drop the class to care for the parent; however, I was able to contact hospice, and they were able to provide a volunteer to be with the parent during the student's class time. These students shared their difficulties with their buddies who in turn gave them sympathetic support and encouraged them to stay in class. This kind of support is especially important for "first-generation" students who often do not get such support at home for going to college. In fact some of my students have reported that their family members feel threatened by their attaining a college degree. For such students, support from the class is especially valuable for their continued attendance.

**Social Support and Learning with Jeopardy**

Another method I employ to increase social support and learning is the use of classroom games. Interactive and collaborative learning methods have been shown to improve retention and learning (McInnis, 2001; Tinto, 2002; Yorke & Thomas 2003, and Cooper, 1995). In addition, gaming can be designed to provide a supportive environment that further facilitates learning (Sealover & Henderson, 2005 and Sealover & Henderson, 2006). Gaming is useful for introductory courses in science areas such as physics, anatomy and associate degree nursing programs (Sealover & Henderson, 2005, Kuhn, 1995, and Reiber & Matzko, 2001). Games that are particularly

useful in helping to retain information are Game Show format games such as Jeopardy (Sealover & Henderson, 2005).

I use a modified form of Jeopardy by creating "Team Jeopardy". I divide the class into teams (usually four or five teams) and I provide one team with a bell. The bells are placed on the front desk. I then have one member of each team come up to the front of the class. I proceed to ask review questions of recent class material, and the first student who rings the bell and gets the correct answer gets a point or prize for their team. Prizes can be something small and inexpensive like a pen or piece of candy. If no one at the front knows the answer, they are allowed to "consult" their team, and the first team to get the answer wins the point. The team with the most points can win an extra prize. This game can be modified to focus on the individual. When students get the correct answer, they can write their name on the board for a future bonus point or prize. This recognition can provide an incentive to study the material early for the games instead of waiting until the last minute before a test. These methods not only create fun for the class and instructor alike, but build team community and help students overcome fears of being in front of groups. One student had been so afraid of being in front of the class that she had avoided previous classes that demanded public speaking. After participating in "Jeopardy," she was able to deliver a powerpoint presentation to the class. To lessen embarrassment and stress, the game can also be modified for pairs or buddies to go up together as a team.

Another outcome of building this classroom fun and sense of community is that many students begin study groups. These groups have been particularly helpful to the first generation students whose family members had little experience with academic demands. The Jeopardy game also helped my students and me to ascertain what material students already knew and what material they needed to review before testing.

**Social Support and Retention with General Hospital**

Another method I use to foster both social support and learning is to divide the class into groups with each group being

assigned a different question or a problem to solve. I teach in the health field and many of my students are in nursing so I call the game "General Hospital," although the game can be modified or renamed to accommodate any discipline.

To begin, each group is given blackboard space and every person in the group must write down a contribution on the board and initial it. This method maximizes participation by all students and minimizes competition. After everyone has put an idea on the board, one person from each group volunteers to stay at the board and elaborate to the class their answers while the others return to their seats. Class discussion ensues, and together the class comes to decide what they believe the best solutions are. Not only do students learn from each other during this exercise, but I have learned from my students. For those students who may shy away from the competitiveness of the Jeopardy game, this "General Hospital" game is a good alternative for problem-solving learning that also fosters classroom community and retention.

**Conclusion**

This paper has focused on the following classroom methods: the Buddy System, the Jeopardy game and the General Hospital Game. Use of these methods builds a nurturing supportive classroom that in turn fosters student retention and learning. Furthermore, students who attended class the days that Jeopardy and General Hospital were played scored consistently better than those who were absent. The games also fostered voluntary study groups and many students improved their test scores by reviewing material with their peers. When instructors take seriously the importance of the classroom climate to retention, our students on a regional campus benefit from these methods.

**Appendix A The Buddy Sheet**

**Directions:**

1. Find three different buddies and record their names and contact info below.
2. Choose one of your buddies to introduce to the class and let the class know where your buddy is from and their career goal or interests.
3. You are to contact a buddy if you miss class notes. However, limit use of a buddy once.
4. **IF you are absent,** contact the instructor. All information will be kept confidential. See instructor contact information at the bottom.

Buddy 1 Name:_____
Email or phone:_____
Buddy 2 Name:_____
Email or phone:_____
Buddy 3 Name:_____
Email or phone:_____
Instructor's Contact information: Best way to reach instructor is:
_____

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**Biographical Information**

Kitty Consolo is currently an assistant professor in health sciences at Ohio University—Zanesville. She has been teaching since 1979 at many colleges and holds a doctorate in Exercise Science from Kent State University. She is considered an expert in the fields of health, fitness and wellness and has developed many successful wellness programs for educational institutions such as Denison University and The College of Wooster. She is also a popular motivational speaker, national class runner and writer. She currently writes monthly runner's advice column. She was appointed by both governors George Voinovich and Robert Taft to serve on Ohio's Physical Fitness and Sports Advisory Board. Her research interests include health, stress management and student retention. She currently co-chairs the retention committee at Ohio University—Zanesville.

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# Advanced Placement, International Baccalaureate, and Dual Enrollment Programs: A Seniors to Sophomores Primer

**Mark S. Cubberley**
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> Higher education is a major driver of our economy. Our colleges and universities provide the workers, the ideas and jobs that our state needs to grow. Ohio used to have one of the most highly educated workforces in the country, but that is no longer true. It is clear that we must increase the number of college graduates in Ohio if our citizens are going to have good jobs and rising incomes in the coming years.
>
> Governor Ted Strickland
> 2008 State of the State Address

In August 2007, Governor Ted Strickland established The University System of Ohio: an integrated network of colleges and universities consisting of 13 universities, 24 branch campuses, a public medical school, and 23 two-year technical and community colleges. Governor Strickland believes "no single institution can provide everything this state needs to compete in the 21st century global economy, but collectively we can build a system that provides our state and its citizens with all of the education, training, and centers of research we need to succeed" ("Governor Issues Directive to Establish The University System of Ohio: Press Release"). Governor Strickland appointed Ohio Board of Regents Eric Fingerhut as Chancellor of The University System of Ohio and charged him with developing a 10-year strategic plan for higher education in Ohio. Chancellor Fingerhut submitted the *Strategic Plan for Higher Education* to the General Assembly on March 31, 2008.

An integral component of this master plan is Governor Strickland's *Seniors to Sophomores* initiative. In order to increase the accessibility and affordability of post-secondary education in

Ohio, eligible high school seniors will be able to take a full load of college courses tuition-free at a University System of Ohio campus. Students electing this program could then, in principle, matriculate (ideally to an in-state college or university) with a sophomore status. This dual enrollment program will provide high school seniors "the opportunity to graduate from high school with a diploma in one hand and a college transcript in the other" ("Governor Strickland Announces Early Adopter Grants for *Seniors to Sophomores* Program: Press Release"). It is Governor Strickland's hope that "these students will leave high school with the confidence and credits to continue their higher education to receive a college degree" ("Governor Strickland Announces Early Adopter Grants for *Seniors to Sophomores* Program: Press Release"). "Early Adopter" school districts will pilot the *Seniors to Sophomores* program starting in the fall of 2008.

Dual enrollment programs, like *Seniors to Sophomores*, are not new to the academy. In addition to concurrent enrollment programs such as this, Advanced Placement (AP) courses and International Baccalaureate (IB) programs provide opportunities for high school students to earn college credit before actually going to college. To provide some context for the *Seniors to Sophomores* initiative, this paper will outline Advanced Placement courses, International Baccalaureate programs, and dual/concurrent enrollment as well as review recent educational research into the effectiveness of these programs.

**Advanced Placement (AP)**

AP can change your life.

College Board

The College Board is the non-profit association of 5,400 schools, colleges, universities, and other educational organizations responsible for college-readiness programs such as the SAT, the PSAT/NMSQT, and AP. Advanced Placement courses are taught on a high school campus by high school faculty and are similar in content and rigor to introductory-level college courses. The College Board offers 37 courses and exams across 22 subject areas. The College Board Web

site outlines a "few reasons to sign up" for AP courses and exams:
Gain the Edge in College Preparation

- Get a head start on college-level work.
- Improve your writing skills and sharpen your problem-solving techniques.
- Develop the study habits necessary for tackling rigorous course work.

Stand Out in the College Admissions Process

- Demonstrate your maturity and readiness for college.
- Show your willingness to push yourself to the limit.
- Emphasize your commitment to academic excellence.

Broaden Your Intellectual Horizons

- Explore the world from a variety of perspectives, most importantly your own.
- Study subjects in greater depth and detail.
- Assume the responsibility of reasoning, analyzing, and understanding for yourself. ("About AP")

Upon completion of an AP course (for high school credit), students may elect to take the corresponding AP Exam. A student's performance on this exam may qualify the student for college credit and/or waivers for introductory-level college courses. The AP Exam is scored on a 5-point scale where an AP grade of 5 is equivalent to the score of an "A" student from a comparable college course. The AP program suggests the best preparation for an exam is an AP course, but the program does not require students to take an AP course prior to an AP Exam.

The College Board describes "success on an AP Exam" as an exam score of 3 or higher—a score threshold that is "predictive of college success and college graduation" (1). In their *4th Annual AP Report to the Nation*, the College Board cites two research studies to support this claim. In a study of over 80,000 freshman entering University of California campuses during 1998 to 2001, Geiser and Santelices (UC-Berkeley) found that "student performance on AP examinations is strongly related to college performance" (1). Yet, "merely taking AP or other honors-level courses in high school is

not a valid indicator of the likelihood that students will perform well in college" (Geiser and Santelices 1). In fact, of all the variables in their regression analysis, a student's unweighted high school grade point average was the best predictor of college success (i.e. first- and second-year grade point averages and first- and second-year persistence rates.)

The second study comes from the National Center for Educational Accountability. This study focused on the relationship between AP participation and college graduation rates for low-income and minority students in the state of Texas. Complementary to the UC-Berkeley results, Dougherty, Mellor, and Jian found that AP exam "success" is the key: "The percent of a school's students who take and pass AP exams is the best AP-related indicator of whether the school is preparing increasing percentages of its students to graduate from college" (13). The authors acknowledge the difficulty of their research question in that in order to truly "isolate the 'AP impact' on college graduation rates would require random assignment of students to AP and non-AP classes, an approach that is not feasible in education" (3). They also recognize the shortcomings of any conclusions that fail to address alternative explanations for any positive correlations between Advanced Placement and graduation rates, for example, self-selection within the school:

> Better prepared and more highly motivated students are more likely to choose to take AP courses and exams. Much of those students' later success in college may be due not to the AP classes themselves, but to the personal characteristics that led them to participate in the classes in the first place—better academic preparation, stronger motivation, better family advantages, and so on. These selection effects will affect any comparison of AP and non-AP students. (3)

Klopfenstein and Thomas are critical of AP research studies that fail to fully control for a student's "non-AP curricular experience" (2). Given the positive correlation between a student's AP course

work and other rigorous non-AP course work (science and math courses, foreign language courses, and honors courses), they argue that, for the average student, the positive correlation between AP and college success (GPA and retention) can actually be attributed to the student's non-AP course work, particularly math and science courses. From a survey of over 8,000 college students in introductory biology, chemistry, and physics courses, Sadler and Tai add:

> Thus, given that high school AP courses are intended to stand in place of college courses, it can be argued that AP students have taken the introductory college course twice, and despite this clear advantage, their performance is by no means indicative of the benefit many would have us believe Advanced Placement courses would impart to high school students who take them....Based on our analysis, it appears that about half of the advantage attributed to AP experience can be accounted for by variables representing the academic abilities and experiences possessed by AP students prior to, or independent of, their AP course experiences. (17)

According to the College Board's 4th Annual AP Report to the Nation (and the Ohio Supplement), for the public high school class of 2007:

- 15.2% of seniors in the United States scored a 3 or better on an AP Exam. New York had the largest percentage (23.4%) of students scoring 3+ on an AP Exam. Ohio ranked 28th in the nation with 11.0% of it's graduating seniors scoring 3+ on an AP Exam. (5)
- Nationally, 61.7% of the AP examinee population is white. 64.0% of the overall student population is white. In the state of Ohio, 82.5% of the AP examinee population is white. Ohio's high school class of 2007 is 82.6% white. (9)
- 18.0% of seniors in the state of Ohio took at least one AP exam during their high school career. Nationally, this percentage is 24.9%. (*Ohio Supplement* 3)

- The five most popular exams in Ohio are English Literature and Composition, Calculus AB, United States History, Government and Politics: U.S., and English Language and Composition. (*Ohio Supplement* 5)

**International Baccalaureate (IB)**

> The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.
>
> To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.
>
> These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.
>
> Mission Statement of the International Baccalaureate Organization

While Advanced Placement courses are offered à la carte in over 10,000 high schools across the United States, International Baccalaureate's comprehensive diploma *program* is becoming increasingly popular. The International Baccalaureate is a nonprofit educational foundation that offers three programs of study: primary, middle, and diploma. Over a half million students are enrolled in one these three programs in 127 countries. There are over 500 IB accredited schools in the United States alone. Each of the IB programs involves "major traditions of learning in languages, humanities, sciences, mathematics and the arts" ("How do the three programmes form a coherent sequence of education"). Taken consecutively, the three programs form a "coherent sequence of education by promoting the education of the whole person through an emphasis

on intellectual, personal, emotional, and social growth" ("How do the three programmes form a coherent sequence of education"). The tenets of International Baccalaureate program echo those of a liberal education in that these programs: require study across a broad range of subjects drawing on content from educational cultures across the world gives special emphasis to language acquisition and development encourage learning across disciplines focus on developing the skills of learning include, to a varying extent, the study of individual subjects and of transdisciplinary areas provide students with opportunities for individual and collaborative planning and research include a community service component requiring action and reflection. ("How do the three programmes form a coherent sequence of education")

- require study across a broad range of subjects drawing on content from educational cultures across the world
- gives special emphasis to language acquisition and development
- encourage learning across disciplines
- focus on developing the skills of learning
- include, to a varying extent, the study of individual subjects and of transdisciplinary areas
- provide students with opportunities for individual and collaborative planning and research
- include a community service component requiring action and reflection. ("How do the three programmes form a coherent sequence of education")

To matriculate from the IB Diploma Programme (IBDP), a student must first complete their studies in six subjects from six subject groups: language A1 (literature), second language (foreign language), experimental sciences, the arts, mathematics and computer sciences, and individuals and societies. In addition to these core requirements, students must also take a critical thinking class (*Theory of Knowledge*), submit a 4,000 word research paper (*Extended Essay*), and log 150 hours of extracurricular activities and community service (*Creativity, Action, and Service*). After a two-year teaching period, students are

examined in each of the core subjects. Each exam is scored on a 7-point scale. Up to three additional points are awarded for a student's performance in the *Theory of Knowledge* course and the *Extended Essay* for a maximum score of 45 points. Students who achieve a minimum score of 24 are awarded an International Baccalaureate diploma. Students may also choose to study and be examined in individual subjects for IB Certificates. Like the AP program, the IBDP often earns a student college credit and/or waivers for introductory-level college courses.

Unlike the AP program, there is a shortage of educational research into the effectiveness of IBDP. In fact, a request to the IBO for reports indicating a correlation between IB studies and college success prompted the following reply from James Cambridge, Head of the International Research Team:

> The short answer to this inquiry is that there appears to have been little research conducted in the area described. However, it may be argued that this is hardly surprising. Linking participation in the IBDP to observed outcomes such as 'college success' can be naïve and simplistic because it is methodologically unclear whether participation in a given programme of study is a direct antecedent of outcomes, or whether both participation and outcomes are confounded with another variable. Students following the IBDP may be viewed as a self-selecting group. In such situations it is not known what factors could have contributed to their selection of the IBDP. Would such students still have succeeded in their studies whether or not they opted to follow the IBDP? It is also unclear whether or not students following the IBDP in two different schools are really pursuing the 'same' programme of study. This is because one school might be non-selective, offering an open access 'whole school' programme, whereas another might be selective, offering a restricted access 'school-within-a-school' programme. The

> values and assumptions underlying the criteria for entry onto the programmes of study are different in either case.

A review from the IBO entitled "A review of research relating to the IB Diploma Programme" is forthcoming as well as a report from the Consortium on Chicago School Research (CCSR) examining the matriculation of public school students from International Baccalaureate programs and selective enrollment schools.

**Dual/Concurrent or Post-Secondary Enrollment**

> Building on the existing Post-Secondary Enrollment Options plan, today I am announcing that every twelfth grader who meets the academic requirements a choice of spending their senior year in their home high school, or spending it on a University System of Ohio campus.
>
> Governor Ted Strickland
> 2008 State of the State Address

In contrast to Advanced Placement and the International Baccalaureate program, dual enrollment offers high school students the opportunity to take college courses rather than college-preparatory or college-level courses. Ohio's Post-Secondary Enrollment Option (PSEO) was created in 1989 by Senate Bill 140 of the 118th General Assembly. Students concurrently enrolled through the PSEO program may earn college credit or high school *and* college credit. Most PSEO courses are offered at college campuses, integrate high school students with college students, and are taught by college faculty.

In addition to college course offerings on University System of Ohio campuses, Governor Strickland's *Seniors to Sophomores* program allows for dual enrollment offerings on high school campuses where college courses will be taught by accredited high school faculty and have an enrollment of exclusively high school students. Forty school districts in the state of Ohio have agreed to pilot this program in the 2008-09 academic year. According to the *Strategic Plan for Higher Education,* in order to participate in the *Seniors to Sophomores*

program, high school seniors must meet a "standard of academic eligibility," as established by the Ohio Department of Education and the Board of Regents:

- Pass all parts of the Ohio Graduation Test.
- Complete Algebra II or the equivalent with a grade of "C" or better.
- Complete three years of high school English with a grade of "C" or better.
- Score "college ready" on the college's placement assessment. (76)

The *Strategic Plan* also dictates "standards for courses that would qualify for college credit on a high school campus":

- All faculty must meet Higher Learning Commission criteria.
- All courses offered must be either Transfer Assurance Guide (TAG) or Transfer Module Courses (terms associated with the state's Credit Transfer System) or courses that are the beginning of technical degree programs.
- All courses must use text(s), assessments and syllabi.
- The college has identified a college faculty member or academic administrator to monitor the quality of the course and visit the high school site at least once-per-term. (76)

A longitudinal study of dual enrollment programs in Florida and New York by the Community College Research Center found positive correlations between dual enrollment participation and a number of short- and long-term educational goals related to high school and college success: high school graduation, matriculation (including an increased likelihood of enrolling in a four-year institution or enrolling full-time), college persistence, and college performance (4-6). Regression analyses of the Florida data indicated that, "in many cases, male and low-income students benefited more from dual enrollment participation than their peers. On some measures, students with lower high school grades also benefited to a greater extent than students with higher grade point averages" (7). Like AP research

studies, the authors acknowledge their inability to fully account for unmeasureable covariates related to student experience that may enhance, if not fully account for, the positive correlation between dual enrollment participation and high school/college success:

> Positive findings may well be due to student participation in dual enrollment. However, it is important to recognize that other unmeasured factors, such as student motivation or parental encouragement and support, are likely correlated with participation in dual enrollment and are also likely to generate a positive effect. By not controlling for important factors affecting a student's decision to participate in dual enrollment, it is possible that our models may generate what appear to be positive impacts when in fact there are no such impacts or there are negative impacts. In other words, if dual enrollment participants are fundamentally different from non-participants even after adjusting for observable covariates, then the estimated effect of the program may, in part, be attributable to preexisting differences. Future research should seek additional control variables as well as use experimental and quasi-experimental designs to establish a causal relationship between dual enrollment participation and educational outcomes. (20)

The progress of Ohio's Post-Secondary Enrollment Option policy was recently assessed by the KnowledgeWorks Foundation and the Western Interstate Commission for Higher Education (WICHE). Unfortunately, a comprehensive analysis of the policy's effectiveness was prevented by incomplete student data available from the Ohio Department of Education (ODE) (responsible for K-12 student data) and the Ohio Board of Regents (OBR) (responsible for PSEO student data). Key findings in the measurement PSEO policy success within the context of participation, access, success, and cost include:

- Forty percent of Ohioans believe high school students should be required to complete a college course while still in high school. (7)
- For the years 1998-2004, enrollment in PSEO increased by 48 percent. The rate of participation in PSEO remained relatively constant: from 1.2 to 1.7 percent of Ohio's public school students. (21)
- In 2006, composition courses were the most highly enrolled followed by psychology, sociology, government, and literature. (22)
- For fall semesters 1998-2004, almost half of PSEO students took six or more credit hours per semester. (23)
- The majority of PSEO participation (83%) occurred at community colleges, state community colleges, and technical colleges. (24)
- The majority of PSEO students are white, non-Hispanic females. (26)
- PSEO students appear to be more likely to go to college and even more likely to go to college in Ohio, are more likely to attend a university campus than a two-year college, seem to have higher retention rates and persistence, and seem to require less remediation. (28-30, 33)
- According to the OBR, PSEO enrollment cost public post-secondary institutions $32.6 million in 2004-05. Institutions were only reimbursed $30.2 million via state PSEO funds and State Share of Instruction (SSI) allocations. (35)
- For 2004-05, PSEO courses at university main campuses were the most expensive per semester hour ($293) while PSEO courses at state community colleges were the least expensive. (36)

**Conclusion**

The Governor's policy focus on college preparation, access, and success promotes accelerated learning and dual enrollment programs. From this review, it should be clear that educational research into the effectiveness of Advanced Placement, International Baccalaureate, and concurrent enrollment programs is limited

by the inability to statistically disentangle selection effects from measurements of program success. Although future studies could reveal a "unique, value-added effect on student achievement and growth" for a particular program, secondary and post-secondary faculty and administrators may be challenged to respond to the Governor's initiatives without strong empirical evidence supporting the effectiveness these programs (Kiplinger 1).

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# Action Research on Context, Process and Product Variables in a Tutoring Lab

**Frank Dill**
**University of Cincinnati—Raymond Walters**

## Introduction

One of the greatest challenges facing two year colleges in Ohio today is student retention (Wirt, J., Choy, S., Rooney, P., Provasnik, S., Sen, A., & Tobin, R., 2004). Students today work full or part time, have families and in many cases are returning to school after a long hiatus. All of these external factors can impede a student's academic progress. In fact, one in every eight students at a 2-year college will drop out due to academic difficulties in the first year (Berkner, L., & Choy, S., 2008). This problem can be particularly acute in the science classes at many colleges. Students often take and re-take core courses in the curriculum either because they failed initially or because a better grade is necessary for them to be competitive when furthering their education. Many students do not have the time or money to repeat courses and they are forced to find a new major or quit (Metzner, B. S., Bean, J. P., 1987).

Raymond Walters College, a 2-year branch campus of the University of Cincinnati, established the Science Learning Lab in an attempt to boost student performance in science and allied health courses. This lab is designed to augment student access to scientific equipment, clarify scientific concepts and to, thereby, improve student achievement and retention. The lab offers individual and small group tutoring as well as interactive computer tutorials. Student use of the Science Learning Lab is strictly voluntary but the lab has seen steady increases in student usage.

To determine factors that influence the lab's efficacy, a variety of action research projects have been conducted. These include a learning style inventory (n=15), an analysis of tutorial technique (n=35) and an evaluation of lab user's performance in class (n=43). The information that has been gathered is presented here according

to the Dunkin-Biddle model variable that best describes the data (i.e. *context*, *process* or *product* variables). Figure 1, taken from Dunkin and Biddle's The Study of Teaching (1974), outlines these educational variables.

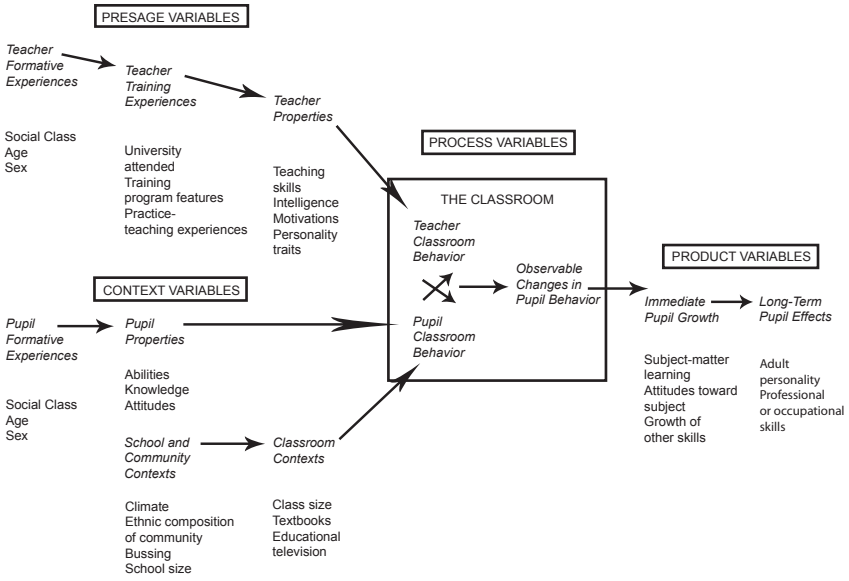


Figure 1.

## Context Variables

### Demographics

Students visiting the Science Learning Lab range in age from 18 to 50. More than 80% of students visiting the Science Learning Lab are female. This is due, in part, to the lab's proximity to the Nursing and Dental Hygiene Departments. Students visiting the lab also tend to be of lower socioeconomic status. Many are single working mothers in addition to being college students. A large number of minority students (>20%) use the lab. The majority of these tend to be African-American or Asian. The subjects who participated in the studies reflect the Science Learning Lab's overall demographic makeup.

**Learning Styles**

Learning styles were also considered as part of the context variables confronting the lab. While the initial sample described here is quite small, subsequent surveys have followed the same general pattern. For this particular survey the *Index of Learning Styles* by Richard M. Felder was chosen because it was developed specifically for evaluating college science students. The learning style index is a forty-four question test that is available online and evaluates students in four different learning categories with two modes per category (Soloman, B. A. & Felder R. M.). A Description of each category is listed below (Felder, R. M., 1989 & 1990). The number in parenthesis is the percentage of students preferring each modality.

ACTIVE (69%): Learn by doing, like group work
REFLECTIVE (31%): Prefer quiet contemplation, work alone

SENSING (92%): Careful; like details, facts, explicit instruction
INTUITIVE (8%)**:** Dislike memorization; like novelty, abstractions

VISUAL (77%): Like diagrams, graphs, pictures, and video
VERBAL (23%): Like lecture and written material

SEQUENTIAL (69%): Prefer logical, linear step by step approach
GLOBAL (31%): Connect disparate topics to gain understanding

The lab survey showed two learning styles to be particularly relevant. The students, as an aggregate, differ from the lab manager's learning style in three out of four categories and by a ratio of more than two to one. Expressing the learning styles in terms of a single sentence may help to highlight the significant differences in thought processes that are at work. For the lab manager, with a *Reflective-Intuitive-Visual-Global* learning style, the approach could be, "Think about the possibilities and imagine what they look like linked together." For *Active-Sensing-Visual-Sequential* type students, the approach to a problem might be, "Let's see if we can get this to work in logical do-able steps." The *Active-Sensing-Visual-Sequential*

learning style is less common in the scientific community and may help to explain the reason for and prevalence of these students in the tutoring lab (Felder, R. M., 1989 & 1990). The particularly high number of *Sensing* students (92%) is not unexpected. Their preference for repetition makes them likely visitors in any tutoring facility.

Since students build knowledge by relating new information to things that they are already familiar with; the students' learning style preferences indicate important support services that the tutoring lab can provide (Hmelo-Silver, Duncan, & Chinn 2007).

1. *Active* learners can be engaged with hands-on opportunities. Using anatomical models and medical equipment makes the material more accessible to *Active* learners.

2. *Sensing* learners can be provided with additional practice problems. *Sensors* prefer doing a copious number of practice problems. By providing these students with additional and novel problems their comfort level, confidence and academic performance improves.

3. *Visual* learners can be provided with diagrams and actual models of the material that is covered in lecture and in their textbook. Additional discussion of scientific concepts can help *Visual* students to develop analogies and to visualize the process taking place. Once *Visual* students have developed this understanding they have a much better chance of remembering, explaining and incorporating new concepts later.

4. Problem solving can be reviewed step-by-step for *Sequential* learners. It is important to show *Sequential* learners how to label variables and extract all available information from a problem. This process helps them to identify and solve similar problems using well established routines.

**Process Variables**

Currently students visit the Science Learning Lab over 800

times per week. Given this volume of student activity it is imperative that instructional activities in the lab be delivered in a time efficient manner. An experiment was run to determine the effect teaching method had on contact time with students.

Two distinct methods of instruction are currently used in the lab. In one method students ask questions and their pattern of inquiry leads the discussion. This method of instruction usually leads to students rapidly solving the task at hand but frequently the principles needed to solve all problems of this type in the future are missed. Students tend to be very task oriented. This trait may actually be hampering their long term understanding. In the other teaching method the lab instructor makes the inquiries and the students must respond until the problem is solved (Socratic Method). Often gaps in the student's understanding are discovered using this methodology. Data in the Product Variable section indicates that the correction and remediation of these gaps, while time consuming, improves student performance.

To conduct this experiment the instructor carried a set of questionnaires. After determining that an appropriate question was available one of the teaching styles was randomly selected. Students received instruction until they were satisfied that they had the correct solution to the problem. At the conclusion of instruction students evaluated the instruction and returned the questionnaire anonymously.

Time was considered to be a confounding variable so questions were carefully screened. In spite of this, no time block showed that students preferred receiving questions to asking them. This would seem to indicate that, for students, effectiveness is not time dependent during student led inquiry. The laboratory staff still hold the view that instructor led inquiry leads to a more durable understanding of the material and data from test scores seems to confirm this. This study did show that an instructor's rated effectiveness may be time dependent when using the Socratic Method (Figure 2).

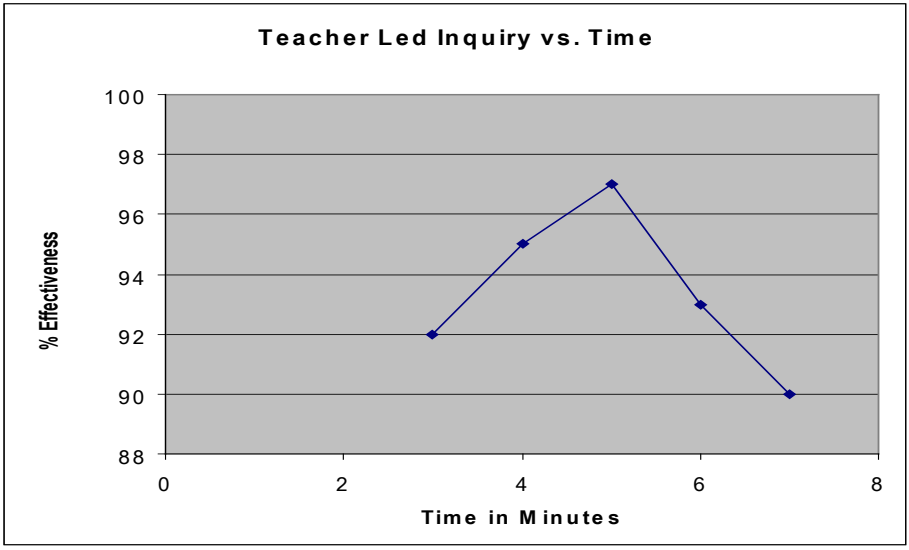


Figure 2.

During this study the optimal amount of time that students were willing to bear the scrutiny of an instructor's questioning was five minutes. Students questioned for less than five minutes probably did not have the root cause of their misunderstanding addressed. Students who were questioned for more than five minutes were likely to have multiple deficiencies exposed. In either case, the student's confidence in their ability to solve similar problems was probably diminished. If an instructor causes such a crisis in confidence without providing the students with the tools to remedy the situation, the instructors 'rated effectiveness' is likely to be low. Clearly, balancing time with efficacy needs to be carefully considered when using the Socratic Method.

**Product Variables**

Understanding a student's abilities and preferences is important. Using that knowledge to improve student performance is a key measure of success. A variety of anecdotal evidence, including student testimonials, exists to suggest that the Science Learning Lab helps to improve student performance. Lab usage is voluntary and since, presumably, students would not use the lab if they did not

perceive it to be helpful, census data may also be an indicator of the lab's usefulness to student performance. The lab has gone from 400 student visits per week to over 800 student visits per week during the past five years (Figure 3.). This data is suggestive but quantitative performance data would be more definitive.

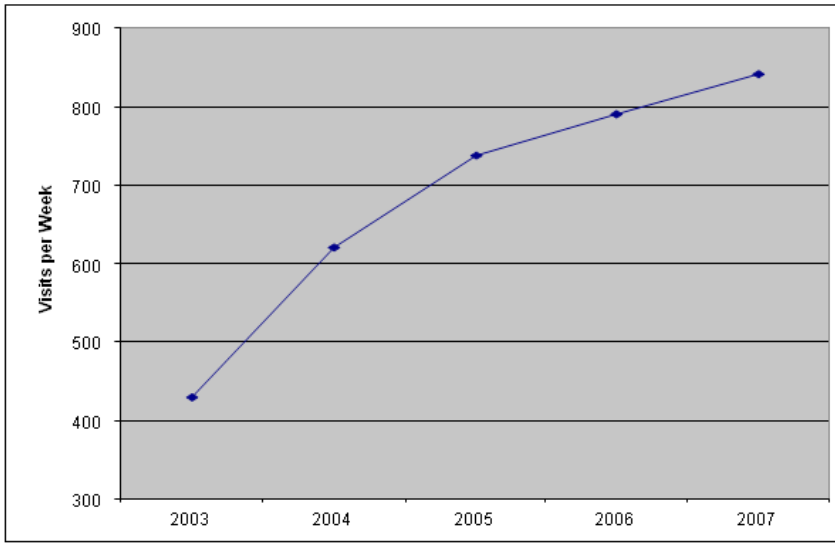


Figure 3.

Students taking evening classes do not have access to all of the services available to students on campus during the day. Staffing issues that arise from budgetary considerations prevent the Science Learning Lab from being consistently available to evening students at Raymond Walter College. This unfortunate circumstance has led to the collection of some particularly compelling quantitative data.

Students taking an evening science class were failing (class average = 64%). The instructor approached the lab manager and asked if it would be possible to make arrangements for the evening students to use the lab. The lab manager opened the lab for these students on an *ad hoc* basis and followed their progress. The professor, collaborating with the lab manager, was able to determine that all of the students who used the lab experienced double digit gains in test scores with the average being twenty percentage points. These results were one-third

better than improvements experienced by their classmates who did not use the lab.

While the above data is promising what makes it truly compelling is that it is reproducible. During a different quarter evening students were failing a science course again. The professor requested that the Science Learning Lab hours of operation be extended. Every student that took advantage of these extra hours of availability showed improved performance in class. The average improvement was 11% which was triple the improvement of students that did not use the lab.

**Conclusion**

Improvements made in learning labs are not esoteric matters. Tailored approaches to content delivery, as this data shows, can be the difference between student success and failure. For this reason tutoring centers need to account for student diversity when delivering services. Techniques designed to meet student needs may make it possible to retain the 12% of students who would normally drop out during their first year due to academic difficulties (Berkner, L., & Choy, S., 2008).

Recently a considerable amount of research has been conducted on virtual learning environments. Tutoring centers are also rich environments for educational research despite the difficulties of working with an itinerant student population. It is hoped that this study is not only informative in its own right but also that it serve as an example and framework for research possibilities in other academic support environments.

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**Bridging the Gap: Emphasizing to Students the Importance of Management & IT Working Together**

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**Introduction**

All decisions made in business have an impact on the financial security of the business and its integrity. Business managers use data to navigate the business toward a profitable goal. Information Technology (IT) departments within each business are charged with making business information readily available to decision-makers (managers) within the company while keeping this same information secure from outsiders or competition. Because each discipline is focused on its specific tasks, security measures have the potential to negatively impact profits by either hindering data abstraction or compromising the security of business data and subjecting the company to undue risks. Today's increasing global competition brightens the awareness of mitigating security risks in order to stay profitable by keeping costly outcomes at bay. Students in both IT and Business Management should be aware of the gap between their rolls in business and its impact on the stability of the company because they will inevitably face the challenges of workforce collaboration to create a successful, secure business. An integrated teaching approach is necessary for both curricula in order to prepare students for the increasing challenges in today's tight market.

Security is a concern that is shared by anyone and everyone accessing a network – from the simple networks (e.g., SOHO (Small Office/Home Office)) to the complex (e.g., corporate WAN (Wide Area Network)). With regards to computers and networks, security "refers to techniques for ensuring that data stored in a computer cannot be read or compromised by any individuals without authorization." (Webopedia, 2008) Security is more than simply a technological issue that counters perceived risks. Security also includes techniques such as policies, procedures, and awareness which are not necessarily

implemented by technology.

One aspect of security which is top priority relates to privacy: securing confidential and personal data. Identity theft impacts everyone – from the individual to the corporate environment. The First National Bank Security Centre defines identity theft as "the crime of obtaining the personal or financial information of another person for the purpose of assuming that person's name to make transactions or purchases." (FBI, 2006) In 2006, the tally of people who fell victim to identity theft was 95 million – however, this number only reflects those incidents that were reported. The actual figure is assumed to be much higher. "Law enforcement and consumer advocacy groups agree that financial institutions lose billions of dollars each year to identity theft and consumers face additional hardships ranging from financial loss to time spent trying to undo the harm caused to their credit records and other aspects of their lives." (FBI, 2006) In addition, there are significant hidden costs with regards to identity theft: time lost by consumers, credit issues, law enforcement costs/time, and hardships faced by consumers.

"In a world where hackers, computer viruses and cyber-terrorists are making headlines daily, security has become a priority in all aspects of life, including business." (Sonnenreich, n.d.) A secure system or network requires more than technology – it requires a certain level of literacy and an understanding of the policies regulating network access, the assets supported by the network, the risks of exposing those assets, and the responses or effects on the system in the event of an attack. If technology were the sole solution, then a user would assume no responsibility regarding the confidentiality of customer/client information or the privacy of corporate documents. Absurd as it may seem, some networks are built on such a premise. The most state-of-the-art technology cannot stop a user from sharing his/her username and password with a co-worker or, worse yet, an outsider. Moreover, one sole method of security cannot be sufficient to protect a system or network. Mark Ciampa, author of network security textbooks, states: "Although you need many defenses to withstand attacks, you base these defenses on a few fundamental security principles: protecting systems by layering, limiting, diversity,

obscurity, and simplicity." (Ciampa, 2005) Just as there are numerous forms of attacks that can be launched on a network, the defense mechanisms applied to the network must be as varied. So if technology is not the complete solution to a secure network, then what is?

Human behavior and social engineering are fundamental weaknesses often overlooked when implementing a security strategy. No matter how much technology is applied, security can still be thwarted "by human failure or deliberate sabotage of a weak social link." (Cross, 2001) Therefore, it is just as important to educate those using the technology as it is to apply technology-based security solutions.

For purposes of this manuscript, these definitions will be used:

- "Management is the process of working with people and resources to accomplish organizational goals." (Bateman and Snell, 2007)
- "Business is the organized effort of individuals to produce and sell for a profit, the goods and services that satisfy society's needs. In general, business refers to all such efforts within a society or within an industry." (Pride, Hughes, Kapoor, 2002)
- Information refers to the resources that tell the managers of the business how effectively the other resources are being combined and used.
- Social Engineering is breaching a system's security and gaining access to confidential or private information not through the use of technology, but by exploiting human nature.
- Risk is the perceived extent of possible loss and is used to help make decisions based on expected outcomes.

**The Gap**

A system security process must be developed to identify security vulnerabilities and protect information from risks associated with these vulnerabilities. Students need to have a fundamental understanding of how each decision affects the system as a whole. Therefore, any process associated with specifying, designing,

implementing, operating, and maintaining a security plan must include a team effort, integrating all departments and specialty groups of an organization. The culture of the workplace significantly impacts the speed at which change will occur and, henceforth, produce results that will benefit the company. Manns and Rising propose that in order to make change, one must look for people and resources to help the efforts. This requires communication with other departments to see how the new (in this case) security plan will affect them and how much resistance will be met before proposing the plan to management as a whole. In a nutshell, management cares about the bottom line, and IT cares about the system. So how can one bridge the gap between IT and management?

Due to problems and corruption in corporate America, the Sarbanes-Oxley Act was made into law, requiring business to establish an internal control structure and set of financial reporting procedures, making security the manager's responsibility. However, managers are not necessarily experts in security and innovative technology. In fact, they often shy away from technological solutions. "Maybe they're suspicious, disappointed by earlier strategies and technologies that fell short of expectations." (Arnett, 1999)

Because business success depends on whether the right choices are made as to what to produce and sell, business is very risky to owners. A change in any internal (e.g., people, process) or external (e.g., regulatory, political, social) factor can affect the outcome either positively or negatively. Today's global economy puts additional pressure on business to be competitive and heightens the risk of loss or ultimately failure.

Managers utilize resources such as money, information, personnel, and the Internet to accomplish organizational goals. Business organizational goals are to make money, keep costs low, protect customers' information, etc. Managers are charged with the responsibility of making the decisions that will accomplish those goals while at the same time being diligent in avoiding risk and minimizing costly outcomes for the business.

In contrast, IT is generally concerned with the function and maintenance of the system and often does not understand why the

information system is not top priority. In order to "sell" a security solution, IT needs to show management how the solution affects the bottom line (cost and productivity). IT can do so by including answers to the following questions in the security solution:

- "How much is the lack of security costing the business?"
- "What impact is lack of security having on productivity?"
- "What impact would a catastrophic security breach have?"
- "What are the most cost-effective solutions?"
- "What impact will the solutions have on productivity?"

(Sonnenreich, n.d.)

Proving in the plan that the proposed solution is the best solution means that IT must have a good understanding of the risks associated with implementing the solution, as well as the risks associated with not implementing the solution. Weighing those risks and showing both sides of the scale will help IT present a stronger case for the need for the security solution.

Managers must understand what risks exist when making investment decisions. A major function of business managers is Cost/Benefit Analysis; that is, to determine the variables involved in any change in business activity. In deciding activity adjustments, the manager must find the best value for the business and weigh the benefits the company receives from the change in activity against the additional cost to the company brought on by the change. Bottom line for the business manager – Is that investment justified? "There's no point in implementing a solution if it's true cost is greater than the risk exposure." (Sonnenreich, n.d.)

What happens when a security incident occurs? What are the costs to the business?

- Loss of image
- Productivity (down time)
- Damage to system
- Loss of confidential information
- Loss of consumer confidence

How do you calculate the dollar amount for these elements affected by the security breach? Many of the costs are abstract or subjective at best. To determine the severity of risk exposure, risk can be expressed as:

**Risk = si * pi * xi** where:

- *xi* is the consequence (the damage or the gain) of a given event *si*, which has a probability of occurrence of *pi*. (Cross, 2001)

Security costs not only include the hardware and software required to protect the system's data, but also the unseen costs incurred upon corporations in the form of regulations and labor. The value of potential loss if no security measures are taken is also an abstract cost. This is primarily the reason that IT staff and management deadlock on issues concerning security: Management determines how much to invest in a project based on the potential profit or savings the project will generate. Security is like insurance; however, there is not a set amount that can be paid monthly to ensure that the system is secure. Security requires constant review, maintenance, and management. Most corporations cannot afford to be lax in the implementation of new security strategies.

"One of the major challenges of the security community is to develop an effective return on investment calculation that will allow them to justify security expenditures before catastrophic incidents occur." (Dittrich, 2002) According to David Lacey, a blog writer for ComputerWeekly, people are a major cause of breaches, yet not enough has been invested in security awareness, and much of the material developed has been ineffective. Lacey states that companies should spend 10-20% of their security budget on promoting security awareness so as to reduce the number of incidents caused by ignorance and bad practices.

One could calculate productivity (down time) in dollar terms: *downtime = hours of downtime * number of employees * hourly wage.*

For example, if two hours of productivity were lost by twenty employees averaging $15/hour, the downtime cost would be $600.

Damage to the system can also be measured:

*damage = unit cost * quantity.*

For example, if the incident damaged four computers and its software at $2000 a unit, that cost could be calculated at $8000.

How can one measure loss of image and the loss of consumer confidence? Perhaps one could measure this loss by the drop in demand for the product or services over time. Another cost could be marketing ploys to boost consumer confidence – possible giveaways or other strategies may be used in order to avoid debilitating loss or bankruptcy.

How can one place a dollar amount on the data managed by a system? Though there is no mathematical formula that is used as a standard, one can begin the assessment by using this simple method devised by Chuck Easttom, an IT manager, educator, and author of security textbooks.

**SP = (v + p) - s** where:

- SP – security protection of the system; values will range from -8 (well-protected, secure system) to 18 (unprotected system).
- ***v*** – value of data to the owner (scale of 1 to 10); personal or confidential information (credit card numbers, social security numbers, financial records) rates higher than static documents or web pages.
- ***p*** – profile of the system to a potential intruder (scale of 1 to 10); global corporation or a government agency would most likely receive a higher score than a small business.
- ***s*** – level of security implemented on the system (scale of 1 to 10); a system with dedicated staff, managed firewalls, and intrusion detection systems would rate higher than a system using only a software firewall.

Granted, this is a crude method of assessing the system's security, but it is enough to build awareness of the value of the data – to the owner and to potential hackers – and the effectiveness of one's security efforts.

In addition, when new security policies or procedures are implemented, all users of that system should be educated as to how the solution will affect productivity, how users' access to the system can be jeopardized, and the cost a security violation can have on the business and its customers. Once the protection of the system has been assessed, one can determine the areas of need and begin to discern a monetary amount each element requires for the system's security improvement.

The result of the various monetary measurements in the Cost/Benefit Analysis is that the Marginal Benefit (security you get from implementing a risk solution) needs to be greater than the Marginal Cost (additional cost of implementing the solution). A Cost/Benefit Analysis team involving both Managers and IT will be more economically efficient for ensuring that the bottom line is protected.

**Conclusion – Bridging the Gap**

Those proposing a new security system that will cost money and change current practices and policies must present a convincing case to management as well as to the users of the new system. To support change, IT must engage influential people from other functional areas of the business to assist in identifying critical concerns and support the case. By involving others with experience and understanding of the business, IT can become more influential in the change process.

The authors of this manuscript have made short- and long-term plans to incorporate each of these interdisciplinary techniques into the curriculum. Students pursuing the business management and computer technology degrees will be exposed to as many of these methods as possible to improve their understanding of the business model. Many of these exercises require teamwork and interaction between students across the disciplines.

- ***Participation in the Income-Outcome Management Model***
  "The Income-Outcome Management Model is a family of financial business simulations that models the real-world business drivers. These experiential, classroom-based learning programs develop business acumen, leadership

and accountability. They demonstrate to everyone in your organization how their decision-making affects the bottom line." (Income-Outcome 2008)

- ***Share lectures across disciplines*** – Professors are joining classes to present lectures that are beneficial to students across the respective disciplines.
- ***Academic advising*** – Encouraging students to choose course electives from other disciplines (i.e., management → IT; IT → management) will reinforce and further develop business concepts.
- ***Capstone Seminar course*** – students across all applied business disciplines participate jointly in this course, preparing them for the workplace. Some of the interdisciplinary activities include:
  - Field trips – Professional field trips will allow students to see first-hand the importance of integration, completing the business model.
  - Guest Speakers – Guest speakers are scheduled during class time to reinforce a particular topic of discussion.
  - Lecture Series – Management and IT professionals are scheduled throughout the semester to share their work experiences and other related insights. A question and answer time allows students to interact with the professionals. Students are required to attend a certain percentage of the lectures.
- ***Accreditation & Certifications*** – ACBSP (Association of Collegiate Business Schools and Programs), the accrediting agency for the associate of applied business programs referenced in this manuscript, requires a strong business component in the curriculum. Most technical certification exams test students on fundamental business concepts and how information is distributed across the system.
- ***Student & Graduate Surveys*** – Students are surveyed upon completion of the Income-Outcome Management Model simulation to assess its benefits and the impact the exercise has made on the student. Graduates are surveyed to see how well they were prepared for the workplace.

In the spring semester of 2008, 92% of students who participated in the Income-Outcome Management Model confirmed that this collaborative experience will benefit them in their professional careers. In addition, 89% said they would recommend this collaborative experience to others, and 95% found that the diversity of the groups was a strength. Here are some of their comments:

- "It was my first insight to what it's actually like to be in a business setting. It really makes me think about all possible options and which option benefits the most. I will use this experience to relate to real business."
- "It helped me to be able to visualize the process of production and all that goes into the process financially."
- "It will give me an understanding on how the real world of business runs."
- "It will help me to better understand why managers may make certain decisions that don't benefit them right now but will in the future."
- "Being my educational background is technology I think this simulation has refreshed accounting principals and business strategies."
- "It helps me understand different situations and look at the big picture."
- "It will help us work better in teams and learn how to deal with different personality types."
- "I can see where every little decision can send a ripple effect through the rest of the company and can affect how you make future decisions."
- "Adds insight to what goes on in the thinking of business."
- "It allowed me to visualize all of the processes a business goes through. I was also given the opportunity to make critical decisions."
- "It gives you real-world situations to deal with and thus be better prepared to react when we get the situations in our job."

With regard to certifications, two-thirds of the core ICCP (Institute for Certification of Computing Professionals) exam covers management, organizational, team-building, and leadership skills. Only one-third of the core exam tests solely on technical skills. It is apparent that business management skills are required for technology students.

In the classroom, faculty need to do more than just inform students that change can impact all aspects of the business. Participating in interdisciplinary projects will help students gain an understanding of the "big picture" and open the lines of communication between management and IT. Exposing students to all aspects of business will enlighten them as to how each is impacted by any decision – including decisions related to information security.

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# Online Professor Evaluation: Are They Useful Resources Or Misleading And Harmful?

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**Abstract**

Over the past few years, online student evaluation of professors has become a readily available and popularly used resource to students across the country. These sites claim to include millions of opinions about millions of professors for almost every institution. Do these sites provide useful information or do they mislead students? How do the ratings at branch campuses compare to main campuses? What influences the student evaluation rating? This paper will provide an overview of two of the most popular online student evaluation sites Rate My Professors and Pick-A-Prof, investigate the accuracy of the ratings, and use data provided from the sites to investigate grading and rating differences.

## Introduction

The end of term evaluation of faculty by students is a regular event on most campuses. Although they often are criticized by faculty members and students who see them as a waste of time, these evaluations are intended to determine the quality of instruction and aid in facilitating course improvements. Rate My Professor and Pick-A-Prof instead focus on using evaluations to provide students with information to allow them to make better decisions about which courses to enroll in. These sites are two of the most used online student evaluation sites that exist. Both of these sites provide students with the ability to evaluate the faculty member in a variety of ways but along with many similarities they also have significant differences.

Rate My Professor (http://www.ratemyprofessors.com) began in 1999 and boasts having over 6 million evaluations of 1 million professors, at 6,000 schools located primarily in the U.S. but also Canada, England, Scotland and Wales. Rate My Professor allows students who establish

an account to evaluate professors on easiness, helpfulness, clarity, and hotness using five point scales. An overall quality score is generated as an average of the helpfulness and clarity scores. This site relies on advertising revenue so it is free to users.

Pick-A-Prof (http://www.pickaprof.com) began in 2000 and claims to have over 1 million users. In addition to evaluating professors, Pick-A-Prof provides students with a schedule planner, book exchange, Facebook application, and grade history of faculty. The grade history of faculty is a significant advantage over Rate My Professor since the data are obtained from official university sources not student self reporting. The data typically go back over a few years and includes multiple sections and courses for each professor. Students also rate the professors for the specific course they have taken where as this separation is not available at the Rate My Professor site. Pick-A-Prof, however, is not free to users. It costs from $5 for 4 months up to $40 for five years of service per user. At many institutions this expense is paid for by student organizations making it free to their current students.

There have been many studies that have looked at the relationship between grades and student evaluations. In particular, there is a considerable amount of research that has that has found that grades actually do affect the evaluations students provide (Miliea 2002, Ellis, Burke, Lomire, and McCormack 2003, Eiszler 2002, Goldenberg and Callahan 1991). A common argument for this relationship is the instructor can generate higher student evaluation scores by lowering the grading standards or by making the course easier. (Crumbley, Henry, and Kratchman 2001, Ellis 2003, Eiszler 2002, Stratton and Myers 1994, Watchel 1998) There are, however, many authors who have questioned the relationship between grading leniency (or workload) and student evaluation scores (Kohn 2002, Marsh and Roche 2000).

Some authors have compared online and traditional teaching evaluation. The evidence in this area is mixed. Gamliel 2005 finds the mode of evaluation matters, where others find it does not matter (Ardalan 2007, Hardy 2003, Thorpe 2002). A few studies have looked specifically at Rate My Professor. Silva, 2008, focuses on the student

written comments made on Rate My Professor evaluations. She finds that the comments were similar to those made on traditional paper student evaluations. Coladarci and Kormfield, 2007, compare Rate My Professor evaluations with formal in-class evaluations and find that they are "substantively and significantly" similar.

**Methodology**

This study focuses on three aspects of online student evaluations. First a comparison is made using the results of the two evaluation sites between Ohio branch and main campuses. The Rate My Professor and Pick A Prof sites are then compared to see if information provided on these sites is consistent and accurate. Lastly, the paper looks at the factors that influence the ratings students provided of their faculty's overall quality on both of the two online student evaluation sites.

To perform this analysis, instructors were identified from branch campuses and main campuses that taught identical courses in six disciplines (Chemistry, English, Math, Biology, Economics, and Accounting). Whenever possible the course used for each discipline was also the same across all schools. For example the Principles of Microeconomics course was selected for the Economics course for all schools. All the Ohio campuses with grade data in the Pick A Prof site were used. A few institutions like The Ohio State University or University of Cincinnati did not have grade data available.

**Results**

Table 1 provides the numbers of faculty surveyed from each of the campuses with data available.

Table 1

| Campus | | Freq. | Percent |
|---|---|---|---|
| | | | |
| Akron | | 16 | 7.77 |
| Akron | Wayne | 10 | 4.85 |
| BGSU | | 11 | 5.34 |
| BGSU | Firelands | 10 | 4.85 |
| Kent | | 20 | 9.71 |
| Kent | Astabula | 6 | 2.91 |
| Kent | East Liverpool | 1 | 0.49 |
| Kent | Geauga | 3 | 1.46 |
| Kent | Salem | 5 | 2.43 |
| Kent | Stark | 14 | 6.8 |
| Kent | Trumbull | 12 | 5.83 |
| Kent | Tuscarawas | 3 | 1.46 |
| Miami | | 18 | 8.74 |
| Miami | Hamilton | 10 | 4.85 |
| Miami | Middletown | 8 | 3.88 |
| OU | | 19 | 9.22 |
| OU | Chillicothe | 6 | 2.91 |
| OU | Eastern | 2 | 0.97 |
| OU | Lancaster | 3 | 1.46 |
| OU | Southern | 4 | 1.94 |
| OU | Zanesville | 2 | 0.97 |
| WSU | | 14 | 6.8 |
| WSU | Lake | 9 | 4.37 |
| | | | |
| Total | | 206 | 100 |

Table 2 provides the means for each of the variables for each faculty member used in the study as a whole and then separated by Main and Branch campuses. To be used in this study the faculty member had to have at least three evaluations from the Rate My Professor site. All faculty from the branch campuses that taught at least two sections in the identified courses were used. Similarly every faculty from the main campus teaching at least two sections of these courses were used. On average each faculty member taught 10.2 sections of the courses used in this study. The average number of evaluations was 11.3 across the entire faculty in this study. The dummy variable takes on a value of one if the course was in a particular discipline and is equal to zero if in another discipline. Since the average of the chemistry dummy variable is .121 this means 12.1% of the sample was made up of chemistry faculty. The dummy variable Branch is equal to 1 if the faculty member is from a branch campus otherwise it is equal to zero. Only 105 students at the Pick A Prof site provided ratings of the professor.

Comparing the Main to the Branch campuses the number of grades assigned to each faculty member and the number of grades provided for each course was significantly higher for Main campuses reflecting larger class sizes. Students rated the quality of the faculty at branch campuses positively compared to main campuses. In the Rate My Professor site the score for the evaluation of the quality of the faculty (RmP Quality) was 3.452 for Main campuses and 3.844 for Branch Campuses. The evaluation of the quality of the faculty member in the Pick a Prof site (PaP Rating) was 3.788 for Main campuses compared to 4.128 for Branch campuses. These scores indicate that the student evaluation of quality was 11.3% and 9% higher for Branch campuses compared to the Main campuses. This was true while the students' perception of the ease of the courses in the Rate My Professor site was very similar, only .5% higher for Branch campuses compared to Main campuses.

Table 2 Means

| | Overall | | | | | Main | | Branch | |
|---|---|---|---|---|---|---|---|---|---|
| Variable | Obs | Mean | Std Dev | Min | Max | Obs | Mean | Obs | Mean |
| Branch | 206 | .524 | .500 | 0 | 1 | 98 | 0 | 108 | 1 |
| Gender | 206 | 0.641 | 0.481 | 0 | 1 | 98 | 0.602 | 108 | 0.676 |
| RmP # Student Evals | 206 | 11.332 | 11.286 | 3 | 90 | 97 | 15.598 | 108 | 7.500 |
| RmP Quality | 206 | 3.658 | 0.962 | 1 | 5 | 97 | 3.452 | 108 | 3.844 |
| RmP Ease | 206 | 2.883 | 0.796 | 1 | 5 | 97 | 2.875 | 108 | 2.891 |
| RmP Hot | 206 | 0.209 | 0.407 | 0 | 1 | 98 | 0.133 | 108 | 0.278 |
| PaP # Grades | 206 | 830.985 | 1097.349 | 28 | 12258 | 98 | 1073.388 | 108 | 611.028 |
| PaP # Sections | 206 | 29.311 | 24.601 | 2 | 126 | 98 | 27.827 | 108 | 30.657 |
| PaP Faculty GPA | 206 | 2.605 | 0.462 | 1.2 | 3.7 | 98 | 2.543 | 108 | 2.661 |
| PaP Rating | 105 | 3.914 | 1.218 | 1 | 5 | 66 | 3.788 | 39 | 4.128 |
| PaP # Course Grades | 206 | 352.553 | 467.023 | 23 | 2933 | 98 | 487.929 | 108 | 229.713 |
| PaP # Course Sections | 206 | 10.180 | 11.557 | 1 | 90 | 98 | 10.510 | 108 | 9.880 |
| PaP Course GPA | 206 | 2.513 | 0.512 | 1.22 | 3.86 | 98 | 2.438 | 108 | 2.580 |
| Chemistry Dummy | 206 | 0.121 | 0.327 | 0 | 1 | 98 | 0.143 | 108 | 0.102 |
| English Dummy | 206 | 0.291 | 0.455 | 0 | 1 | 98 | 0.173 | 108 | 0.398 |
| Math Dummy | 206 | 0.228 | 0.421 | 0 | 1 | 98 | 0.214 | 108 | 0.241 |
| Biology Dummy | 206 | 0.141 | 0.349 | 0 | 1 | 98 | 0.133 | 108 | 0.148 |
| Economics Dummy | 206 | 0.150 | 0.358 | 0 | 1 | 98 | 0.235 | 108 | 0.074 |
| Accounting Dummy | 206 | 0.068 | 0.252 | 0 | 1 | 98 | 0.102 | 108 | 0.037 |

Table 3 provides the correlations between the main variables used in this study. The correlations between all the variables are significant with the level of significance at or below .0342. This indicates that the correlations are significantly different from zero at a 3.42% level or lower.

Table 3 Correlations

| | Rate My Professor | | | Pick A Prof | | |
|---|---|---|---|---|---|---|
| | RmP Quality | RmP Ease | RmP Hot | Faculty GPA | PaP Rating | Course GPA |
| RmP Quality | 1 | | | | | |
| Significance | | | | | | |
| Observations | 205 | | | | | |
| | | | | | | |
| RmP Ease | 0.4897 | 1 | | | | |
| Significance | 0 | | | | | |
| Observations | 205 | 205 | | | | |
| | | | | | | |
| RmP Hot | 0.3873 | 0.1707 | 1 | | | |
| Significance | 0 | 0.0144 | | | | |
| Observations | 205 | 205 | 206 | | | |
| | | | | | | |
| PaP Faculty GPA | 0.311 | 0.4316 | 0.1917 | 1 | | |
| Significance | 0 | 0 | 0.0058 | | | |
| Observations | 205 | 205 | 206 | 206 | | |
| | | | | | | |
| PaP Rating | 0.5195 | 0.4688 | 0.2069 | 0.4675 | 1 | |
| Significance | 0 | 0 | 0.0342 | 0 | | |
| Observations | 104 | 104 | 105 | 105 | 105 | |
| | | | | | | |
| PaP Course GPA | 0.2814 | 0.4183 | 0.1777 | 0.8898 | 0.3887 | 1 |
| Significance | 0 | 0 | 0.0106 | 0 | 0 | |
| Observations | 205 | 205 | 206 | 206 | 105 | 206 |

These correlations are used to investigate accuracy and consistency of the student evaluations. A particular concern is that the individual students that provide the evaluations in the Rate My Professor site accurately represent the views of all the students taking the course. The correlation between the individual student evaluations of the quality of the faculty from Rate My Professor (RmP Quality) and the rating of the faculty provided by the institution data from Pick-A-Prof (PaP Rating) will be positive and high if students are providing consistent evaluations. This would also be true if the evaluations were fair and correct. It is, however, also possible that students are lying and provide unfair or incorrect evaluations of faculty (for the same professors) at both sites. This would also result in a high positive correlation but this explanation is probably less likely. If the exact same students were performing the evaluations at both sites and consistently lying, this would be true, but this would have to be the case for the vast majority of the students across faculty members and institutions for the correlations to be high across all faculty evaluated. The correlation between the RmP Quality and PaP Rating was .52. This means that over 27% of the total variation of the RmP Quality is captured by the PaP Rating (the r-squared of a regression of the RmP Quality on PaP Rating is $(.522)^2$ or .27).

Similarly, a large positive correlation between RmP Ease and PaP Faculty GPA would also suggest that students are appropriately evaluating their instructors. The correlation between these variables is .43. This means that over 18% of the total variation of the RmP Ease is captured by the PaP Faculty GPA (the r-squared of a regression of the RmP Quality on PaP Rating is $(.432)^2$ or .18). Students provide the evaluation of Ease on the Rate My Professor site but Faculty GPA at the Pick A Prof site comes from official university sources - student evaluations. The strong positive correlation between these two variables provides evidence that the student evaluations (at least concerning the difficulty of obtaining a high grade) are accurate.

To investigate the factors that influence the overall quality of faculty that students provided at each of the two sites the following regression was performed on the RmP Quality and the PaP Rating variables.

$$RmP\ Quality = b_0 + b_1 PaP\ \#\ Grades + b_2 PaP\ Faculty\ GPA + b_3 Branch + B_4 Gender + B_5 RmP\ Hot + b_6 Chemistry\ Dummy + b_7 English\ Dummy + b_8 Math\ Dummy + b_9 Biology\ Dummy$$

$$PAP\ Rating = b_0 + b_1 PaP\ \#\ Grades + b_2 PaP\ Faculty\ GPA + b_3 Branch + B_4 Gender + B_5 RmP\ Hot + b_6 Chemistry\ Dummy + b_7 English\ Dummy + b_8 Math\ Dummy + b_9 Biology\ Dummy$$

Table 4 and 5 provides the regression analysis results.

Table 4 PaP Rating Regression (No. Obsv. 105, Adj. $R^2$ = .31)

| | Coef. | Std. Err. | t | P>t |
|---|---|---|---|---|
| PaP # Grades | 0.000115** | 0.0000799 | 1.44 | 0.154 |
| PaP Faculty GPA | 1.267283*** | 0.2999455 | 4.23 | 0 |
| Branch | 0.165803 | 0.2344469 | 0.71 | 0.481 |
| Gender | 0.186272 | 0.2222369 | 0.84 | 0.404 |
| RmP Hot | 0.343197* | 0.2660569 | 1.29 | 0.2 |
| Chemistry Dummy | 0.017912 | 0.4815744 | 0.04 | 0.97 |
| English Dummy | 0.573008 | 0.4807101 | 1.19 | 0.236 |
| Math Dummy | 0.976491** | 0.4754737 | 2.05 | 0.043 |
| Biology Dummy | 0.634797* | 0.4640887 | 1.37 | 0.175 |
| Economics Dummy | 0.309543 | 0.4336047 | 0.71 | 0.477 |

* Significance at 10%, ** Significance at 2.5%, *** Significance at .5%

Table 5 RmP Quality Regression (No. Obsv. 205, Adj. $R^2$ = .21)

| | Coef. | Std. Err. | t | P>t |
|---|---|---|---|---|
| PaP # Grades | 7.16E-05 | 0.0000578 | 1.24 | 0.216 |
| PaP Faculty GPA | 0.578063*** | 0.1487248 | 3.89 | 0 |
| Branch | 0.231394** | 0.1295595 | 1.79 | 0.076 |
| Gender | -0.1092 | 0.128565 | -0.85 | 0.397 |
| RmP Hot | 0.812699*** | 0.1536802 | 5.29 | 0 |
| Chemistry Dummy | 0.216359 | 0.2931921 | 0.74 | 0.461 |
| English Dummy | 0.13851 | 0.2658263 | 0.52 | 0.603 |
| Math Dummy | 0.522358** | 0.266422 | 1.96 | 0.051 |
| Biology Dummy | 0.233918 | 0.2813592 | 0.83 | 0.407 |
| Economics Dummy | 0.142494 | 0.2761708 | 0.52 | 0.606 |

* Significance at 10%, ** Significance at 5%, *** Significance at .5%

For both regressions the PaP Faculty GPA is positive and highly significant. Looking at Table 4 this implies that if an instructor provides an average GPA of one letter grade higher the student evaluation at the Pick-a-Prof site will be 1.27 points higher on a 5 point scale. Although the magnitude of the effect differs, an easier grader will have their rating at the Rate My Professor site similarly increase. Namely, a one letter grade higher average GPA will result in a .57 point increase (on a 5 point scale) in the students' evaluation of the instructor's quality. Alternatively, a one point higher GPA will increase the ratings by 25% (Pick-a-Prof) or 11%. (Rate My Professor). The other two variables that are significant for both regressions are the RmP Hot and Math Dummy variables. Both of these variables are positive which indicates that an instructor that receives a hot rating from a student (whatever this means) will receive a higher quality rating. The positive Math Dummy variable implies that, relative to accounting, math instructors receive a higher evaluation of quality by their students.

**Conclusion**

This study finds evidence that the faculty at Ohio branch campuses are viewed by their students as higher quality instructors

then those of the main campuses. One possible explanation for this is that branch faculty have smaller sections and therefore have the ability to become more familiar with their students. The study also finds evidence supporting the contention that the student evaluations are consistent and accurate. In particular, the correlation of the student evaluations of how easy instructors grade and the actual grades instructors gave was statistically significant and positive. Lastly, the actual GPA provided by the instructor is found to be an important factor contributing to the student evaluation rating of the overall quality of the instructor. This was true even while controlling for a number of other factors that might influence the student rating. This study provides evidence to support that the online evaluation sites are providing useful information to students concerning the grades provided by faculty members, however, the quality ratings are also highly influenced by how difficult the instructor grades or if the instructor is "hot". So although the students appear to be honestly providing evaluations, the ability of these evaluations to accurately reflect the teaching ability of the instructors is questionable. Alternatively, students might pay more attention to "hot" instructors which results in higher quality instruction and the higher grades could be the cause of superior instruction. Faculty can therefore have some faith that the evaluations provided by students on these sites are reasonably reflecting the evaluations of students taking their classes.

There are a number of shortcomings of this analysis. This study focuses on Ohio branch campuses and their main campuses so these results may not be true for university systems in other states or private institutions. This analysis is also limited to 23 campuses many of which are probably very similar in mission and student/faculty demographics. Further, only a handful of courses and disciplines are evaluated. Nevertheless, as an initial study, this line of work shows promise and has potential for being scaled up to a broader national study.

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# Social Work Education and Human Service Technology on the Regional Campus: Using Remote Interactive Technologies to Enhance Student Effectiveness

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**Abstract**

Regional campuses in Ohio face insurmountable issues associated with lack of resources in tandem with the need to offer remedial and other systems of help generally associated with the adult learner. For social work programs, the need to assist adult students with critical thinking, clinical writing proficiency, and competent interviewing techniques usually places increased demands on a system that is already overtaxed. This article will address the need for the regional campus system to enhance social work curriculums and to develop learning labs using technologically based solutions. The discussion will focus on the promotion of educational paradigms, in particular the use of Learning Communities; Virtual World, Access Grid, and Blackboard technologies to assist students to excel in critical thinking, to gain competent interviewing and intervention and clinical writing skills. Suggestions will follow linking paradigms, technologies, and activities to enhance student learning while assisting regional campuses with resource management.

## Student Characteristics

### Rural

Although the dynamics of Ohio regional university campuses vary, students attending classes at these institutions share many of the same common obstacles. Regional university campuses are especially valuable to rural, nontraditional students who face obstacles such as scarcity of money, and often-lengthy travel time to class. Students also have added demands of family and work related issues.

Ohio University Southern Regional Campus (OUS) serves as a beacon to students who are geographically isolated by the hilly terrain that covers 455.5 square miles (U.S. Bureau of the Census, 2000). Among other issues, poverty translates into poorly maintained infrastructures in Appalachia, which predestines students to travel on roads that are often in disrepair. The U.S. Bureau of the Census Report (2000) calculates that Lawrence County, the primary area served by OUS, is located in Appalachia and has a poverty rate of 18.9 percent. Lichter (1997) maintains that children living in poverty generally receive lower grades in school and have higher dropout rates. Davies, Crow, Hamilton, and Salois (2006) discuss additional issues facing rural students such as poor academic preparation during the primary and secondary education years. These authors reason that poor academic and cultural teacher preparation as well as low pay of teachers, is in part the impetus behind poor student academic training. Additional issues faced by rural students defined by Davies, et al. focus on the lack of laboratory and library resources, and the scant offering of advanced courses during secondary education.

The effects of poverty on rural student's academic advancement are extreme. Low self worth, depression, and crime are primary outcomes of children growing up in poverty. Guo and Harris (2000) forward the concept that those growing up in poverty worry about getting their basic needs met which leaves no time for academic pursuits. The adult who has contended with a lifetime of poverty has little opportunity to advance academically in rural areas. Davies et al. (2006) states that there is a large gap with regard to adult learning opportunities in rural areas, leaving the disadvantaged student with hardly any chance to improve literacy and basic skills let alone to attend college. Higher education statistics highlight the lack of adult education opportunities in Southeastern Ohio. Eight years ago, only 10.3 percent of persons 25 and older living in Lawrence County held a bachelor's degree or greater (U.S. Bureau of the Census, 2000).

**Appalachian**

A large percentage of students who attend OUS carry the cultural ethnicity identifier of "Appalachian". Jones (1999) offers

insight about how Appalachian students identify themselves as being inferior and poor as compared to their more prosperous urban counterparts. She utilizes material gained from a course offered jointly to Appalachian and Sioux Indian students via blended technology. Jones points out that both cultures struggle with the concepts that identify them as poor and minority, and comments about their hopes to improve their lives with education and more viable job prospects.

Biggers (2006) maintains that stereotypes such as being poor and ignorant have been a deterrent to the larger society in recognizing the contributions of Appalachians to the development of a civilized United States. Biggers points out that Appalachians were historically ahead of their time with regard to establishing democracies in geographically remote areas, and begs his audience to reconsider the classic Appalachian stereotype in favor of a more historically accurate concept of the Appalachian that has a great sense of social justice and ability for innovation. Unfortunately, rural, Appalachian, nontraditional students in Southeast Ohio seldom have the opportunity to consider a grand history. They are fraught with daily struggles of survival and fit in study and course attendance with the hope of a better future.

**Nontraditional**

Ohio University Southern's student body is overwhelmingly comprised of students age 25 and older, many of which are single mothers. These students are nontraditional and lifelong learners and face daily issues that interfere with achieving higher education. Davies, et al. (2006) sees issues with the nontraditional lifelong learner as being somewhat the same as those facing rural, Appalachian students. Hearn (1992) states that 40-50 percent of nontraditional student's juggles family and work but continues to desire higher education. He points out that they are attending colleges and universities in growing numbers and need to access courses and lectures during evenings, weekends and other nonconventional times. Jones and Pritchard (1999) highlight that although college preparation among nontraditional students is weaker than traditional students' preparation; nontraditional students seeking education are driving the market to deliver education in their homes and workplaces. Pritchard

believes that this demand is an indicator that nontraditional students are motivated to learn. Pickerden (2002) points out that lifelong learning is expensive to deliver due to nontraditional students' need for additional learning support. However, she is quick to add that the academic success of nontraditional students has extended economic advantages that include breaking the cycle of poverty by providing role models for children who aspire to realize higher education.

**Technological Issues and Advancements on the Regional Campus**

Dobbs (2000) concludes that students who are unable to purchase a computer or access the internet are at a greater disadvantage and will more than likely find that they are less able to acquire quality employment and to obtain a better quality of life. Rocha and McCant (1999) advance the notion that adults who are not acclimated to technological gains find a glut of jobs that offer little more than a living wage.

The Ohio University Regional Campus System offers rural, Appalachian, nontraditional students the opportunity to bridge academic and professional gaps created by deprivation of robust secondary education and living with generational poverty. Many programs offered allow students to utilize computers and other technologies that might not ordinarily be within their reach. These opportunities are motivating nontraditional students to compete in a global economy by preparing them to understand and utilize technological innovations.

To remain on the cutting edge of technology and help rural, Appalachian, nontraditional students advance, regional campuses serving these populations must continue to utilize the most up-to-date technologies, distance learning applications, and educational pedagogies. Some studies (Schoeck, 2000; Hearn, 1992) show that nontraditional students acclimate quickly to web-based courses and utilize websites more often due to the need to cope with multiple responsibilities.

**Social Work and Human Services Technology**

For Social Work Education and Human Services Technology

at Ohio University Southern, applications such as Compressed Video and Blackboard have proven to be exemplary in accommodating student access to course materials and in enhancing student learning. Wernet, Olliges, and Delicath (2000) endorse the utility of course management tools for social work nontraditional students and maintain that nontraditional students actually excel in social work courses when utilizing web-based technology. This and similar studies (Cauble & Thurston, 2000) forward the hypothesis that web-based and web-enhanced courses effectively accommodate nontraditional student learning in the social work.

Angelo (2007) discusses the advantage of distance learning technology for rural, nontraditional students. Specifically she contends that distance-learning applications are especially useful for those students who are experiencing housing and transportation issues. Angelo's view is similar to Davies et al. (2006) who discuss the need for regional campuses and community colleges to help rural, nontraditional students overcome obstacles by utilizing virtual, hybrid on-line, and face-to-face courses. Several studies (Blanchard, 1989; McNabb, 1994; Whittington, 1986) suggest that well-designed and well-organized telecourses are as effective as conventional face-to-face courses in their impact on student learning as well as on student and faculty satisfaction. Brangan (1997) highlights the success of students participating in a gerontology telecourse and points out that the students were older (nontraditional) and more self-motivated. Cauble and Thurston (2000) report that social work students who engaged in a web conferencing course increased their knowledge base to the point of being competent with the subject matter as well as capable and comfortable with the new technology.

Not only are distance learning applications useful in the transfer of knowledge, they are being used more and more in professional agencies (Angelo, 2007) including human services and social work. Oliver and Demiris (2004) point out that Hospice Organizations are currently utilizing technological innovations to interview clients and conduct record keeping. Web-based technologies are used in the professional areas of Veteran's Health Administration (Happ, Whitten, Subramanian, Woodbridge, Mackert, & Lowery

2006), Child and Adolescent Mental Health Services (Grealish; Hunter; Glaze; & Potter, 2005), and in the field of Geriatric Services (Berta, Binh, Wuertz, & Bonner, 2007). These applications highlight the need for students to understand technologies to be professionally competitive in social work professions.

**Virtual Connectivity**

**Applications**

*Web conferencing.* Angelo (2007) defines the web conferencing application as one that is most useful for small groups of less than 50. She discusses how groups view streaming video, slideshows, and spreadsheets on the internet while simultaneously communicating through real time audio. She highlights the following web conferencing providers: WebEx Communications; Microsoft Office Live Meeting; Adobe Systems Connect; Elluminate Live; iLinc Communications Meeting; and Raindance Meeting Edition.

*Webcasting.* Angelo (2007) maintains that this application provides both video and audio over the Internet but only via one-way communication. Angelo suggests that this application be used for larger video events and is often "captured for asynchronous playback" which allows students to view a pre-recorded lecture at their leisure (p.54).

*Video conferencing.* Angelo (2007) describes this application as all inclusive of video, audio, and media advanced "specialized hardware and software systems that are supported by telecommunications and IP technology" (p. 54). Angelo discusses specific providers of these services such as Polycom; Tandberg; RADVision; VCON; and Sony. Berg, Alverson, McCarty, Sinclair, Hudson, & Vincent (2007) discuss other applications such as Access Grid advanced videoconferencing system and the Internet 2 high performance research and education network. Still, Kiernan (2006) discusses other applications. He proposes that digital software which merges lectures with a lecturer's notes, visual aids, and an electronic pen that allows the student to take notes on a specialized note pad, eventually allowing the student to dock the pen with their computer

and play back the lecture with notes, is a reality. Kiernan discusses Tegrity, Inc. and Anystream's Apreso Classroom software as two applications that allow students to access lectures and additional learning tools where and whenever they desire, making them invaluable for rural, Appalachian, nontraditional students who face issues of time and money. Kiernan quotes one professor as maintaining that students using Tegrity are performing better than other students who are not using the technology. Kiernan's thesis supports Regan, ONeill, and Whitehouse (2002) emphases of the importance of fully integrating computers into courses to improve students' self-directed learning skills. Rural, Appalachian, nontraditional students customarily noted as being academically ill-prepared (Branigan, 1997) now have a chance to excel with the introduction of these new classroom technologies.

Berg et al. (2007) discusses how the Access Grid video conferencing technology provides a mechanism to teach and evaluate medical students' abilities to effectively assess and intervene with clients. Students and "remote evaluators" who are usually faculty are located at two medical schools on each side of the United States. This study finds that multiple cameras, multiple data, and multiple image streams originating from and displayed simultaneously at participating sites provides an optimal system to train medical students in client interaction and assessment. Students reported that the sessions had the "look and feel of in-person experiences" (p. 316).

**Collaborative Applications for Social work**

**Webcasting and Web-conferencing in a Virtual Social work World**

Webcasting provides a one-way communication paradigm (Angelo, 2007). Virtual world (Foster, 2007) applications utilizing webcasting would allow for teaching initial courses in social work interviewing, policy, and research. Foster discusses the work of Dr. Edward Castronova who uses the virtual world of "Second Life" as a science laboratory. His work includes testing economic principles and conducting ethnographic studies. Second Life is a three dimensional virtual world that allows the creation of individual personas (http// www.secondlife.com Retrieved March 17, 2008). It additionally allows

the "ownership" or creation of a virtual world for a modest monthly fee. This application would be useful to teach elementary interviewing in social work. Virtual "home visits" provide students with the opportunity to explore their value systems and ethical standards through the development of their professional "avatars". Students develop Avatars that serve as the caseworker who will interview clients involved in various problematic scenarios. Scenarios developed by social work faculty include multicultural and multilingual clients. Students control their interactions with clients as students and faculty at other distance learning sites observe online.

*Discipline specific writing curriculum.* The student engaged in the virtual interview provides a real-time process recording about the encounter. Students watching the encounter also provide process recordings about what they have witnessed. Faculties provide feedback about the encounter in real-time using web conferencing technology. The availability of technology to provide a means for students to engage in weekly writing assessment in the social sciences is novel and important to professional development. Alter and Adkins (2001) strongly promote the idea of discipline-specific writing labs and the need for all professionals in the social sciences to have a command of language to advocate for their clients.

**Web and Video Conferencing**

*Teaching using standardized clients.* Manning and Kripalani (2007) point out that medical personnel are trained using standardized patients. They additionally point out that the medical community established this educational model in the late 1960's. Terms used to describe the patients include "programmed" and "simulated," but "standardized" is now the common use due to the standardization of patient issues that standardized patients portray. Manning and Kripalani explain that those who become standardized patients study particular factors of specific cases. These patients provide a more realistic clinician-interviewee encounter than role-play. Social work has adapted the medical model of standardized patients for use in social work interviewing (Badger and MacNeil, 2002). Badger (2007) expands on this idea by maintaining that the standardized patients'

educational paradigm is very useful to social work clinicians in recognizing and treating mental disorders. She advocates using the term "standardized clients" for the social work field.

*Utilizing Standardized Clients and Remote Technologies.* Several studies (Berg et al., 2007; Berta et al., 2007; Grealish et al., 2005; Linsk et al., 1997; MacFarlane, Harrison, Murray, & Wallace, 2006) highlight the use of interactive technologies in conjunction with standardized clients to teach, enhance, and evaluate student-interviewing skills. Specifically, the Berg et al. (2007) study of using Access Grid and Internet2 technology for training and evaluating interviewing skills of medical students is especially promising for the social work profession. Two or more distance learning sites equipped with these technologies would allow "remote evaluators" or faculty at each site to view a student interviewer conducting a session with a standardized client at a site housing the standardized clients. Standardized clients tend to be costly to train and maintain (Berg et al., 2007) making medical schools a likely base for the program.

*Interviewing standardized clients using interactive technologies.* The combination of Badger's (2007) proposal of incorporating standardized clients into social work interviewing courses and the Berg et al. (2007) proposal of standardized client interviewing using remote interactive technologies provides rural campuses with a novel social work interviewing course initiative. Using advanced video conferencing to teach and evaluate social work students allows students a safe arena to hone client assessment and intervention skills. Many students could view student-standardized client interactions that would provide valuable feedback. Students could provide process recordings about the session. Providing real-time process recordings using web casting will enhance student ability in discipline-specific social work writing.

*Financial investment of standardized clients and interactive technologies.* Berg et al. (2007) maintain that the Access Grid interactive technology would require a large initial investment. Additionally a sound financial infrastructure is required to train and maintain standardized clients. Universities that have medical schools usually have a standardized patient pool. Funds from social work and

human services technology departments would be required to purchase standardized client time from medical schools. However, after the initial investment, student enrollment from distance learning sites and low overhead for instructors located at one site for a multi-site course would offset costs.

*Other Academic Uses of Web and Video Conferencing.* Technology-based distance learning paradigms can assist rural, Appalachian, nontraditional students to catch up academically by providing access to course materials and lectures as often as needed. Using technologies such as Tegrity, students can view streaming digital video of lectures along with course documents and notes on campus and at their leisure. This educational process allows the nontraditional learner time to focus attention on the material without outside stressors such as children or having to take time from work to attend class.

*Blackboard as a Tool to Enhance Social work Courses.* Blackboard components provide excellent opportunities for web support of academic courses (Blackboard Inc. 2002). Santhiveeran (2006) points out that Blackboard software provides components that allow the posting of syllabi; announcements; course documents; course quizzes; communications via email and discussion boards; and a document delivery system via the digital drop box. Links to streaming video and web sites are also available.

*Utilizing Interactive Technologies to Enhance Social work Learning Communities.* Learning communities developed on a variety of models in conjunction with interactive technologies offer social work education state of the art integrative and collaborative course structures.

Two models discussed on (http://www.evergreen.edu Retrieved March 17, 2008) describe the Linked Course/ Course Cluster Model that allows coordination of courses associated by content and themes. Lardner and Malnarick (2008) maintain that faculties design their courses collaboratively and use larger perspectives to structure course content. They further indicate that by designing and teaching courses collaboratively, faculties can focus on the common attributes of their disciplines. For social work, the Linked Course/Course Cluster Model presents faculty opportunities during each class to explain

relationships between theory, research, and evidence based practice. Each class would offer assignments pertaining to the link between paradigms and their cumulative effect on social work practice.

The Coordinated Study Model of learning communities engages faculties to team-teach embedded courses during an integrated program of study. In the field of social work, an example of this model would call for the faculty teaching practice to coordinate with the research faculty. Both faculties would design their syllabi coordinating practice content with research content. The course(s) would incorporate a block of time allowing both faculties to integrate their course content. Evidence based social work practice is obtained from research. Practice outcomes must be tested and measured to generalize to a wider population. Students' understanding of the research-practice loop can be improved by utilizing team teaching and structured course design to highlight the content and process of evidence based practice. Enhancing social work curricula by combining both learning community models with web based and virtual technologies would provide regional campus students with a superior education. Students would be able to access, share web based lectures, and work on projects in real time using webcasting. These technologies synchronized with the Coordinated Study Model with its integrative assignments and team teaching would offer distance cohorts in social work a dynamic experience of learning. Social work courses that teach across the curriculum orchestrate assignments within situational contexts, and offer students a robust opportunity to understand the connections between theory, policy, practice, and research. These technologies and educational pedagogies offer an innovative approach to enhancing rural, Appalachian, nontraditional student learning.

**Conclusion**

Students attending Ohio University Southern are predominately rural, Appalachian, nontraditional students who have a history of being ill prepared academically due to issues of poverty and poorly prepared secondary teachers. These students are historically highly motivated to achieve academically and desire to attain a better quality of life through education.

Several studies speak to the ability of rural nontraditional students to excel in courses infused with web-based and virtual technologies. It is imperative that regional campuses understand the needs of rural, Appalachian, nontraditional students and be prepared to provide the technological advances that are required to assist them in procuring the education denied them during their secondary years.

Various types of web-based and virtual technologies can enhance social work courses. These applications also provide social work students with a head start in understanding and utilizing technology in professional social work practice. Social work students exposed to these technologies can find themselves in leadership positions in a global economy.

A collaboration of web-based and virtual technologies in conjunction with learning community pedagogies will provide social work students with more enhanced situational learning applications. The possibility of teaching across the social work curriculum by integrating various models of learning communities and web-based, hybrid distance education technologies will provide regional campus students with practical and robust social work educational pedagogies.

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# Reality Nursing: Student Transition Into Practice

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## Abstract

Transitioning from nursing academia to nursing career is often a frightening experience for the new graduate nurse. This project will discuss the rationale, planning, implementation, and evaluation of an eight-hour seminar, which will include the following topics: interviewing techniques, health care orientations, collaborating with physicians, shift reports, delegation, communicating with families, legal implications, and balancing of work and life. The topics were chosen from the Graduate Nurse Survey, conducted six months after graduation, by the Ohio University Chillicothe Campus nursing program and feedback from current graduating nursing students. Thirty-nine sixth quarter graduating students participated in this seminar. The outcome of this project is to increase the students' knowledge of transitional aspects of a nursing career and to provide realistic information to assist the new graduate's transition from academia to practice.

## Objectives

The objectives of this article include a) discuss the rationale for developing the "Reality Nursing" seminar, b) discuss the planning phase, c) describe the agenda or topics chosen for the seminar, d) discuss the implementation phase, e) discuss the evaluation phase.

## Introduction

The student reaches the final capstone course in a nursing curriculum and at some point in time realizes that they soon will be out there – by themselves. This creates a certain panic state where the student's level of self-esteem takes a momentary dip and they feel inadequate for the career in which they have spent much time in learning and preparation (Delaney, 2003; Halfer & Graft, 2006). The

Reality Nursing seminar was developed to assist the student in their transition into nursing practice.

**Rationale**

Transitioning from nursing academia to nursing practice can be frightening. The capstone course in our Associate Degree Nursing Curriculum includes 180 hours of a preceptor experience. During these hours, the student provides care on a one-to-one basis with a registered nurse. Incorporated in the course is material covering leadership roles, mentoring, and independent practice. The student is also required to complete Professional Development hours. This is one method of assisting the student in their transition into practice.

The Graduate Nurse Survey is completed by the graduates in our program within six months of graduation. The survey identifies strengths and weaknesses of the curriculum according to the past graduates. Results of this survey were analyzed for suggestions to include in the Reality Day seminar in an effort to provide pertinent and needed programs. Students repeatedly alluded to the fact that there was a need for preparation for "nursing in the real world."

Based on this consistency, it was decided that a professional seminar type activity with speakers from agencies in the area would be beneficial not only to provide professional development hours, but also to fulfill this identified concern (Ashcraft, 2004; Ellerton & Gregor, 2003). By formatting it in this manner, the students would have an introduction to what is expected of them during professional presentations, such as dress, attitude, and demeanor (Lindsey & Kleiner, 2005).

**Planning Phase**

A committee was formed to organize the Reality Nursing event. This consisted of representative faculty members. The members held brainstorming sessions to determine content ideas and suggested topics. Upon reviewing the Graduate Nurse Survey and referring to the capstone course content, specific topics were selected. Additional brainstorming sessions were held to determine appropriate speakers. Factors considered included assuring that speakers were selected

that represented various agencies/facilities in the surrounding areas (Maiocco, 2003). Also, representatives from varying disciplines in nursing were sought. Other topics discussed included lunch arrangements and housekeeping items such as securing a room appropriate to the event.

**Agenda and Topics**

A one-day seminar was held with a morning session and an afternoon session. The hours of the seminar were from 8:00am-4:00pm, with an hour for lunch. Each session was 45 minutes in length. A room capable of holding all participants, providing presentation equipment, and comfortable was secured. Lunch was catered, which provided an incentive for our speakers as well as a professional type atmosphere where mentoring and networking could occur.

The sessions and discipline of speakers are listed below: The morning session topics included: a) interviewing, b) orientation, c) shift report and d) collaborating with physicians. The afternoon session topics included: a) legal aspects, b) delegation, c) communicating with families and d) balancing work and life.

- Interviewing – representatives from human resources departments presented a positive and a negative mock interview session
- Orientation – a panel presentation with representatives from varying agencies, mostly hospitals
- Shift report – a nurse manager on a medical-surgical unit
- Collaborating with physicians – a nurse manager from a medical-surgical unit
- Legal aspects – Risk Manger who is an RN
- Delegation – Clinical Educator, also a member of the State Board of Nursing
- Communicating with families – Licensed Social Worker
- Balancing work and life – Psychologist

**Implementation Phase**

The event was advertised to the students. It was scheduled in their course rotation fairly early, during the fourth week of the quarter. This enabled the student to schedule this day around their other clinical hours. The speakers were enthusiastic and positive in their presentations and gave information in a variety of formats. Some used PowerPoint presentations; some used handouts. All had time for questions following the presentations.

**Evaluation Phase**

The Reality Nursing seminar was evaluated by the students and speakers with regard to the speakers and the topics. The speakers gave informal verbal feedback. They appreciated the opportunity to be a part of the professional development and education of the students, which would ease them into the role of nursing. They felt that in some way, they were contributing to their orientation to and familiarization of clinical facilities. In a matter of speaking, it was an opportunity for recruitment, even though efforts were made to limit the specificity of any one clinical agency.

The students were given evaluation forms using a Likert scale to evaluate each of the presentations and the speakers separately (see Table 1). There was a 92% response rate from the students.

Table 1

*Students' Evaluation of Panel/Speaker using Likert Scale*

| Panel*/Speaker | Highly effective 5 | Somewhat effective 4 | Neutral 3 | Somewhat effective 2 | Highly effective 1 | Comments |
|---|---|---|---|---|---|---|
| Interviewing* | 32 (89%) | 4 | | | | |
| Orientation* | 28 (78%) | 5 | 1 | 1 | 1 | |
| Shift Report | 30 (83%) | 4 | 2 | | | |
| Collaborating with Physicians | 29 (81%) | 6 | 1 | | | |
| Legal Aspects* | 30 (81%) | 6 | | | | |
| Delegation | 26 (72%) | 8 | 2 | | | |
| Communicating with Families | 34 (94%) | 1 | | | | |
| Balancing Work and Life | 30 (83%) | 3 | 1 | 1 | | |

N = 36 students

The sessions were rank ordered as to the preference by the students. The order is as follows. The most preferred session was the interviewing session. The following rank in subsequent order: communication, shift report, collaboration with physicians, legal aspects, orientation, balancing work and life, and delegation (see Table 2). The evaluations of the speakers were used for professional feedback for them. They were given their results. Comments were reviewed and compiled. The students overall thought that the seminar was informative and had excellent speakers and topics. They enjoyed the food and the interaction with the speakers during lunch in addition to adequate question and answer sessions.

Table 2

*Students' Evaluation of Topics Using Likert Scale*

| Topics | Highly relevant 5 | Somewhat relevant 4 | Neutral 3 | Somewhat irrelevant 2 | Highly irrelevant 1 | Comments |
|---|---|---|---|---|---|---|
| Interviewing | 36 (100%) | | | | | |
| Orientation | 28 (78%) | 6 | 1 | 1 | | |
| Shift Report | 33 (92%) | 1 | 1 | 1 | | |
| Collaborating with Physicians | 30 (83%) | 5 | 1 | | | |
| Legal Aspects | 29 (81%) | 7 | | | | |
| Delegation | 25 (69%) | 8 | 3 | | | |
| Communicating with Families | 33 (92%) | 2 | | | | 1 abstain |
| Balancing Work and Life | 27 (75%) | 3 | 4 | 1 | | 1 abstain |

N = 36 students

Other comments included the fact that there was much good information. Some suggestions for improvement included scheduling it earlier in the quarter since some students had already had interviews completed at this point. They also wanted more information about the NCLEX as well as advanced education. Some students suggested sessions on charting and documentation.

**Potential Revisions**

After review of the results of the evaluations and the comments, some possible changes and ideas for improvement emerged. The committee felt that more time should be devoted to the panel discussion on orientation since there were many questions and time was not fully adequate. Also, it was determined that a greater variety of facilities should be included in this. The committee also felt that the emphasis needed to be on more "non-site" specific information. Other topic ideas were discussed. It was felt that documentation is included in each course currently, as well as NCLEX review is a thorough part of the curriculum. It is felt that the focus of the seminar is to assist students with the more clinical or role related issues of nursing that may not be a focus already in the curriculum.

For future Reality Nursing Seminar days, a format utilizing two half-day sessions was implemented. This allowed students to be more focused and was more conducive to their attention span.

Also, a variation in topics was included in future sessions. With the current nursing research trend focusing on evidence-based practice, it was felt that this would be an important concept to include at an introductory level. This was presented by a Nurse Practitioner in an acute care setting. The other new topic for subsequent seminars included a session on delegation, as it is described in the state Board of Nursing Rules. This was presented by a nurse who is certified to present for the Board of Nursing.

**Benefits**

There proved to be benefits for all involved in this activity. According to the evaluations, the students overwhelmingly thought that they benefited and would recommend holding this function again. They felt that the information was relevant and appreciated the fact that it was presented by nurses "in the field." They were introduced to a professional seminar type atmosphere, with all the features thereof. The speakers and staff of area agencies benefited by introducing the students to their facility as a recruitment tool as well as being a part of their professional development and success in nursing. It is noteworthy that some of the speakers were graduates of our program. This added

an additional dimension to the seminar, providing opportunities for the students to be mentored by graduates. The faculty benefited by allowing an opportunity to present information that is not covered in the curriculum; however, it was felt that this information would be beneficial to a new professional in nursing.

**Summary**

Transitioning from a student nurse to a registered nurse can be a frightening endeavor (Kilstoff, K. & Rochester, 2004; Squires, 2002). Through the use of the Reality Day seminar, students feel more prepared in some of the day-to-day activities of a "real nurse." This gives them greater confidence when they are interviewed and when they enter that new career.

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# Reviewing Science Concepts Using CLAD: Collaborative Learning Assessment Through Dialogue

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## Abstract

Success on the comprehensive science examination generally requires a thorough review of key concepts. Typically this takes the form of a game or a question-and-answer activity. In this paper, we describe a new and more effective way to review basic concepts using the Collaborative Learning Assessment through Dialogue (CLAD). This approach can also help teach new material and eliminate misconceptions of difficult concepts.

## Introduction

For many students the typical lecture format results in limited long-term retention of key science concepts. In one study, pre-service teachers evidenced continued misunderstanding of fundamental concepts after six weeks of detailed instruction (Azizoglu, 2006). As Keck (2000) stated "Even the most basic concepts from week one are often forgotten at the end of the semester …" Thus, a timely review of basic concepts is essential. In addition to games and question-and-answer sessions, some educators review concepts using a two-cycle process of "directed review and relearning" (Gravert, 2006). CLAD differs significantly from these approaches. It offers an enjoyable way for students to work together as they learn and review difficult concepts and eliminate misconceptions. Using this method, students have the opportunity to 1) work collaboratively in reviewing concepts and evaluating their understanding 2) receive immediate feedback and 3) relearn fundamental concepts via critical thinking peer-driven dialogue.

## CLAD Cooperative learning

CLAD was originally developed to improve reading

comprehension among elementary age students, but is readily adapted to the college classroom (Fitch, McCarthy and Green, 2008). It draws upon and combines a number of methods and theories including; team learning (Michaelsen et al., 2004) anticipation guides, collaborative learning (Wertsch and Toma, 1995) and dialogic inquiry (Wells, 1999). However, it is most directly based on the elements and principles of cooperative learning.

Cooperative learning has been called ". . . one the greatest success stories in the history of educational innovation (Slavin, 1999). It ". . . . is now an accepted, and often the preferred, instructional procedure at all levels of education" (Johnson et al., 2007 p.15). Its positive effect on academic achievement has been established in hundreds of studies over the past 90 years (Johnson and Johnson, 1994). Compared with individualistic and competitive learning, it not only results in greater academic achievement, but also in better long term learning retention, higher level reasoning, more accurate and creative problem solving, and greater intrinsic motivation (Johnson and Johnson, 1994). Johnson and Johnson (1994) have argued that while cooperative learning is effective for any instructional task, "the more conceptual and complex the task, the greater the superiority of cooperative learning over competitive or individualistic learning" (p. 44).

Although cooperative learning is often mistakenly regarded as nothing more than 'group work' or 'seating students together', it has five distinctive and defining attributes (Johnson and Johnson, 1994; Johnson and Johnson, 1989); they are: (1) a common task or learning activity suitable for group work; (2) small group learning structure; (3) cooperative behavior; (4) positive interdependence; and (5) individual accountability and responsibility.

**Modified CLAD**

CLAD was first developed to reduce an achievement gap between students from two different elementary schools (Fitch, 2007). In its most basic form, it incorporates all five of the elements of cooperative learning. Students work in 4 – 5 member groups on a common text or assignment. Before students read the text they work

independently to complete an anticipation guide. An anticipation guide (AG) contains true and false statements on the topic of a text (Figure 1). It is a comprehension strategy designed to engender active learning by requiring individuals make predictions about what they are about to read. Students complete the first phase of AG activity by simply writing "true" or "false" in response to each statement. In the second phase students work in cooperative groups to compare responses, debate the probable truth or falsity of each statement, explain their reasoning, and an attempt to reach agreement. After class, as they read the text on their own, students revise or confirm their predictions and record where they found the relevant information (noting page and paragraph numbers). The following class period students generally take an individual multiple-choice quiz based on this reading before there is any class discussion (this ensures individual accountability and careful pre-class reading and preparation). Immediately following the individual quiz, students work in cooperative groups to discuss/debate responses to the AG. At this point the instructor generally leads a whole class discussion on the AG answering questions and attempting to clear up lingering misconceptions. This is followed by the "group quiz". The group quiz ensures positive interdependence and face-to-face interaction in that there is only one quiz paper per group and members all receive the same score. It also requires that students read and discuss each question and possible choices, listen closely to each other, reach common consensus, and mark the group quiz on a self-correcting answer form. This allows giving partial credit for second and third choices and immediate corrective feedback.

**Collaborative AG**

The collaborative AG is an integral part of the CLAD process. In general, the AG is an advance organizer comprehension strategy designed to engender active reading. There are several AG designs and implementation strategies (Duffelmeyer, 1994; Duffelmeyer, 1987; Herber, 1978). However, the collaborative structure of the AG component of CLAD is somewhat unique.

The collaborative AG provides additional motivation to readers by asking them to come to group consensus on predictions

about a text prior to reading. When students make a personal and group commitment to a text interpretation, they effectively create a collective purpose for the acquisition of knowledge. Student directed group discussions have the potential to promote a quality of critical thinking and discussion beyond the text that is unavailable to the individual working alone. In addition, collaborative AG statements are intentionally written so that they facilitate conceptual change. They are intended to focus on concepts in text that are contrary to common understandings. The statements are written in ways that challenge conventional taken-for-granted ways of thinking and thus highlight potential misconceptions. Research on conceptual change indicates that misconceptions are resistant to change, interfere with learning, and must be replaced (Smith, 1993; Bilgin, 2006).

As students discuss the AG statements and attempt to come to consensus they, in effect, externalize their thinking to the group. As thinking within the group is externalized implicit or unarticulated disagreements often become explicit. This increases the likelihood that cognitive conflict will occur. In fact, collaborative AGs are intentionally designed to engender cognitive conflict among readers. Cognitive conflict leads to intellectual disequilibrium and a search for resolution (Piaget, 1959). However, as outlined in the CLAD structure, the role of timely feedback in the cognitive conflict process is crucial. Studies indicate that in the absence of feedback, cognitive conflict only helps individuals who reason at a less advanced level than a more advanced and confident partner(s) (Tudge, 1985; Tudge, 1986). But with the provision of timely feedback, reasoning improves regardless of participants' level (Tudge, 1989). The following procedure section will outline in greater detail the CLAD technique as it was modified to review basic concepts for the chemistry exam.

**Procedure**

The implementation of CLAD for review began with the identification of important chemistry concepts, the preparation of AG form, and multiple-choice questions quiz based on those concepts. The questions included in AG used common misconceptions and motivated students to develop critical thinking skills (Figure 1). The

prepared reading of concepts and multiple-choice quiz provided the common language and system of ideas. To be effective CLAD quiz questions had at least one of the following: 1) were challenging; 2) presented analogy; 3) had an answer that is contrary to common sense.

CLAD was implemented a week before the final exam (Fall 2006). Students were divided into three or four member teams. The CLAD process and cooperative skills have been explained to students prior to CLAD implementation. Cooperative skills "included: (1) take turns taking; (2) if you disagree, say so and explain why; (3) when someone disagree with you, try to understand why; (4) look back at your reading if you need to; and (5) praise each other for good ideas and listening" (Fitch, 2007).

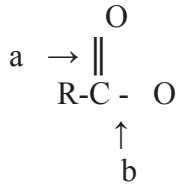
Afterwards, students worked first individually and then in cooperative groups to review concepts, rules, and principles of chemistry. Individual students did the following: (1) made predictions/recalled chemistry concepts, rules, and principles then marked their predictions on AG; (2) read the text (Concepts, Rules, and Principles) and marked their AG indicating where they found the confirming evidence; (3) took an individual CLAD quiz (closed book).

Having completed reading concepts and the multiple-choice quiz individually, cooperative groups went over the AG and come to consensus on answers and location of evidence. After students turned in their group AG, the whole class discussed AG answers and reached consensus with other groups whether they agreed or disagreed with each statement. Finally, a group quiz that had identical questions as individual one was administered. Group quiz correct answers were marked on the group quiz paper with invisible ink of Crayola Color Changeable Markers. If students' answer was correct the mark box changed color. Students had up to 3 choices to give correct answer. Immediate feedback was provided so groups could self-correct and adjust as they proceeded.

Anticipation Guide:

The actual structure with delocalized electrons (resonance hybrid) is a mixture of two compounds (resonance contributors) in rapid equilibrium. T___ F___ Concept # _____ Correct statement:
Concepts, Rules, and Principles:
Delocalized electrons are shared by more than two atoms; they result when a p orbital overlaps the p orbital of more than one adjacent atom. Chemists use resonance contributors – imaginary, not real structure with localized electrons – to approximate the actual structure of a compound that has delocalized electrons: the resonance hybrid (26).

Individual and Group CLAD Quiz:
One of the two equivalent energy resonance structures for carboxylate anion is shown here




Which statement best describes the carboxylate ion?
A. a is longer than b
B. b is longer than a
C. b is stronger than a
D. a and b are equal length

Figure 1. Examples of different CLAD forms

Average Test Grades (All numbers are percentages)

| | Fall 2005 | Fall 2006 |
|---|---|---|
| Individual CLAD quiz | – | 48 |
| Group CLAD quiz | – | 84 |
| Final Exam | 74 | 78 |

Figure 2. Average Test Grades from Organic Chemistry I students, Fall 2005 and Fall 2006.

**Conclusions**

Students expressed satisfaction with their experiences using the CLAD process. They commented positively on the benefits of the CLAD group quiz and emphasized the "magic marker" that "knows the correct answer". Some misconceptions were identified and eliminated with the help of AGs and individual multiple-choice quizzes.

Compared to previous year we found a slight (not significant) increase in final exam scores (Figure 2), especially among lower performing students. These results tend to confirm previous findings (Shachar, 2004). They are also consistent with the large body of research on cooperative learning indicating that when cooperative situations are structured appropriately, groups of students working together learn more and remember new ideas and general principles better than those working alone or in large unstructured groups (Johnson and Johnson 1994).

We have found that CLAD can play important role in teaching and reviewing science concepts. It highlights potential misconceptions where they exist and promotes the learning and relearning important concepts. We plan to use CLAD more frequently in the future. For example, we predict that an initial review of the preceding semester/quarter's concepts using CLAD will better prepare students for subsequent success in learning new science concepts.

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# To Read Or Not To Read: How Student Characteristics Relate To Textbook Reading

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## Abstract

Concern abounds that textbook reading is declining among college students. We surveyed introductory psychology students regarding textbook usage. Students were compared on gender, student type (traditional vs. non-traditional), and textbook reading habits. Students who reported reading none to 25% of assigned text tended to use skimming as their reading method; on the other hand, students who read 75% to all used a multifaceted reading approach. The most significant gender comparisons found non-traditional female students were more likely to read 75% to all of the assigned reading, whereas traditional female students were more likely to read none to 25% of the readings. We recommend instructors link textbook reading with assignments such that higher order reading is required, as well as find ways for non-traditional students to mentor traditional students concerning the importance of reading.

## Introduction

Most college psychology professors agree that the core knowledge of our discipline has been and continues to be found in the textbook (Zechmeister & Zechmeister, 2000). Although core knowledge in psychology is increasing with new research and theoretical perspectives, United States literacy is declining, even among the most educated (Steuer, 1996). With research suggesting psychology students read less than 30% of the assigned text (Clump, Bauer, & Bradley, 2004; Yonker, Cummins-Sebree, Marshall, & Zai, 2007), how are professors to manage this dilemma?

In a review on reading in the undergraduate psychology curriculum, Steuer (1996) states that psychology's scientific knowledge base requires students read the text in a critical, analytical

manner with a focus on concepts in order to verify the truth of what they read. Most traditional college freshmen lack the developed learning strategies to read the text in this fashion (Clump et al., 2004). Poorer readers tend to rely on lectures for their psychology information, rather than exerting the effort to read the text for their core knowledge (Steuer, 1996). This tendency, in turn, results in low levels of reading found in several studies (Clump et al., 2004; Sikorski et al., 2002; Yonker et al., 2007). Not surprisingly, 61% of students in general psychology courses reported simply reading the text before the exam (Clump et al., 2004). Little is known about how students use introductory texts (Sikorski et al., 2002) and how that usage may impact amount read.

As a professor, identifying which students may or may not complete the required textbook reading could permit targeted guidance concerning course successes associated with textbook reading (Bol et al., 1999). Unfortunately, very few studies examine the relationship between student characteristics and academic attitudes (Ganz & Ganz, 1988; Lammers et al., 2001), though this information could be vital for ensuring success for both traditional and non-traditional students.

Based on our previous study (Yonker et al., 2007) of a survey method for new textbook selection, we asked students about textbook usage and found that 33% reported reading a quarter or less of the textbook. The current study arose out of a desire to understand student characteristics associated with reported textbook reading.

**Method**

*Participants.* Two hundred and ninety-eight Introductory to Psychology students, from a regional campus of the University of Cincinnati, participated by completing a questionnaire during Fall Quarter, 2005 or Winter Quarter, 2006. Students at the regional campus are typically of freshman or sophomore standing. More participants were female (58%) as well as traditional students (68%).

*Procedure and Survey Instrument*. The survey administrator (not the instructor of the surveyed class) came to Introduction to Psychology classrooms and asked students to read the informed consent. The survey administrator then distributed the surveys with

Scantron answer sheets. A student volunteer collected the surveys and placed them in an envelope and upon completion, sealed the envelope and delivered it to the survey administrator waiting outside the classroom. A student volunteer assisted in order to reduce possible coercion for the students. Students were verbally informed that traditional students meant they had begun college directly after completing high school (Yonker et al., 2007). The survey instrument was originally designed to assist in the selection process of a new Introduction to Psychology textbook, so questions were focused on textbook usage with some student demographics. Thus, this study is a more in-depth analysis of reading habits not based on level of class (Introductory Psychology I vs. II, as reported in Yonker et al., 2007), but of the student characteristics they bring to the classroom and of how much they read as a result.

**Results**

Students were grouped by amount of assigned text read, resulting in the following reading groups: "None to one quarter", "Half", and "Three quarters to all". Table 1 contains student characteristics by reading group. Using Chi-Square ($\chi^2$) analysis, we found significant differences between groups with respect to a) how they read the text [$\chi^2(4,289) = 103.0$, $p < .001$], b) reported use of "learning checks" [$\chi^2$ $(4,292) = 32.3$, $p < .001$], and c) type of student (traditional vs. non-traditional) [$\chi^2$ $(2,272) = 8.1$, $p < .02$].

**Table 1: Characteristics by Amount of Text Read**

| Amount of Text Read Groups | None to 1/4 | 1/2 | 3/4 to all |
|---|---|---|---|
| How do you read the text?* | | | |
| Skim | 63 (22%) | 9 (3%) | 3 (1%) |
| Read only | 20 (7%) | 19 (7%) | 26 (9%) |
| Read plus† | 25 (9%) | 38 (13%) | 86 (30%) |
| Reading level of current text. | | | |
| Too hard | 6 (2%) | 2 (1%) | 1 (0.4%) |
| A little too hard | 21 (7%) | 12 (4%) | 14 (5%) |
| Just right | 75 (26%) | 49 (17%) | 94 (33%) |
| A little too easy | 2 (1%) | 3 (1%) | 5 (2%) |
| Do you do the in-book learning checks?* | | | |
| No | 87 (30%) | 41 (14%) | 52 (18%) |
| Sometimes | 17 (6%) | 23 (8%) | 51 (18%) |
| Always | 5 (2%) | 2 (1%) | 14 (5%) |
| Sex of Student | | | |
| Male | 37 (14%) | 26 (10%) | 38 (14%) |
| Female | 65 (24%) | 36 (13%) | 73 (27%) |
| Type of Student** | | | |
| Traditional | 84 (31%) | 46 (17%) | 72 (27%) |
| Non-Traditional | 18 (7%) | 14 (5%) | 38 (14%) |

Percents listed are % of total

* Chi-Square $p < .01$, **Chi-square $p < .02$

† Read plus indicates the combining of the groups: read & take notes, read & highlight, read & highlight & take notes

Figure 1 illustrates how students in each reading group read the text, with more students in the "none to one quarter" group skimming and the "three quarters to all" reading, taking notes and highlighting. In order to gain a better understanding of the differences between traditional and non-traditional students we also examined the data by sex.

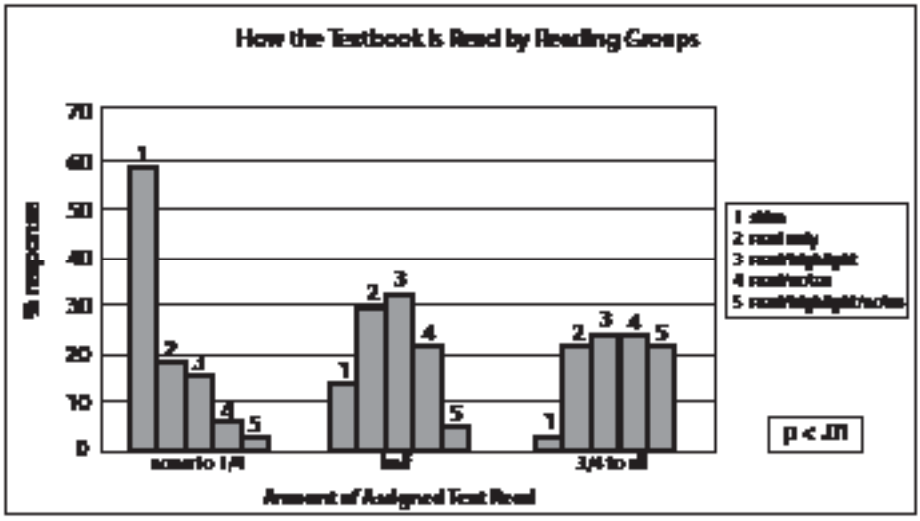


Figure 1: Percent of respondents within each reading group who report using specific reading techniques.

These results are illustrated in Figure 2 and show a significant difference ($p < .05$) between sex and student type with non-traditional females reporting reading more assigned text, whereas more traditional female students reading "none to one quarter".

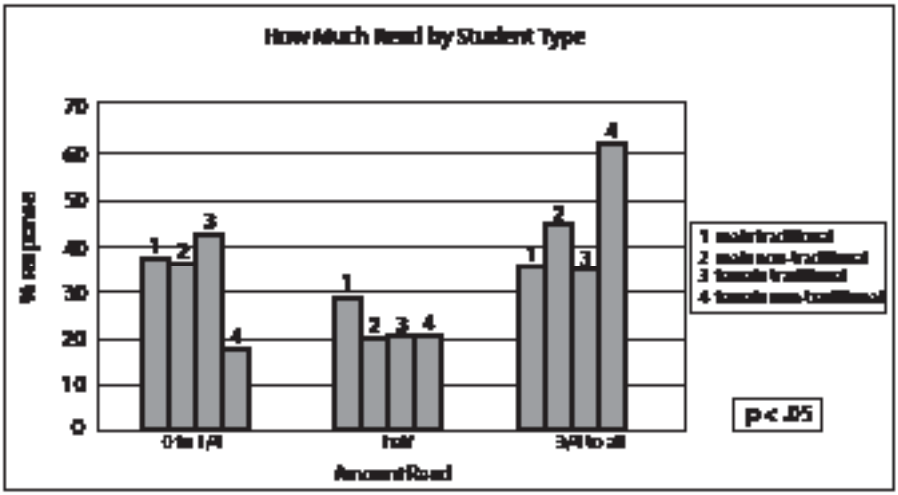


Figure 2: Percent of respondents within each student type who report reading the amount of assigned text

**Discussion**

Our results support the premise that students who approach reading with the skimming method will read significantly less than students who report a multifaceted reading approach. Furthermore, students who read more will also study more by completing the in book "learning checks" more frequently as well as consider the reading level of the text to be "just right". Our results that non-traditional students read more of the text than traditional students continue to support the notion that a relationship does exist between age and academic achievement (Ganz & Ganz, 1988; Lammers et al., 2001; Yonker, submitted).

This study confirms the assertion that some traditional college

students lack mature and efficient strategies for self-learning (Clump et al., 2004; Ganz & Ganz, 1988; Lammers, et al., 2001; Yonker, submitted) as compared to non-traditional students. In fact, our data show a bimodal distribution within traditional students, with 42% reading "none to one quarter" and 36% reading "three fourths to all". Our results illustrate that some traditional students are well prepared to read the amount required for college courses, but a majority of traditional students are ill-equipped or unwilling to read the essential amount of text. On the other hand, it could be argued that the non-traditional students read more assigned text because they have gone back to school for intrinsic and interest reasons, thereby promoting the type of reading that provides deep personal satisfaction, interest and learning.

Although students who report reading the least amount of text tend to both skim the text and consider the reading level to be more challenging, our results are not clear which of these characteristics is the driving force behind lower levels of reading. Do the students read less because the text is too difficult or is the text too difficult because the students tend to skim less than 25% of the assigned reading? Our study was not designed to specifically answer these questions, yet we postulate that both factors may be at work to influence reading.

There are additional explanations for limited reading. One explanation could be that the professor failed to utilize the text by not linking reading to assessments. Another explanation would suggest that although professors link the textbook to assignments and examinations, the students failed to comply with reading the text. Thus, results suggest that professors need to highlight the importance of reading. To do this, professors can explicitly declare what constitutes effective reading strategies. This can be followed by giving reading tests and linking assessments more closely to reading. We concur with three of Steuer's (1996) suggestions to promote independent and effective reading: generation of summaries of text and personal reflection on the summarized material, as well as production of short research papers based on the assigned text.

Professors at 2-year community colleges and regional campuses may also want to involve non-traditional students in their

efforts to increase reading among all students. Having non-traditional students mentor traditional students in- and outside of the classroom concerning the importance of reading the textbook more deeply may encourage traditional students to engage in the material to a greater extent. Structured group assignments, including paired variations of those Steuer (1996) promotes, may allow non-traditional students the opportunity to scaffold the reading skills of traditional students in a less threatening way than one-on-one meeting with the professor or in sessions with a campus's study skills center. Whether provided individually or in a group setting, the prudent professor must seek ways to discourage students from skimming short passages of text but rather promote reading as a means to embrace the core knowledge as found in the text.

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# Applying ITD Model For Online Course Design And Development

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This paper demonstrates how to convert an existing classroom course into an online course by using Three-Dimension ITD (information, technology, instructional design) model. The course development consists of three phases: (a) course feasibility study; (b) course design and development; and (c) course evaluation. ITD model provides more than a framework for systematic online course design – it allows flexible integration of learning theories into online course designs. The course evaluation indicates a successful conversion of classroom course into online course.

## Online Course and Its Effectiveness

Allen and Seaman (2006) define online courses as those courses in which at least 80 percent of the course content is delivered online. According to Allen and Seaman, "nearly 3.2 million students were taking at least one online course during the fall 2005 term, a substantial increase over the 2.3 million reported the previous year", and that "Online students, like the overall student body, are overwhelmingly undergraduates." However, research findings on the effectiveness of online courses are inconclusive. In 1997, McCollum (1997) reported that online students displayed more collaboration and better performance compared to their traditional counterparts. McCollum's finding was later supported by studies conducted on nursing students (Nesler, Hanner, Melburg, & McGowan, 2001) and English as second language (ESL) students (Al-Jarf & Sado, 2002). At the same time, other studies (Nacarro, & Shoemaker, 1999; Schulman & Sims, 1999; Ryan, 2000) found no significant differences in student learning performance between online and classroom courses in various

subjects and settings. Waschull's research (2001) reported different findings: in one study online students scored lower on course tests and the final exam and were more likely to fail the course; in another study, no significant differences in student performance between the online and the classroom sections were found.

More recent studies (Daniel & Broida, 2004; Liu, 2005) indicate more positive findings of online course effectiveness. Daniel and Broida confirmed that web-based quizzing could be as effective as in-class quizzing. Liu reported a significant difference in student learning performance between online and classroom learners. This study includes both qualitative and quantitative evaluation to conclude that online students are better motivated and have learned more than classroom students.

**Three-Dimension ITD Model for Online Course Design**

The studies of the effectiveness of online course must examine the learning process which is often the center piece of course design. In 2003, Liu and Johnson proposed a new approach to the design of online courses, the Three-Dimension (3D) ITD Integration Model. The three dimensions were Information, Technology, and Instructional Design. The Information (I) dimension represents the learning or teaching content, and any supporting resources and materials. The Technology (T) dimension represents the hardware and software tools to enhance learning and teaching. The Instructional Design (D) dimension represents the principles and theories guiding the instructional design (Liu & Velasquez-Bryant, 2003). The model provides a theoretical framework to follow in the online course design.

Using the ITD model, an existing classroom course can be systematically converted into an online course and the outcome can be measured objectively. The complete process includes feasibility study, design, implementation and evaluation.

**Feasibility study**

In the fall quarter of 2005, the feasibility study was conducted with three computer science technology classes. All three classes started in classroom settings. The first three weeks of the instruction

was delivered face-to-face. Students then completed Exam One which covered the first three weeks' content learning. Exam One was served as a pre-test. Then the classes were divided into two groups on a volunteer basis: Group 1 were students who felt comfortable studying online and only came on campus to submit assignments and take the exams. Group 2 were students who preferred face-to-face instructions. Thereafter three exams were given: Exam Two and Exam Three covering content areas addressed after Exam One, and a comprehensive Final Exam. Exam One served as a pre-test. It was administered to all students before the two groups were formed and began the differentiated format of the last 7 weeks of the course. The Final Exam, administered after the differential experience in learning, served as a post-test. If the performances of the two groups on the Final Exam were compared, a major concern was the differences in the ability between the two groups that might be a confounding factor. In other words, the observed group difference on the Final Exam might result from the differences in ability between the two groups. To control ability differences, a gain score (Final Exam minus Exam I) was used as the indicator of progress. The gain scores between the two groups were tested to see if there were any statistically significant differences among students' learning progress in relation to their mode of learning (attending classes vs. taking the course online).

52 out of 58 students in three classes took both Exam One and the Final Exam. These 52 students were considered valid subjects. A t-test was run on the gain scores for the two groups with tails = 2, and type = 2 (two-sample equal variance). The t-test result is $p = 0.115$ ( $> 0.05$) and shows no statistically significant difference between the two groups of students in their gain scores. Table 1 provides descriptive statistics of the two groups.

| | Exam One | | Final Exam | |
|---|---|---|---|---|
| Group | M | SD | M | SD |
| Group 1 (38) | 88 | 17 | 83 | 11 |
| Group 2 (14) | 88 | 17 | 77 | 17 |

Legend: M: Mean, SD: Standard Deviation

Table 1
Overall Result: Mean and Standard Deviations by Group

Based on the positive result of this feasibility study, online computer science technology classes were offered in all the four quarters of 2006.

**Online Course Design and Implementation**

**Design of the Online Course**

The integration of the classroom curriculum into the online curriculum followed the Three-Dimension (3D) ITD Integration Model. This model emphasizes the integration of all three dimensions in a course design: no single dimension or any combination of just two dimensions in this model will produce effective learning (Liu & Johnson, 2003). Figure 1 illustrates the conversion of classroom curriculum to online curriculum using 3 D ITD Integration Model.

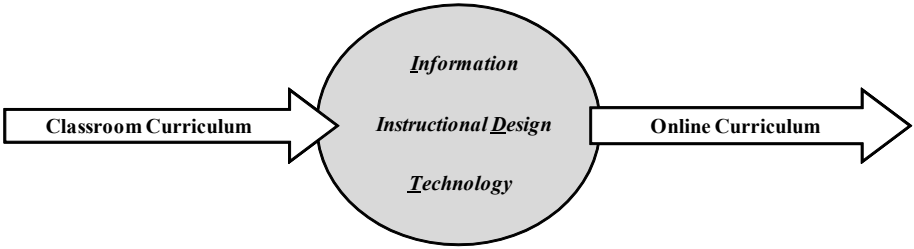


Figure 1. Conversion of Classroom Curriculum to Online Curriculum Using 3D ITD Integration Model

The first dimension of the (3D) ITD model is *Information (I),* the learning content and any supporting resources and materials. For this online course, the instructor contact information, course syllabus, course schedule, textbook information, lab examples, PowerPoint presentations, and assignment sheets used in classroom teaching were all uploaded into the following sections of Blackboard: Staff Information, Syllabus, Textbook Information, Course Document, and Assignments. In-class discussion and interaction among the students and between the students and the instructor were not so easily converted. In their place, the following tools were included in Blackboard: the Communications section with discussion boards and email functions, the External Links section with useful Internet resources, and the Grade Book section were added to provide for interaction, convenient communication, and timely student progress reporting.

The second dimension is *Technology* (T) which represents the hardware and software tools that can be used appropriately to support the learning process. To take this course, students were advised to take a self assessment quiz to determine if they possessed the basic software skills and had access to adequate hardware equipment to effectively use the course material. At the beginning of the class, students were given another pretest to confirm their preparation for taking the course online. Students must also have access to the specific software application used to complete the assignments. Students who did not have personal copies of the software might work in a computer lab on campus. However, no instructor was present in the lab while they were doing the assignments so their experience was similar to those students who worked solely off-site.

In this course, class communication was conducted via email and discussion boards. The structured format for email and discussion board was enforced. An optional orientation session was provided to the students who had never taken an online course before and/or to the students who lacked confidence on using Blackboard and email.

The third dimension in the model is *Instructional Design* (D) which represents a set of rules for systematic design of an online course. The rules for this course were that each learning module must

include a three-step learning process:

- familiarize students with the basic concepts of that module content
- provide students with step by step hands-on exercises
- encourage students to apply what they have learned to the real world situation by completing a given scenario

There are five modules in this course: Computer Hardware and Software, Computer Operating System, Word Processing, Worksheet, and PowerPoint Presentation. The proctored midterm exam and final exam consisted of two parts: a written part in which students answer written questions and multiple choice questions and a lab part in which the student must use the computer to apply the lessons and produce a lab result. Both formats were used in order to test student mastery of basic concepts and application skills.

**Implementation of the Online Course**

The integrative theory in the study of Vermunt and Vermetten (2004) identified student learning activities in three categories: cognitive processing activities, affective activities, and regulation activities. The theory also identified instructor teaching functions as promoting high-quality student learning. The theory was used as a conceptual framework in implementation of this online course.

*Cognitive processing activities* are those thinking activities that students use to process subject matter. This online course guides students to relate the components of computer and the Internet to the information processing cycle, post their own exam questions, provide their own examples of computer terminology, and apply their learning to given scenarios. These activities lead to learning outcomes at the knowledge, comprehension, and application levels.

*Affective activities* involve emotions that arise during student learning. These emotions lead to affective states that may positively, neutrally, or negatively influence the progress of a learning process. To release students from the anxiety of waiting, the instructor responded to student email inquiry and discussion board posting in a timely manner, usually well under 12 hours. For the same reason, the grade

book was updated with their scores immediately after each due date. After each grade posting, the instructors asked students to check their grade book for discrepancies. Not only did this invitation allow the instructor to quickly make corrections, it also indicated to the student that the instructor was open to discussion. Students were required to self-evaluate their assignments before submission and followed by individualized feedback from the instructor, further promoting a sense of recognition and connection with the instructor. There was also a strong disincentive to falling behind; assignments that slip one week lost 25% of the available points. After one week, no points could be earned on the assignment. Students felt motivated to learn with their best efforts.

*Regulation activities* direct the course of cognitive and affective processes, which indirectly lead to learning outcomes. Regulation in this online course involved an orientation session on the course outlook, policies, requirements, and, basic technology skills. In addition, the instructors monitored student learning and, if necessary, adjusted or enhanced learning activities via the discussion boards, announcements, and emails. Comments on individual student work, study guides on each project, weekly summaries of class performance, and two proctored exams guided students through the entire quarter. Strictly observing the class schedule guaranteed that the learning process proceeded as planned.

The interplay between student self-regulation and instructor external regulation may give rise to either congruence or friction between learning and teaching strategies. This online course employed weekly logs to reduce the destructive friction between learning and teaching strategies. Students exerted self-regulation through their weekly logs reporting what they had learned, what they needed to improve, and what they planned to do. The instructors kept the record of student weekly logs and monitored their learning process. Weekly logs are weighted 5% of student final grade in this course.

**Supporting Services of the Online Course**

The students for this online course were located over all 5 campuses of the Ohio University as well as other regions of the

country. Supporting services are important for increasing enrollment, solving technical problems students may encounter in their learning, and guaranteeing a fair exam procedure.

The university online education office was responsible for answering generic questions to student inquiries and coordinating among the exam proctors at all campuses and other universities. The instructors sent the exams and exam guidelines to the online education office and the office distributed the documents to all proctors, including proctors at other colleges for those students who lived a great distance from our location. The students went to the closest site to take the exams and submit the results online, leaving a copy with the proctor in case their online submissions were lost.

The computer services and libraries facilitated the online classes with lab assistants and tutors. The contact information sheet was available online so that students knew where and who they could go for help. This support allowed the instructor to concentrate on the effective delivery of the course curriculum and individualized feedback. Time constraints would prevent this interaction if the instructor was overwhelmed with questions, inquiries, and services the supporting office and staff could handle.

**Online Course Evaluation**

The online course evaluation used the same method as the one used for the feasibility study to evaluate the learning outcome for both face-to-face classes and online classes – t-test on the gain scores for the online classes and the face-to-face classes. During the winter, spring, summer, and fall quarters of 2006, four face-to-face classes and seven online classes were taught with the same textbook, learning objectives, instructors, teaching strategies, and learning materials. The only difference is the delivery method – online vs. face-to-face. A pretest was given to all the students at the beginning of the quarter, a midterm exam was halfway through the quarter, and a final exam was given at the end of the quarter. Both online classes and face-to-face classes completed the same assignments and both took the same pretest, midterm exam, and final exam. The gain score, used as the indicator of the academic progress, were calculated from the average score of the midterm and final exam minus the pretest score.

**Data collection**

71 out of 78 students in five face-to-face classes and 125 out of 134 students in seven online classes completed the course. A total of 196 students took all three tests: the pretest, the midterm exam, and the final exam. They were considered valid subjects. The observation on student computer use performance during the midterm exam and the final exam was conducted by the instructors and proctors. 16.9 % of the classroom students (12 out of 71 students) raised questions or had problems when downloading files or submitting the exam result via email attachments. 3.2 % of the online students (4 out of 125 students) had similar problems during the midterm exam and the final exam.

**Analysis**

Students' gain scores were determined by the difference between their average scores on the midterm and final exams and the pretest scores. Excel was used to run a t-test on the gain scores for the two groups of online class and face-to-face class with tails = 2, and type = 2 (two-sample equal variance). If there was no statistically significant difference between the two groups, it was assumed that there was no observed performance difference associated with the instruction delivery method – online vs. face-to-face.

**Findings and Conclusion**

The t-test result is $p = 0.842$ ($> 0.05$) and shows no statistically significant difference between the online students and the face-to-face students in their gain scores. The result supports the feasibility study result stated in this paper, and also supports some earlier study results from the courses of other subjects. A systematic approach to conversion of a classroom course into an online format can be done without loss of learning progress by the student. Table 2 provides descriptive statistics of the online and face-to-face classes.

| | Pretest Score | | Average Score | |
|---|---|---|---|---|
| Class | M | SD | M | SD |
| Online (125) | 75 | 9.24 | 86.28 | 11.74 |
| Face-to-Face (71) | 68 | 10.04 | 80 | 16.28 |

Legend: M: Mean, SD: Standard Deviation

Table 2
Overall Results: Mean and Standard Deviations by Class Type

The observation of student computer use performance made by the instructors and proctors indicates that the online students seem more confident with downloading files and sending email attachments. A contributing factor might be that the online students were required to use email and discussion board as main communication tools. They submitted their assignments via email attachment at least twice a week and posted on the discussion board at least once a week.

The following are important contributors to the success of the design and implementation of the online course:

- established course design framework (i.e. ITD)
- current learning theories
- accurate and concise wording of all course materials
- student self-assessment, pretesting, and orientation
- significant self and external regulation
- timely feedback (< 12 hours)
- hands-on component to examinations
- proctored examinations and labs
- weekly logs completed and submitted by students

These factors reflect the integration of multiple curriculum elements of effective online course design by using the ITD model, from setting course goals to applying relevant learning theories to guide learning processes, from broad course design framework to detailed specifics of online learning activities. ITD Model provides

only the technical and theoretical framework of online course design and development. The success of an online course design depends on the correct application of the model and integration of appropriate learning theories and learning environments for each specific course.

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# Crucial Components of Online Teaching Success: A Review and Illustrative Case Study

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**Abstract**

A literature review provides the framework for presenting a case study illustrating the crucial components of learning on line. Best practices derived from the literature focus on high communication and high structure within an online course to facilitate learning. Students' comments in discussion boards from the case study supported the importance of instructor responsiveness and effectively structured course. Students' motivation for taking the online course included convenience, economic issues, and personal learning style. The amount of peer and instructor interaction with students was quantified, and students were determined to have participated in the course more than would have been expected. Instructors are provided with metrics and illustrative examples to enhance their online courses.

## Crucial Components of a Successful Online Learning Experience

Enrollment in online courses continues to soar. Many schools have exceeded the prediction by Golden (2006) that student enrollment in online degree programs would be 10% by 2008 (Messina, 2008). More colleges plan to offer online education for reasons as varied as meeting students' and their employers' needs for flexibility in scheduling to reducing the institution's per student costs (Cavanaugh, 2005; Howell, Williams, & Lindsay, 2003). Recently gas prices have driven more students to seek online education (Dillon, 2008). Given that students identify convenience as a leading reason for taking online courses (Cavanaugh, 2005; *Attitudes and Opinions*, 2002) and given colleges' challenges to compete in the growing education industry, the availability of online courses will continue to grow.

**Brief Literature Review and Conclusions**

The literature review addresses: a) instructor issues in teaching online, b) student characteristics that affect online learning, and c) the impact of online course structure on learning with emphasis on the role of communication and structure.

Although demand is great, teaching online can be a new experience for many college instructors. Even those with online teaching experience often fail to appreciate the differences between an online course that uses technology in a way that enhances learning and one that does not. Adapting to this new medium requires modifying traditional teaching practices and finding new ones (e.g., Rovai, 2004). However, often instructors lack the type of training to utilize online media appropriately (Piotrowski & Vodanovich, 2004). As a result, even if instructors choose to teach online, they often move material from a classroom setting into an online environment with little or no modification (Easton, 2003). Failure to accommodate the online environment is likely to reduce learning because delivering material online changes how students learn and experience it (Ellis, Goodyear, & O'Hara, 2006; Hobbs, 2002). Furthermore, the lack of nonverbal cues and opportunities to see via facial expressions impairs instructor's responsiveness (Easton, 2003). As a result, the shift to online teaching will require significantly more professional and course development time compared to teaching in the traditional classroom environment (Hill et al., 2004; Oliver, 2004). Finally, recent research suggests that student learning in online courses varies greatly (Bernard, Abrami, Lou, Borokhovski, Wade, Wozney, et al., 2004), suggesting, among other things, that some instructors fail to build essential components of online teaching and learning into their courses.

Some types of individuals learn more effectively in online courses that other students. Typically, students who have an internal locus of control, are intrinsically motivated, are self-disciplined, and are introverted do better in an online class than their peers (Finley, 2005; Waschull, 2005). Also, computer self-efficacy, internet self-efficacy, and problem solving self-efficacy have been show to impact online enrollment and success (Bates & Khasawneh, 2007; Solimeno, Mebane, Tomai, & Francescato, 2008; Thompson & Lynch, 2003).

Although students have a role to play in being effective online learners, student behaviors are also influenced by the course requirements established by the instructor. Research shows that the structure of the course and amount of discussion required in the course are key elements (Hill, Wiley, Nelson, & Han, 2004). Perhaps because of the lack of face-to-face contact, instructors of online classes must know to how create user-friendly (extremely clear) explanations of assignments, take more care in structuring the course, and require frequent discussion among students in order to obtain the most effective learning outcomes (Hill, et al., 2004; Smith et al., 2003; Vrasidas, 2000; Wang & Newlin, 2000). Research indicates that instructors can improve online learning by providing detailed syllabi, offering clearly articulated assignments, carefully structured course objectives, tracking student progress toward those goals, and actively participating in discussion boards and email (Easton, 2003; Ellis et al., 2006; Hobbs, 2002; Jiang & Ting, 2000; Smith, Ferguson, & Caris, 2003). Therefore, in online courses, a high level of communication with a high level structure of produces the best learning outcomes. But what constitutes a highly communicative and structured course?

First, consider communication online. Communication within an online course can occur between student and instructor, students and student, and student and content (Rovai, 2004). Jiang & Ting (2000) found that students perceived that they learned more in online courses that emphasized online discussion. Interaction that leads to deep discussion of the material and interaction that leads to a feeling of community generally leads to improved students outcomes (Jung, I., Choi, S., Lim, C., & Leem, J., 2002). Easton (2003) and Rovai (2004) emphasize instructor to student communication to engage students, particularly by providing very timely feedback.

Next, consider the structure of an online course. Understanding what constitutes a high-level of structure is difficult. Many articles provide written descriptions of what to include or steps to follow (Carr-Chellman & Duchastel, 2000; Chamberlain & Vrasidas, 2001; Hill et al., 2004; Rossner-Merrill, Parker, Mamchur, & Chu, 1998). However, with the noted exception of Bellefuille, Martin & Buck (2005), few sources offer specific examples of structure. That is,

instructors are admonished to provide steps for students to follow with clear indication of what is to be accomplished at each step, but best practice examples with pictures are hard to find. Books also often fail to provide pictures of what a well-structured online course should literally look like (e.g., Envig, 2006; Finley, 2006; Hiltz & Goldman, 2005; Ludwig & Perdue, 2006). Even well respected books on web design, fail to make the link between best practices in web design and best practices for teaching via the web (e.g., Horton, 2005). Perhaps these omissions are purposeful to avoid the suggestion that there is only one way to create an online course. However, it is unlikely that an instructor's idea of a well structured course is similar to a student's idea of a well-structured course. By searching the internet, one can find examples of effective teaching web pages. However, the links to these pages can be lost due to changes in the computer environment that houses the web pages. Therefore, more examples in the literature would be beneficial.

**Case Study**

In light of these findings, we present a case study to a) explore the factors that draw students to online courses, b) evaluate specific instructor interventions that create an effective online learning experience, and c) provide illustrations to describe effective course structure. Findings provide an example for instructors who teach online with regard to levels of communication needed and the qualities of course structure required to create an effective learning experience.

**Method**

**Procedure**

*Criteria for course selection.* The course selected was taught by an experienced online educator who had received excellent evaluations by online students. Also, note that the students in the class excelled in the class (only one student failed to finish and the course grade point average was over 3.0). The class was a five week summer course entitled *Positive Psychology* and was offered to both undergraduate and graduate psychology students. A total

of 16 students, 15 undergraduate students and 1 graduate student, participated in the course. All students were female, ranged from sophomores to seniors or beyond, and included a roughly equal distribution between traditional and nontraditional learners.

*Data collection.* Students' reasons for taking the course and the amount of communication within the course was examined. The discussion board from the course provided data. There were a total of 698 postings on the discussion board. Note that the course was organized into nine steps accompanied by nine discussion boards. Students were required to make two postings to each board, such that by the end of the course, a student must have made 18 postings to receive full credit for class participation (nine of the 18 postings were to be replies to another student). Students were also required to submit two one-page reaction papers for seven of the nine steps. The first focused on the readings for the step, and the second involved an internet activity.

*Content analysis.* A course observer selected keywords (e.g., "organization" or "convenience" and related words) and tallied the number of times they occurred in students' postings. The observer also tallied instructor and student postings to determine the amount of instructor to student and student to student participation. To evaluate instructor to student interaction, total student posts were compared with total instructor posts. The total number was used because the instructor would often address multiple student posts within one posting to ensure that a point was understood by all participants in a particular thread of discussion (which has reduces the total number of instructor posts). Although the data are not perfect, counting only linkages between the instructor and individual students would have provided data that were less accurate. To evaluate student to student participation, only posts made by students with replies by students were used. No posting that was in response to the instructor was included.

**Results**

Of the 698 postings to the discussion board, 38 had to do with students' online experience. All 16 students posted one or more of the

38 entries. These postings were organized into two groups. Group one postings describe the advantages of taking online versus traditional courses and are presented in Table 1. Group two postings describe students' perceptions of the current online course and are presented in Table 2. Note that the numbers in the tables will not add to 38 because one posting may have included multiple advantages and/or perceptions of the course.

As in prior research (e.g., Cavanaugh, 2005), students cited convenience in scheduling most often when commenting about the advantages of online courses. Second, economic reasons were reported due to the high price of gasoline at the time. The remaining comments describe personal preferences for online courses due to personality or learning style. Of all the postings, only two students wrote comments that expressed some type of concern: "I do prefer traditional classes…"; "…I'm not computer savvy."

Table 1. Group 1: Advantages of online versus traditional courses.

| Advantage | Number of times mentioned |
|---|---|
| Online courses provide more flexibility for students' schedules. For example, "I am glad that this is such a flexible class …. I would never be able to take it since I work 12 hour days every day…." | 5 |
| Online courses eliminate long commutes. For example, "Gas prices have caused a severe financial burden on me …since I have to drive main campus…." | 4 |
| Online courses are advantageous for shy people. For example, "… the discussion board allows people to really talk without feeling inhibited since they are not face to face with other students." | 3 |
| Online courses enhance participation relative to traditional courses. For example, "… participation is greater and I personally get a great deal out of learning from other people…." | 3 |
| Some people wrote general positive comments about online courses. For example, "I love online classes….I'm sure this one will be no different." | 3 |

Next, student perceptions of the current online course were evaluated to determine what factors influenced student perceptions of the course. As shown in Table 2, the primary items cited by students were the high level of participation and organization in the course. Careful organization of the content, such as the use of a step-by-step format throughout the course, and cultivation of a highly interactive online learning community promoted student satisfaction and learning. Other comments cited specific assignments given and full utilization of online capabilities as enhancing the learning experience.

Table 2. Group 2: Perceptions of the current online course.

| Perception | Number of times mentioned |
|---|---|
| Students experienced a high level of camaraderie and participated heavily in the course discussions. For example, "If I have 5 minutes to spare, I run back … to see what kinds of responses are on the discussion board." | 15 |
| Students found the course to be well structured with clear expectations. For example, "I really like the structure and that everything is outlined in an easy to find format." | 12 |
| Students stated specifically that the course was superior to other online courses he or she may have taken. For example, "I would like to say that this is the best experience in an online class that I have had …." | 6 |
| Students specifically stated that the level of learning in the course was superior to other courses. For example, "These exercises are terrific for working the brain!" | 5 |
| The course used all online capabilities. "The online courses I have taken do not to utilize all of the tools…such as the home page function." | 1 |

Next, an analysis evaluated the level of participation in discussion boards. Nine separate discussion boards were created by the instructor to correspond to the nine steps required to complete the course. Each student was required to make two postings per board

such that each student should have made 18 postings to satisfy the participation requirement (recall that nine of the 18 postings were to be replies). Table 3 shows the number of postings per board.

Table 3. Discussion Posts by Board

| Student | Discussion Posts by Board | | | | | | | | | Totals |
|---|---|---|---|---|---|---|---|---|---|---|
| | Board 1 | Board 2 | Board 3 | Board 4 | Board 5 | Board 6 | Board 7 | Board 8 | Board 9 | |
| 1 | 10 | 8 | 8 | 7 | 11 | 6 | 5 | 5 | 1 | 61 |
| 2 | 6 | 11 | 11 | 5 | 3 | 6 | 3 | 1 | 3 | 49 |
| 3 | 9 | 3 | 6 | 7 | 4 | 7 | 4 | 3 | 2 | 45 |
| 4 | 2 | 4 | 6 | 5 | 3 | 4 | 3 | 5 | 3 | 35 |
| 5 | 2 | 4 | 6 | 2 | 4 | 3 | 3 | 4 | 2 | 30 |
| 6 | 3 | 3 | 5 | 4 | 5 | 2 | 3 | 2 | 1 | 28 |
| 7 | 3 | 2 | 3 | 4 | 2 | 5 | 4 | 2 | 2 | 27 |
| 8 | 4 | 2 | 4 | 4 | 3 | 2 | 3 | 3 | 1 | 26 |
| 9 | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 24 |
| 10 | 4 | 4 | 2 | 2 | 2 | 0 | 3 | 2 | 3 | 22 |
| 11 | 2 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 1 | 21 |
| 12 | 4 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 1 | 20 |
| 13 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 19 |
| 14 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 18 |
| 15 | 3 | 0 | 2 | 0 | 2 | 2 | 2 | 2 | 1 | 14 |
| 16 | 2 | 0 | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 8 |
| **Student Total** | **64** | **53** | **65** | **53** | **52** | **49** | **44** | **41** | **26** | **447** |
| **Instructor** | **31** | **30** | **30** | **33** | **29** | **27** | **29** | **23** | **19** | **250** |
| **Observer** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **1** |
| **Board Total** | **95** | **83** | **95** | **86** | **81** | **76** | **73** | **64** | **45** | **698** |

The mean number of postings per student was 27.94 with a standard deviation of 13.71. A t-test was performed to determine if the mean number of postings per student was significantly higher than 18. The results yielded $t(15) = 2.90$, $p = .0055$, indicating that the number of posts was significantly more than 18.

Instructor participation was also evaluated given prior research indicating that interaction influences student satisfaction and participation. The ratio of student to instructor postings was 1.79. That is, for every 1.79 student postings, the instructor made one posting. Note that these numbers include all student postings, not only those postings where the instructor was communicating with a specific

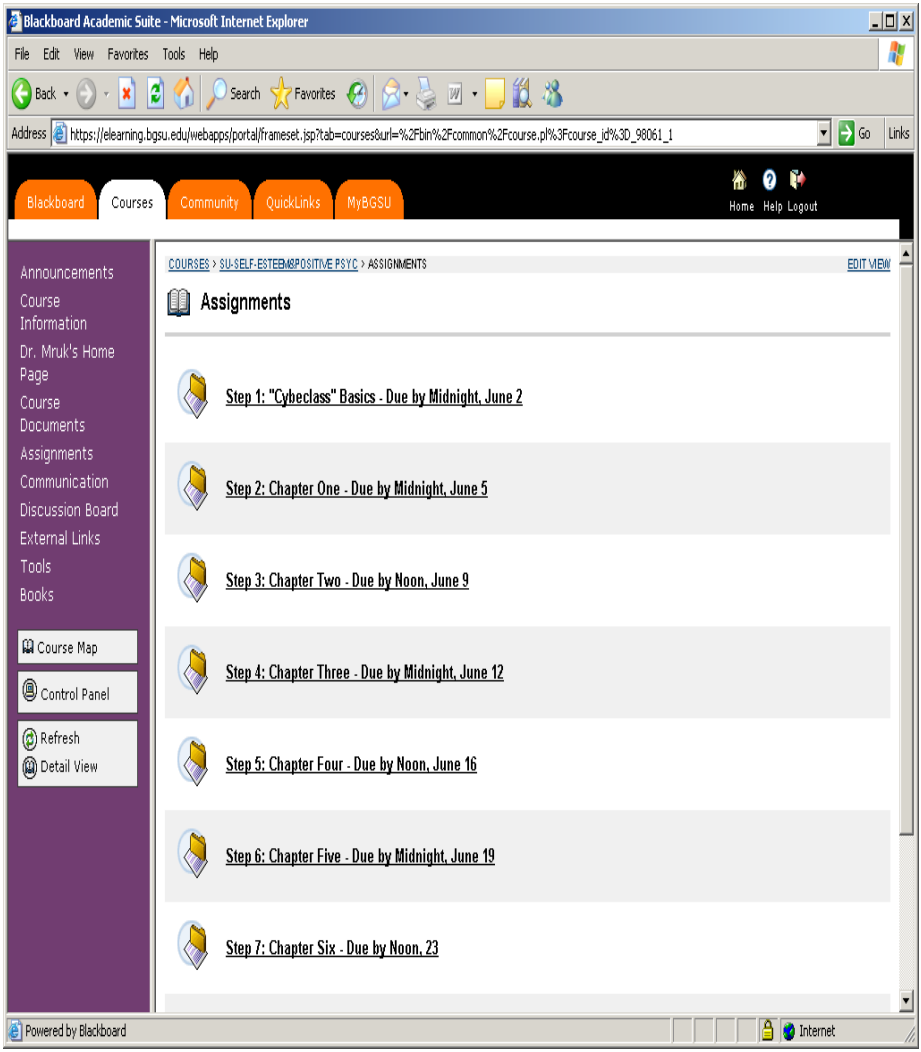
student. Again, the total number was used because the instructor would often address multiple student posts within one posting (which would reduce the total number of instructor postings). Therefore, the 1.79 number should be considered a conservative estimate. This finding indicates that the instructor had a very high level of interaction with students on the discussion board.

The timeliness of instructor responses to students was also evaluated. Of the 241 replies to students' postings, 182 (75.52%) were made the same day, 54 (22.41%) were made the following day, and only five replies (2.07%) were posted 2 or more days after the post. Note that the majority of instructor replies that occurred after one day were in response to students' late night postings. These postings were typically responded to by 8:00 a.m. the following morning.

Student to student participation was also evaluated. The ratio of student replies to another student's posting was 1.45. That is, for every one student posting, other students made 1.45 reply postings to the student. Using the course requirement that students post one reply per module, the ratio would have been expected to be no better than one to one. Students' replies to the instructor were not counted in this analysis. This finding indicates that the students also interacted heavily with each other on the discussion board.

The next several figures pictorially describe the structure of the course, which was identified by students as being very important to their learning. These figures are included to provide specific guidance to other instructors regarding what, for this class, constituted an effective course structure that lead to high student achievement. Figure 1 contains a view of the assignment section of the course's website. Assignments and due dates are clearly provided. Note that this page is broken down into boards to guide students through the course. Only boards one to seven could be included in the screen shot, although the boards continued up to board nine.

Figure 1: Assignments section of the course.



The screenshot in Figure 2 is displayed if a student clicks on the "Step 1: Cyberbasics…." web link on the webpage shown in Figure 1. It provides an introduction for students and takes them though some simple steps to begin building an online learning community.
Figure 2.

Figure 2. Section of step 1 used to orient students to the online environment.

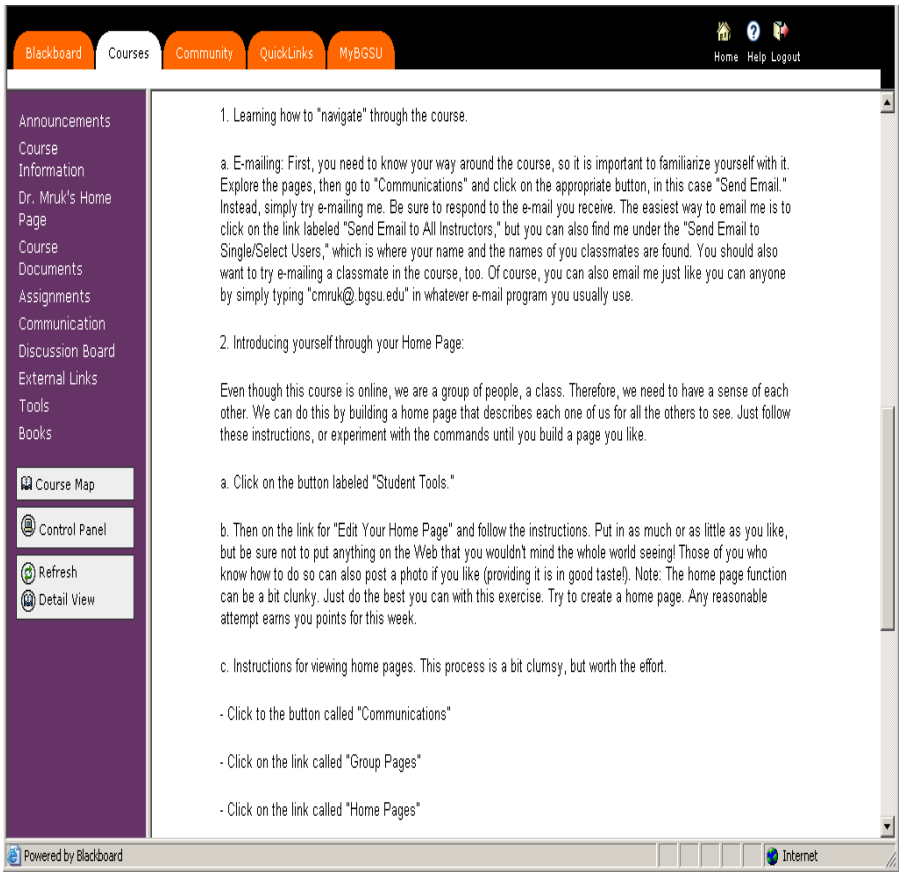


Figure 3 shows how a given step (in this case step 2) is broken into parts for students. Students can clearly see what is required to complete the step and can complete the required activities in the correct order.

Figure 3. Detailed view of step 2 of the course.

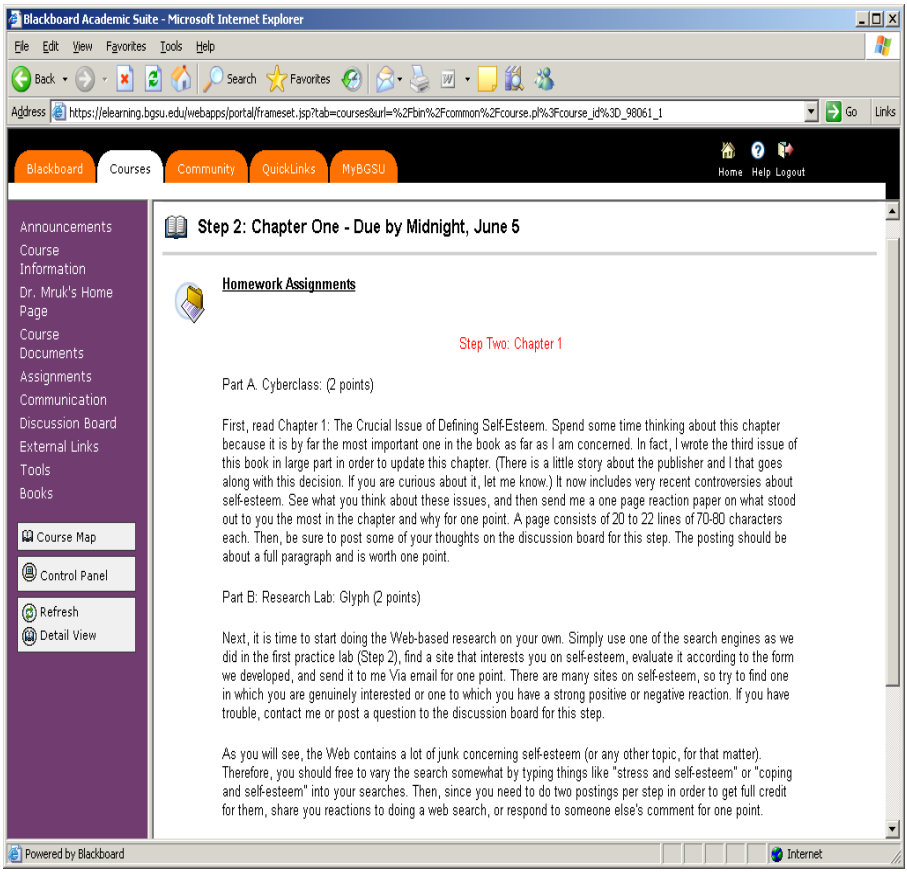
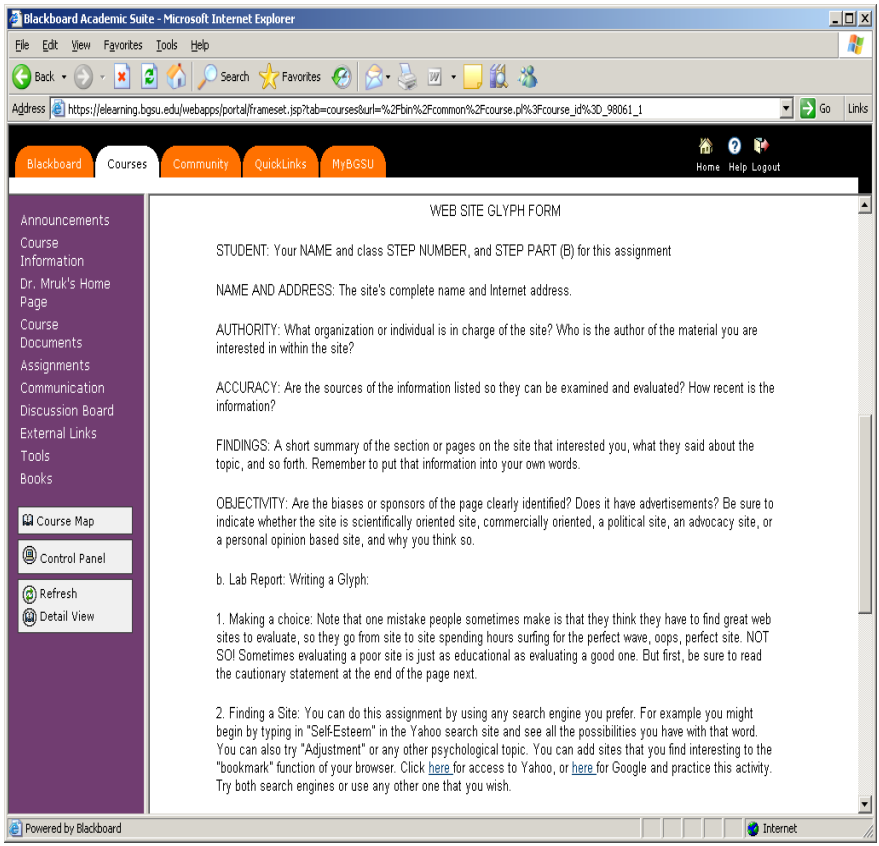


Figure 4 shows the template used for the Research Lab assignment in step 2 part B. The template provides a clear framework for completing the assignment, including questions students must respond to and guidelines for topic selection.

Figure 4. Description of research lab assignment.



**Discussion**

The results suggest that online courses will continue to be popular because they meet scheduling and personal needs. Students appreciate that the flexibility of online courses allows them to meet work and family obligations while making degree progress. Many students find online courses to meet their personal needs. For example, shy students feel less inhibited in the online environment. These findings are consistent with Finley (2005).

The critical roles of instructor and student interaction and course structure were examined as factors that providing an excellent learning experience. The level of instructor and student participation made a clear impact on students' satisfaction with the course and, from their reports, the level of learning that took place. On average, the student posting to instructor posting ratio was 1.79 to 1, less than 2 to 1, with the student to student ratio being 1.45 to 1. The value of having numbers instead of a verbal descriptions or interpretations is that numbers can provide benchmarks for instructors when evaluating the interaction in a course. Students reported rushing back to their computers to see what others had posted, being able to count on the instructor to give personal attention to their posts, and having any anxiety about the course reduced due to the approachability of the instructor and collegiality engendered through the course discussion boards. The result of this level of involvement is shown in the statement, "…of all the online classes I have taken over the past three years, this … one has had the most consistent participation and enthusiasm!" Note that the timeliness of instructor feedback to students' written assignments was similar to the timeliness of discussion database postings.

The case provides clear examples of the level of structure required to achieve an online interface that students find inviting and easy to use, as shown in the figures. Student comments, such as, "I really liked how the professor set up the weekly assignments … it was easy to follow and it kept [me] apprised of when something was due," underscore the responsibility of the instructor in carefully organizing content online.

Unfortunately, the need for the crucial components of clear

course structure and a high level instructor involvement is often under appreciated by many online instructors, even experienced ones. Instructors may be loath to spend additional time to create a detailed course structure or engage in a high level of interaction online (Wong, 2003), especially when they perceive themselves to be teaching effectively already. However, the problem may also reflect a more fundamental issue concerning basic differences between traditional and online teaching environments and strategies. Easton (2003) describes the need for online instructors to engage in a "paradigm shift" regarding their approach to time and student management and in gaining skills to utilize virtual class management techniques and engage students through virtual communication. Oliver (2004) reports that teaching online has transformed instructors' work, especially in terms of developing a greater appreciation for effective time management. At the very least, it is clear that effectively teaching online requires a willingness to spend considerable time and energy on developing and running a class. In the end, teaching and learning well online is not a matter of simply transposing material and techniques from one format to the other. In short, teaching well online may indeed involve something of the paradigmatic shift Easton (2003) mentions. The present research and prior research call on instructors to recognize the importance of course structure, clarity, and willingness to spend time interacting with students to ensure effective online learning experiences.

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# Is There Any Correlation In An Inquiry Class Between Students' Perceived Topic Difficulty And Their Performance?

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**Abstract:**

Several techniques were developed to track what sections of Physics by Inquiry's *properties of matter* module were most difficult for students in their own view. These techniques and their analysis allows us to see what elements of the course are the most difficult.

## Introduction

Physics by Inquiry (PbI) is a general course for prospective teachers taught with the expectation of student mastery of the subject through hands-on experiences and reasoning on the basis of that experience in new situations (Aubrecht, 2004; Aubrecht, 2005). Several versions of the course are taught at Ohio State.

Our present study is part of our ongoing formative evaluation of PbI. This paper is concerned with investigation of the "properties of matter" PbI course. It builds on work I have previously done in studying the "electric circuits" PbI course (Bowman and Aubrecht, 2007; Aubrecht and Bowman, 2008).

The Physics by Inquiry (PbI) class is taught with student groups doing experiments and interacting with the instructors. Students are checkpointed by instructors as they do experiments in a section. Before students work on a section, they fill out a diagnostic sheet. After finishing a section, they rework the diagnostic on the basis of what they've learned within that section. Students are asked to explain what they've learned in the section and to rate the section's difficulty (as they saw it) on a scale from 0 to 6. Figure 1 shows a diagnostic.

In addition, there is a question of the day at the beginning of each class. The students are also asked to rank the difficulty—this time of the preceding day's classwork. These diagnostic and question of the day "difficulty rankings" as well as other data constitute our dataset.

For this paper, we concentrate solely on the diagnostic difficulty. Forthcoming work will expand the analysis to the other dimension.

**The Data**

I compiled data from six sections of the Physics by Inquiry class Physics 106 (properties of matter, PoM), with a total student number of N = 107. Table 1 shows the distribution of these students.

Table 1. Sections and numbers of students.

| Quarter | Number of Students |
|---|---|
| Winter 2006 | 22 |
| Autumn 2006 | 13 |
| Winter 2007 | 27 |
| Autumn 2007a | 10 |
| Autumn 2007b | 12 |
| Winter 2008 | 23 |

The PoM sections examined in this paper, and the topics covered in those sections, are: Sections 1, 2, and 3, balance & mass; Sections 4 and 5, mass and uncertainty; Sections 6, 7, and 8, volume; Section 9, proportional reasoning; Sections 10 and 11, math interpretation and density; Sections 12 and 12a, sinking, floating, and density; Section 13, graphical interpretations of density; Sections 14 and 15, equations' meanings; and Section 16, analogies.

The most obvious way to see which topics are most difficult for students is to look at the students' own rankings, of course, but other indirect methods must also be utilized. Self-reporting is fraught with the possibility of misapprehension or misstatement as well as other difficulties, so it is essential to have other dimensions of difficulty examined for consistency's sake.

Some diagnostics also are harder than others as rated by students. Table 2 shows how students rated them in terms of average perceived difficulty. (Note that the Winter 2006 section was when I first began to use diagnostics, so there is no diagnostic 1 for this section.) The table shows that the consensus changes somewhat among

the sections, but that, overall, Sections 4 and 5 and Section 13 are among those considered most difficult by this criterion.

Table 2. Diagnostic rankings by students.

| Reported Difficulty | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 12a | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter 06 | | 3.6 | 3.4 | 5.1 | 4.1 | 3.8 | 4.1 | 3.3 | 4.5 | 4.0 | 4.1 | 4.2 | 3.8 | 3.3 | 3.0 | | |
| Autumn 06 | 2.8 | 2.4 | 1.4 | 4.5 | 2.3 | 2.3 | 2.2 | 2.0 | 1.6 | 2.2 | 2.3 | 2.4 | 1.5 | 4.8 | 1.5 | 1.7 | 1.0 |
| Winter 07 | 2.1 | 2.3 | 2.4 | 3.2 | 3.8 | 3.0 | 3.2 | 2.7 | 3.7 | 3.1 | 3.1 | 3.3 | 3.2 | 3.3 | 3.3 | 2.0 | |
| Autumn 07a | 3.7 | 2.9 | 1.5 | 3.6 | 3.0 | 3.0 | 2.3 | 2.2 | 2.2 | 2.0 | 1.2 | 2.8 | 1.4 | 2.6 | | | |
| Autumn 07b | 3.4 | 2.8 | 1.3 | 4.8 | 2.5 | 2.8 | 1.4 | 1.6 | 2.0 | 2.1 | 1.9 | 2.4 | 2.1 | 2.0 | 2.3 | | |
| Winter 08 | 3.4 | 3.1 | 1.5 | 2.3 | 2.5 | 2.7 | 1.4 | 2.5 | 1.8 | 1.5 | 2.3 | 1.6 | 1.2 | 2.1 | | | |

Table 3. Number of diagnostics not completed.

| Number of uncompleted diagnostics | Number of students | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 12a | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter 06 | 22 | | 7 | 8 | 4 | 14 | 6 | 5 | 10 | 9 | 9 | 7 | 12 | 10 | 10 | 15 | 20 | 22 |
| Autumn 06 | 13 | 5 | 3 | 1 | 7 | 3 | 2 | 2 | 3 | 4 | 2 | 6 | 3 | 4 | 9 | 3 | 6 | 13 |
| Winter 07 | 27 | 6 | 2 | 2 | 7 | 6 | 1 | 7 | 6 | 7 | 5 | 11 | 13 | 17 | 25 | 25 | 24 | 27 |
| Autumn 07a | 10 | 4 | 3 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 10 | 10 | 10 |
| Autumn 07b | 12 | 0 | 0 | 0 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 3 | 9 | 12 | 12 |
| Winter 08 | 23 | 3 | 4 | 2 | 6 | 5 | 5 | 3 | 6 | 7 | 4 | 9 | 7 | 7 | 17 | 23 | 23 | 23 |
| Totals | 107 | 18 | 19 | 17 | 32 | 33 | 20 | 22 | 31 | 33 | 25 | 42 | 41 | 44 | 69 | 85 | 95 | 105 |

We can alternatively look at how many students did not have diagnostics accepted, as shown in Table 3. The greater the number that did not complete a diagnostic implies indirectly that that diagnostic was more difficult to complete successfully, which (again indirectly) implies the subject matter difficulty. By this criterion, Section 13 is quite difficult (the higher sections may be misleading because the end of the quarter prevented some groups from completing these sections, but all groups had completed Section 13). Sections 11, 12, and 12a are not completed by some 40% of students. Sections 4 and 5, and 8 and 9 also have fewer than the sections that most people complete. Section 3 seems to have been easiest for most students to complete.

| Reported Diagnostic Difficulty | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 12a | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter 06 | | 3.57 | 3.39 | 5.13 | 4.06 | 3.76 | 4.08 | 3.25 | 4.54 | 4.00 | 4.10 | 4.17 | 3.85 | 3.29 | 3.00 | | |
| Autumn 06 | 2.75 | 2.40 | 1.42 | 4.50 | 2.27 | 2.27 | 2.18 | 2.00 | 1.56 | 2.18 | 2.25 | 2.40 | 1.50 | 4.75 | 1.50 | 1.71 | 1.00 |
| Winter 07 | 2.05 | 2.32 | 2.40 | 3.19 | 3.78 | 2.96 | 3.16 | 2.67 | 3.67 | 3.14 | 3.13 | 3.31 | 3.18 | 3.33 | 3.33 | 2.00 | |
| Autumn 07a | 3.67 | 2.86 | 1.50 | 3.60 | 3.00 | 3.00 | 2.33 | 2.20 | 2.20 | 2.00 | 1.20 | 2.80 | 1.40 | 2.60 | | | |
| Autumn 07b | 3.42 | 2.83 | 1.33 | 4.78 | 2.45 | 2.82 | 1.36 | 1.64 | 2.00 | 2.09 | 1.89 | 2.36 | 2.09 | 2.00 | 2.33 | | |
| Winter 08 | 3.40 | 3.05 | 1.55 | 2.31 | 2.50 | 2.74 | 1.37 | 2.53 | 1.81 | 1.53 | 2.29 | 1.56 | 1.19 | 2.14 | | | |

Still another way to rank difficulty is to see in how many instances all members of the group were able to complete the diagnostics (students may confer with one another on the diagnostics, and this occurs especially within the groups). Clearly, the smaller the number of entire groups completing a diagnostic, the more difficult some students would have found it.

Table 4 shows these numbers for the uncompleted diagnostics. By this criterion (excluding the concluding Sections 14, 15, and 16, which many students did not complete), Sections 11 and 13 are the most difficult. Once again, Section 3 seems to have been the easiest for students.

Table 4. Number of complete groups finishing diagnostics.

| Diagnostics completed by groups | Number of groups | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 12a | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter 06 | 6 | 0 | 1 | 3 | 0 | 3 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Autumn 06 | 3 | 0 | 1 | 2 | 0 | 1 | 2 | 1 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Winter 07 | 6 | 3 | 4 | 4 | 2 | 1 | 5 | 1 | 3 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Autumn 07a | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 |
| Autumn 07b | 3 | 3 | 3 | 3 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 0 | 0 | 0 |
| Winter 08 | 6 | 3 | 2 | 4 | 2 | 2 | 2 | 3 | 2 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Totals | 27 | 11 | 13 | 18 | 7 | 11 | 15 | 9 | 10 | 7 | 12 | 3 | 8 | 6 | 3 | 1 | 0 | 0 |

Finally, we can look at the average number of tries it took for the diagnostics to be accepted. If students struggle with the content enough so that their analysis is returned for further work, the material is very likely to have been more difficult. Table 5 shows the number of tries taken to complete the diagnostic. If the diagnostic takes a greater number of tries, it is probably more difficult. Sections 4, 5, and 9 top the list of number of tries. Sections 1, 3, 10, and 13 are among the lowest number of tries.

Table 5. Average number of tries to get the diagnostic accepted.

| Average # of tries | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 12a | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winter 06 | | 2.5 | 2.4 | 1.6 | 3.6 | 2.1 | 1.8 | 1.7 | 2.2 | 1.8 | 1.9 | 2.0 | 1.7 | 1.1 | 2.4 | 1.5 | |
| Autumn 06 | 2.5 | 3.5 | 3.1 | 3.7 | 3.7 | 3.3 | 3.6 | 2.9 | 4.2 | 3.1 | 3.4 | 3.3 | 3.2 | 1.8 | 4.3 | 2.6 | 1.0 |
| Winter 07 | 2.1 | 2.3 | 2.4 | 3.2 | 3.8 | 3.0 | 3.2 | 2.7 | 3.7 | 3.1 | 3.1 | 3.3 | 3.2 | 3.3 | 3.3 | 2.0 | |
| Autumn 07a | 2.6 | 2.9 | 2.5 | 3.8 | 3.0 | 2.4 | 3.2 | 2.5 | 4.4 | 2.2 | 2.6 | 2.6 | 2.2 | 3.0 | | | |
| Autumn 07b | 3.8 | 4.1 | 3.9 | 4.1 | 4.5 | 4.5 | 4.5 | 3.9 | 4.5 | 3.5 | 5.0 | 4.3 | 3.8 | 4.0 | 4.0 | | |
| Winter 08 | 3.2 | 3.8 | 3.3 | 3.6 | 4.1 | 3.7 | 3.8 | 3.3 | 3.7 | 3.5 | 3.1 | 4.0 | 4.0 | 3.0 | | | |
| Averages | 2.8 | 3.2 | 2.9 | 3.3 | 3.8 | 3.1 | 3.3 | 2.8 | 3.8 | 2.9 | 3.2 | 3.2 | 3.0 | 2.7 | 2.3 | 1.0 | 0.2 |

**Analysis and Summary**

In summary, let me examine in more detail the three methods other than student self-ranking to measure difficulty presented in Tables 3 through 5. Assuming that the three "most difficult" descriptions are used, Section 4 appears in all three tables; Sections 11 and 12a appear in two tables, and Sections 5 and 9 are cited in just one table. Recall from Table 2 that Sections 4, 5 and 13 are the most difficult as ranked by students. Section 4 seems to be a consensus "most difficult" section (it is this section in which uncertainty is introduced and quantified). Sections 11 and 12a appear to be runners-up as to difficult.

If I expand the list and look instead at the six sections rated most difficult in the tables, Sections 4 and 12 appear four times, and Sections 9 and 11 appear three times among the more difficult; Sections 5, 7, and 12a appear twice; and Sections 2, 8, and 13 once each. These results are summarized in Table 6.

Table 6. Comparison of the three other measures of section difficulty with student self reporting of difficulty

| | | | | | | |
|---|---|---|---|---|---|---|
| Average number of tries | 9 | 4 | 5 | 7 | 11 | 12 |
| Groups completing | 11 | 12a | 4 | 9 | 12 | 7 |
| Diagnostics uncompleted | 11 | 12a | 4 | 12 | 8 | 9 |
| Student self-reporting | 4 | 13 | 5 | 6 | 2 | 12 |

Weighting these other three equally (which may not be meaningful, because these are different measures), we find the average order reported above: 4, 9, 11, 12, then 7 and 12a, and 5 and 8. Again, there is consensus on Section 4, but students rank Sections 5 and 13 as most difficult on average, while our alternate evidence belies this and points to Sections 9, 11, and 12 as more difficult than the ones the students cite.

It is clear that especially parts of the material related to uncertainty are challenging. Also density, proportional reasoning, and sinking and floating caused problems in student understanding. Analysis of the questions of the day will be pursued. In addition, further work trying to address these difficulties by making changes in teaching and the written materials as measured in this formative assessment are under way.

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Figure 1 An example of a diagnostic.

Figure 1 (side 1)

**Physics 106**
**Winter 2008**
Diagnostic for Properties of Matter Section 4

Name: _____ Table:_____ Rework (circle) 1 2 3 4 5 6 7

Date first done __/__/__ Date first turned in __/__/__ Date Accepted __/__/_____

1. You have landed a job over break at a restaurant that serves frozen yogurt. The shop uses a spring scale that measures in ounces, very different from our balance, but it has an uncertainty, too. The uncertainty of the yogurt shop scale is one-quarter of an ounce, and the scale is set so that it reads zero when there is an empty cup on the scale. Your first customers are Sue and Tom, who both order a 5 ounce yogurt. After looking at Tom's, Sue thinks she may have been short-changed. Tom and Sue decide to check their servings on the shop scale.

a. Sue's yogurt reads 4.9 ounces on the scale. Is she correct that you short-changed her?

b. How much yogurt in all do you have to give her so both you and she are sure she received the advertised amount of 5 ounces?

The diagnostic is continued on the back of this page.

Figure 1 (side 2)

c. When Tom puts his cup on the scale, it reads 5.1 ounces. Can everyone be sure he got more yogurt than the 4.9 ounces Sue got at first?

d. How much yogurt does Tom need in order to be certain he got more than Sue did the first time?

e. If the uncertainty of the scale is U ounces, how much more yogurt do you need to have gotten to be sure you actually got more than they did. Explain with words and a drawing.

2. How difficult/frustrating was working on Section 4? (circle number)
not at all 0 1 2 3 4 5 6 very

3. (On first rework) What have you learned between the time you first took this diagnostic and the time you reworked it? How did you learn it?

# E. "Ted" Bunn Student Excellence Award Winners 2008 - 2009

# Encouraging Pretend Play: An Analysis of the Duke Energy, Cincinnati Children's Museum

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## Abstract

The Cincinnati Children's Museum is full of exhibits that facilitate the development of both cognitive and social skills through functional and pretend play. Through pretend play interactions, the child expands his schema (Piaget, 1962) and exchanges ideas during symbolizing substitution. The child explores his attitudes toward information as well as others' attitudes toward the same information (Leslie, 1987). Because of the importance of pretend within the larger context of social and cognitive development, I selected this as an area for analysis and improvement in an observational study of the play areas at the museum. The paper describes how children used the exhibits to develop their social skills. Suggestions for increasing opportunities for pretend are based on observations, theories of development, and current research. Encouraging children to pretend presents them with the most precious gift—the ability to create.

## Introduction

The following suggestions of the Cincinnati Children's Museum are the result of observations of children engaged in activities in the exhibits there and analysis of the importance of pretend play for cognitive and social development. As a result of these observations and the analysis, included are recommendations for improvement of exhibitions that will enhance the progress of the crucial skills in social and cognitive development.

The Cincinnati Children's Museum is full of exhibits that facilitate the development of both functional and pretend play. Functional play is useful to solidify a child's understanding of objects and tasks (Leslie, 1987). If a child uses truck noises as he plows through the sand, for instance, he is demonstrating his knowledge of

trucks, but he is not developing social skills. In contrast to functional play, pretend play uses object substitution, attribution of pretend properties, and imaginary objects.

Pretend play may be one of the most important activities in the social and cognitive development of a child, so it is important to understand from where this ability emerges. An infant learns sensorimotor skills such as grasping, using a spoon to eat and drinking from a cup, but she is also learning the cognitive ability of representation. The ability to use representation is first observed as the infant becomes capable of perceiving things like her mother's scent or a family member's voice. The infant is able to reference an object externally as an internal perception, such as a mother representing safety in this example. A Mother can fit into more then one perception though, such as nurturing and safety. One thing (mother) is representing multiple things (nurturing and safety), but it is in literal forms, not pretentious. As these abilities develop, infants form what Piaget first called schemas. The infant begins to pour experiences into mental molds, and assimilates new experiences using defined schemas. When infants come across an experience that doesn't quite fit into one of these molds, they adjust the mold, a process referred to as accommodation. In this manner the infant forms references. Using references, the infants are able to associate items with a certain task. Not only do they possess the sensorimotor skill to use a cup, but the infant has the cognitive understanding that a cup is used for drinking. These meanings are continuously changing and evolving. They require cognitive and social activity on the part of the infant to be developed. This requires practice.

Leslie (1987) offers a theory for a working model on pretense development. In this article he argues that pretense is an early manifestation of theory of mind. By one child pretending and interacting with another, that child explores his attitudes toward information as well as others attitudes toward this same information. By substituting one object for another, to speed up the process, the infant develops a way to use current references to symbolize other references. A child pretending, who uses a block of wood to have a phone conversation with a playmate is learning social lessons and

displaying his own cognitive capacity using emotion filled, elaborate fantasy play to form new primary and mental state references. As Piaget (1962) points out, pretend play becomes an extreme form of assimilation that the infant as young as two years old is using to expand his schema. This type of assimilation was observed at the museum.

A father led his three year old boy to a tube that allowed the child to crawl into the fish tank to see what the fish see. The boy, pretending to be a fish by making mouth movements like a fish was expanding his schema of what a fish sees from under the water. Another observation of assimilation occurred in a mock grocery store where a little girl pretending to be a cashier, checked out another little girl who was pretending to purchase some items. Both girls seemed to be about 5 or 6, and the cashier said "that will be 20 hundred dollars please" as she held up all ten fingers. The other little girl put her hand out like there was something in it, and the first girl took the imaginary money. The little girl who was purchasing the items started to walk away, but the first girl elaborating on the social script said, "don't leave behind your change". These are the types of pretend scripts that teach children how to regulate their behavior later in life. A person regulating her behavior, for example would use a social script of politeness to control her impulsivity, and delay the gratification of retaliating to an insult from a co-worker thereby safeguarding the higher priority of being viewed as a stable person among her co-workers and superiors. Living in a society, these skills become extremely important. By learning early how to develop a theory of mind, the child can more easily perceive what his future boss's reaction would be to unacceptable behavior, such as the above suggested retaliation and avoid the consequences.

Children begin developing a theory of mind by engaging in pretend play with social scripts. The result is an expansion of shared ideas and meanings. The children are more likely to engage in even more elaborate themes and ideas as they learn how each other thinks and feels. In one example of this, research was done involving kindergarten children and their siblings (Howe, et al., 2005, p. 790). They were put into control groups where one group engaged in pretend

played frequently and the other group infrequently. According to this research "…the frequent pretend playgroup engaged in a significantly greater number of shared meaning strategies, particularly semantic tying, and in fewer non-maintenance behaviors than did the infrequent pretend playgroup". This means that the more children are involved in pretend play, the more likely they are to engage in collaboration of meaning, cooperation and sharing of ideas and less argumentative behavior about roles and scripts. The ability to empathize and persuade, which is required in these types of pretend play scenarios demonstrate the ability to take another's perspective. This is an indication of the developing theory of mind in a child.

An example of the developing theory of mind was observed at the Cincinnati Children's Museum with a child playing in the sand box at the Kids Town exhibit of the museum. She was shoveling sand out of the box onto the floor. She then sat in the sand smoothing it out. The father asked his daughter; "Are you on the beach honey?" She nodded yes and smiled. Whether the father of this 3 year old girl realized it or not, he was promoting cognitive and social behavior that may help his daughter to excel in development in these behavioral learning areas. Another father corrected his daughter for mimicking this behavior and told her to keep the sand inside the box. The first child noticed the second child was sad. She got her a shovel. In doing so, she was demonstrating her emerging theory of mind as she perceived the little girl's emotional state.

In another area of the museum, a group of children playing at a diner exhibit were observed. They were siblings and cousins. They quickly assigned roles in the diner and waited for the oldest girl, who was around seven years old to designate scripts. With so many props, pretend play was limited to the interaction between players. The oldest called out the order, and the cook went to work. "We are out of toast" said the cook, who received a look of annoyance from the waitress, but she quickly informed the customer that they were out of toast and asked if he wanted something else. The expansion of pretend play invoked here increased affect, which caused a spontaneous adlib in the theme. The emotion of the cook as he stated they were out of toast, the frustrated look on the waitresses' face as she relayed this information

to the customer. As if a cue to expand the pretend play to another level of absorption people started to adjust to the new direction in theme. One customer wanted to substitute fruit for bacon because he didn't like meat; one changed his mind and wanted his eggs scrambled.

The more detailed and intense the emotional absorption during pretend play, the more informative the experience becomes. As a child gets emotionally swept away in intense pretend play, his ideas become more original. This helps a child develop alternative meanings and solutions to problems. Divergent tests are used to score a child's free association, scanning ability and fluidity of thinking. Since divergent thinking is one of the basic predecessors of cognitive creativity, the more original the responses, the more creative that child is thought to be.

In one research study, children who experienced more affect as opposed to feeling neutral gave more original responses (Russ, & Kaugers, 2000). The children in the study were instructed to play with happy and angry pretend play affects. The research found no correlation between instructing children to play in emotion filled pretend play and higher divergent thinking scores. However, children's self reported mood during pretend play was significantly associated with higher scores. Thus, children that participate in frequent and emotion filled pretend play develop higher degrees of creativity. This creativity can later be applied to abstract logic and reasoning. A child pretending to pour tea into a block of wood that is suppose to symbolize a cup is nurturing the skills required to remember letters in an algebraic formula actually symbolize numbers. They learn creativity that they can apply toward social challenges, such as the forming of identity in adolescents. More immediately, the child learns social scripts that prepare her to transition effectively into a stage of life symbolized by widening social influences. Examples would include baby sitters, day care, pre-school and kindergarten.

The Cincinnati Children's Museum is an excellent facility for children to practice cognitive, social and physical development skills. It has several exhibits designed to help children develop assimilation, social scripting and creativity. There are however some recommendations that would improve its effectiveness.

It is unfortunate that not all children can fully benefit from the existing exhibits. One example specific to the analysis of pretend play would be a child with autism. One challenge that children with autism face is the inability to form a theory of mind. This makes it difficult for these children to participate in pretend play so vital to skills like creativity and all the benefits of divergent thinking. According to a recent study, video modeling is an effective and efficient strategy for teaching sequences of play (MacDonald, et al. 2005) to children with autism. Although MacDonald's research did not show any sign of adlib social scripting, the children did retain the scripted play dialogs. The museum could help these children develop these skills by installing video monitors with examples of scripted play for a certain area. It can be used to teach a variety of skills such as daily living, conversational and perspective taking. These skills and particularly the skill of perspective taking could facilitate development of skills normally very deficient in children with autism. A child could press a button and observe the scripted pretend play and then participate in the activity. This type of prompting has proved effective even with no reinforcement.

Another suggestion is that the museum should expand its focus to include exhibitions that promote less functional play and more pretend play. Most of the exhibits in Kids town use life like props to promote pretend play, but for children ages four and up who engage in more imaginative themes, these props limit them to a few tasks that may become boring because they have already mastered them. One boy, who was about six years old took a cart through the mock grocery store, took everything from the shelf and put it in his cart, took it to the cash register and left the cart there. He didn't even wait for the cash register operator to ring up his order. A way to over come this monotonous effect on children in this group is give them an environment that doesn't limit their imagination. For instance, build a stage for acting out plays. Have an off stage area complete with mirrors, costume props and stage props. Have parents work with their children to cooperate with others to develop a play. Encourage them to make things up as they go along, but that "the show must go on". A few ideas for props include: costumes, hats, blocks, cardboard

boxes, fabric, dolls, chairs, tables, toy animals hand and finger puppets to name a few. There should also be an audience area for parents to watch the performance and help with props should those services be required from the young actors and actresses.

Pretend play is one of the most important activities in the social and cognitive development of children. It is crucial for the development of creativity and divergent thinking. This creativity can later be applied to abstract logic and reasoning and help the adolescent define himself. The roots of these abilities start with the perception of an infant and the ability to form references. By expanding schema the child forms new references. To speed up the process the infant develops a way to use current references to symbolize other references. This substitution of one item to symbolize another is the basis of pretend play. The child's imagination begins to takes over. Through pretend play, the child learns that emotionally rich fantasy invokes stimulation of new ideas. Sharing with others and expanding on these ideas, the child's schemas expand. Providing children with fantasy rich environments to explore and pretend in is one way to promote the development of this vital skill. By providing props that promote symbolic substitution, children are encouraged to pretend. In encouraging children to pretend, children are presented with the most precious gift of all, the ability to create.

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**The Communal Importance of the Roman Collegia**

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Since the dawn of humanity the need to group one's self with like-minded individuals has permeated even the simplest of societies. These social groups have served many causes for those involved from the basest form of survival to political maneuvering. For some, the membership into a social group is considered to be a badge of honor and privilege that will follow them till their dying day. Other such groups may ensure that its members are justly compensated through wages, the quality of work, or job security. Whatever the case may be, history shows that social organizations have existed for millennia, and will continue on wherever humanity feels the desire to interact with individuals such as themselves.

When observing the guilds of today, it is important to gain an understanding of their predecessors and their methods. Whereas there are many examples of guilds throughout antiquity, it is the Romans who have given the world a rich history of these organizations and who it was that inhabited them. As with many historical inquiries, the guilds of Rome are not only shrouded in mystery, but also steeped with controversy. This controversy stems from a common mistake made by people who look upon the Romans with a biased, modern perspective. The views, beliefs, and practices of the Roman people were unique unto themselves and must be examined accordingly.

The Roman *collegia,* or guilds, were active in both the Republic and Imperial age. The abundance of physical evidence lies with the several thousand funerary monuments, inscriptions, and dedications found throughout the Empire, which describes the life and duties of the *collegia*. It can be determined from the inscriptions found on said monuments that the primary function of the *collegia* was to care for their members' proper burial upon death, along with monthly feasts, religious ceremonies, and politics. It was these organizations that created the strong social environment for those of similar trade

and lesser standing to bond with each other outside of the daily routine of Roman life.

In the year 1816, an important discovery was unearthed while two brothers were tilling their land. Marble fragments were found strewn about the Frezza brothers' property, 60 fragments in all, that upon further inspection contained what seemed to be Latin inscriptions. This event, in the modern day town of Lanuvio, Italy, came to be an important discovery concerning a section of Roman life rarely, if ever, studied by classical scholars (Perry 20-21). These inscriptions gave scholars the chance to gain a first hand account of the organizations that existed during the Roman period. This revealing find led to over 2,500 inscriptions being uncovered from over 475 villages and towns that were once apart of the Roman Empire (Haywood par.9). In Rome itself it was discovered that over 80 different trades had existed, but this number would likely have been larger if the inscriptions had remained in better condition (Haywood par.9). These findings brought forth an intriguing perspective of the Roman people that was descriptive in nature and had never been fully dealt with until now.

Soon after the uncovering of the fragments on the Frezza brothers' property, conflicting views began to arise as to where these Roman inscriptions were originally housed. Some would argue that the fragments were originally meant to be on the wall of a public bath, while others felt that they were situated along side the "Via Appia-Lanuvina" near a town cemetery (Perry 21). The matter of origin quickly passed when Theodor Mommsen, a poet and school teacher of girls, published the first research dealing with these newly found engravings (Perry 23,28). The information revealed that these Roman organizations were in fact tradesmen guilds, and it was Mommsen's intention to publish these inscriptions and to detail the purpose of these guilds (Perry 28). These publications, including the seminal "*De Collegiis et Sodaliciis Romanorum"*, gave birth to a new field of study in classical scholarship, and with the help of a grant in 1847, from King Christian III of Denmark, Mommsen helped form the "*Corpus Inscriptionum Latinarum"*. This association's goal was to record and publish the Latin inscriptions so as to increase the wealth of

knowledge for those interested in the antiquities of Rome (Perry 28).

Theodor Mommsen's original hypotheses was that the guilds, or *collegia*, of Rome had special groups that dealt specifically with funerary causes (Perry 31). The engravings also pointed towards a *collegium* of sacrificial specialists who would perform sacrificial duties during religious ceremonies(Perry 13). Other scholars, such as Otto Hirschfeld, began to describe a *collegia* of fire-fighters whose titles of *fabri* (lesser workmen) and *centonarii* (mat-wielders) were often seen paired together in a great many of the inscriptions (Perry 10). It wasn't until Jean-Pierre Waltzing began his studies that the *collegia* of Rome would take on its more modern day definition. Waltzing would agree with Hirschfeld on the descriptions found within the engravings concerning the Roman fire-fighters, but Waltzing felt that these groups were in fact brigades instead of volunteers as proposed by Hirschfeld (Perry 14). Waltzing's work on the Roman *collegia* resulted in a four volume series called *"Etude Historique sure les Corporations Professionelles Chez les Romain, Despuis les Origines Jusqu'a la Chute de l'Empire d'Occident"* that was commissioned by the Academie Royale de Belgique in 1887, and it was this work that helped to make Waltzing the preeminent authority on the Roman *collegia.* Even to this day, many believe that Waltzing's publication is the best source available on the topic (Perry 14,71). What Jean-Pierre Waltzing hypothesized was that the Roman *collegia* were associations of persons, connected together by a similar trade, that gathered occasionally for social, religious, and funerary purposes (Haywood par. 2).

The Roman *collegia* is said to have its historical roots dating back to pre-historic Rome, and some have argued that the *collegia* can trace themselves as far back to Numa, the 2nd King of Rome (Haywood par. 6; Waltzing 345). Whether or not these proclamations have any substance is ultimately irrelevant. The fact of the matter is that these Roman guilds were prolific, and signs of their existence can be found in every town of the Empire (Ulrich 9). As was stated before, it is through the study of the physical evidence that scholars can begin to paint a detailed picture of the *collegia*, its members, and their role in Roman history.

As is the case with any organization past or present, the substance of a group is defined by its members. When looking at the *collegia* of Rome, it can be seen that their membership ranged from the individuals of noblehouses, freedmen, and slaves, but for a slave to gain membership they had to first retain permission from their masters (Haywood par. 17). It should also be noted that many freedmen that inhabited these guilds held substantial wealth, thus pointing towards a desire for social interaction and not for economic gains (Haywood par. 17).

The members came from a variety of different trades, but the most common of the *collegia* were those of carpenters and builders. Leather and metal workers, along with dyers, were substantially less in their membership, and those of the sculpting and painting professions seem to have failed in organizing *collegia* what so ever (Burford 162). These tradesmen toiled in small workshops day in and day out with one or two master craftsmen being supported by apprentices. The apprentices were mainly made up by the master's son, relatives, or slaves, and it is from this hierarchy that the desire for collegial membership spawned (Ulrich 9). The difficulty of working in these professions, especially if one was a slave, meant that they were at a loss when any decision making was to be made. Community politics was also a distant desire for the tradesmen since any non-citizen was denied the right to vote by the State (Burford 159). It is these issues, among others, that made membership into a *collegia* so desirable, for a member had the chance to gain some form of political importance within the guild. This sense of identity in a world of social and professional persecution gave many within the *collegia* hope for a better tomorrow (Burford 159-60).

With all of the benefits that a *collegium* offered, such as feasts, religious affiliation, and the promise of a decent burial, a prospective member had to pay a fee before acceptance (Ulrich 9). This fee, which was ten *denarii*, was paid to the treasury for use with meals, dedications, and arguably the most important factor, funerary expenses (Burford 161-62). An interesting question thus arises as to how the poor and the slaves were able to afford these fees, but if the *collegia* held such an important role in Roman life this amount would probably

be acquired no matter the means.

When observing the evidence concerning these guilds, a problem arises when comparing the *collegia* of Rome with modern day organizations. Modern organizations deal with several issues pertaining to salaries, quality of work, benefits, etc., but this was far from the truth during Roman times. Those of the *collegia* did not care about fair working conditions, wages, how apprentices were trained, or the quality of work their trade dealt with. All of these issues were to be determined by the master, and it was he that would set the standards of that particular workshop (Burford 160; Ulrich 9).

As has been indicated, the *collegial* feasts provided a valuable social service to its members. This bonding together of members just helped to strengthen their resolve in a turbulent world. Many of these feasts were predetermined and held seven to five times annually depending on the *collegia* (Waltzing 359). Even though the feasts were important for bonding members together, there were several rules that had to be followed. The evidence found among the inscriptions have given scholars a detailed account as to what these rules were and how members should conduct themselves during banquets and celebrations. One such rule explained that if a member was found to be abusive vocally or the cause of a disturbance during a feast that individual would be fined 12 *sesterces.* The *sesterces* was a small silver coin used during the Republic, or a bronze coin used during the era of the Empire. Other edicts included being fined for being to loud when moving from one place to another, or if a member was found guilty of verbally attacking a *quinquennalis* (an official elected every five years) they would be fined a total of 20 *sesterces* (Perry 22).

Another important facet of the Roman *collegia* was their religious significance, and how they incorporated it into their social survival. As has been mentioned before, and will most likely be mentioned again, the ideologies of the Roman religions were widely different than our modern day perspectives and beliefs. The religions of Rome concerned themselves, not with rules and regulations concerning morality and faith, but with attaining the gods wrath in order to achieve their divine blessings, and unlike the modern Christian contemporaries who hold charity as virtuous, the Roman

religions deemed that this charity had no purpose within their faith. Whereas this mentality seems to strike a nerve to modern sympathies, the evidence found in the inscriptions points towards a total lack of regard to helping out the downtrodden (Waltzing 349, 356). The *collegia* used these religions for bringing its members together for social reasons and to give devotion to a particular deity. The deities however were not related to the trade of that particular guild, unlike the trade groups of past civilizations (Burford 173). These *collegia* did have personal deities though, but it was not mandatory for members to attend any worship performed by their guild (Waltzing 347).

The money collected by the *collegia*, from fines and entrance fees, was used for a variety of aspects that ultimately benefitted the members. The inscriptions have pointed towards the *collegia* using these finances for improving their guild houses, temples, funerary spaces, the worshiping of the deceased, honors to their patrons, and most importantly the burying of their dead. With all of these events occurring, the *collegia* needed to ensure that funding was available to them. These groups were able to find a variety of ways to acquire said finances, but it should be noted that there is no evidence pointing to the *collegia* using this money for charitable causes. Collegial members however were either asked or forced to pay extra fees, and many wealthy patrons provided money, houses, statues, and/or furniture to ensure that the *collegia* remained financially secure (Waltzing 357).

Arguably the most important function that the Roman *collegia* offered to their members was the promise of a proper burial upon death, but this was not without its own regulations. It was these guilds who offered burial that had the most numerous of members which were comprised mainly of the poor, slaves, and freedmen (Waltzing 347). It is at this point that a diversion must be made about what the Roman ideal of death was. To all persons of Roman life death was a horrific reality, for if one was buried improperly it was believed that their spirit would wander the earth unhappy and lonely (Haywood par. 11). This issue was of no real concern to those of substance and wealth, but to the poor this was a living nightmare. If a Roman, upon death, was unable to pay for a proper burial they were un-ritualistically tossed into a pit, called a *puticuli*, that was centered near the middle of

town (Haywood par. 12; Perry 61). It is from this Roman horror that the *collegia* took on its grand veneer.

It has been argued that this burial of members was in fact an act of charity, but this is an incorrect assumption since a member was expected to pay a monthly fee in order to secure the right of burial. If a member was unable to pay this fee, or were behind in payments, their right was revoked again showing that charity was never a factor in this area (Waltzing 349). When death finally arrived and the stricken member had paid all his dues on time, and was considered to be of a good standing within the *collegia*, 250 *sesterces* would be given to the man's family in order for them to pay for the burial (Perry 22). This was not the end of the *collegias'* involvement for it was important to continue on with the honoring of the deceased. This honoring of the dead occurred on either the anniversary of death or during ritual occasions and was vital, for if these honors were not upheld the ghost may be forgotten and damned to nothingness. It was the duty of the relatives to continue the honoring, but if this was somehow impossible the *collegia* would continue the tradition. This act would ensure that the deceased would be honored forever and their spirit would remain content for eternity (Waltzing 350, 358). It could again be argued that this honoring of the dead was an act of charity, but it was charity in so far as whom ever had the money to pay the *collegia* received the charity.

It has been determined that the *collegia* of Rome served as a valuable resource for those who were lucky enough to be considered one of their members, but the *collegia* also provided a service for society as well. Along with the duties of accommodating their members, the *collegia* of Rome made many dedications and epitaphs for individuals of great wealth. This was a common practice among the guilds in part due to its publicizing of the group. As was stated earlier, this publicizing brought funds into the *collegia* since the dedications held more importance than for who the dedication was actually for (Burford 164, 173-75). In order for a *collegium* to do these dedications, many sought out a patron who would help with the collegial expenses, and in return honors would be given to the patron (Haywood par. 16). With all of this providing a service to the community, it was those in

the *collegia* that truly benefitted.

The Roman epoch had a great influence on how the *collegia* were formed, how they operated, and what they became. It was during the latter part of the Roman Republic that the *collegia* began to emerge, but it wasn't until the Empire that the *collegia* numbers expanded immensely (Waltzing 346). Originally the *collegia* had no aspirations in becoming involved with the political workings of Rome , but this didn't prevent Rome from pulling them in. The *collegia* had been some how involved with civil unrest and politics throughout the region, and it was from this that the government of Rome began to place restrictions upon these guilds (Perry 6; Waltzing 345). Up until the last moments of the Republic the *collegia* were able to assemble as they saw fit, but associations with armed criminal organizations around the 1st century B.C.E. made sure that the restrictions would last until the time of Augustus (Perry 6). In 56 B.C.E., Caesar actually disallowed any *collegia* from existing, but one exception was made. Those of the Jewish religious groups were allowed to continue on for Caesar realized that these groups held a great deal of political importance and to ban then would be suicide (Haywood par. 6). Another issue that led to the banning of *collegia* was the threat of riots made by the bakers in Ephesus. The bakers, in realizing their potential power in society, began making demands for more power only to be brought down later (MacMullen 270). It is difficult to know if these were just localized occurrences or not, but it wasn't until the reign of Augustus that the *collegia* came back into its own.

As Augustus allowed for the *collegia* to return, he began to set regulations for their organizing. In order for this organization to occur, the *collegia* had to receive a special authorization by the Emperor or Senate, and this would only happen if the group in question was deemed to not be a threat to the public and were of some use to the State (Haywood par. 6; Waltzing 346). The Emperors Nero and Trajan chose to decree harsher regulations than Augustus that required collegial membership to become a hereditary practice. The *collegia* members and their children were now unable to choose where they could work or if they could work at all. It was now their duty by law to work when and wherever the state saw fit no matter the what

the *collegia* may think (Haywood par. 7). Emperor Nero had also disallowed any *collegia* from existing for a period of ten years due to an event that had occurred after a gladiatorial contest. Civil disruption broke out between the city of Pompeii and one of its neighbors which resulted in a massacre which some said was the fault of the local *collegia* (Burford 161).

As time passed, many government officials, including the Emperors, realized that the *collegia* held great importance to Rome. The cities and states, in the hopes of attracting these guilds to their services, began to implement certain privileges and exemptions such as immunities from various taxes, land, and city building projects (MacMullen 269-70; Waltzing 346). These political maneuvers worked, for the *collegia* began to take on a more official status within society. The guilds were able to still retain their initial purpose, but were now expected to handout a variety of supplies such as grain and bread to the Roman populace (Waltzing 346). Even with all of the restrictions applied to them, the *collegia* were still able to enjoy the privileges that State granted them, but as the 3rd century came to a close these privileges turned into a forced servitude (Waltzing 346). As the 4th century came to pass, it became a requirement for tradesmen to become officially affiliated with a *collegia* of the same trade. These edicts of the State were for the purpose of being able to impose the *collatio lustralis*, a five year tax that affected bank-like groups, merchants, and craftsmen (Ulrich 12). These laws began to create even more illegal *collegia,* which were found in every town during the Roman period. Most of these *collegia illicits* were unauthorized , but none the less tolerated by most cities. These groups consisted mostly of religious organizations and political dissident's, but if these *collegia illicits* were caught it was the leader of the guild that would be punished through heavy fines that must be paid or he would be jailed (Haywood par. 8; Waltzing 352). It was here in the 4th century that the decline of the *collegia* began and ultimately faded from the view of the world (Waltzing 362).

It can be seen that those who were affiliated with *collegia* of Rome were, in many ways, radically different from our modern day Unions. It can also be argued that they were closer to our sensibilities

then we may admit. As has been pointed out, the need to be apart of society is an important facet of our existence, and this is defined clearly in those of the antiquities, but it has been discovered that the *collegia* were an entity beyond what we may have previously thought. It has been shown that these guilds of the Roman era were more than just a group of individuals gathering for a good time. They had a mission to provide not only social services, but religious, political, and burial. It is vital for those of this modern day to understand that these individuals were very similar, but that they still held a uniqueness all their own. To better understand these people and their time, we must admit that we are them and they are not us.

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# 2008
# AURCO Conference
# Plenary Session

**2008 AURCO Conference Plenary Session**
**Liberal Arts Education At The Regional Campus: An Open Dialogue Among The Disciplines**

**Moderator: Rhonda Pettit**
**University of Cincinnati—Raymond Walters**

*It goes by many names – The Liberal Arts, The Humanities, General Education – but in all of its manifestations, it is our single opportunity as faculty to introduce students to a world of knowledge beyond their home or major. How best to do that within the time and structural limitations of a regional campus was the focus of discussion at the plenary panel of the 2008 AURCO conference at UC Raymond Walters College. Panel members, collectively representing more than 125 years of experience in higher education, included: Gary Bays, M.A., associate professor of English at the University of Akron-Wayne College; Miki Crawford, Ph.D., professor of communication and coordinator of technical applied studies degree program at Ohio University Southern; Martin Kich, Ph.D., professor of English at Wright State's Lake Campus; Rhonda Pettit, Ph.D., associate professor of English at UC Raymond Walters College; James Steinberg, Ph.D., associate professor of sociology at Wright State's Lake Campus; Andrea Tuttle-Kornbluh, Ph.D., chair of the History Department and professor of history at UC Raymond Walters College; Lynn Walsh, Ed.D., professor of teacher education and director of the education department at Ohio University Southern. What follows is an edited version of the discussion.*

**Rhonda Pettit:** Faculty at the regional campus do not have the luxury of four long years to provide a liberal arts education. Most of our students, whether they are traditional or nontraditional students, have families, jobs, and generally very busy lives; many of them are in degree programs that allow little time and flexibility for course electives. Under these conditions, what *is* a liberal arts education and how do we provide it? We meet today to define our terms, to talk

about our methods, and to deal with the issue of assessment. Let's begin with definitions. If a prospective regional campus student with a certain degree program in mind comes up to one of you and asks, "How important are these liberal arts requirements and how do they relate to my program," what would your answer be? What do you find essential about a liberal arts education? Miki, could we begin with you?

**Miki Crawford:** I think of it in terms of breadth of knowledge – that's the term that we use at Ohio University when we talk about General Education courses – breadth of knowledge in that there are 30 hours students take in four out of five areas, including applied sciences, humanities and fine arts, natural sciences and mathematics, social sciences, and cross cultural perspectives. I tell them the courses help them to become a well-rounded student.

**Lynn Walsh:** That also would be my argument to students, that it is not just to advance their career; it's to help them become well-rounded citizens and to have knowledge and skills in a range of areas.

**James Steinberg:** I usually indicate that it provides a broader understanding of the world, a broader understanding of yourself and your personal growth, and increases your knowledge of your own culture and of other cultures, as well as ways of thinking about ideas.

**Gary Bays:** I come from a History and English background so I think I am steeped in the background of Liberal Arts. I used to argue that it was just basic rhetoric, logic, grammar, but anymore I stress that a Liberal Arts education provides the transferrable skills that you will use in all of your classes. And by the way, if you look at it historically, it was the arts that would lead you to social advancement. I think the case for that is even stronger in today's society. The Liberal Arts education will help you advance socially, professionally, and certainly as a citizen.

**Martin Kich:** I think that most technical skills that you get are ephemeral, and when you consider that students on average are going to go through six different careers in their lifetime, not just six jobs, the Liberal Arts portion of their education, if not a liberal arts education in itself, provides some of those core skills: written and oral skills, critical thinking skills, interdisciplinary and multidisciplinary perspectives, approaches to problem-solving, familiarity with other cultural sensibilities and even with other languages. All of these things are transferrable from one career to another.

**Andrea Tuttle-Kornbluh:** Since I agree with everything that has been said, let me add that like many other people I've been reading the plan for education in Ohio, and notice that the term "liberal arts" appears in that document all of five times: four times in connection with what are termed "traditional liberal arts schools" – which we do not represent here – and one time in a discussion of STEM emphasis where the phrase appears: "where this plan speaks of a comprehensive quality education, it is meant in the broadest sense to include the liberal arts, fine arts and the humanities." So it appears that the state will not be emphasizing the liberal arts to future students if this plan is an indication of the approach they will be taking, which, of course, makes it more important that we do so. The tension between the economic needs of the state and whether we are producing people who can go out and simply work, or whether we are teaching people to think about *how* they go out to work is a critical question. A useful phrase I picked up from somebody else, that the Liberal Arts imparts the arts of learning how to learn, is what we are trying to do in a nutshell.

**Martin Kich:** I would like to pick up on that just briefly. It depends on how we are looking at Liberal Arts. Are we looking at Liberal Arts as a stand-alone major or are we looking at Liberals Arts as part of the educational package? Even a general studies degree in Liberal Arts, a bachelor's degree, has a lot of room for electives, and students can package business and science courses with the electives. We recently added an English B.A. in general studies in Liberal Arts, and

a student came in and asked about pursuing the B.A. in English as a pre-med degree. Now we're very interested in getting as many majors in this program as we can, but that question caught me off guard, and I discouraged the student at first. Then he told me that medical schools are encouraging students to have a Liberal Arts degree if they want to be general practitioners or general surgeons. I checked this out, and it's true. In our English degree there are forty-eight credits of electives that this student is going to pack with sciences. So it seems to me that the Liberal Arts can be an important part of the interdisciplinary degree programs, and that we can introduce students to both the Liberal Arts and the interdisciplinary possibilities when they first enter their General Education courses.

**Rhonda Pettit:** I'm going to play devil's advocate here. We're all Liberal Arts educators so we are already sold on what we do, but when we define the value of a Liberal Arts education, we tend to use abstract terms. Are we making a strong enough case when we define it that way or is that the "nature of the beast"? Are we defining it in the only way that it can be defined? Any thoughts about this?

**Lynn Walsh:** Perhaps an analogy might help. In our College of Education we use the National Middle School Association's perspective on teaching the child as a whole. When we prepare teachers to send them out into the classroom, we want them to teach to all of the needs of their students – social needs, intellectual needs, physical needs. Maybe that's what we need to focus on as we sell the Liberal Arts, that we are teaching to the whole undergraduate. We want to teach to their cognitive abilities and their passions, and things like that, in essence, *are* the Liberal Arts.

**Martin Kich:** I don't think that we are necessarily teaching skills, though, that are for personal enrichment. I think written and oral communication skills are paramount to any field that students are in. In a global economy, having knowledge of other cultures and other languages is a very real marketable skill set that we are selling. So I don't think the Liberal Arts are necessarily the sort of thing that you go to the ivory tower for, that it's *that* abstract.

**Andrea Tuttle-Kornbluh:** Or I guess the other way of saying it is: there has tended to be a way of thinking about Liberal Arts education as though it were sort of a rarified elite experience. But if you consider the phrase I mentioned earlier about "learning how to learn," you realize that a Liberal Arts education is extremely practical. For any job our graduates will have, there are going to be things every day that somebody has not already taught them how to think about. Our graduates are going to have to have skills to understand how to ask meaningful questions and find the answers they need. That's what a Liberal Arts education provides.

**Rhonda Pettit:** Of course, you can get critical thinking skills in a business course or in a number of non-liberal arts or non-humanities courses. I think that critical thinking skills, which is one of the big selling points of Liberal Arts education, is something that any good college course in any field would offer.

**Gary Bays:** At the same time, I think that it can be divisive because there are times when Liberal Arts majors are pictured as: Those are the folks who critically think like someone who is teaching economics and critically thinks about the economy. So, I think at times, we separate ourselves over the issue of Liberal Arts rather than seeing it as a unifying agent. Every single class ought to have some component of writing, critical thinking, and oral presentation that brings the class together.

**Rhonda Pettit:** Maybe this is a good time to shift our conversation to methods. I've got two related questions. First, is there something in terms of teaching, or goals and expectations, that distinguish Liberal Arts courses from other courses? And to build on what Gary was saying, do Liberal Arts courses and the degree program courses have to be mutually exclusive? Are there ways in which we can include Liberal Arts components into degree program courses or technical courses? Are Liberal Arts courses destined to be separate?

**James Steinberg:** Actually the OBR requires nontechnical courses in some Associate degrees such as applied science. Many others technical programs have few if any general education or Liberal Arts classes. Many Liberal Arts classes have the advantage of being in the "transfer module;" however, many colleges and community colleges have not incorporated them into the program. This lack of transferability is a major complaint of tech graduates. The OBR should support some Liberal Arts in a technical program; departmental chairs would improve their programs if they included some Liberal Arts classes in program revisions.

**Miki Crawford:** I don't think that they are mutually exclusive. I can think of courses that are taught at an associate degree level that address ethics. In fact, we've addressed ethics in almost every course and that's a Liberal Arts component. Also, we use reflective papers in a variety of courses, and they contribute to critical thinking.

**Gary Bays:** Industry keeps saying that they are looking for folks who can write, for folks who can speak on a daily basis, and there is not a bit of research out there that goes against that. So my students constantly hear me stress this. I've also got an engineering colleague who comes to me periodically and asks about how to introduce more writing into his engineering class because he is very much aware that the research consistently shows that the communications skills are the one thing that students are going to need once they get into the work place.

**Miki Crawford:** And incorporating presentations into the classroom gives them that experience.

**Martin Kich:** I mentioned our Gen Ed module, but we also have at Wright State a Writing Across the Curriculum Program, and students have to take four of their Gen Ed's as writing intensive courses. So we're emphasizing writing and oral communication skills in non-Liberal Arts classes as well. A lot of the regional campuses are in rural areas where companies have trouble bringing in employees from the

outside so they basically have to home-grow their employees. One of the biggest advocates for our new English degree turns out to be the executive who runs the local insurance group who has pushed several students who are interested in working for the insurance group toward us. He told them, we'll train you to be underwriters but you have to be able to think and speak clearly and write clearly. So there is a valuable connection there. A Liberal Arts degree is being packaged to meet the needs of a business job.

**Rhonda Pettit:** Let's talk about some specific methods. Have any of you found any of the current pedagogical options such as team teaching, writing across the curriculum, learning communities, service learning, first year experience programs, internships, study abroad, technology, or knowledge transfer projects particularly useful in your Liberal Arts courses?

**Andrea Tuttle-Kornbluh:** I can speak to some of that. We have a one-credit-hour, required seminar for our Liberal Arts majors which we have taught for three years now. It is topic-driven and team taught, and the professors have to be from different disciplines. This year Rhonda and I are teaching together, an historian and an English professor, on the topic of Human Rights and the Arts. One of the things interdisciplinary team teaching does is allow students to see in the classroom how different fields of study approach and analyze the same issue or problem, and determine where the overlaps might be, where the connections exist. We bring together different kinds of documents, showing the strengths of each independently and in combination. I think that's a helpful thing for students to see.

**Rhonda Pettit:** It demonstrates to students how different kinds of thinking, and different kinds of knowledge, are necessary to comprehend and solve problems, problems on any scale really, but especially the larger, complex ones.

**James Steinberg:** One way that we use is internships or capstone projects that involve the student in a variety of field observations

where they observe professionals in their work. These experiences help the student connect the things they have learned to the actual services that are provided. They can get a clear picture of how the attitudes and values one learned transfer in one's occupation. Other involvement includes student activities; field-trips of various kinds, faculty lectures and presentations, and poetry readings are examples of things that remove students from the formal class. These experiences are very enriching and rewarding.

**Rhonda Pettit:** Have you ever been able to offer a Liberal Arts internship in conjunction with an internship for a class in a technical or degree program? Or are there institutional or pedagogical barriers that prevent this kind of collaboration?

**Martin Kich:** We have an Honors Program with 200-level interdisciplinary Honors seminars, and a few years ago I team taught a course called "Science Writing as Literature" with a geology professor. We read work by scientists such as Warren Isley, Steven Jay Gould, activists such as Wallace Stegner, Edward Abbey, and then some general non-fiction writers like John McFee, who has a science background, and Annie Dillard. So there was a combination of hard science and activist writing, which might be identified as more of a Liberal Arts component.

**Lynn Walsh:** We are in the process at Southern of coming up with a lecture series in the fall as part of the anniversary of the Emancipation Proclamation. We have a community not far from campus called Black Fork and there was a significant number of black slaves who came to that area through the underground railroad and re-established and stayed there. And we are in the process now of trying to come up with some way that education, all the disciplines, can get together and share in this lecture series and have one-hour lectures each week where we bring into play how our discipline reflects what's going on there. For example, I would talk about education during that time period. Maybe early childhood specialists would talk about what early childhood experience was like during that time period. What

games did they play? Things like that. A writing or reflective type of experience for the students would also be included.

**Miki Crawford:** I use service learning, which is different from volunteerism in that there is a reflective writing assignment. I use service learning, which is different from volunteerism in that there is a reflective writing assignment. I ask students to write as they're working on service learning projects and then at the end of the course students can see the process/progress and feel success in that they have given back to their community in some way. Also, currently, I am teaching a 400-level capstone course which is interdisciplinary in that they're using their knowledge learned from technical and applied studies and applying it to service learning. So that's the integration there. It's also problem based learning in that I don't define exactly what it is that they're going to do. They define their projects, they work with a nonprofit and it can't just be that they're volunteering hours. They provide some kind of goods or service to that non-profit. So they take a leadership role and I feel that through this they're gaining experience for that reflective piece; they're doing citizenship; they're thinking about ethics; there's writing involved in their project; there's a presentation component in that they present their project in class; they present their project to the non-profit, so, there are numerous things going on that we could tie into the liberal arts.

**Gary Bays:** My engineering colleague sought me out to teach technical writing to his engineering class. It was not a required class at that point, so he went out of his way to make them do more writing and involve them more with the technical writing they would do professionally. But I think at times we're also divided a bit simply by the broad nature of the courses that we offer at the two-year college. My engineering colleague has a little more wiggle room, but I have another colleague who teaches Microsoft Certification, and that book is several inches thick, and he's got ten weeks to get through it. I don't think he has nearly the space to fit in some of the other components that he would like to use; he's got testing and modules he's got to get through. So I think part of the problem of the Liberal Arts at two-year

colleges is the broad range of courses we offer and their tendency to be packed with requirements.

**James Steinberg:** Additional programs I think reinforce and facilitate the learning of students who have real tight schedules and career based programs. So, attending a poetry reading or attending a guest lecture are very enriching for those students and I think it is very important that we support those activities so that they can have exposure to those.

**Rhonda Pettit:** Yes, I make that a requirement in my classes as well but you're always faced with those students whose employers won't let them off without some kind of penalty, or children that can't be left at home alone. The nature of our students' lives also makes it difficult to provide the learning opportunities that I as an undergraduate took for granted as part of my Liberal Arts education. What about learning communities? Have any of you had experience with learning communities or talked about that as a way of combining a Liberal Arts course with say another type of program?

**Lynn Walsh:** We have a first year experience which is comprised of learning communities throughout Ohio University Southern. Students read a common book and then professors and instructors of courses incorporate references to that book within their classes. The learning communities meet and also discuss the book. This year they have expanded that experience to include providing some cultural opportunities with tickets to the local orchestra and other types of performances. Again, we run into the same issues that your have mentioned; student conflicts with work schedules and family responsibilities. However, viewing this as something that can meet during the day and can be discussed in other classes has an impact. It shows the connectivity again.

**Rhonda Pettit:** Let's talk for a few minutes about assessment and the Liberal Arts. If, as Michael Berúba has argued, a Liberal Arts education involves an open-ended rational debate where outcomes can't be known in advance or simplistically measured, and if we are

trying to generate empathy in our students for those people, those cultures, those situations they haven't themselves experienced, how do we assess that kind of thing? How do we assess the intangibles of a Liberal Arts education when, in fact, that empathy or that understanding might not be activated in any kind of a measurable way for several years after a course takes place?

**Miki Crawford:** Could I first say that in education, whenever you create objectives, they should be measurable, and that measuring attitudes is the most difficult type of objective to measure. So I think that we need to be very careful how this assessment is written and how we make those objectives because they need to be measurable, and they need to be obtainable.

**Rhonda Pettit:** And we're talking about assessment in the middle of the development of a state-wide plan that seems very jobs-oriented and very practical in its approach.

**Andrea Tuttle-Kornbluh:** I think now there is going to be at least two approaches to assessment: what you have to do for the State, and what you might want to do to enhance your teaching. There was a big study done recently by the University of Iowa and the Center for Inquiry in the Liberal Arts at Wabash College in which they went to 16 different institutions – all different kinds, not just Liberal Arts colleges, but places like ours and community colleges. They wanted to see what elements across institutions they could identify as Liberal Arts. They found that when you are successful in providing these elements of a Liberal Arts education, the students who benefit the most are the students who had previously been low-achieving minority students. They are the people who get the most out of it perhaps because the other students have already had some exposure to this kind of education. So if we want to talk about assessment, we should name the things we are trying to do, and find ways to measure them.

**Miki Crawford:** A lot of those hold merit, but how do you measure the quality of teaching? I don't think there can be a box there that

they put a number on. It may be the hours students have outside the classroom with the faculty, or the amount of writing that they do, but once again, how do you measure quality?

**Rhonda Pettit:** And how do you measure success in those areas when there are so many factors outside of your control, outside of your classroom, that determine the choices a student makes or the success the student has with any given project or goal or objective?

**Martin Kich:** On a practical level, since the state is going to tie basically how many jobs our students get into our funding, we need to collect information that reflects our successes. At our campus, we do a terrible job of following up on graduates and alumni. And as bad a job as we do across the board, we do an even worse job with people in the Liberal Arts. And so, I think part of the package has to be not just what students coming out of the degree program are feeling about what they got, but what do they think five, ten, twenty years down the road. Tracking our alumni, putting mechanisms in place to do that, involving alumni and the people who hire them, particularly locally or regionally, in focus groups and in advisory boards, establishing those kinds of boards for Liberal Arts programs, I think is all kind of essential.

**Lynn Walsh:** Although I ran across an interesting quote that says, "Education is what remains after your training is obsolete," but how do you measure that?

**Gary Bays:** There is plenty of assessment out there right now telling us that the folks who are getting employed are not rising up to the level of the jobs in which they're being hired. So I like Rhonda's point that often times you cannot access somebody's writing skill or someone's critical thinking skills immediately, and I like the idea of assessing folks, as Martin pointed out, ten years down the road, fifteen years down the road, because engineers fifteen years into their profession say that running a meeting is one of the most important oral communication skills that they have. They won't know that until they

get to that point in their career but there is a lot of research out there already telling us the things that we should be trying to get across to our students.

**Rhonda Pettit:** And if Writing Across the Curriculum has any merit, one of the things it suggests is that you continue to develop as a writer after you've left college and after you've begun whatever writing tasks are required by your job.

**Martin Kich:** I would like to go back to another practical matter. The Lake Campus is a small regional campus and we have a lot of one- or two-people departments. The Governor's coming out with this mandate that we ought to be offering bachelor's degrees and so there are obvious limitations to that. One of the ways we're getting around it is to create interdisciplinary degrees. For instance, we have concentrations in an organizational leadership degree now, all of which are going to involve courses from management and leadership, from different technical studies areas and from Liberal Arts areas. We're putting in place a degree in environmental stewardship which will have three cores to it. One will be regular science classes, another one will be science classes across the different sciences that emphasize reading and writing about science, reading and writing scientific literature, and then there will be communications and English classes, technical and professional writing. We also have a very popular IT degree in graphics that have a lot of students in an associate degree and we're going to team teach on the junior and senior level, and create a degree in technical and professional communication design. So we'll actually team teach a lot of the 300- and 400-level classes combining Liberal Arts and technical expertise. So there are ways that I think the regional campuses can take a lead in developing some of these interdisciplinary strategies. All of these degree programs we have were developed after focus groups offered input. There are employment opportunities for people with these degrees. They're not just something we are making up to keep ourselves busy.

**Gary Bays:** One element we haven't brought up and that is the fact that students are coming to us out of high school with lower skills in the Liberal Arts and the declining scores on the SAT over the last decade, indicating that students are not doing as much writing, or perhaps as much public speaking at the high school level. Then we are supposed to fix that in fifteen weeks. So unless we are communicating well with secondary schools, it's a huge challenge to suddenly make them experts in the Liberal Arts. We need to do a lot more communication with our colleagues at the secondary level.

**Miki Crawford:** I agree, and I think increased communication among our regional campuses is also needed. Students today are expected to hold several different kinds of jobs in their lifetimes, and the Liberal Arts knowledge we provide them will transfer from job to job. We're providing not only a good workforce, but good citizens as well. We can and should work with each other and the secondary schools to accomplish this.

**Rhonda Pettit:** Thank you, panelists. That's a good note on which to close our discussion.

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# Ohio Public University Regional Campuses

1. Bowling Green State University—Firelands
2. Kent State University—Ashtabula
3. Kent State University—East Liverpool
4. Kent State University—Geauga
5. Kent State University—Salem
6. Kent State University—Stark
7. Kent State University—Trumbull
8. Kent State University—Tuscarawas
9. Miami University—Hamilton
10. Miami University—Middletown
11. Ohio State University—Lima
12. Ohio State University—Mansfield
13. Ohio State University—Marion
14. Ohio State University—Newark
15. Ohio University—Chillicothe
16. Ohio University—Eastern
17. Ohio University—Lancaster
18. Ohio University—Southern
19. Ohio University—Zanesville
20. University of Akron—Wayne
21. University of Cincinnati—Clermont
22. University of Cincinnati—Raymond Walters
23. Wright State University—Lake