# Long-term Observations of Celestial Objects in Middle School Astronomy

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**Abstract**

During the 2008-09 school year, Ohio State University at Marion collaborated with the entire Grant Middle School (Marion) science faculty to improve science teaching and learning systemically. Part of the effort involved an astronomy unit that addressed major parts of Ohio standards, instituting investigations to occur over the entire school year. In the investigations students observed, predicted, and inferred changes in the motions of the Sun and Moon without being told what was expected. As often happens, only part of what we planned was implemented the first year. Few Moon observations were made by students (expected to do this at home); in some classes, this improved the second year of the project. The Sun observations were carried out over the school year because they were done at school and because some of our teachers were committed to doing them. Sun shadows were observed several times a month by students and the tip of the Sun shadow was indicated by a blob of paint on the surface of a wood platform the first year. The second year, the observations were made using a golf tee mounted on posterboard as a gnomon. Each observation day resulted in up to 12 blobs, depending on how many classes participated. We present the results of the two yearlong investigations and consider whether this constitutes a useful way to address students' general misconception of science as a series of 45-minute experiments.

**Introduction**

The American Association for the Advancement of Science (AAAS) has noted that "[m]iddle-school students may think experiments are a way to produce a desired outcome, rather than … of testing ideas." (1) Many students (and many teachers) at all levels believe that all experiments are verification experiments. This predisposition is excruciatingly difficult to counter in both students and teachers. This report involves the astronomy focus in eighth grade science and development of our own astronomy unit that would address major parts of Ohio standards. As part of an intervention program, we instituted long-term observations of the Moon and Sun shadows to allow middle school students to make and record personal observations that could support personal discovery, reasoning and the building of personal explanatory models.

**Marion City Schools**

Grant Middle School (GMS) is a part of the Marion (Ohio) City Schools. As part of the rustbelt, Marion has few jobs for unskilled labor, many unskilled laborers, and a lack of skilled labor. Many residents are mired in poverty, and about two-thirds of pupils are eligible for reduced-cost or free lunches. The proportion of minorities in the schools is small (~5%). Grant Middle School enrolls all sixth-, seventh- and eighth-graders in the City Schools. The State of Ohio has achievement tests in reading, writing, science, mathematics, and social studies. Because of the powerful negative environmental factors mentioned above, scores on Ohio achievement and graduation tests (OAT and OGT) are extremely low, and the Marion City Schools is under a form of state watch.

As a result of some positive outcomes of a state-funded program for Marion and Newark City Schools teachers (Project IMPACT), administrators from the Marion City Schools contacted us and asked us for help in improving the abysmal OAT science scores at the middle school. We and the City Schools were part of a grant proposal to the Ohio Department of Education that was subsequently awarded.

The Ohio State University Marion collaborated through us

with the entire middle school science faculty to improve science teaching and learning systemically. Part of the attraction of the program to funders was the commitment of every science teacher in the middle school and of the union. As part of our program, we were in GMS twice a week each week meeting with the teachers. Much of our information about the classrooms and changes comes from these extensive discussions with the teachers.

**The Science Intervention at GMS**

The focus for the teachers was on Life Science, Earth Science, and Physical Science (areas of study in middle school). As a parallel part of the effort, the Marion City Schools bought modules from the Full Option Science System (FOSS) and we developed the astronomy unit.

Much effort was originally focused at each of the grade levels on helping teachers become comfortable with the new materials. However, our overall aim through the year with teachers' cooperation was to change the science classrooms to help teachers be more open to engaging students in science inquiry and honoring student thinking, and engendering discussion rather than telling students the "right" answer. Because of our programmatic use of FOSS, the FOSS Newsletter featured Grant Middle School. (2)

**Following the Sun and Moon**

Discussions between Aubrecht and GMS teachers Fogle and Tanner and then Schmitt in June, 2008 identified a wood platform in the school's courtyard as suitable for a yearlong Sun shadow experiment. Almost all the eighth-grade science teachers became part of the project when the 2008/09 school year began. Sun shadows were observed roughly once a month by students and the tip of the Sun shadow was indicated by a blob of paint on the surface of a wood platform.

During the summer of 2008, Fogle, Tanner, Miller and members of their families scraped and painted the wood platform and created a grid system, visible in Figure 1. A microphone stand at full extension was chosen as a gnomon (a vertical post to produce

a shadow). Starting on 2 September 2008, students from different eighth-grade classes came onto the platform at various times during the school day approximately twice a month and spray-painted a spot at the tip of the shadow. They were not told why they were doing it, they just did it every so often as part of class to compare the shadow form day to day. Mr. Tanner kept track of the observations on his whiteboard for all the teachers.

Students were given a "Moon observation sheet" to take home, starting in the spring. Few students did any observations of the Moon the first year (there was greater success the second year, according to the teachers). The remainder of this article deals with our Sun observations.

**Figure 1.** The Sun shadow records taken over a school year by students and teachers are visible on the platform in the Grant Middle School courtyard. From the left are Aubrecht (~ 2 m tall), and eighth-grade science teachers Fogle and Miller to provide the scale, and the boards are 13.5 cm wide with the painted grid lines about 77 cm apart. The circle below (to the left of) the lines show the position of the gnomon. (Photo by Bill Schmitt)

Students went out, and one student from each class would make the spot with the paint. Over the course of the school year, many students were able to have made the dot. All students were able to see the development of the dot pattern. (They did not have the lines shown in Figure 1 until the last day of school when several students painted

the lines that connect the dots.)

Several interesting things happened that students observed. First, the equinox (equal interval of day and night) occurred not long after the beginning of school (September 23). The dots for the autumnal equinox fell mostly in a straight line, the straight dark gray line visible in Figure 1. Mr. Miller has a class of special-education students. One of them noticed something early in the year; as Mr. Miller wrote: "We were tracking our shadow data and one of my special-education students said, 'The shadows change from date to date.' When we tracked the data from Oct. 2 and Oct. 21, we plotted the points on a graph and connected the dots for each individual date. At the beginning of the year the points went in a "frown" shape and as we got closer to the equinox, the line flattened out. Now the line is turning into a smile.' I found it interesting that one of my students observed this without having someone point it out to him."

Needless to say, we were excited to read about Mr. Miller's student's success. (These particular observations, of course, depend upon the person's viewing perspective.) This is the sort of thing that happens when observations continue to be made but would never occur in "normal" lab mode. Students also noticed when something unanticipated happened —the shadow early in the day did not fall on the platform, but later in the day, the shadow did fall on the platform. Also, as the season passed from fall to winter, the shadow moved off the top edge of the platform entirely. This made seeing the shadow of the tip of the gnomon impossible.)

Students also discovered that our local noon occurs at about 1:30 PM DST, and much of the day's shadows are not observable by students. Despite this, students did tell teachers who asked them to predict what would happen and most students suggested that the path would mirror the morning's path (providing evidence that they were using evidence form earlier observations to make the prediction).

The platform was covered by snow during parts of December and January. When observations resumed, students saw that the smile shape, which had become a "wider" smile, became narrower. What was happening became apparent when the 4 April dots seemed to fall on the same line as the 2 September dots. Students in Mr. Tanner's

class called them "twin dates," though it is not entirely clear that they then understood the reason it occurred, even with our astronomy unit (see below). (The dates were approximately the same interval before the autumnal equinox and after the vernal equinox.)

**The Astronomy Unit**

The astronomy unit that we developed was designed to address major parts of Ohio standards. We called it *Spacing out in Marion, Ohio*. (3) A primary component in this astronomy unit was to give students the experience of doing school-year, long-term observations from which they could collect data and then reason about their experiences. This addresses the problem of lack of understanding of the value of observation directly, by instituting a long-term investigation. We chose not to tell students about Sun and Moon motions and prove our assertions through observations; rather, we asked students to observe these positions and motions and infer whatever results they might be able to defend by reference to observation.

As often happens, only part of what we planned was implemented fully. Few Moon observations were ever made by students, who were expected to do this at home because of the scarcity of opportunities for Moon observation during the school day. The Sun observations were carried out over the school year because they were done at school and because our teachers were committed to doing them and had control of the scheduling.

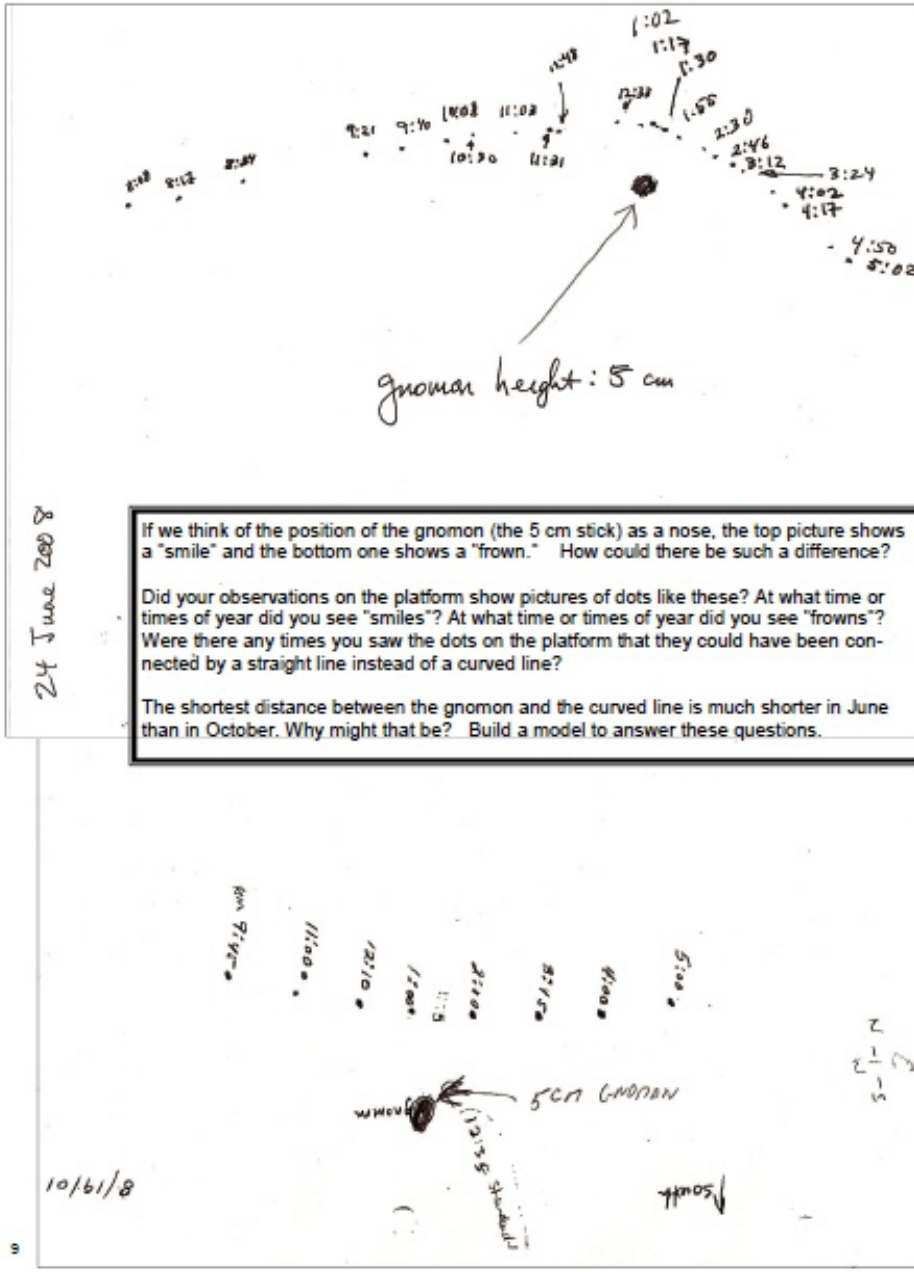


Figure 2. Sun shadow plots.

We ask "If we think of the position of the gnomon (the 5 cm stick) as a nose, the top picture shows a "smile" and the bottom one shows a 'frown.'

"How could there be such a difference?

"Did your observations on the platform show pictures of dots like these? At what time or times of year did you see 'smiles'? At what time or times of year did you see 'frowns'? "Were there any times you saw the dots on the platform that they could have been connected by a straight line instead of a curved line?

" The shortest distance between the gnomon and the curved line is much shorter in June than in October. Why might that be?"

One of the parts of the astronomy unit written by Aubrecht and Schmitt asked about the sun shadow plots, reproducing plots made by Aubrecht (Figure 2). It asks "We know that you have gone outside and made paint marks where the shadow of a pole fell on the platform. On the following page are two Sun shadow plots made by standing a 5 cm stick straight up from a piece of paper. The experiment here is exactly the same, except we are looking at a piece of paper instead of a platform and a 5 cm high stick instead of the pole. The chart is made by putting a mark at the end of the shadow made by an object that is blocking sunlight, starting in the morning and continuing throughout the day. You will notice the shadow changes length and also changes direction.

"Use a globe or ball, a flashlight, and a stick to build a model that helps explain how these daytime sun shadows change during the day and from month to month. If you have made a sun shadow plot use it as a reference to help explain how the shadows change length and direction."

"Record what you did and how you explain the changing shadows."

We follow with open-ended questions: "Can you make the length of the shadow shorter by moving your flashlight? How did you move the flashlight?

"Can you make the length of the shadow longer by moving your flashlight? How did you move the flashlight?

"If you have a Sun shadow that points East what direction must the Sun have been in to have made that shadow? Is it morning or afternoon?

"Invent your own questions."

Figure 3 shows how the students' observations were recorded by one of the eighth-grade teachers. The schedule was adjusted for times when it was possible to view the shadows if one of the days chosen ahead of time could not be used (day was cloudy, snow on the platform, etc.).

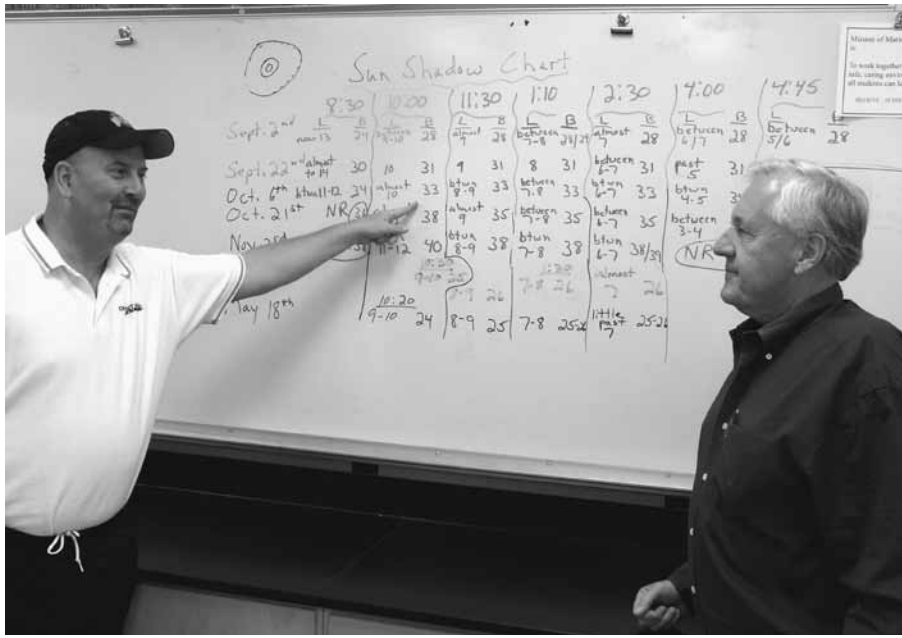


Figure 3. Eighth-grade teacher Tim Tanner shows Bill Schmitt the observation schedule. (Photo by Gordon Aubrecht)

Students exposed to the whole school year's observations could see a large part of the yearly pattern unfold, and make predictions based on the pattern they recognized, whether or not the basic understanding

was there. One opportunity to test understanding came when Schmitt was in St. Martin in May and observed that the Sun made a shadow that was 3 cm long from a meter stick gnomon at local noon EDT (12:10 PM). The shadow pointed southward. Schmitt communicated this by email; some classes were told about his observation and went out to the platform. Mr. Tanner described his experience with one of his classes: "We went outside at 1:30 Ohio time [local noon at EDT] and measured the Sun's shadow with a meter stick. We also used another meter stick as our gnomon and [found] the length of our shadow was between 32 and 33 centimeters. … we discussed why there was a difference between Mr. Schmitt's reading and the Ohio reading. Without blinking an eye, came a chorus of 'because he is closer to the equator!' And they also told me that as we traveled towards Mr. Schmitt, the shadow would become shorter and if we traveled north from Ohio the shadow would become longer." The shortest shadows for all the various days measured all point in the same direction, north, which was not expressed by students, most likely because the pattern was of dots, not lines until the last day of school.

**Changes for the 2009/10 school year**

The first year, few students made moon observations. In addition, the school year unfolded differently from the way we expected. We had expected a much longer time for our astronomy unit, but it was begun only mid-May. Because the moon data sheets were not a success, we decided to give the sheets to students at the start of school and expected students to turn them in periodically, which worked better.

The sun shadow observations also were modified to make it easier to administer by teachers. Instead of refurbishing the platform to make new observations, teachers used a sheet of poster paper with an upside-down golf tee gnomon to record shadows and had students carry the sheet outside to make observations. The sheet was then kept in one classroom where all students would see it every day. The other change is that some teachers seemed less committed to ensuring regular observations. Most of the eighth-grade students were

exposed to the long-term observations. From frequent visitations to the classrooms to discussion with students by Aubrecht and Schmitt and from discussions with teachers it was clear that the students were engaged and making comments similar to those of students a year earlier. No evaluation was done to compare the outcomes from the two years.

**Conclusions**

In this project we set out to observe student engagement and reasoning that would result from student-centered long-term observations of the moon and sun shadows. Moon observations were very limited and more difficult to implement than we anticipated. Making sun shadow observations were much more successful. Through regular visits (often weekly) to the classrooms Aubrecht and Schmitt were able to engage and interview students and teachers and observe the progress. Additionally conversations via a listserv provided additional documentation of student responses for all teachers.

From our observations (many of which are documented in this article) we are convinced that we did make a significant contribution to helping students (and teachers) make personal observations that did support personal discovery, reasoning and the building of personal explanatory models. Additional investigation is needed to establish the long term effect of this project and to quantify student learning. But our observations suggest that such research may yield some important insights for student learning.

This project is also unique in our experience for its yearlong focus, for its use of observation without explanations, and for the commitment of the participating teachers. The teachers were, initially at least, very interested in the process of something so different from their "usual" mode, but practically everything in the project has been different for them.

Our observations suggest that students did not "turn off" because the teachers were not explaining things to them. Instead, they were freer to discuss what they saw with other students. They were willing to hazard guesses about what they saw. They were exposed to a

long-running experiment in class that was not what they were used to.

When looking at student achievement overall we also documented significant achievement. Inquiry and good questioning opens doors in students' minds (though not all students, of course). One of the teachers in the program confided to us that he had been taught in education classes that being rigid would be more helpful for the student; however, the opposite seemed more valuable for his students. When this year's eighth-graders took the OAT, they obtained an average score in the low forties (the score of 75% or above is considered "proficient"). However, the previous year's students (with the same set of teachers) obtained an average score in the high teens. There was some effect from the change in instruction, albeit not as positive as we would have liked. We do think that this process was good for the students. One might wonder how much of the effects of the changes is due to teachers' use of FOSS, which provided modules used much of the year. We view all curricular materials as tools to be utilized by teachers.

The real answer is that we cannot disentangle the effects of the inquiry intervention we did from the inquiry aspects of the curriculum, except for this astronomy unit. However, a review of middle school mathematics education found that the curriculum had negligible effects. According to Slavin et al., writing about middle school mathematics, a "surprising observation is the lack of evidence that it matters very much which textbook schools choose." (4)

This supports that notion that teaching and learning methods have much more to do with improvement than particular curriculum resources. However, in this project we were not comparing textbook to textbook, rather we were moving teachers from a textbook-centered curriculum to a materials-based curriculum that involved considerable student activity. It may be possible that the program provided more effective tools to facilitate teacher growth and development in areas of inquiry and more student-centered learning than previously. It is also possible that perhaps the materials give kids something that even good teachers cannot give. In any case, we feel the total effort of this project enables good teaching by good teachers who are willing to listen to, and follow avenues exposed by, their students in ways they were never before able to carry through.

**Acknowledgments**

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**Biographical Information**

Gordon J. Aubrecht, II is professor of physics at OSU Marion. He graduated from Rutgers University summa cum laude and earned his graduate degree at Princeton University. His original research interest was theoretical particle physics, but he is currently studying how students understand atoms, nuclei, and the interaction of light and matter as well as how useful and effective physics by inquiry is. He was awarded the Distinguished Service Citation of the American Association of Physics Teachers in 1994, was elected a Fellow of the American Physical Society in 2000, and was presented with the John B. Hart Award for distinguished service from the Southern Ohio Section of the American Association of Physics Teachers in 2002.

He received the AURCO Distinguished Service Award in 2004. Also in 2004, Aubrecht received the Howard Maxwell Award for Distinguished Service from the Ohio Section of the American Physical Society and the Louis Nemzer Award from the Ohio State Chapter of the American Association of University Professors for his defense of academic freedom. He is a past president of AURCO.

# Creating a Link with the Community: Developing a Speakers' Bureau for Undergraduate Business Courses

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**Abstract**

This paper describes the creation and application of a computer-based speakers' bureau for an undergraduate business curriculum. Contact information, areas of specialization and suggested courses where each speaker would most logically add value are tabulated and archived in a searchable database accessible to all business faculty. Examples of the speakers' bureau in use, plus reaction from faculty and students to the easily accessible information are discussed. Extensions beyond the business curriculum are also presented.

## Introduction

Students in post-secondary education today seek strong value for every dollar that they spend on tuition and supplies. For students enrolled in undergraduate business programs, particularly those that are seeking a two-year associate's degree and do not immediately plan to continue their studies toward a bachelor's degree, the value in their programs is frequently determined by the answer to one or both of the following questions: "Will the information that I am learning in my classes help me to secure a good job after I graduate?" and/or *"Will the information that I am learning in my classes help me to become more skilled and to advance in the job that I hold today?"* For these students, answering "yes" to either question is linked heavily to the immediate relevance or "real world" applicability of the information learned.

Bringing guest speakers from for-profit corporations, governmental agencies and/or non-profit organizations into business courses is a classic way to introduce students to relevant, up to the minute business information and potential career pathways. When viewed as an essential component of a well-rounded business

curriculum that may also include experiential learning projects, business case studies, access to internships, and other on-the-job training programs, and effective counseling activities, guest speakers offer students unique opportunities to hear people talk about their own career passions and pathways, reflect on what "worked" and what "did not work," plus explain how textbook business theories apply under conditions of actual use. Unfortunately, identifying, contacting, and arranging effective guest speakers can be an easy to avoid task for faculty members already caught up in the mechanics of keeping multiple courses running during a given semester.

This paper describes the creation and use of a speakers' bureau as one practical solution to the problem of identifying relevant guest speakers for undergraduate business courses. Based on an easy to use Excel database, the speakers' bureau tracks a variety of information regarding the speakers' skills and availability, plus suggestions on courses where the speakers may offer the greatest value. Easily updated as new speakers are identified, the speakers' bureau is a valued resource for faculty and students alike. Although the example discussed here focuses on speakers relevant to the field of business, alternate fields of applicability are limitless and may be accommodated by simple alterations of the information categories tracked within the database.

**The Need for Relevant Real-World Experience in the Classroom**

It is frequently the case that students in undergraduate business programs have little to no practical work experience in the types of business organizations discussed in textbooks and traditional lecture materials (Harmer, 2009). Positions that they have held prior to, or in conjunction with, attending school have been largely entry-level and/or task oriented positions that are near the bottom of the "corporate pyramid." As such, many students tend to view business organizations in very simplistic terms, often believing that various departments function discretely, almost as silos within an organization, rather than recognizing the complex interactions and relationships that characterize the majority of contemporary business organizations today (Harmer, 2009, p. 44; Feldman, 1988).

Faculty members of business departments that concentrate on preparing undergraduate students to enter the workforce and compete effectively immediately after graduation thus face the challenging task of providing a curriculum that appropriately covers fundamental business concepts and knowledge while instilling within their students a realistic picture of what life in a corporate setting actually entails. This picture is known within the business literature as one comprising a set of "employability skills" (Mason, Williams and Cranmer, 2009, p. 1) that are intended to enable new graduates to merge more quickly and more successfully into the routines, practices, and behavioral norms of a typical business setting. Examples can be somewhat business-specific, but generally include skills involving communication, ability to work with numbers, literacy, information technology, problem-solving, understanding the world of work, team work, and learning how to learn (Mason, Williams and Cranmer, 2009, p. 2, 5-6). Implicit within this list is the observation that these skills will not all come directly from a set of business course textbooks, no matter how broadly or how deeply they explore the inner workings of a typical business organization. Without direct contact between business students and the types of business organizations that they are likely to approach for careers, many students will find themselves unable to secure a position – or unable to acclimate themselves to what is actually required on the job (Harmer, 2009, p. 46).

There are many ways that faculty in undergraduate business programs can seek to improve their students' knowledge of the workplace environment and thereby increase the students' probability of making a successful transition from academics to a business career. Business and industry, too, can help in this process and it is often the case that collaborative efforts lead to greater success than approaches taken by either party independently (Berman, 2008). Case studies and programs described within the literature include a wide variety of approaches such as joint academic-industry research projects (Berman, 2009, p. 167), industry participation in business course design (Ungaretti, Chromowicz, Canniffe, Johnson, Weiss, Dunn and Cropper, 2009, p. 5-7), incorporating traditional business/ industry-based tools such as total quality management (TQM) into the

educational process (Brown and Koenig, 1993, p. 326), and adding instruction in specific job-related tools as a replacement for a portion of traditional business theory in the classroom (Wellman, 2010, p. 121-124). All of these approaches have merit and may be either more or less applicable depending on the level and sophistication of students in a given class, the overall goals of the program, and the availability of suitable business partners.

There are, however, simpler, less costly, and often times even more popular approaches to increase students' exposure to real-world business practices that may be undertaken in virtually any business course setting. Many such approaches can originate through carefully listening to the needs and wants of students who have had previous workplace exposure and are returning to school (or entering a degree program for the first time following years in the workplace) (O'Connor and Cordova, 2010, p. 359-360). Although these students may make up a fairly small percentage of the student population in a given degree program (depending on the type of degree, institution, etc.) their opinions on the factors that can make new graduates more competitive carry the weight of experience and can be helpful. For example, in a business program, the inclusion of experiential learning projects, job shadowing activities, business-based guest speakers, business-appropriate communications technologies, and simulation of a workplace environment within traditional or online classroom all can serve to reduce the barriers to success that graduates will face upon assuming a new business position (O'Connor and Cordova, 2010, p. 367-368; Nemanich, Banks and Vera, 2009, p. 128; Saeed, Yang and Sinnappan, 2009, p. 100).

In the author's experience as a long-term instructor of undergraduate courses in management, marketing, and other business disciplines, students seek to validate the credibility of any novel approach designed to augment the text-oriented materials typically delivered in class. Of the approaches mentioned here, it may be argued that none is more popular with students, and none brings more rapid clarity and credibility to the materials presented in a course, than the incorporation of one or more guest speakers with solid business knowledge. Numerous publications in the business and educational

literatures cite the advantages of adding knowledgeable guest speakers to the curriculum, including building student interest and involvement with the course materials, adding new or different perspectives, validating the theories presented through other instructional means, and offering the students an opportunity to meet people who could be potential future co-workers (Hemphill and Hemphill, 2007; McNett, 2001; Rowe, 2004). Experiences listening to and interacting with guest speakers can help to close what is called the "the academic: practitioner gap," resulting from instruction that is based too heavily on theory and too lightly on understanding the actual responsibilities and tasks required on a typical business job (Wellman, 2010, p. 121).

Integrating knowledgeable guest speaker into an undergraduate business curriculum is both a simple and a complex task – all at the same time. It is fortunate that many experienced business people, from the regular rank-and-file up through "C-level" executives and retirees, love to talk about what they do and love to interact with college-age students who are just starting their careers. Time permitting, many business people will eagerly accept an invitation to talk with a class and the learning outcomes are frequently many fold more enriching for students than an equivalent time spent on conventional lecture materials. It is equally unfortunate, however, that many potential speakers are "well hidden" within their respective organizations and can be difficult to identify. Searching for a speaker with a certain expertise to augment something that a class has taken a particular interest in can mean a frustrating series of phone calls and searches before a good match is made. In a classroom setting where the instructor tries to maintain a degree of flexibility to meet students' interests as they are identified, securing an "on target" guest speaker in real time (as opposed to prearranged before the start of an academic term) can be, at times, extremely difficult.

**The Speakers' Bureau: Quickly Identifying Suitable Guest Speakers**

The speakers' bureau described here was designed to reduce the complexity of identifying and contacting experienced business professionals who had been previous guest speakers within the

business program on campus and/or who had expressed a desire to be guest speakers at some point in the future. The speaker's bureau is loosely patterned after several in operation on other college campuses, including the University of Wisconsin-Madison (http://www.speakers.wisc.edu/directory), Purdue University (http://www.purdue.edu/speakers), and the University of Iowa (http://www.uiowa.edu/speakersbureau/). The main difference between these Internet-referenced speaker's bureaus and the one described here is that the ones available on the Internet are meant to make it easy for the general public to identify speakers from universities who can come to their civic organizations, meetings and other functions to provide expertise. The speaker's bureau described here operates somewhat in the reverse by making it easy for faculty to identify experienced business people who could be contacted to come in and provide business, career, and other types of similar advice to students in a classroom setting.

**Designing the Speakers' Bureau Database**

The content of the speakers' bureau database is its most important feature, with the physical form of the database, including the software chosen for use, being of secondary importance. Experience gained in developing a prototype database and using it over several semesters has shown that both basic and "enhanced" information on each speaker listed is useful. For example, under basic information, the speaker's name, business name or organizational affiliation and contact information (ideally phone, e-mail and address, if available) are listed. Also included, under enhanced information, are a list of the speaker's preferred topic areas/areas of expertise, comments regarding any special skills or presentation attributes that the speaker demonstrated, and a list of suggested courses where the speaker's knowledge and/or presentation style would be expected to add the most value.

It is the presence of the enhanced information that elevates the utility of the speakers' bureau beyond that of a simple address book of contacts. While the skills and style of a speaker may be known to the compiler of the database, it is unlikely that other faculty, students and/or administrators will personally know each "name on the list." Being able to scan or search the database for potential speakers that are

experts in specific topic areas is thus a value-added feature. Similarly, comments entered by the individual who last hosted the speaker can be very helpful. For example, if conducting a senior-level seminar-style course that is configured to support round-table discussions, a speaker with the comment of "being a good story teller" and/or "very receptive to Q&A style presentations with multiple student interruptions" may encourage a faculty member to call the speaker to discuss a possible visit to class. Comments that a speaker is "particularly good at bringing complex business topics down to a basic level" may encourage a faculty member to consider that speaker for entry-level classes where the emphasis is on fundamentals. Listing suggested courses is also helpful in many situations. The database may be sorted easily for speakers potentially suitable for finance, management, marketing, or other courses as needed.

The format and content of the enhanced information supplied in the database are designed to be easy to alter over time and should be thought of as evolving to meet student and departmental needs. The column representing suggested courses, for example, was added after the database was up and running. Recently, an excellent suggestion was received to include a diversity-driven column to the database indicating available information on gender/ethnicity/cultural background of each speaker so that users could better match potential speakers to the needs of their classes. This feature will be incorporated into the next iteration of the database and should prove to be highly useful.

The speakers' bureau currently in use was originally designed as a simple Microsoft® Excel database. Excel was chosen originally just to get something up and running, but it proved more than adequate for the task at hand and has remained in use for several years. Excel has the advantage of being present on virtually all PCs, so e-mailing the database for perusal or updating or locating the database on a shared drive for access presents no difficulty in a typical department setting.

For individuals interested in more robust database tools, Microsoft® Access is certainly a viable alternative as are the wide range of contact management and/or address book type software

packages now readily available. GoldMine® by FrontRange Solutions is one such package that the author has used successfully for similar projects in the past and it would be suitable for a speakers' bureau database with the added advantage of being able to easily contact all speakers listed or selected subsets of speakers via automated electronic mailings as the need arose. As stated previously, the exact nature of the database is less important than having an easy-to-use tool that "corrals" all of the pertinent information into a format that is easy for the occasional user to access and peruse.

**Database Example**

Figure 1 illustrates an example of the speakers' bureau currently in use. A six-column format that includes all of the information described above is employed. In this example, the speakers' names and contact information are simulated, although the comments and other enhanced information are taken directly from actual entries in the current database.

**Speaker Examples**

Undergraduate students respond well to guest speakers who are currently employed doing work that the students could see themselves doing relatively early in their careers, and also to guest speakers that have achieved high-level positions that the students may aspire to reach later in their careers. Additionally, speakers demonstrating an entrepreneurial bent – such as small business owners or speakers with very unique occupations that they largely designed themselves – can add substantial value to a course. Descriptions of speakers that recently visited undergraduate marketing and/or management courses include;

**Speaker 1**

This speaker was a retired senior business executive who worked for two of the world's largest automotive manufacturing companies across a career of more than 30 years. His specialty was finance, but he had branched out significantly over the years into the management of sales forces, advertising and other marketing-related fields and also general management of large district offices.

## *Business Speakers' Bureau*

For Questions Regarding Any of the Speakers Listed, or to Suggest New Speakers, Please Contact XXXXXXXXXXXXXXXXXX

| Name of Speaker | Affiliation | Contact Information | Preferred Topic(s) | Comments | Suggested Courses |
|---|---|---|---|---|---|
| Speaker A | Partner, large commercial landscaping firm | (XXX) XXX-XXXX, xxx@xxxxxx.com | Small business management, customer service, employee relations | •Long-standing area business in Middletown and Warren County.<br>•Very engaging speaker in terms of working with individual consumers, planning projects, etc.<br>•Handles project planning from start to finish, including developing detailed cost estimates, meeting with the customer to go over designs and supervising installation.<br>•Low-key approach, but excellent ability to relate to audience. | Marketing, General Management, HR, Customer Service |
| Speaker B | Owner, small business | (XXX) XXX-XXXX, xxx@xxxxxx.com | Starting up a new business, leaving a "big" company to go out on your own | •Interesting background in competing with bigger firms.<br>•Experience in working for big companies and then leaving to start up a small business.<br>•Good background in how to handle competition with a former boss.<br>•Knowledge of hiring and working with temporary labor. | Management, Customer Service |
| Speaker C | Director-level manager in corporate research | (XXX) XXX-XXXX, xxx@xxxxxx.com | Technical management, recruiting and interviewing, foods and pharmaceuticals | •Familiar with BTE program, open to many types of contacts with students.<br>•Knowledge of switching companies at a junior and a more senior level, recruiting, hiring people, etc.<br>•Can give advice on resumes, job searching, getting hired with little/no experience, etc. | Management, Marketing, New Product Development, HR courses |
| Speaker D | Sales and marketing director in a medium-sized firm | (XXX) XXX-XXXX, xxx@xxxxxx.com | Marketing | •General sales practices, commissions, strategies<br>•Talks about Internet sales and other non-face-to-face sales opportunities | Any of the Marketing classes |
| Speaker E | Mail-order retail specialist | (XXX) XXX-XXXX, xxx@xxxxxx.com | Marketing | •BTE graduate -- relates very well to current students<br>•Good source of information on the mail order side of retailing | Marketing |

The students were immediately intrigued since he was from the auto industry – a venue very popular with college-age students. Beyond that, however, this speaker was able to tell a very important story about how one's career can take multiple, seemingly unrelated pathways over the years and still keep an individual moving forward. He was able to provide tremendous perspective on the current state of his industry, described many commonalities and differences between the companies where he had worked and brought everything to a level that students within their first two years of business education could understand.

**Speaker 2**

This speaker was a small business owner with a strong entrepreneurial bent. He had started, run and sold or closed a number of business ventures across his career that were all directly or indirectly tied to the home furnishings and decorating industries. At the time that he visited several business classes, he had just finished closing his most current venture, due to the present state of the economy. While one may have assumed that he would be negative on the whole idea of starting and running a small business, the exact opposite was true. He was, in fact, already planning his next venture. What truly made this speaker unique and of tremendous value to the students was his ability to put business cycles into proper context and perspective. He detailed some typical ways that people get started in launching new businesses, described briefly all of the responsibilities that a small business owner must balance, but, even more importantly, gave a very realistic assessment of how to determine if and/or when it is time to shut down a business and move on to other projects. His discussion of the importance of watching for future trends while keeping an eye on the current business was pitched at just the right level for the students.

**Speaker 3**

This speaker had been in "corporate America" for over 25 years and had worked for several very large US corporations. He was not originally a business-educated person, but came from the sciences,

instead. Over his career, he had moved up through various managerial positions, but stayed heavily involved with technical issues. As his career progressed, the importance of business knowledge became greater and he returned to the classroom himself to work on his own MBA. Reflecting on his career progress, this speaker illustrated for the students that no one is able to clearly predict what route their career may take in the long run and that a willingness to keep learning and to try new things is often a key to success. This speaker had also been responsible for many hiring/firing decisions across his career and was able to provide students with some important insights regarding how to interview for jobs and what is critically important to do after joining a company.

**Speaker 4**

This speaker was probably the most unusual guest speaker to address the undergraduate business students to date. He was originally suggested by one of the business students who knew him and he gave a fascinating presentation on two topics – the importance of networking and the importance of developing good people within an organization. This speaker was, by occupation, a licensed bounty hunter within the State of Ohio. His presentation initially focused on how he developed strong working relationships with local police departments, the courts system, other bounty hunters, etc., using very interesting case examples of how this type of networking allowed him to be successful. As his business expanded, he began to hire and train his own employees, leading to the second portion of his presentation. This speaker stressed the importance of developing the employees in an organization thoroughly so that they can be counted on to handle issues appropriately under unforeseen circumstances – something that he encountered regularly in his line of work.

**A Suggested Format for Guest Speaker Presentations**

Most guest speakers appreciate receiving some guidance on expectations before coming to class. Many may be couched in professional business presentations that could fly over the heads of an undergraduate audience while others may have only rarely

delivered any type of presentation in front of an audience at all. Similarly, students may be unaware of the potential benefits of having a guest speaker in class and not be able to take best advantage of the experience without some guidance. An important first step in ensuring a successful speaker-class interaction is therefore to perform some simple "pre-work" to be certain that expectations are realistic on both sides of the lectern.

**For the Speaker**

Begin by contacting the potential speaker to determine availability and interest in speaking to the class. Provide a brief description of the subject matter covered in class and the level of the audience (first-year students, graduating seniors, etc.). If the potential speaker agrees to come, discuss a plan for the visit and any details regarding specific topics to cover. For undergraduate business students, a simple format that works well is to have the speaker begin by providing a brief overview of his/her work history and current position. This sets the stage for the main part of the presentation and allows the students to better understand the speaker's knowledge base and expertise. Following the introductory material, ask the speaker to talk for 15-20 minutes on his/her main topic, leaving the remainder of the class period open for questions from the students and general discussion. Speakers frequently comment that they like this format for two reasons. First, for a typical 75-minute class period, they only need to prepare approximately 30 minutes of material – a comparatively easy request to make of a busy professional. Second, the Q&A format used for the bulk of the period allows topics to flex and align closely between the students' curiosity and the speaker's expertise, self-driven process that maximizes the success of the interaction.

**For the Students**

Begin by briefing the students at least 2-3 class periods ahead of time that a guest speaker will be appearing on a certain date. Personal experience has shown that some students immediately view the possibility of a guest speaker as a way to add new knowledge and perspective to a course while other students may see only the fact that

regular classroom activities will be suspended for an upcoming class period. Building interest uniformly throughout a class population can work if the speaker sounds like someone who will be innovative and knowledgeable and/or who will be coming from a well-known organization or background. Additional interest can be built by offering students a small amount of extra credit for preparing questions for the speaker ahead of time and asking them during the Q&A portion of the presentation. If the speaker and/or the speaker's topic area are not well known, encourage students to list general question areas that they would like to explore with the speaker and then formulate their exact questions as the presentation progresses. Extra credit points, up to an agreed-to maximum, are easily given if students turn in lists of questions asked as they leave class on the day of the presentation, or if they e-mail a list of their questions asked to the instructor by the end of the day.

**Discussion**

There is little argument that including energetic, well-versed guest speakers as part of a business curriculum adds great value for students. Feedback received after the speaker has left is nearly always positive, with students frequently commenting that the speaker's presentation and/or question and answer session afforded them the opportunity to see course theories and potential applications in a new light. This is particularly the case when speakers have presented information or told of personal experiences regarding concepts that are difficult for students to grasp from theory alone. In a business setting, such concepts might include dealing with difficult personnel situations, how to set meaningful business-driven goals and objectives, how businesses make decisions on allocating resources or any of a number of other complex topics. Known in the literature as "war stories," presentations and anecdotes of this nature are of great use as practical illustrations of not only what goes on in a business setting, but also how business process are actually carried out in practice (Harmer, 2009, p. 47-48).

It is interesting to observe that speakers need not always be physically present in order to deliver a similar degree of impact on

undergraduate business students. Online courses, for example, can also benefit from the inclusion of guest speakers through the use of streaming video, narrated PowerPoint® presentations or even guest editorials published to a Web-based course room by a business speaker of interest. Although the process may be a little more difficult to handle logistically, there is evidence in the literature that online participation by guest speakers can serve the same purpose of helping to cement key course concepts as having a guest speaker physically present in a traditional lecture-based class (Kumari, 2001; Walker 2005). More specifically, when guest speakers were invited to participate by posting in online discussion groups or boards, students demonstrated higher-order thinking regarding the topics under discussion while maintaining a high degree of participation (Hemphill and Hemphill, 2007).

The speakers' bureau described in this paper serves as a resource for instructors who would like to quickly identify and contact potential guest speakers for undergraduate business courses. Due to the type of information tracked, instructors can readily determine the potential speaker's areas of expertise and even get valuable hints on the interaction style that the speaker prefers to use during presentations. The ready availability of what amounts to a list of "prescreened" speakers has turned out to be a tremendous time saver for those who use the speakers' bureau. In operation for about three years, the speakers' bureau has received positive feedback from students, faculty and administrators, alike.

An important observation made from the ongoing use of the speakers' bureau is that it should be thought of as a dynamic database that can and will evolve over time. There was a small hurdle to cross during initial set up just to gather all of the information on speakers that department faculty had "squirreled away" in notebooks, planners, files, and even miscellaneous scraps of paper hidden in desk drawers. Once the initial set up was complete, however, the speakers' bureau has proven to be extremely easy to maintain. It is a database that can be stored on a shared drive with password accessibility. Depending on preference, it could be updated by a chosen administrator, but the preferred method would most likely include granting read/write

access to all department faculty. In that way, any faculty member who identifies and brings in a new guest speaker can quickly add that individual to the database for future reference. Similarly, a faculty member could then update information on previously listed speakers as needed, or even remove an entry for an individual who may have moved away. Operational parameters are thus easily tailored to the specific needs of a given academic department.

**Extensions of the Speakers' Bureau Concept**

Although the speakers' bureau described here was configured to contain information on corporate, government and not-for-profit business speakers, the basic concept is broadly applicable beyond the business classroom. As one example, a department in fine arts could logically use the same concept to keep track of local and regional artists, models, and/or speakers on the arts. Similarly, a history department could choose to track members of relevant historical societies, experts on different time periods in history, speakers with special knowledge related to particular events (such as ex-military leaders, for example) or many other purposes. The list of possibilities is long and varied.

The main point in developing a speakers' bureau is that for the price of a little set up time and a small amount of initial legwork, a highly useful database can be developed to facilitate the process of bringing outside expertise and knowledge into the classroom. Once the speakers' bureau is developed and faculty become accustomed to its availability, the ongoing maintenance process is inconsequential compared with the effort often required to identify and contact a single great guest speaker "from scratch." A well-designed speakers' bureau is thus a win-win for students and faculty alike, by making it easier to include the real-world relevance of a guest speaker's presentation as part of the curriculum.

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**Biography**

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## About the Book: Collaboration and Publication

**Miki Crawford, Ohio University Southern Campus**

In November of 2009, *Japanese War Brides in America: An Oral History* was released by Praeger Publishing, an imprint of ABC-CLIO. The idea for this book began in 2006 as a collaborative work by three researchers—two who are faculty and one who is a Japanese journalist. From idea to publication, this book was a dichotomy of "hurry-up and wait" which required perseverance and patience. This article will provide some information about collaboration, finding a publisher, and working effectively with editors and deadlines for those who are interested in publishing. In conclusion, experiences gained during the publication of *Japanese War Brides in America: An Oral History* will be shared.

**Collaboration Advantages and Disadvantages**

Collaborating on a publication means open communication, consensus, and a clear understanding of goals. The advantage is more diversity in ideas and content and less writing for the individual. Working with co-authors provides support, ideas and feedback, and networking. The disadvantages may lie in negotiations, loss of control, and the time it takes to collaborate. Following are merely a few examples of questions that need to be solved. Who decides the content of the book? How are the chapter titles determined? How will the content of the book be arranged? Who will take the lead in submitting an outline or the manuscript? Who determines which publisher? Who will negotiate the contact? Who will become the publisher's contact person? Who is responsible for the publication abstract? Who makes decisions on the book cover? Perhaps the most sensitive issue of all is who will be the lead author? While collaborating requires less time and effort in writing, it will require more time and effort in maintaining the partnership.

Another consideration regarding partnerships in publishing is how you will communicate. If your co-author(s) is/are not co-located and you rely on the use of email, it may take longer for

decisions to be made. Constructing email takes more time and thought than simple conversation and the lack of tone and non-verbals can hinder communication. When discussing sensitive issues or during negotiation, it may serve well to write and then hold the email until the next day for a second reading before sending. Communicating by telephone is quicker and easier; however, there are no records of the discussions and consensus. After a phone conversation, an email could summarize and confirm that discussion. This can clarify a miscommunication, as well as provide detailed records.

**Finding a Publisher**

You may have a great idea for a book or even a manuscript ready for editing. How do you find the "right" publisher? Acquiring a publisher often involves research to ensure that the topic is genre appropriate and that the manuscript submission follows the specific guidelines for that publisher. An important consideration for faculty is the use of peer review for the publication, or that the publisher is considered highly reputable and well known in the academic realm.

It is considered academic courtesy to submit to only one publisher at a time and gaining rejection before submitting to another publisher. This is often stated on submission information, as publishers do not want to spend their time considering a manuscript that may already have been accepted elsewhere. Careful selection of a potential publisher can save time and effort for the authors. Consider the publishers in your discipline, check your reference list for possible publishers, and ask others who are knowledgeable about publishing experiences. Having a mentor or networking with those who have experience can not only save time, but also provide support.

Rejection letters happen—but it only takes one acceptance letter for the publication. Publishers offer a standard contract that should be reviewed carefully. What do you wish to gain/maintain from this trade (your work to their work)? Who is taking the lead in these negotiations? You will be offered a percentage of sales—is this enough? Do you wish to maintain the copyright for future use? Can you give the publisher complete control over the medium, imprint, title, cover, advertising, price of the book, or other options?

What restrictions can be tolerated? Are you willing to wait up to 24 months before they actually publish your manuscript or return it and terminate the contract? Does this work require a stipend? Some stipulations may be surprising if this is your first contract. Consider each carefully and determine what is negotiable. It is essential to have open communication and that the co-authors are in agreement as each will need to sign the contract. Be aware that if a stipend is offered and accepted, you may become liable if your co-authors renege on this contract.

**Working Effectively**

Once the book outline has been accepted, the real work begins. Setting weekly goals and adhering to these goals are good motivators. In working effectively with co-authors and the publisher, a compatible word processing program and the use of the publisher's formatting style are critical. The style will be identified in the publisher's contract. The authors should review each other's work early in the writing stage in order to establish consistency in the writing and to ensure that the publication is uniform. Determine the compatibility of the word processing programs used by all involved early to bar frustration and wasted time. Even different versions of the same word program can prevent a user of a former version from viewing documents.

Your contract will specify due dates at different stages. Allow yourself some "cushion time" by setting an earlier date to complete each stage, especially if you are co-authoring. The publisher will most likely want one contact person who is responsible for submission of all work. It will take time to consolidate multiple works into one manuscript before submitting this to the publisher. If you are using photos in your book, the publisher will provide release forms and it will be your responsibility to gain the signatures for permission to use these photos.

Your editor(s) will provide corrections, ask questions about your word choices, and in some instances seek clarification. Yes, you may have more than one editor since this process takes time and editors may come and go during that time. This may also prolong the stages of your publication. Consider their changes and questions

vital to your work's improvement. An editor can more easily identify areas in writing that need consistency to help the publication's flow. However, there may be times when the editor's correction appears unfounded and a simple explanation from you can maintain your intended message. Working with an editor is another "hurry-up and wait" process as you hurry to submit your work and wait for revisions.

When it is time for the final revision, the last review before the manuscript becomes a book, you will be given an opportunity to make final changes. These may incur costs, so be aware of your publisher's stages and expectations. Make all corrections before this point. Your publisher may require that you submit an electronic and a hard copy (paper copy) of this final work. There may also be so called "last minute" details that may have been overlooked or delayed, such as an abstract for advertising, a quick review of changes for the cover, etc. At this stage, your editor is forwarding the manuscript to the next department and responses from you must be swift. After this brief period of fast-paced work, a significant waiting period begins as you wait to see the fruits of your labor—the book. It may appear advertised as a pre-order item on Amazon months before it is available and this fuels anticipation. Then there's the final waiting period—your first commission check.

**About the Book—My Experiences**

We had our trials and tribulations, which I considered to be minimal. The authors Katie Karoi Hayashi, Shizuko Suenaga and I live in different states (California, Washington, and Ohio) which meant that our collaboration was by email and telephone with a few mailings. The only time that we physically met was in 2006 when Katie Hayashi shared her idea to co-author this book with us at a war brides' convention.

Since I was actively seeking a publisher and my first language is English, the others suggested that I negotiate the contract, become the publisher's contact and be listed as lead author. Praeger was the second submission for publication. After the first rejection letter, I talked with Dr. Susan Sarnoff, a faculty member at Ohio University, about trying to publish and she suggested contacting Greenwood

Publishing Group of which Praeger Publishing is a subsidiary. While checking their website and the type of publications they provide, I realized that I have scholarly reference books published by Praeger. I also learned that Praeger focuses on many genres including social sciences, history, international affairs, and social issues for general readers and scholars. I had found a good match for our book's content and Praeger accepted our outline.

Points of contract negotiation that were important to us was to maintain copyright as Katie and Shizuko may wish to have this book published in Japanese; to have a specific number of photos in the book; and to have a free copy of the book provided to each author and each war bride whose story was shared in the book. Looking back, we may have been able to negotiate more copies and a better percentage of the sales, as we accepted what was offered—eight percent.

After the acceptance of our outline, Praeger Publishing was in negotiations with McGraw Hill and then with ABC-CLIO for consolidation. We experienced three editors, some lapses in time, resubmissions, and changes in our manuscript due to this.

However, it was our desire to provide a missing piece of American history—the oral histories of some Japanese women. When asked if co-authoring was worth the time and effort, I believe that it was the collaborative writing that helped this book to be successful. *Japanese War Brides in America: An Oral History* is currently listed in worldcat.org as available in 499 libraries worldwide.

For more information about academic publishing, here are some helpful references:

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**Biographical Information**

Miki Crawford, Ph. D. is an associate professor, faculty coordinator, and coordinator for the Technical and Applied Studies program at Ohio University's Southern Campus. Miki facilitates courses in Communication Studies (Public Speaking, Communication Theories, Training and Development, and Gender Communication) and in Technical and Applied Studies (Intro to TAS and the Capstone Seminar). Research on Japanese War Brides has been the main area of focus for the past several years due this aging population and the lack of information available about these women. Other areas of interest have been distance education, service learning, and gender communication. Miki is the chairperson for the Southern Campus curriculum committee, serves on Ohio University's Regional Campuses' curriculum committee, and is the campus' faculty senate substitute.

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# From the Traditional to the Conceptual: The Challenge of Teaching Art Foundations to the Non-Art Major

**Kelly Frigard, Associate Professor of Art**
**Kim Taylor, Assistant Professor of Art**
**University of Cincinnati, Clermont College**

**Abstract**

Two studio art professors team up to explore the challenges of teaching Art Foundations to non-art majors. This paper will explore the process of trying to expand students' conceptions of art beyond traditional forms by asking some of the following questions: Does art have to be beautiful? What is the creative role in art practice? Does art have a function in society? Do artists need to be professionally trained? These four questions are essential to the study of art; they formed the framework for our course design and the assignments we created. It is a challenging (and sometimes humorous) role that a teacher plays when trying to expand student understanding of art beyond the traditional and representational. The instructors embarked upon an experimental approach to teaching an Art Foundations course, including studio projects and reflective writing, aimed to strengthen student understanding of art. This research is particularly relevant to Fine Arts Areas at other branch campuses that have similar Art Foundations courses. It is also relevant to other disciplines within the humanities because it identifies common student preconceptions about a given subject and provides a means for addressing these obstacles in order to reach a deeper level of understanding.

**Profile**

The Fine Arts Area at the University of Cincinnati, Clermont College (UCC) is primarily a service area for the college, offering courses in Studio Art and Art History at the one-hundred and two-hundred levels, with average class sizes ranging from twenty to twenty-four students. These courses meet general education requirements for the general student population in Fine Arts,

Humanities, Historical Perspectives, and Diversity categories. With two full time faculty members and four adjunct instructors, UCC's Art Area serves approximately three-hundred students every quarter; students have a wide range of creative aptitudes, experiences and interests.

This study focuses on the Fundamental Concepts of Art course, an introductory-level Art Foundations course designed for non-art majors. The course combines studio art projects with analytical writing assignments in order to expand students' preconceptions about traditional and contemporary art, and the role of an artist in society. Contemporary Art is a term that describes artwork created during the present time, particularly art that's conceptually based, and demonstrates an artist's broad approach to diversity in style, media and subject matter. Conceptual Art refers to artwork whose primary focus is the actual concept, or idea, behind the physical art object(s). The format and goals for this course are similar to most introductory art foundations courses with the exploration of the principles and elements of design as the core. Studio projects include two and three-dimensional studies of line, value, shape, form, color, and composition in a variety of media including pencil, paint, clay, sculpture and collage. As the students become more familiar with the principles and elements of design through actual studio experiences, they learn to appreciate the challenge of making art.

**Challenges**

As instructors we have successfully taught this course for many years, but we recognized that our curriculum and assignments were not addressing some of the core challenges that might prevent students from understanding art in a meaningful way. As a result, we set up a personal blog for sharing our ideas, experiences, frustrations, failures and successes in the classroom.

In order to become more effective art teachers, we needed to better understand our students' (and the public's) basic views of contemporary art. Our students were entering the classroom with pre-conceived ideas regarding both traditional and contemporary art; furthermore, many of our students defined "good art" as having

to be both traditional and representational. In other words, the more a painting looks like a photograph, the more favorably the students tend to view it. We realized that our assignments needed to directly confront some of these very narrow conceptions so students could free themselves from societal stereotypes about art. Two initial questions, which we posited in our blog, were:

- What assumptions do we have about our students who are non-art majors and their views about contemporary art?

- How can investigating these assumptions help us learn to become more effective art teachers?

We also needed to encourage students to be more creative and to take art seriously even if they previously had negative experiences taking art classes or had no previous art-making experience. In order for our students to both appreciate and participate in a course that explores the creative process on a basic level, they need to develop a level of confidence and curiosity. As we addressed this need, we formulated some key questions to consider within the blog and, subsequently, the classroom itself:

- How do we encourage our students to become better artists when they haven't had much experience with art and don't consider themselves artistic? A typical student question is, "I'm not very creative. Am I going to be graded based on my creativity?"

- How do we encourage our students to take creative risks and establish a challenging classroom environment that motivates them to invest time and effort into class assignments? One of the most common student questions when working on a studio project is, "Am I done yet?"

- How do we establish a standard of excellence without alienating students? How do we help students develop a more informed standard of artistic excellence?

Finally, we wanted students to have an experience and appreciation for art that would last beyond the classroom and the often too common objective of simply earning a "good grade." If "the relation between what we see and what we know is never settled" (Berger, et al, 1972, p. 7), how could we, as teachers, initiate a questioning of these two conflicting modes of perception? The following questions served as the basis for creating new studio projects and writing assignments to help our students better understand both traditional and contemporary art.

- How can we use traditional art as a bridge to conceptually based art?
- How can we introduce conceptual art in a meaningful, non-threatening way?
- How do we provide opportunities for expansive thinking, encouraging students to explore some of these aesthetic questions on their own?
- How is the teacher a facilitator for new experiences and perceptions beyond the classroom?

From these questions, we created a project called "Rate the Artist", which involved researching and writing about both traditional and contemporary art alongside the studio projects for each unit.

**"Rate the Artist"**

"Rate the Artist," is an experimental project whereby students complete surveys at the beginning of the quarter based on their own assessment of the quality of a given artist's work. During the survey, students are presented with one sample image of the artist's work and asked to rate the artist according to whatever criteria they choose; no information about the artist or artwork is provided. "One" was assigned as best and "five" as the worst; we do not provide any criteria

for what constitutes "good" art or "bad" art. Underneath the rating of each artist, the student is asked to provide the criteria upon which he/she rated the artist. The explanations students write on the evaluations are more enlightening than their numeric rating. By requiring the students to explain the rationale for their rating, we are forcing them to make judgments about the work and to initiate a relationship with it. This process also allows students to reflect and ponder the criteria they used to judge the work.

We are asking students to form a definite rating about the quality of the artists' work based on their own intuitive responses. In many ways this experience mimics the way the public experiences art; typically very little context for the artwork is provided. The experience of visiting an art museum is alien to many people and most of our students have never visited an art museum or have very little understanding or interest in the role of art in society. This survey is intended to bring the question of rating the "quality" of an artwork to the forefront on a more reflective and intuitive level.

The five artists for this project were taken from those who produce traditional and contemporary art, with the majority being contemporary artists who work in a wide range of media. In selecting artworks, we were thorough in compiling a diverse range of styles and media while considering the question, "Does the public have no real choice between vulgar kitsch and alienating avant-garde work? Must it be either Thomas Kinkade's villages or Damien Hirst's sharks?" (Freeland, et al, 2001, p.96) The following is a list of the artists, brief profiles of their work, and the media in which they work.

- Artist: Damien Hirst, born 1965
  Description: Conceptual, controversial, multi-media artist employing non-traditional materials such as scientific specimens and large-scale installations

- Artist: Polly Apfelbaum, born 1955
  Description: Experimental fiber media artist utilizing unexpected, floor-based presentation of colorful pattern work
- Artist: Jenny Saville, born 1970

Description: Painter who works with the traditional medium of paint but explores the nude as subject matter from a contemporary, even confrontational, context

- Artist: Jean- Auguste-Dominique Ingres, 1870-1867
  Description: Neo-classical painter of traditionally crafted, idealized nude figures

- Artist: Carrie Mae Weems, born 1953
  Description: Multi-media photographer who creates biographical and historically based images that address gender, race, slavery and other societal issues in a challenging manner

- Thomas Kinkade, born 1958
  Description: Painter, although most of his paintings are photographically reproduced and these reproductions are sold to a mass market, his images are highly derivative landscape scenes crafted in a formulaic and sentimental style

After completing this initial survey of the artists, the classes are introduced to a series of lecture / discussions of traditional and contemporary art dealing with each of the principles and elements of design through weekly studio projects and writing assignments. Slowly students grow an appreciation for the process of making art and the complex thought process involved. We use traditional art as a bridge to conceptual art by explaining how so-called "classical" artists used elements of abstraction in their work to emphasize content and meaning through images like Michelangelo's sculpture of the biblical figure "David." By asking the students to analyze this work and examine why the artist chose to make David's hands very large in relation to the rest of his body, the students start to understand the importance of abstraction as a necessary tool to relay meaning and symbolism. Through these classroom experiences, students start to understand that artists have taken creative risks throughout history. Alongside the traditional work, we show the work of present-day artists who are also taking creative risks within a contemporary context.

We show many images of the sketches and understudies of Renaissance artists so that students will see that finished "masterpieces" often took years to create, with reconsiderations along the way. This concept is very important as students ask the all-too-familiar question, "Am I done yet?" as they're just beginning a project. Throughout the course of a class, we see progress, as students analyze the work of artists at museums and local galleries. By seeing art up close, some of their estrangement is removed and students speak about how they can't wait to return to the museum or how they want to share the experience with a family member. Through these experiences, students see the relevance of art for their lives.

Toward the end of the quarter, we revisit the "Rate the Artist" assignment, this time we break the class into five groups and require each group to research one of the five artists. We work with each of the groups as they research each of the artists online and gather important information through individual artist statements, interviews, collective imagery and critical reviews. While the students may not necessarily like the artist they are assigned, through this project they learn more about each artist's body of work. Each of the students writes an individual paper about the artist and answers a series of questions about this history, context, materials, and meaning of the artwork. Based on this research, each of the five groups gives a presentation about their assigned artist in front of the class. The group is required to show multiple images of the artist's work and explain the context. After all the groups have presented, the "Rate the Artist" survey is given to the entire class again. The following comments are a result of the final class surveys. Some of the comments are very insightful, making it clear that the students are applying critical thinking to the assessment process. It was also evident that the more challenging works prompted some of the more thoughtful student comments:

Artist: Damien Hirst

- Art is definitely made to create controversy. Controversy creates cash.
- The things I don't particularly like I still consider very good art

and very original. It's just not in my taste.
- He just really tries all kinds of art. He really just does what he wants and doesn't care what people will think of it.

Artist: Polly Apfelbaum
- It's an artwork that others can pick up on and reproduce.
- This piece is very creative and deserves recognition in my opinion.
- The different abstract colors bring life to the piece.

Artist: Jenny Saville
- Saville is one of the few artists that have the guts not to make their work pretty and to show how we live in a sick world that puts too much emphasis on beauty.
- Even though I view the artist's work as a little bit disturbing, I do understand the work that goes behind the concept and creation of the painting.
- This theme is actually a different approach to viewing women and the beauty of women not being the same as society's views of women.

Artist: Jean Auguste Dominique Ingres
- His pieces of art are the type of thing that pops into my head when the word "art" is mentioned.
- While I am not extremely inclined to like his female nudes, I can appreciate the extreme skill that was used to create them.
- In my current home, I think that Ingres's work would be out of place. However, if I ever move to an old Victorian style house, I would love to have one of his pictures in my living room. I think, though, that his pieces fit best in a museum.

Artist: Carrie-Mae Weems
- I can honestly say that I didn't believe that Carrie Mae Weems' work was art when I was first introduced to her. After I learned about her and her artwork I do believe her work is art and she has a true meaning and purpose for what she does.
- Weems chose to bring to light the African American experience.

- I personally enjoy researching Carrie's work. I found a lot of her work to be educational and heartfelt.

Artist: Thomas Kinkade

- The fabulous Thomas Kinkade, one our our many blessings here on earth. Bringing joy to his audience by becoming the biggest sellout in modern artistry. To me he is the politician of the art world, using the compelling good ole Christian stories to inspire paintings that bring a simplistic inspirational message to all.
- You can only paint so many pictures of cottages until they start looking the same.
- I think he is very talented but I wouldn't display it in my home. It's just a little too perfect and cheesy for my taste.

**Reflective paper: What have you learned in this class?**

At the end of the quarter students are asked to write a paper that provides introspection in context with the studio projects and the "Rate the Artist" project. Although not all students expressed a change in perception, many showed significant growth over the course of the class. "Art is a quality that permeates experience; it is not, save by a figure of speech, the experience itself." (Dewey, et al, 1934, p.339) Through the process of both experiencing and writing about art, most students show an understanding of both form and content. A sampling of student comments demonstrates a more thoughtful approach to viewing art:

- It has allowed me to focus on more depth for my own art and show more passion than I previously thought I should or could.
- This class took me out of my comfort zone, which is truly something I am grateful for.
- I have gained a deeper appreciation for the process of creating a work of art from this class. The thought, planning, and effort involved to create a work of art can only truly be appreciated by the experience of doing it.
- The most important thing I've learned in this class is not to judge it. We have to give it a chance and try to understand it.

- I learned that even though I don't like someone's art, that doesn't mean it isn't art.
- I look back to some of the examples of art I've seen in this class that were not pretty in a conventional sense, but these artists brought out strong feelings. When I look at artwork, I ponder its origin and meaning. This will be the biggest thing that I take from this class.

**Conclusion**

Art objects embody our human experience and sympathies; art is symbolic of the culture in which we live. The study of art is a personalized subject whereby each student relates to the artwork differently— student responses are based on their own unique life experiences. Successful art must have both a personal and universal quality; it must engage our senses, feelings, thoughts, and intellect. Sometimes it's meant to make us uncomfortable, often by serving as a mirror to problems within society.

The "Rate the Artist" project has proven successful because it has provided a way for introductory-level students to better understand and appreciate how and why artists make art. "Art denotes a process of doing or making" (Dewey, et al, 1934, p.48) and students who engage in the making process gain deeper insight into its meaning and relevance. The project synthesizes all the information learned throughout the quarter and reinforces it in a direct context for the class as a whole. The student comment, "The thought, planning, and effort involved to create a work of art can only truly be appreciated by the experience of doing it" shows that the student understands the tools necessary to create successful design while understanding the context and symbolism embodied in art objects. The "Rate the Artist" project allows students to understand that they don't necessarily have to "like" an artwork on a purely visual level in order to appreciate its significance. This thought is reflected in the following student comment, "I learned that even though I don't like someone's art, that doesn't mean it isn't art." One of the greatest barriers non-art students face when entering the classroom is the sense of alienation that comes with not having a background in the subject.

We are also aware of the reality that some students have not been able to cross the bridge from representational to conceptual art through this project and still find conceptual art alienating. Some students, like the general public, will always feel more comfortable with representational art because it reflects a more familiar experience. Our role as instructors, however, is to provide the tools to make informed decisions when faced with works that might be of a challenging nature. For example, the following student comment shows a lack of understanding of Jenny Saville's work, " I don't like this one at all and it kind of scares me." Comments like this reflect the discomfort students sometimes feel when conceptual art questions familiar paradigms, especially the concept of beauty prevalent in Saville's work. Ultimately students are rewarded as academic inquiry produces intellectual growth and understanding as reflected in the following student comment, "This class took me out of my comfort zone which is something I'm truly grateful for."

Art becomes a symbol of the human dimension and has a relational role to each individual. Our goal in teaching this class is to create a learning environment where students start a relationship with art. The final student responses to the "Rate the Artist" project demonstrate this growth process and the new access students have gained through inquiry and research. A student writes, " I look back to some of the examples of art I've seen in this class that were not pretty in a conventional sense, but these artists brought out strong feelings. When I look at the artwork, I ponder its origin and meaning. This will be the biggest thing that I take from this class." As instructors we know we have created an effective classroom environment when students experience how art can elicit strong feelings which prompt deeper investigation into the origin and meaning of the work. The "Rate the Artist" project has allowed us to nurture a curiosity for art in its many styles and forms creating a bridge for students from the traditional to the conceptual.

Instructors may apply this study to other disciplines by addressing common successes and failures through a collaborative blog with fellow colleagues. This type of focused dialogue can identify problems and initiate inventive approaches to new assignments that

effectively address instructor concerns. The investigation of core questions within any discipline is essential to good course design and provides a means for discussion and more innovative approaches to teaching.

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**Biographical Information**

Kelly Frigard received her MFA in Inter media art from the University of Iowa in 1996. She has traveled widely to northern climates pursuing her interest in traditional art forms including weaving, knitting, spinning wool, and felting. As a visiting artist in the arctic region of the Northwest Territories she worked with an Inuit women's sewing co-operative and learned how to work with seal and caribou skins. She received a Fulbright Fellowship to study traditional textiles in Sweden at Saterglantan Hemslojdens gard in Insjon and Handarbetets Vanner in Stockholm. Following her interest in felting and natural dyes, she also taught and studied at Jurva College of Arts and Crafts in Jurva, Finland. She is currently an Associate Professor of Art at University of Cincinnati's Clermont College in Batavia, Ohio. Kelly Frigard shows her work nationally and locally in galleries around the Cincinnati area.

Kim Taylor earned her MFA from the University of Cincinnati's College of Design, Architecture, Art and Planning in 2006, and a BFA from the University of Texas at Austin. She has also

studied at the University of Georgia in Cortona, Italy, and is currently Assistant Professor of Art at UC Clermont College in Batavia, Ohio. In 1990 she began her career as an artist on the animated sitcom, The Simpsons, and has spent more than two decades working in the creative fields of animation, graphic design and product design. She has traveled extensively within Asia for art and research, including artist residencies in Taipei, Taiwan, and Beijing, China. In addition to local galleries, her artwork is exhibited nationally and internationally. For more information, www.kimraetaylor.com.

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# Assessing Career And Educational Aspirations of High School Youth And Identifying Trends in Their Perceptions of Small Communities

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**Abstract**

This study assesses post-high school career and educational aspirations of high school youth in small communities within Northwest Ohio. The study further identifies trends and issues related to youth retention within this area. Researchers sampled over 875 graduating seniors from 16 high schools within six counties throughout the region. Of the counties involved in the study, none contained metropolitan centers. Results highlight future career and educational goals of these young people, impressions of their home communities as a place to live and work, and the impacts on their communities based on post-high school choices. Results suggest that the area is seen as a positive place to live, however, not seen as a viable option for the highest achieving high school students or those that are pursuing post secondary education. Youth whose parents are originally from this rural area and young people who earn higher wages in part-time employment are more likely to believe that they will remain or return to Northwest Ohio to live and work. Students with GPA**'s** of 3.75 report an overall lower rating of Northwest Ohio as an employment location for them.

## Theoretical Base

### The Retention Crisis:

Career development and occupational choice are important decisions for older youth and often times propel young adults to seek out better opportunities in urban area. Not only do occupations provide

a means to support individuals and families, but they also provide meaning and purpose in life for many. A large proportion of rural areas in the US are experiencing struggles with keeping youth from migrating to urban areas and sustaining a youthful, skilled workforce. Opportunities that once kept youth tied to rural communities in the US are changing. As urban areas provide more job opportunities and more high school students seek post secondary education, the claims that locality, kinship, and social support are no longer the ties that bind youth to their rural communities. The focus must shift to how communities retain rural youth, prepare them for sustainable jobs within their communities, and strengthen their work readiness. Beyond retaining youth, small communities need to strive towards providing opportunities that attract young adults. With any luck, an equal influx of talent flowing into their state can compensate for those who choose to move elsewhere (Moutray, 2009). Unfortunately, many small communities are weakening because of the brain drain. Statistically, Ohio has seen a 23.6% decrease in its 20-29 year old population between the 1990 and 2000 census years. (Ohio Department of Development, 2003). Small communities within Northwest Ohio have decreases in this population at much higher rates averaging 28.6% (Ohio Department of Development, 2003). The 2010 census is projected to show further declines.

The out-migration of youth from rural areas is an issue predominantly driven by economic factors. Many policymakers and economic development leaders worry about the net outflow of talent from their state, especially in rural or economically depressed areas (Moutray, 2009). Rural adolescents, more frequently than their urban or suburban counterparts, are more likely to experience the conflict of choice between the desire to live close to family and the necessity of moving away to achieve success. Youth who choose to place a predominant weight on the desire to remain close to home in their future career choice are more likely to feel limited and are more likely to have lower career aspirations (Hektner, 1995). The context of the school and community culture has a significant impact on youth occupational choice (Ferry, 2003). While many of Northwest Ohio rural schools have high achievement results, it's proving not to be

enough. Of tenth graders who completed all five portions of the Ohio Graduation Test (OGT), statewide 69.8% of students scored proficient or better on all five test (Ohio Department of Education, 2009). Of the tenth graders who completed all five portions of the OGT within the surveyed counties in this study, 77.5% of students scored proficient or better on all five tests (Ohio Department of Education, 2009).

Students in a Pennsylvania study of high school graduates reported "money" or financial means to attend school or training" as the number one barrier to achieving their occupational goal (Ferry, 2003). Rural youth tended to have lower educational and career aspirations than their urban counterparts. Major contributors include lower socioeconomic status of rural families and the limited scope of available opportunities presented to rural youth (Haller & Virkler, 1993).

Formal education has been and continues to be what Anthony Giddens (1990) calls a key institution of "disembedding," loosening ties to particular locales and promoting out-migration from rural places. While post secondary options are predominant in Northwest Ohio (nearly 16 within the region), these institutions may not be preparing youth for jobs not found in Northwest Ohio.

**Influences to Stay in Small Communities:**

A study of Pennsylvania graduating high school youth conducted by Ferry (2003), found that parents and family members had the biggest influence on youth occupational choice. Closely following parents in terms of influence was the young person's evaluation of their own personal skills, aptitudes, and academic efficacy. A study conducted by Otto (2000) found of all the people to whom youth can turn for help with making career plans, most look to their mothers. Otto (2000) further explains the findings apply across gender, to young men as well as young women; and they apply across race, to minority youth as well as majority-culture youth. The results underscore the importance of parents as allies and resources for career counselors in facilitating youth career development (Otto, 2000).

Other influences included part-time or volunteer work experience, teachers and school projects (Ferry, 2003). His study

suggests the key to changing youth perceptions about potential careers will be to provide parents, schools, and communities the tools to communicate positive opportunities about local employment. The study found that youth who planned to stay were motivated to do so because of family and the culture in the rural area, the connection to family being very strong in these young people (Ferry, 2003). With states investing heavily in the education of their youth, it can be disappointing for small communities to see some of their highest achieving students move away.

This study assesses post-high school career and educational aspirations of high school youth in small communities. The study further identifies trends and issues related to youth retention in small communities within Northwest Ohio. The objectives of this research study were to analyze the current trends related to career, education, and future residency choice of high school graduates in Northwest Ohio. Specific components included:

- What are the current trends of youth interest in career and educational objectives, particularly in rural Northwestern Ohio?
- How do young people feel about their home community as it relates to their future intent of either remaining or returning to live and work?
- How do parents, peers, economic factors, and distance from post-high school educational institutions impact educational decisions after high school graduation?
- What factors influence the intention of youth to either remain or return to the Northwestern Ohio area upon graduation?

**Methods**

Sixteen high schools were identified in six study counties (Mercer, Van Wert, Williams, Henry, Putnam, and Paulding). Each of these counties is considered rural with no metropolitan centers and has all experienced significant population loss of young adults. After

receiving approval from Wright State University Human Subjects Review and Ohio State University Human Subjects Review, a written survey instrument was administered in 16 cooperating Northwestern Ohio High Schools with 875 high school seniors providing usable instruments for this research project. Anonymity and confidentiality of participants and their individual responses were maintained throughout the project. Data analysis using SPSS was utilized to evaluate multiple components of the survey instrument. Descriptive statistics analyzed overall youth ratings of community perceptions. Pearson correlations were used to determine interrelation between various components of the research. Cronbachs alpha of .90 indicates a high level of confidence in instrument validity.

**Results**

**Demographic Data**

Approximately 52% of the sample was female. The surveyed students indicated a large number of their parents were employed in the management/professional, manufacturing, and skilled trades as professions. 86% of mothers and 93.5% of fathers were reported to be working. A relatively low percentage of the parents of these high school seniors had completed Bachelors or Graduate Degrees (approximately 22% of mothers and 17.5% of fathers). The vast majority of respondents (80%) indicated that both their parents were originally from Northwest Ohio.

The vast majority of these Northwest Ohio High School Seniors were employed at least part-time. Over 59% of these seniors indicated that they were working 11 hours or more per week, 21% indicated they worked between 1 and 10 hours. Less that 20% of the students surveyed did not have some type of part-time employment. At the end of their high school programs, most reported that they were not allocating a large amount of time studying per week. Over 84% of high school seniors indicated that they were allocating two or fewer hours per week studying (Table 1).

**Table 1**
**Hours Studying per Week**

| Distance | Number | Percent |
|---|---|---|
| Less than 1 hour | 431 | 49.5% |
| 1-2 hours | 299 | 34.4% |
| 2-3 hours | 97 | 11.1% |
| 3-4 hours | 30 | 3.4% |
| More than 5 hours | 13 | 1.5% |
| Total | 870 | |

More than half of the respondents indicated that they were actively engaged in volunteer work on a weekly basis. A sizable number (9.4%) were volunteering more than five hours per week. High school seniors reported relative success in their academic work (when analyzing High School Grade Point Average). Over 61% of seniors reported a GPA of 3.0 or higher.

**Post-High School Plans of Northwest Ohio Graduating Seniors**

The researchers explored the intended high school plans of this sample of high school seniors. The vast majority (80.0%) reported an intention of attending college and 6.0% had chosen a trade school option. Only 8.1% indicated that they were entering the workforce directly, 3.1% selected a military plan, and 2.9% were unsure of their post high school plans.

With over 85% of the surveyed population indicating post-high school educational plans, it is of particular interest to the researchers what career fields they are pursuing. Of those seeking a trade school education, the most popular program areas included Auto/Mechanical (32.7%), Skilled Trades (21.2%), and Health Care (13.5%) (Table 2).

**Table 2**
**Program of Study – Trade School**

| Program Area | Number | Percent |
|---|---|---|
| Auto/Mechanical | 17 | 32.7% |
| Skilled Trades | 11 | 21.2% |

| | | |
|---|---|---|
| Health Care | 7 | 13.5% |
| Driving/Trucking | 4 | 7.7% |
| Business | 2 | 3.8% |
| Education | 1 | 1.9% |
| Other | 7 | 13.5% |
| Total | 52 | |

The top three programs of study for those planning to attend college include Medical (29.7%), Business (17.1%), and Education (13.0) (Table 3).

**Table 3**
**Program of Study – College**

| Program Area | Number | Percent |
|---|---|---|
| Medical | 205 | 29.7% |
| Business | 118 | 17.1% |
| Education | 90 | 13.0% |
| Engineering | 50 | 7.2% |
| Liberal Arts | 34 | 4.9% |
| Social Sciences | 30 | 4.3% |
| Agriculture | 23 | 3.3% |
| Physical Science | 23 | 3.3% |
| Computer Science | 21 | 3.0% |
| Other | 59 | 8.5% |
| Total | 691 | |

Despite the close proximity of many post secondary institutions, the surveys revealed moving outside of the home to attend college or trade school is the plan reported by 69.2% of high school seniors. However, those who indicated plans to move tended to report an overall close locale for their college/trade school of choice. In reporting the distance of their move to seek an advanced education, 63.2% reported a location less than two hours away. For students choosing to commute, more than 95% intend to drive less than 60

minutes to their post secondary school (Table 4).

**Table 4**
**Commute Distance (Those Commuting College or Trade School)**

| Distance | Number | Percent |
|---|---|---|
| Less than 15 minutes | 32 | 13.6% |
| 15-30 minutes | 89 | 37.7% |
| 30-45 minutes | 68 | 28.8% |
| 45-60 minutes | 36 | 15.3% |
| More than 60 minutes | 11 | 4.7% |

If entering the workforce directly, respondents were asked what type of job category they would seek upon graduation. Manufacturing, Construction/Skilled Trades, and Agriculture were the most common areas of intent for direct from high school employment (Table 5). Of those working directly, 78.9% indicated that they believed they would stay in the Northwest Ohio area for employment, while 21.1% expected to be leaving the area.

**Table 5**
**Job Classification of those Entering Workforce Directly**

| Category | Number | Percent |
|---|---|---|
| Manufacturing | 13 | 18.3% |
| Construction/Skilled Trades | 13 | 18.3% |
| Agriculture | 12 | 16.9% |
| Food Service | 8 | 11.3% |
| Business | 6 | 8.5% |
| Retail | 4 | 5.6% |
| Secretarial | 3 | 4.2% |
| Health Care | 2 | 2.8% |
| Other | 10 | 14.1% |
| Total | 72 | |

**Youth Perceptions of their Home Communities**

The High School Seniors in this sample reported overall positive ratings of their community on a series of twelve perception indicators. Highest overall mean ratings on these questions were reported on the following two areas: "Northwest Ohio is a Safe Place to Live" and "Northwest Ohio is a Good Area to Raise a Family." Youth tend to have on overall lower rating of Northwest Ohio when evaluating the cultural, entertainment, and overall employment opportunities of the area (Table 6).

**Table 6**
**Youth Perceptions of their Community**
**(Likert Scale 1 = Strongly Disagree, 5 = Strongly Agree)**

| Question | Mean Rating |
|---|---|
| Safe place to live | 4.39 |
| Good area to raise a family | 4.07 |
| Schools are of high quality | 3.64 |
| Area share my beliefs | 3.62 |
| I can get a good education in this area | 3.49 |
| My parents want me to stay in the area | 3.38 |
| There is positive growth in the area | 3.37 |
| Area is interesting and fun | 2.81 |
| Enough cultural activities | 2.72 |
| There are enough employment opportunities in the area | 2.60 |
| There are enough shopping/restaurants in the area | 2.20 |
| *Other people know too much about me* | *4.24* |

**Impact of Youth Post-High School Plans**

The influence of college or trade school choice was evaluated using a series of Likert-Scale questions assessing influence. The

strongest overall influencers on the choice of college or trade school were "Job Opportunities", "Earning Impact", and "Majors/Programs". Surprisingly, family influence tended to be rated lower when compared to the other variables (Table 7). The influence of friends and the extra-curricular activities offered at the college/trade school were rated considerably lower than other variables as well.

**Table 7**
**Influence on College or Trade School Choice (n = 742)**
**(Likert Scale 1 = Very Weak Influence, 5 = Very Strong Influence)**

| | |
|---|---|
| Job Opportunities | 4.34 |
| Earnings Impact | 4.33 |
| Majors/Programs | 4.25 |
| Skills Gained Before Work | 4.01 |
| Location | 3.90 |
| Cost/Scholarships | 3.79 |
| Family Influence | 3.75 |
| Friend Influence | 2.80 |
| Extra Curricular Activities | 2.49 |

Of those that were heading directly into the workforce, the top factors reported included: "Job Opportunity", "Immediate Income/ Wages, and "School is Too Costly". Again, "Family Influence" and "Friend Influence" were rated lower in terms of their influence on post-high school workforce decisions (Table 8). Of those intending to enroll in the military, more than half agreed that they selected the military due to their "Desire to Serve Others' and "Monetary Influence".

**Table 8**
**Reason for Entering Workforce Directly**

| Distance | Number | Percent |
|---|---|---|
| Job Opportunity | 21 | 31.3% |
| Immediate Income/Wages | 18 | 26.9% |

| | | |
|---|---|---|
| School Too Costly | 11 | 16.4% |
| Family Influence | 8 | 11.9% |
| Friend Influence | 1 | 1.5% |
| Other | 8 | 11.9% |
| Total | 67 | |

**Impacts on Youth Retention**

Although the surveyed students indicated little influence from parents on their career directives, they did reveal strong pressure from mothers and fathers to remain in Northwest Ohio. The researchers analyzed whether or not there was a parental influence on youth retention and if their respective parents were originally from Northwest Ohio themselves. Youth whose mothers were born and raised in Northwest Ohio reported a significantly higher rating on the "Desire to Live in Northwest Ohio", "Northwest Ohio will Provide a Good Job", and "My Mother Influences me to Remain in Northwest Ohio" ($p < 0.05$) (Table 9). Mothers tended to have more influence than fathers for these variables. Similar to the influences of mothers, youth whose fathers were from Northwest Ohio were significantly more likely to think greater employment opportunities are in Northwest Ohio and fathers encouraged them to remain in Northwest Ohio (as compared to their peers whose parents were not originally from Northwest Ohio) ($p < 0.05$).

**Table 9**
**Impact of Mothers and Fathers on Youth Perceptions of Northwest Ohio**
**(Likert-Based Questions 1 = Strongly Disagree, 5 = Strongly Agree)**

| Mother from Northwest Ohio | Desire to Live in NW Ohio | NW Ohio Will Provide Good Job | My Mother Strongly Influences me to Remain in NW Ohio |
|---|---|---|---|
| Yes | 3.08 (n = 685) | 2.92 (n = 671) | 3.02 (n = 650) |
| No | 2.42 (n = 144) | 2.54 (n = 140) | 2.40 (n = 136) |

| Father from Northwest Ohio | | | |
|---|---|---|---|
| Yes | 3.09 (n = 691) | 2.93 (n = 684) | 2.93 (n = 656) |
| No | 2.29 (n = 128) | 2.36 (n = 118) | 2.22 (n = 107) |

Not only do young people whose parents originate from Northwest Ohio tend to perceive their future employment success in Northwest Ohio more optimistically, but they also tend to have an overall more positive view of their respective community (when compared to their peers whose parents were not originally from NW Ohio) (Table 10). Statistically significant higher ratings were reported by seniors rating life/family, quality of their community, employment growth, and cultural/entertainment options.

**Table 10**
**Youth Perceptions of their Community Differences Based on Parental Alumni Status**
**(Likert Scale 1 = Strongly Disagree, 5 = Strongly Agree) Bold = Significant Difference**

| Question | Mean Rating Mother from NW Ohio (n = 702) | Mean Rating Father from NW Ohio (n = 711) | Mean Rating Mother not from NW Ohio (n = 153) | Mean Rating Father not from NW Ohio (n = 134) |
|---|---|---|---|---|
| Safe place to live | **4.45** | **4.45** | **4.20** | **4.20** |
| Good area to raise a family | **4.14** | **4.16** | **3.82** | **3.63** |
| Schools are of high quality | **3.68** | **3.72** | **3.47** | **3.26** |
| Area share my beliefs | **3.73** | **3.75** | **3.16** | **3.01** |
| I can get a good education in this area | **3.56** | **3.56** | **3.16** | **3.12** |
| My parents want me to stay in the area | **3.50** | **3.47** | **2.82** | **2.86** |
| There is positive growth in the area | **3.43** | **3.47** | **3.14** | **2.89** |
| Area is interesting and fun | **2.89** | **2.88** | **2.45** | **2.47** |
| Enough cultural activities | **2.80** | **2.77** | **2.35** | **2.39** |

| | | | | |
|---|---|---|---|---|
| There are enough employment opportunities in the area | **2.69** | **2.67** | **2.15** | **2.22** |
| There are enough shopping/ restaurants in the area | 2.24 | 2.20 | 1.95 | 2.10 |
| *Other people know too much about me* | *4.27* | *4.25* | *4.16* | *4.23* |

An additional variable analyzed in terms of its possible relationship to youth perception of future employment viability in Northwest Ohio was their high school employment and Grade Point Average (GPA). Youth earning higher overall pay per hour reported higher ratings on their "Desire to Live in NW Ohio" and "NW Ohio will Provide a Good Job for Me" ($p < 0.05$). Additionally, according to findings reported in Table 11, the highest achieving high school students reveal a lower perception of employment viability for themselves in Northwest Ohio ($p < 0.05$). When analyzing GPA and responses on "Desire to Live in NW Ohio" and "NW Ohio will Provide a Good Job", results indicate a significantly lower rating from youth with high school Grade Point Averages of 3.75 and higher.

**Table 11**
**Impact of High School GPA on Youth Perception of Northwest Ohio**
**(Likert-Based Questions 1 = Strongly Disagree, 5 = Strongly Agree)**

| HS GPA | N | Desire to Live in NW Ohio | NW Ohio Will Provide Good Job |
|---|---|---|---|
| Under 2.0 | 14 | 2.93 | 2.69 |
| 2.0-2.49 | 77 | 2.81 | 2.74 |
| 2.50-2.99 | 223 | 2.96 | 2.82 |
| 3.0-3.49 | 252 | 3.02 | 2.95 |
| 3.50-3.74 | 122 | 3.04 | 3.16 |
| Higher than 3.75 | 139 | 2.83 | 2.52 |

**Conclusion**

Ohio as a state continues to deal with youth retention challenges. Not only is the state losing population, but a disproportionate share of this loss within Northwest Ohio is those highly educated and skilled young people. The impact of the loss of youth is compounded in rural areas as they deal with the trend of population loss to metropolitan areas of the state and outside the state. Data from the Ohio Department of Development reveals a continual trend not only in overall population loss in most areas of rural Northwest Ohio, but a disproportionate loss of the 20-29 year old cohort. This study found a strong desire of young people to advance their education and skills post high school with the region. Over 80% of high school seniors in this study were planning to advance their education in either a college or trade school setting. When looking at retention issues, we are not typically losing these students from the area upon starting their college or trade school program as 63% are seeking this education within a two hour radius of our region. The area has a strong education infrastructure that students plan to utilize to seek advanced training. Researchers suggest a thorough evaluation of post-secondary educational programs within the area. Are these institutions preparing our youth for local jobs or are they giving them educations that will ultimately push them from the area to find employment? Local colleges and trade schools can be valuable assets in addressing youth retention issues in small communities. If programs can be tailored for local job opportunities, these institutions can be the catalyst for reversing youth retention trends.

Small communities in Northwest Ohio have lots of valuable attributes young adults recognize. When analyzing the impressions that high school seniors have regarding Northwest Ohio, the results indicate an overall positive evaluation. High school seniors report Northwest Ohio as a “safe place to live”, “a good place to raise a family”, and that the “quality of the schools are very high.” Most young people tended to report a desire to either remain in or return to the area to live and work. Generally, students indicate encouragement from their parents to remain in Northwest Ohio. Those students whose parents were originally from Northwest Ohio reported a higher

level of interest in living in the area and indicated more positive evaluations of their home community. The families that are located here in Northwest Ohio tend to be deeply rooted with a strong desire reported by these young people to want to stay here if the employment opportunities are available for them.

Despite the positive perceptions students have of these small communities, students did identify challenges in living in rural Northwest Ohio. Among the greatest challenges were the perceptions of limited professional jobs in their communities, limited cultural activities, and less recreation and shopping options.

Northwest Ohio has a strong foundation of stable families, strong communities, quality schools, and a history as a great place to live and raise a family. A number of recommendations should be considered to further position Northwest Ohio to retain the next generation of working young people. Central to the issue of retaining youth in Northwest Ohio is employment opportunity for the next generation and the preparation for this group to match the future job needs of the area. The researchers suggest an analysis of the advising and preparation of high school students as they make choices in their future educational and career goals. These youth need to be aware of what future employment opportunity might look like. Career exploration, mentoring, young professional speakers, etc. can strengthen the link between community employers and their potential workforce. Internships, job shadowing, tours, and other methods of showcasing a realistic view of local employment opportunities will enable youth to make an educated knowledgeable decision on career goals. To encourage talented youth to remain in Northwest Ohio, they have to be able to see viable professional career options from a realistic perspective.

One of the influencers that increased the retention likelihood of these youth was their employment during high school. Over 82% of high school seniors report that they are employed in a paid position. Youth earning higher overall pay per hour reported higher ratings on their "desire to live in Northwest Ohio" and also are more likely to agree that "Northwest Ohio will provide a good job for them." As organizations consider their financial support of students

traditionally given in the form of scholarships and grants, they may want to consider formalizing the relationship in terms of a paid part-time or summer position, or asking for a return of investment with a certain amount of community service hours in the home community. A number of medical organizations in the Northwest Ohio area have been proactive in this arena providing paid internship experiences to talented college students to build a relationship and encourage their eventual employment in the area.

The linkage with future working professionals should continue beyond the high school setting as youth pursue college training and workforce development. Ultimately, if communities want to prosper in years to come, it is imperative they build linkages with youth, employers and post secondary schools and form a consortium to plug the brain drain within their communities.

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# Approaches to Improved Learning in Foundational Courses

**Janice Rye Kinghorn, Miami University Middletown**
**Eli Nettles, Nashville State Community College**

Inquiry-based learning is rapidly replacing lecture-based learning in colleges and universities across the country. Experiments with course redesign programs that promote experiential learning, group activities, critical thinking, and student engagement are emerging. These pedagogies present unique challenges and opportunities for open-access institutions. How can students of diverse backgrounds and levels of preparedness become full participants in engaged learning? This paper describes the use of pedagogies to enable non-traditional students as well as those who may struggle to fully participate in inquiry-based learning. Recent courses offered at Nashville State Community College in Nashville, Tennessee and Miami University's Middletown, Ohio campus provide insights into ways that technology can be used to support deeper learning for all students.

## Engaged Learning

In an effort to increase student engagement, Miami University has undertaken a project to redesign the twenty-five courses with the highest enrollments to include a concentration on inquiry-guided learning. The emphasis is on active engagement with the material by the students through independent work and peer collaboration. The focus on inquiry-based learning intentionally moves the spotlight away from traditional lecture, emphasizing instead the active role of the student in interactive settings. The goal is to design environments where the student becomes more responsible for and active in her learning.

Research support for active, or inquiry-based, learning is widespread. After two weeks students tend to remember 20% of what they hear, 70% of what they say, and 90% of what they say and do

(Active Learning). Studies on the impact of engaged learning often focus on the deeper learning achieved by students who successfully complete the course. Less is understood about the impact on students who do not see the course to completion. Open access institutions need to evaluate the effects on *all* students. How do the strategies of active learning affect the barriers faced by non-traditional, lesser prepared, or otherwise at risk students? How can open access institutions provide the benefits of engaged learning while still giving students a high level of content support? Evidence suggests that if we can indeed achieve more active engagement without negative effects on retention, non-traditional students can benefit. The National Survey of Student Engagement documents that, while all students benefit from higher engagement—showing increased satisfaction, higher likelihood of retention, and higher grades—the benefit is larger for students who are less prepared or from underrepresented backgrounds (Wasley A39).

The shift to engaged learning posed some challenges at Miami University's regional campuses. To prepare for active learning in class students were required to take responsibility for much of the simple knowledge acquisition that had previously been supported during class time. In short, they were held accountable for achieving a basic understanding of the material in the text prior to working with the material in class. This posed a challenge for students who did not possess the independent study skills or content background to master new material on their own. To meet the needs of these students, course design had to foster the development of independent work and critical thinking skills inside of class, while supporting their learning outside of class.

At Miami Middletown we tapped into lessons from an innovative math redesign at Nashville State Community College, where a supportive alternative learning environment enabled students to successfully acquire the knowledge outside of the traditional classroom and engage with the material during class in a meaningful way.

**The Nashville State Model**

Developmental math has always been a stumbling block for

students at Nashville State Community College (NSCC). The lecture-based delivery system did not benefit the majority of students. It allowed students to be passive learners and thus did not necessarily develop the independent study, quantitative reasoning and critical thinking skills that students need to succeed in their major coursework. With state guidelines changing, a National Center for Appropriate Technology (NCAT) grant opportunity, and the desire to help a greater number of students achieve their academic goals, NSCC redesigned their developmental math program.

Before redesign, the developmental math program at NSCC was comprised of three levels of lecture based courses, DSPM 700, DSPM 800 and DSPM 850. Students with weaker math skills placed into one of these courses based on ACT or compass scores and completed the remaining courses in the DSPM series before moving on to college level math. The redesigned program replaces lecture-based classes with a modularized lab class format. Instead of passively acquiring the course material in class as delivered by an instructor, students are responsible for learning the material themselves as part of an intentionally designed computer based course. Seventy-five percent of student learning takes place in the lab as students work through assignments in the required modules with the aid of one-on-one time with instructors as well as learning tools in Pearson Education's *MyMathLab*. This is not an on-line course; it is a face-to-face course with required attendance where the role of faculty lecturer has been replaced with faculty facilitator. Students needing additional help with topics have access to instructors and tutors during regular class time, as well as tutors in open lab hours outside of normal meeting hours. The meticulously designed lab-based classes require active engagement of students, and promote critical thinking and independent learning.

To address varying levels of preparedness and academic backgrounds, NSCC faculty designed a program that is self-paced with a minimum requirement of work each week - the course management software allows faculty to track students and quickly intervene in cases where students are not progressing at the minimum pace. Where some students might need additional one-on-one time with an instructor

during each class meeting to progress through the course, others might complete all required developmental math coursework in the first half of the term, allowing them to register and move into a college level math course in the second half.

There is no question that practice is necessary to become skilled in a mathematics course at any level. However, NSCC faculty recognized that in the traditional lecture based developmental math classes, students were passive, often not doing homework outside of class, or even taking notes. Too often students believe that their ability to follow how an instructor worked a problem on the board means that they have the ability to solve similar problems on their own--on a test, for example. In reality, practice (homework) is vital to student success. Unfortunately, when an instructor is teaching several courses finding a way to make homework a requirement can be an obstacle. Grading and providing meaningful and timely feedback each class for every student is problematic.

In developing our new program, we used Pearson's *MyMathLab* to create our course. In the course, students will work through each section, called modules, one at a time, in order. For each module, students will begin by taking a pre-test. Those scoring 80% or higher have shown mastery in that module and will move directly to the next module. Those scoring less than 80% will begin working to achieve mastery. The work includes homework, a critical thinking assignment, a cumulative homework assignment, a practice test, and a post-test. Students must obtain minimum scores on each assignment before moving on to the next. Students must obtain 75% or higher on the post-test before moving on to the next module.

Each module focuses on different content that is essential for students to be successful in college-level mathematics. The course design requires students to be active learners with questions designed to strengthen their independent study and critical thinking skills. It puts the responsibility for learning the material on the shoulders of the students while providing instructor and tutor support during class and open hours in the lab. In addition, *MyMathLab* provides support and feedback twenty-four hours a day and is accessible from any computer with an internet connection.

The design of the program grew out of lessons learned from NCAT and collaboration with other institutions facing similar obstacles with their developmental math courses. Unlike typical on-line courses, the modular computer-lab format provides more interaction between students and instructors than ever before. The interaction is more meaningful, more individualized, and more focused. Students learn better in this format because they are less passive, more actively involved doing math, and receive help based on their individual needs. Based on NCAT's research, the success rate in a Traditional Developmental Math course is 48% versus 64% in a Redesigned modular computer-lab format, and the percentage of students exiting the Developmental Math Program rises from 55% in a Traditional program to 74% in the Redesign program. The success rate of students in college math courses is 7% higher when they have gone through the modular computer-lab format for developmental math (TheNCAT, "The Emporium Model").

**Adaptation To Principles Of Economics**

The insights from NSCC regarding benefits of self-paced, active, and individually supported learning– and the role of technology in facilitating such learning– informed experiments in the use of on-line learning tools and team-based learning in the principles of economics courses at Miami University Middletown. Students at Miami Middletown were provided content and the tools to master basic knowledge prior to class. They could learn the material through the text, supplementary resources provided on a course management system, or by watching a recorded lecture by the instructor provided on-line. Some students found reading the text sufficient. Others took advantage of all of the resources. Access to on-line tools provided the self-paced learning and differential levels of support that let regional students show up for class ready to use the material for deeper critical thinking and to actively engage with their classmates. The technology also ensured that students had the incentive to learn the material, as on-line assignment performance indicators are available to instructors in time to use the information in class. Unlike at NSCC, this portion of the learning was outside of the classroom. While students were

encouraged to work together and seek assistance from an instructor when having difficulties, attendance in a lab was not required.

The pre-class preparation facilitated by technology was critical to enabling students who came into the course with different levels of preparation to effectively work in teams during class time to solve problems that would have been too challenging for most to solve independently. The team approach is consistent with the program at NSCC: students were able to learn basic material at their own pace and were required to complete problems to demonstrate their understanding. The pre-class work and the on-line assignments holding students accountable for it allowed all students to participate in the active team based learning that went on during class time.

Team based learning, first developed by Larry Michaelsen in the 1970s, has been used by instructors in many disciplines and has led to body of literature by practitioners attesting to its effectiveness. Team-based learning differs from cooperative learning. L. Dee Fink describes team-based learning as a specific type of small-group learning, which "transforms 'small groups' into teams," "transforms a technique into a strategy" and "transforms the quality of student learning" (Fink 4). As students spend time working together, they go beyond being "groups" into being teams. That process involves increasing trust in team members, thereby allowing them to achieve at a level that individuals alone could not. The focus of the in-class times moves away from the instructor toward creative problem solving by the team. Students become responsible for each other, and thus supportive of each other's struggles with the material, and with class attendance.

Heterogeneity is key to the construction of effective teams. The margins on which student differences are combined are specific to the course content. For example, in an introductory economics course students with different majors (business and non-business) and different math backgrounds may be combined. The heterogeneity of groups stressed in the team-based teaching literature supports student success. Less advanced students learn well from peers who have only recently learned the material themselves. Conversely, more advanced students benefit from the deeper learning possible when they are asked

to explain the concepts to others (Whitman).

Students seem to understand the advantages and reap benefits from conversations with their fellow team members. 79% of students in an introductory economics class reported understanding the benefits of working in groups. 57% agreed that explaining concepts to other students helped their own understanding of material. 71% reported that they improved their understanding of a concept after a group member explained it to them. Students are aware of different perspectives group members bring. "It helps to hear how someone else approaches the problem – they often look at it a different way or talk about it in other language, which helps my own thinking" reported one student (Kinghorn).

It is very important in team-based teaching that the groups remain together for the duration of the course. This is in contrast to a small group model, in which teams can come together for temporary tasks, and reconfigure frequently. The rationale for this is that the characteristics of long-term groups are distinct along many margins. Carolyn Birmingham and Mary McCord have identified "level of trust in, and attraction to, their group, motivation to achieve group goals, willingness to help each other, awareness of each other's skills and abilities, ability to share information effectively, willingness to disagree, preferred method for resolving conflict, overall ability to complete difficult intellectual tasks" (Michaelsen 81).

We know from brain-based learning literature that challenge encourages learning, yet when that challenge is too severe, as in threat, learning is inhibited. This is often explained by the "downshifting" of the brain during times of stress, which translates into lower order thinking. As discussed above, the connection between a feeling of safety and deeper learning has been documented. Teachers intuitively know this and attempt to challenge yet support students in their learning. The increased levels of trust and mutual help demonstrated by long-term teams allow challenges to increase without students experiencing those challenges as threatening, and thus becoming less able to learn.

**Conclusions**

As colleges and universities increasingly embrace active, engaged learning, classroom faculty often struggle to meet the needs of students with diverse educational backgrounds. Flexible, self-paced pedagogies make courses more accessible to those who need some extra support to master the basic knowledge and skills necessary to participate fully in an engaged classroom.

Educational technology provides a platform for course development and student support that is adaptable to a variety of learning styles, delivery methods, course designs and pedagogies. Often, however, when technology is introduced to an existing course, the way it is used can leave out the very students we are hoping to support. When technology is used as an «accent» it often just strengthens understanding for those who have a solid background, but does little to advance the knowledge and skills of those students who are less prepared or have weaker technological backgrounds. New technology should be adopted with a recognition that our students enter the classroom with a variety of levels of preparation and abilities. This awareness allows us to structure resources and activities with a variety of "jumping in points" thus providing support for those students who struggle while allowing strong students to demonstrate their mastery.

The same can be said for other innovative teaching strategies, such as team-based learning. Teamwork allows a broader range of students to contribute from where they are, and all allows all students to move toward a deeper understanding of the material. The challenge in any classroom is to use pedagogies to draw out learning and independence and introduce necessary skills for all students.

This paper has described how the innovations at one institution influenced the design of a course at another. The strength of the dialogue surrounding inquiry based learning at open access institutions is encouraging. It is our hope that some of the mechanisms we used to balance the benefits of inquiry based pedagogy with the need for strong student support will provide insight for other course redesigns.

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# Making Connections: Linking Experiences in Undergraduate Chemistry Courses

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**Abstract**

This paper describes the linking of laboratory experiences between organic chemistry and "Chemistry in Art" students at Miami University Middletown. As the final lab of the spring, 2010, semester for both classes, the organic chemistry students synthesized a series of azo dyes which were then used in fabric dyeing experiments by the Chemistry in Art students. The combinatorial design of the azo dye synthesis experiment is presented. The open inquiry lab utilizing these dyes to color multi-fiber cloth strips is also described. The connections between the two groups of students in terms of specifics related to the experiments as well as generalities related to the linking of the courses are discussed.

## Introduction

One of the benefits of a regional university or small college campus is the opportunity for collaborative interactions between faculty related to the scholarship of teaching and learning. At regional or small college campuses, faculty usually carry full-time teaching loads and often "share" students as they advance through courses in a given discipline. In addition, departments and classes are typically small, creating a familiar environment for both faculty and students, which facilitates communication and supports collaboration.

At Miami University Middletown, the primary academic responsibilities of the three full-time chemistry faculty center on teaching, with each of us directly teaching at least two different laboratory-based chemistry courses. These courses primarily serve first- and second-year students and include courses for traditional science and allied-health majors, as well as non-science majors satisfying the university's physical science requirement. As science educators in a close-knit department, we often discuss our courses and

students and readily exchange ideas and approaches for the teaching of chemistry to a variety of student backgrounds and interests.

One of the introductory chemistry courses offered on the main campus (Oxford, Ohio) as well as on the two regional campuses (Hamilton and Middletown) of Miami University is a one-semester survey course designed for non-science majors (CHM 111/111L). The course is an integrated lecture and laboratory course and covers topics of a general chemistry nature with applications to the world around us, especially in an environmental sense. In an attempt to broaden the appeal of this introductory course, a special topics version of CHM 111/111L was developed; this course, "Chemistry in Art," is offered once per year on the Middletown campus.

In addition to covering traditional general chemistry concepts, the Chemistry in Art course introduces topics from organic, inorganic, and physical chemistry with applications to both historical and current topics in art. Typical precipitation reactions, metal reactivity, atomic structure, and acids/bases/buffers are presented. However, also discussed are spectra and color theory, organic functional groups, dyes, pigments, polymers, and molecular orbital theory. These topics are presented in the context of detecting forgery, examining pointillism, restoring artwork, and understanding the source of color in colorants. The laboratory activities accompanying the lecture are very hands-on and include making pigments and using them to paint a fresco; making paints (oil, egg tempera, water color, and acrylic), crayons, pastels, and inks; etching glass and making colored glass beads; enameling; working with clay; dyeing various fibers; and chromatographic and spectroscopic analysis of colorants. The textbook (with accompanying lab manual) used in this special topics course is "The Molecular Basis of Color and Form: Chemistry in Art" (Hill and Marine, 2009). The Chemistry in Art course has proved to be quite popular, typically starting with the enrollment maximum of 24 students each semester it is offered. In addition, it attracts students with an artistic background or interest who generally would not choose to take a chemistry course to fulfill the university's physical science requirement.

Along more traditional lines, another course offered at both the Oxford and Middletown campuses is organic chemistry lecture

and laboratory (CHM 241/242/244/245). This second-year course is designed for science majors and is often taken by pre-professional students considering medical, dental, or pharmacy schools or graduate school in the biological sciences. At Miami University, this course is taught using a novel spiral approach where the first semester is taught as a survey of fundamental organic principles, covering most of the concepts taught in a typical two-semester course, but in less detail. The second semester revisits and expands upon many of the topics introduced in the first semester in addition to covering more advanced mechanisms and reactions (Grove, Hershberger, and Lowery Bretz, 2008). Like many traditional organic chemistry courses, the final exam given at the end of the second semester is the American Chemical Society's national examination in organic chemistry. The accompanying laboratory course focuses on the development of students' synthetic and analytical skills, primarily during the first semester, with application of this training to the synthesis and characterization of organic compounds, especially during the second semester.

**Connecting the Organic Chemistry and Chemistry in Art Courses**

The synthesis of azo dyes is a standard reaction in many second semester organic chemistry laboratory courses. These highly-colored synthetic dyes are used to dye fabrics, *e.g.* "American Flag Red," as pigments in paints and printing inks, and as food colorants, *e.g.* "Butter Yellow" (once used to color margarine). The diazotization of aromatic amines and diazonium coupling reactions used to make azo dyes are commonly taught in organic chemistry lecture courses near the end of the second semester, and the synthesis of these dyes is often one of the final experiments in the laboratory course.

In the Chemistry in Art course, the chemistry of both inorganic pigments and organic dyes is studied. Inorganic pigments are synthesized in lab as examples of insoluble ionic compounds. The electronic structure of the metal cations is studied to explain their characteristic colors. Specifically, "*d-d*" and charge transfer electronic transitions are the mechanisms of our focus. Organic dyes are studied in terms of organic functional groups, then in terms of chromophores

(chemical structures that give rise to color by absorption of visible light) and auxochromes (chemical structures that augment color). Accompanying laboratory experiments include "Synthesis and Identification of Inorganic Pigments" and "Natural and Synthetic Dyes" (Hill and Marine, 2009).

Toward the end of the spring, 2010, semester, we recognized a unique opportunity to connect our organic chemistry and Chemistry in Art courses. The last experiment in the organic chemistry laboratory (CHM 245) was the "Preparation of Para Red and Related Azo Dyes" (Lehman, 2009). The lab is directly tied to the lecture topics of amine reactivity, the Sandmeyer reaction, and diazonium coupling reactions and offers a good opportunity for students to gain hands-on experience with this chemistry. In addition, since the products are colored solids, this presented a welcome departure from the typical white or colorless solids and liquids which are usually isolated from organic synthesis experiments. In other words, this is an enjoyable experiment for students and well-suited as the final lab. In a similar fashion, one of the last topics covered in Chemistry in Art was "Natural and Synthetic Dyes." Given the connections between the topics covered in both courses, we decided to link our student laboratory activities. As the culminating activity for students enrolled in our respective courses, the upper-level students actually practiced the "art of organic chemistry" by synthesizing azo dyes for use in the Chemistry in Art laboratory.

**Organic Chemistry Laboratory: Design of the Azo Dye Synthesis Experiment**

The linking of two aromatic rings with the azo group (-N=N-) yields highly-colored compounds known as azo dyes. They come in a broad range of colors, including yellows, oranges, reds, browns, purples, and blues. Each dye has a slightly different color due to differences in the degree of conjugation in the delocalized π-electron system. This is the chromophore. In addition, certain substituents on the aromatic rings, known as auxochromes, can affect the color by extending this conjugation. In general, dyes with more extended π-electron systems will absorb visible light of longer wavelengths. The observed color from the reflected light will change

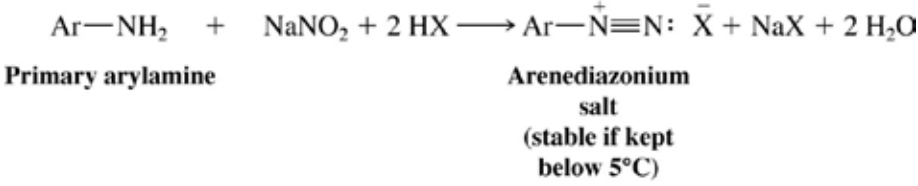
accordingly. For example, if a dye absorbs light in the visible region of the spectrum at 500 nm, which is green, the combination of all other wavelengths of light which are reflected makes the dye appear red. The general relationship between the extent of conjugation of the π-electron system and color of an azo dye is as follows:

White (least extensive π-system) → Yellow → Orange → Red → Green → Blue (most extensive)

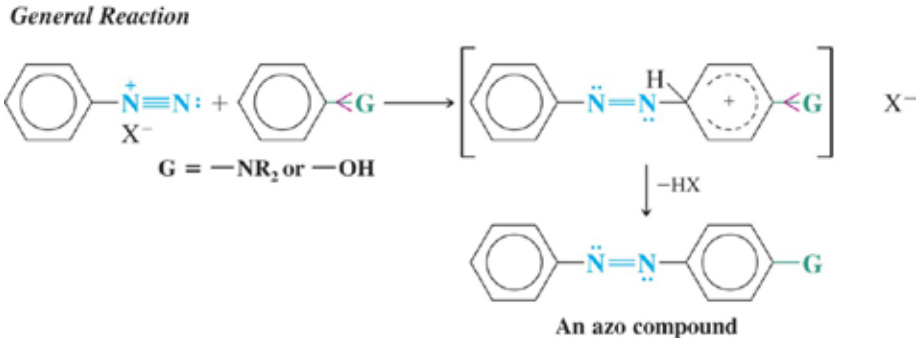
The experimental procedure used for the synthesis of azo dyes followed that outlined in "Preparation of Para Red and Related Azo Dyes" (Lehman, 2009). As has been done by others, a combinatorial approach was taken in order to maximize the number and variety of azo dyes synthesized by the class (Gung and Taylor, 2004). Azo dyes are formed by the coupling of an aryldiazonium salt with either an aromatic amine or a phenol. The diazotization reaction used to prepare the aryldiazonium salt involved the reaction of one of four anilines with nitrous acid (generated *in situ* from HCl and sodium nitrite, $NaNO_2$). For this step of the synthesis, each student was assigned one of these four compounds: aniline, *para*-anisidine, *para*-toluidine, or *para*-nitroaniline. For the subsequent coupling step, students were assigned either N,N-dimethylaniline, phenol, or 2-naphthol (a type of phenol) as the coupling reagent. The reaction between the aryldiazonium salt and the coupling reagent yields an azo dye which has the -N=N- group linking the two aromatic rings (Figure 1; Solomons and Fryhle, 2008).

**Figure 1: General synthetic scheme for the preparation of azo dyes**

**Diazotization Reaction:**



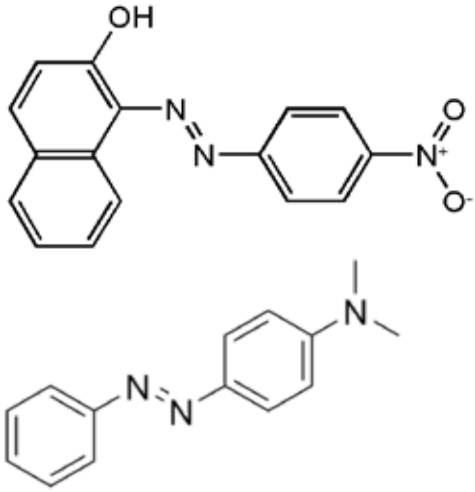

**Coupling Reaction:**




In the design of this lab, students were paired, although each student was responsible for synthesizing a single azo dye. The purpose of the pairing was to expose all of the students to the two types of coupling reagents (phenols or aromatic amines). For example, if a student was assigned a phenol coupling reagent (either phenol or 2-naphthol), his or her partner was assigned N,N-dimethylaniline. Both students were responsible for understanding the experimental differences in the coupling step based upon the type of reagent. By pairing, each student could easily observe and ask questions about the reaction being executed by his or her partner. Additionally, the assignment of aniline or a substituted aniline in the diazotization step

of the reaction, as well as the assignment of the coupling reagent, was made such that each pair of students had large differences in the size of the chromophore (number of atoms in the conjugated π-electron system) of their azo dye products and could easily see how this impacted the color of their dyes. For example, a pair of students were assigned the reactants to make American Flag Red (21 atoms in its chromophore: reaction of *para*-nitroaniline and 2-naphthol) and Butter Yellow (14 atoms; aniline and N,N-dimethylaniline). The structures of these two dyes are shown in Figure 2. All of the synthesized azo dyes contained at least one auxochrome located *ortho* or *para* to the azo group. Auxochromes, such as a dimethylamino ($-N(CH_3)_2$), hydroxyl (–OH), or methoxy ($-OCH_3$), group, can extend the conjugated π-electron system by resonance, and in essence, increase the wavelength of light the dye absorbs. Each student was asked to calculate the number of atoms in the chromophore of the dye he or she synthesized and to also draw resonance structures showing the involvement of the auxochrome with the rest of the chromophore.

**Figure 2: Structures of "American Flag Red" and "Butter Yellow"**




**American Flag Red** **Butter Yellow**

Lastly, each student was asked to follow the experimental procedure for dyeing a multi-fiber cloth strip (containing thirteen different fibers) using the ingrain process. In essence, the azo dye is synthesized directly within the fibers (*in the grain* of a fabric) by first putting the cloth strip in a dilute solution containing the coupling reagent followed by immersion of this strip in a dilute solution of the diazonium salt. Both the multi-fiber cloth strips and the solid azo dyes were then passed along to the Chemistry in Art students for use in their laboratory experiment. The azo dyes synthesized by the organic chemistry students are listed in Table 1.

**Table 1: Collection of azo dyes synthesized for use in the Chemistry in Art lab**

| Dye Color | # Atoms in Chromophore | Auxochrome(s) | Diazotization Reactant | Coupling Reactant |
|---|---|---|---|---|
| Yellow Ochre | 14 | $-N(CH_3)_2$ | *p*-Toluidine | N,N-Dimethylaniline |
| Burnt Orange | 14 | -OH | Aniline | Phenol |
| Orange/Red | 18 | -OH | Aniline | 2-Naphthol |
| Orange/Red | 18 | -OH | *p*-Toluidine | 2-Naphthol |
| Pink/Red | 18 | -OH; $-OCH_3$ | *p*-Anisidine | 2-Naphthol |
| Red | 21 | -OH | *p*-Nitroaniline | 2-Naphthol |
| Red/Purple | 17 | $-N(CH_3)_2$ | *p*-Nitroaniline | N,N-Dimethylaniline |

**Chemistry in Art Laboratory: Design of the Fabric Dyeing Experiment**

In the first week of the "Natural and Synthetic Dyes" lab, students synthesized mauve, dyed silk with it, and also dyed cotton with indigo in a vat dyeing process. In addition, the students dyed thirteen different fibers (in a multi-fiber cloth strip) with four different kinds of dyes (acidic, basic, direct, and disperse) to discover what dye type works best with each fiber. The multi-fiber cloth strip included natural fibers such as silk, cotton and wool, along with synthetic fibers such as polypropylene, Dacron, Orlon, and Creslan. The students then identified the chemical bonds or attractions that held the dyes to the fibers. They also explored the effect of mordants and modifiers on

the color, brightness, and colorfastness of madder root dye with the thirteen fibers.

The following week, the organic chemistry students provided seven different azo dyes, along with the chemical structure of each, to use in fabric dyeing experiments (Table 1). The Chemistry in Art students worked in teams to dye the multi-fiber cloth strips with their assigned dye for the entire class. This open inquiry lab began with a class discussion reviewing the dyes used the previous week: the direct and disperse dyes had both contained the azo group (-N=N-). In this previous dyeing experiment, dilute solutions of Chicago Sky Blue 6B (a direct dye; 10 mg in 20-30 mL of water) and Disperse Orange 3 (a disperse dye; 15 mg in 20 mL of water) were heated to 80 °C. Multi-fiber strips were soaked in the hot solutions for 2 or 10 minutes, respectively. The dyeing was conducted at a constant temperature (80 °C), but the concentration of dye and fabric exposure time was varied. Based on the students' prior experience, a general approach to dyeing the fibers with the azo dyes was agreed upon, but each group had to optimize conditions for their specific dye. Since the azo dyes were not appreciably water soluble, the students had to dissolve each of them in 1-2 mL of ethanol in a test tube and transfer the solution to a hot water bath. The amount of dye used and the time of dyeing were optimized for each azo dye. Unlike previous experiments where detailed procedures were provided, this experiment was open inquiry with the students designing the experimental procedures themselves. The colors of the dyed multi-fiber strips were quite reproducible as each group used their optimized conditions to dye enough fiber strips for all class members. These colors were more uniform for any given fiber than those produced by the ingrain process, as provided by the organic chemistry students. The Chemistry in Art students questioned whether the ingrain process evenly distributed the reactants on the fibers and whether the fibers were sufficiently rinsed after the dye was formed in them.

Once everyone had a complete set of seven dyed multi-fiber strips, the class reconvened for discussion. General observations were compiled; then the students shared the chemical structures of their dyes. The chromophores and auxochromes were identified in each

structure. The numbers of atoms in the conjugated π-electron system of each dye were determined, and the resulting colors compared. In general, the more extended the conjugated π-system or chromophore, the longer the wavelength of light absorbed and the more red-to-purple the dye. The difference in color caused by the addition of an auxochrome, such as a hydroxyl, a methoxy, or a dimethylamino group, was noted. The lack of color change with addition of a methyl group ($–CH_3$) conclusively showed the students that a methyl group is not an auxochrome. The room was alive with excitement as students drew conclusions from their observations and saw the effects of what they had studied in class. As a gesture of gratitude to the organic chemistry students who synthesized the dyes, the Chemistry in Art students dyed additional fabric samples for them.

**Conclusions and Future Plans**

The students and instructors in both the organic chemistry and Chemistry in Art classes found the synthesis and use of azo dyes laboratory experiments to be particularly enjoyable. The labs for both sets of students were coordinated with their respective lectures and well-matched to the objectives of each class and the skill levels of the students. Each experiment could have been done independently to some extent (using commercial azo dyes in the Chemistry in Art lab) and the students would have benefited from their respective labs. However, linking the two courses by having the organic chemistry students serve as the "chemical suppliers" for the Chemistry in Art students added an aspect to the labs that was especially appreciated by the students.

Because of the combinatorial design of the organic synthesis lab, the Chemistry in Art students were able to correlate dye structure with color, much as the organic chemistry students had done. Both sets of students were asked to think about the relationship of the azo dye chromophore and auxochromes to the observed colors in ways that correlated with their level of chemical knowledge and experience. A linked set of azo dyes would not have been as easily obtained or as inexpensive if they had to be acquired from commercial sources. Since both of these lab courses are taught in small classes

with knowledgeable faculty instructors, issues related to the safety and handling of student-prepared materials could be addressed and managed. In addition, the Chemistry in Art students were able to observe fabric strips dyed via an ingrain process (which would not have been easy to prepare in this class) and compare those to the fabric dyeing processes they employed. In a similar fashion, the fabric samples prepared by the Chemistry in Art students, which were given to the organic chemistry students, allowed for the reverse observations.

Comments offered by several of the organic chemistry students, many of which were echoed by the Chemistry in Art students, point out some of the most important benefits of linking experiences in the two courses. In response to a request of the organic chemistry students for feedback on the synthesis of azo dyes lab, a student wrote, "I believe this lab was a great success! The pairing of the students was a great idea as long as it is set up correctly, which it was. Each student had a partner in which the color of the dye would come out significantly different and this would allow you to collaborate on how/why?" Another student noted, "The lab felt like it mattered more than the other ones because our product was actually being used for something, so there was more pressure to produce a good product. The partner aspect of the lab worked well, too, because it allowed us to understand the other coupling reaction without having to perform a second experiment. Finally, it was cool to see how the dye looked on different types of fabric." Along similar lines, a student wrote, "Knowing we made something that we knew was going to be useful to someone else just added a sense of achievement to the entire organic chemistry lab experience. It really brought everything we have learned together and showed us some real life applications of organic chemistry as a whole."

We believe our first experience at linking undergraduate chemistry courses was successful, based upon our observations as well as feedback from our Chemistry in Art and organic chemistry students. As we think about further opportunities to take advantage of our departmental organization and course offerings to benefit our current and future students, several ideas come to mind. In particular, we plan to continue to link the organic chemistry and Chemistry in Art classes

through the azo dye labs. A logical extension of this would be to have the organic chemistry students learn more about the dyeing processes from the Chemistry in Art students, possibly via a joint lab session. Many of the organic chemistry students appreciated the opportunity to synthesize something in lab that had "value" and quite enjoyed the "real world" application of the dyes they produced.

We also envision linking the college chemistry students (1st year course, typically science majors) with the organic chemistry students (2nd year course). Many of our organic chemistry students complete their first year of college chemistry at Miami Middletown. Perhaps a way to take some of the fear out of the transition to organic chemistry would be to have the organic chemistry students instruct college chemistry students in a simple synthesis laboratory. Making a product that is easily recognized as something useful (such as Nylon rope, indigo dye, or aspirin) would reinforce the practical application of the subject. The organic chemistry students would be able to integrate what they've learned by having to teach a synthesis lab, and the college chemistry students who might be intimidated at the thought of taking organic chemistry would see that it is very doable and enjoyable. We hope that both sets of students would be able to better appreciate "where they are" and "where they are going" and benefit from their common experiences.

Lastly, we encourage you to consider taking advantage of the environment we have at regional university and small college campuses to "link" courses through related student experiences. As noted, we generally work in departments where teaching is a priority and class sizes are relatively small. In addition, we typically work closely with our colleagues and often "share" students, especially as they progress through inter-dependent courses. As described in this article, this type of environment enabled us to recognize an opportunity to link laboratory activities in two of our chemistry courses, Chemistry in Art and organic chemistry. In a related fashion, a collaborative effort linking students in Spanish and art classes at the University of Cincinnati's Clermont campus has been described in this journal (Frigard and Parra, 2008). Our future interdepartmental collaborative efforts include connecting college chemistry (1st year)

and geology students through joint laboratory activities with an environmental/geological chemistry focus. We are also exploring options for students enrolled in our one-semester general/organic/biochemistry course to develop chemistry demonstrations suitable for K-8 students via collaborative efforts with our colleagues in the education department. We encourage you to explore similar opportunities for your students within or across disciplines.

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Susan S. Marine, Ph.D., is an analytical chemist and associate professor of chemistry at Miami University. She joined the Middletown campus in 1998 to coordinate the new Chemical Technology Program. Dr. Marine teaches general chemistry, analytical chemistry, Chemistry in Modern Society, Chemistry in Art, chemical technology courses, labs for the preceding courses, and Fundamentals of Chemistry. Abroad, Dr. Marine has taught Chemistry in Art (without lab) on Miami's Luxembourg campus. She also guides undergraduate research in the analytical laboratory in Middletown.

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# Faculty Success Tips: Adapting to a Regional Campus Microdepartment

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**Abstract**

In the state of Ohio, regional campus faculty provide vital outreach to more than 47,000 students at 24 locations (Ohio Board of Regents, 2007). Despite this strong presence, regional campus faculty are largely ignored in literature on professional development (Fonseca & Bird, 2007; Nickerson & Schaefer, 2001). Regional campus settings share common attributes with small liberal arts colleges and with community colleges, yet they differ in important ways. For example, regional campuses often have small departments and offer a disproportionate number of introductory level courses. The biggest difference between regional campuses and other academic contexts is that regional campuses are the only setting in which faculty must operate within the parameters of two separate units – their local campus and their main campus department. We identify the distinct characteristics of regional campuses that provide faculty with both unique challenges and rewards. Furthermore, we outline key strategies that Ohio faculty members can adopt to maximize success in regional campus environments. These strategies, developed over four decades of combined regional campus experience, focus on all aspects of faculty life and responsibilities in regional campus settings.

## Faculty Success Tips: Adapting to a Regional Campus Microdepartment

Regional campuses are home to thousands of faculty and hundreds of thousands of college students in virtually every state in the U.S., and increasingly worldwide (Bollag, 2006; Wolfe & Strange, 2003). In Ohio, the enrollment growth on regional campuses

has surpassed the rate of growth on main campuses (Ohio Board of Regents [OBOR], 2007). Growth on regional campuses is projected to continue in coming years as student needs and demographics change (Fonseca & Bird, 2007; Nickerson & Schaefer, 2001). Given these trends, it is surprising and disappointing to find that the professional development literature almost entirely ignores regional campus faculty (Fonseca & Bird, 2007; Nickerson & Schaefer, 2001; Wolfe & Strange, 2003). For example, two quintessential guides for academicians fail to mention regional campuses at all (i.e., Darley, Zanna & Roediger, 2004; McKeachie, 2002). In this article, we seek to address general themes that apply to regional campus faculty members in Ohio. As faculty members with a combined 43 years of experience in regional campus higher education, we discuss the issue of successfully adapting to regional campus life.

The landscape of public higher education in the state of Ohio consists of 24 regional campuses, which outnumber main campuses and community colleges. Whereas each campus is unique in its own way, there are many overlapping similarities that characterize regional campuses and several common issues faced by regional campus faculty. For example, regional campuses, like small liberal arts colleges, are often "Noah's Ark" environments, with a couple of faculty from every discipline isolated and adrift among an unrelated group of scholars. These "microdepartments" are characterized by fewer than 4 faculty members, large teaching loads, high expectations for service, and relatively modest expectations for scholarship (Poling, LoSchiavo, & Shatz, 2007). This translates into spending more hours than main campus faculty on course preparation, student interaction outside of class, student activities, and other service obligations (see Carnegie Foundation for the Advancement of Teaching, 1990; McReynolds, 1986).

Not all regional campuses follow this model. Some have residential students, multiple degree programs, graduate degrees, and research expectations that nearly parallel the main campus. Regardless of the model characterizing the campus, the one thing that makes regional campuses truly unique across all academic settings is that regional campus faculty must simultaneously serve two masters.

Faculty must develop strategies for accommodating the demands of their local campus as well as meeting the standards of their main campus. This can be difficult because the demands from the regional campus are not always the same as those from the main campus and because regional campus faculty are at risk for negative stereotypes or misperceptions from the main campus department. For example, main campus faculty may not appreciate the significantly heavier emphasis on teaching, as opposed to scholarship, on regional campuses.

Faculty who adapt well to the unique challenges of regional campus jobs can easily attain many of the most rewarding aspects of academia, such as autonomy, efficacy, and a sense of community (Wergin, 2001). Borrowing from the child psychologist Jean Piaget, we apply two components of adaptation, known as assimilation and accommodation, to meeting the challenges of a regional campus. Assimilation refers to adding new information or experience into one's existing framework. For regional campus faculty, this means employing strategies that have proven successful in other settings, such as small liberal arts colleges. Whereas this component of adaptation is crucial, many such strategies have been eloquently presented elsewhere and will not be the focus of this paper except to mention that they include things like developing efficient course preparation strategies, staggering assignment due dates, and becoming active in teaching organizations (see Dunn & Zaremba, 1997 for elaboration on these strategies).

Accommodation is an aspect of the adaptation process referring to the need to change one's thinking in order to accurately conceptualize or successfully adjust to a situation. For regional campus faculty, it is necessary to revise one's assumptions of what it means to work, succeed, and be fulfilled in academia. Graduate students are generally trained in, and prepared for, the "publish or perish" mentality of traditional academic programs. If faculty come into regional campuses with this template for success, they will most likely be disappointed. However, if faculty understand and appropriately respond to the unique challenges of regional campuses, the rewards are great.

**Accommodating Regional Campus Challenges**
**Understand Your Campus Mission**

Regional campuses depend heavily on good community relationships, and revolve around faculty-student interaction and educational access as opposed to the research mission common to larger universities (Flaherty, 2004; Kezar & Kinzie, 2006). The community-centered mission of regional campuses is likely to become increasingly relevant in the state of Ohio as part of the current strategic plan that focuses on educational access and student centered approaches throughout the state (OBOR, 2010). To accommodate this mission, faculty may implement student-centered teaching techniques, utilize outcome assessments, field work or internship opportunities, and community service learning projects (Bringle & Hatcher, 2002).

In addition, regional campus faculty must always work to maintain town-to-gown equilibrium by engaging in roles such as community public relations specialist, recruiting officer, enrollment analyst, and marketing strategist (Wolfe & Strange, 2003). In doing this, we have found success by applying our professional skills to community settings. For example, we have worked with community organizations, volunteered in the court system, provided counseling in hospice settings, and raised money for local organizations. Such endeavors are not always deemed meritorious in main campus departments, but regional campus faculty can earn personal, professional and civic fulfillment from them.

**Capitalize on Disciplinary Diversity**

Feelings of loneliness or isolation can be problematic for faculty in any academic context (Kraft, 2000). In regional campus settings, these feelings result from being geographically separated from colleagues in one's own discipline. Even in relatively large regional campus departments, it is unlikely to have peers who share specializations. Instead of ruminating on the lonely plight of an overworked and underappreciated scholar, there are many things to appreciate about the "Noah's Ark" model. On regional campuses, for example, the collaborative relationships common to larger departments are replaced with cross-disciplinary friendships that can be very

rewarding (Wolfe & Strange, 2003). In addition, common goals of teaching excellence and common struggles with a unique student population can support the development of a teaching group in which faculty meet to discuss teaching, much like a large research lab might function on a main campus (see Kraft, 2000).

Regional campuses make ideal settings for cross disciplinary collaboration in both research and teaching. Disciplines like psychology, for example, are particularly well suited for scholarly collaboration with other social sciences or humanities (Cacioppo, 2007). Often times, regional campus faculty have the freedom to explore the scholarship of teaching and learning, which can easily generalize across disciplinary boundaries.

Regarding teaching, colleagues from related disciplines can guest lecture on a variety of topics. Many regional campus faculty in the Ohio University system enjoy teaching entire classes whose content is aligned with their area of expertise even though the course is outside the faculty member's discipline. For example, on our campus, a psychobiology course is made available to psychology students by a biology professor, and a psychologist who specializes in humor teaches a journalism course in humor writing. The opportunity to cross disciplinary boundaries and tailor one's teaching to individual scholarly interests is an example of the freedom afforded to regional campus faculty. Another related example is interdisciplinary team-taught courses. We have successfully developed an interdisciplinary team-taught course in Psychology and Film. Students remark that they feel as if they are getting two courses in one because they acquire important concepts of film technique as well as an understanding of psychological theory, disorders, and the use of cinematic strategies to portray psychological distress. Many times on main campuses, faculty do not have opportunities to develop such teaching-based partnerships.

**Appreciate Student Characteristics**

Many students on regional campuses are nontraditional "employees who learn" rather than "students who work" (OBOR, 2008a, 2008b). They are frequently academically phobic, have a strong need for developmental or remedial courses, and face

obstacles in completing their degrees (Lane, 2004; OBOR, 2007). Nontraditional students in Ohio need instructor flexibility, such as offering courses during evenings and weekends and designing flexible class requirements (OBOR, 2008b). Regional campus faculty are accustomed to finding novel solutions to these student needs. For example, from 2007 to 2008, online course enrollment increased more on Ohio regional campuses than other academic settings (OBOR, 2010).

As regional campus faculty continue to facilitate the student-centered focus, we suggest utilizing technology in ways that work with student lifestyles without compromising pedagogical goals. Blending technology with face-to-face course offerings can empower students who juggle multiple roles. Using course management software, we have successfully implemented collaborative group presentations in which students work online via private discussion boards instead of having to physically meet outside of class (Poling & Hupp, 2009). Not only did this solution allow for students to "meet" with group members at their convenience, it also allowed the instructor to monitor individual effort within the groups.

Because most regional campuses do not have graduate programs, faculty do not have the luxury of being assigned teaching or research assistants. Using the best and the brightest regional campus undergraduates in limited teaching assistant roles or as research assistants can be extremely beneficial to faculty as well as to the students. Additionally, we have found that placing senior level students in peer mentor positions within lower-level courses can benefit students because student-to-student assistance can compliment instructor-to-student connections in valuable ways.

**Scholarship: When Given Lemons, Make Lemonade**

Because regional campus faculty generally have fewer resources for conducting research than main campus faculty, they have to be strategic in order to maintain a record of publication. Campuses vary on the amount and quality of publications required to earn promotion or tenure, so it is important for faculty to understand the criteria of their local campus. In cases where limited resources

delay the speed with which one can feasibly collect and analyze data, we suggest that faculty supplement their basic research program with pedagogical articles, or theoretical papers that do not require lengthy data collection. By doing so, faculty have the opportunity to explore multiple areas of interest in a way that would not be feasible in research intensive departments. We also advise faculty to develop collaborative relationships with colleagues from other regional campuses as a way to pool resources.

More importantly, we encourage regional campus faculty to partner with colleagues in their main campus department and to use available resources as much as possible. Main campus departments provide access to lab space, graduate assistants, larger participant pools, and materials. Also forming relationships with main campus colleagues will benefit regional faculty when it comes time for promotion and tenure. In some models, main campus departments actively vote on promotion and tenure of regional campus faculty, whereas in others, they play an advisory role. Either way, regional campus faculty should take the initiative to establish a positive reputation within their main campus department, and scholarship can be a good way to accomplish this.

**Brace for Change**

The University System of Ohio (USO), unveiled in 2007, has three primary goals: (1) to graduate more students in Ohio, (2) to keep more college graduates in Ohio, and (3) to attract more degree holders from out of state (OBOR, 2008b). There are two ways in which faculty at regional campuses may be affected by the USO. First, the implementation of a universal academic calendar, which will operate on the semester system, represents a change for 13 of Ohio's regional campuses. The change to semesters will affect all faculty, but the experience may be different for those on regional campuses than main campuses. For example, regional campus faculty are less likely to have input in curricular changes that come about from the conversion, they may not have the same voice in determining course workload as main campus faculty, and course offerings may be designed to reflect the needs of traditionally-aged, main campus residential students

instead of the commuter population on regional campuses. We encourage regional campus faculty to become vigilant in seeking and sharing information so that their interests and those of their students can be protected. For example, faculty members across the five Ohio University regional campuses have created quarter-to-semester committees on each campus and regularly communicate with each other and with the main campus administration on issues of course offerings and workload under semesters.

The second way in which the USO is poised to impact regional campus faculty is in the "two plus two" model. Students will complete the first two years of their college education at a community college and seamlessly transfer to a 4-year institution to finish the last two years (OBOR, 2008b). Regional campuses play a vital role in this plan because they are easily accessible for working, place bound adult students, and offer lower tuition than main campuses. Indeed, the state has explicitly shifted its position from discouraging bachelor's degrees on the regional campuses to promoting more bachelor degree offerings as a way to reduce the cost of a college education to one of the lowest in the nation (OBOR, 2008b). For regional campus faculty, this represents a shift toward offering a major if they are not already doing so, and toward emphasizing the junior and senior level courses within the major as students earn Associates of Arts or Associates of Science degrees at nearby community colleges.

Although the state mandates that regional campuses offer more bachelor degrees, regional campus faculty may face considerable obstacles in implementing the "two plus two" model. For example, if students no longer need to attend main campuses to complete degrees, then tensions may arise between main campus departments and regional campus faculty. The two plus two model might create a "turf battle," and threatened main campus departments may respond by making it more difficult for regional campus faculty to obtain clearance to teach upper division courses.

We encourage regional campus faculty to work with their main campus departments to build distance learning opportunities into their programs. In addition, regional campus faculty may need to remind main campus departments that they serve different populations of

students. A major target group of the USO is the two-thirds of Ohio adults who are lacking a college degree (OBOR, 2008a), and regional campuses are ideal for serving this group.

Regarding the logistics of day to day life on a regional campus, the impact of the USO will vary from one campus and discipline to another. The key is that faculty on regional campuses need to be proactive in their relationship with the main campus. Separation from the main campus affords regional faculty autonomy, but it also makes regional campus faculty needs less apparent to main campus departments and administration. By maintaining open lines of communication, regional campus faculty can reduce the risk that the main campus will implement changes without first seeking their input.

**Conclusion**

Regional campuses are not traditional academic settings. Furthermore, they are not uniform in structure or function. In order to be successful in regional campus environments, faculty need to acknowledge the realities of regional campuses and appreciate that they can be rewarding. We have found, for example, that the freedom to pursue varied interests helps us sustain our excitement about teaching and scholarship. Having the opportunity to actively work toward the betterment of the community through educational outreach and service provides a sense of personal fulfillment that extends beyond the traditional rewards of the job. Our mature students bring a wealth of life experience to the classroom that provides a pleasant contrast to the sense of entitlement and apathy about which so many academicians complain (Carroll, 2003).

Regional campuses are ideal settings for academicians who want a balance between teaching, scholarship, and service (Mooney, 1995). We encourage all faculty to push harder for transparent communication, both with their main campus departments and with colleagues on their own campuses. In a recent workshop on our campus, we simply asked senior faculty to share stories about how they've found success on a regional campus. For nearly two hours, faculty freely conversed about the benefits of being able to take advantage of opportunities that suited their professional aspirations,

the sense of connection to students and community, and the value of accommodating the nontraditional setting and expectations on a regional campus.

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# Introducing American Government and Politics to Students Through a Learning Community

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**Abstract**

The purpose of this paper is to discuss the advantages of introducing students to an introductory course in American Government and Politics in a Learning Community setting. The use of Learning Communities is nothing new to academia, for their use is commonplace in most college and universities. Through a use and the results of a survey instrument, a detailed analysis will be presented that ultimately argues that students who complete a Learning Community that includes American Government are not only likely to demonstrate strong levels of retention in the basic concepts of American government and politics, but also become more excited and involved with the world of politics and government.

## Young People and Government Participation

One of the most well established patterns in American electoral politics is the relationship between age and voting. In any given presidential, congressional, or state and local election, it has been documented routinely that older Americans vote in greater numbers than the younger generations (Ragsdale, 2009). Even in the historical presidential election of 2008, where the campaign of Barack Obama focused considerable resources in youth voter turnout, older Americans still voted in greater numbers than those younger, and the overall percentage of the voting age population who voted was only 56.8%, representing a slight *decline* (U.S. Election Project, 2010).
There are explanations for why younger Americans vote with less frequency than their elder counterparts. In their seminal work on voter turnout, Wolfinger and Rosenstone (1980) suggest that Americans are more likely to participate in politics if they feel that they have a vested interest in the activities and outputs of government. Furthermore,

that younger Americans generally feel that they have little influence over the political system or being subject to influence from what government actually does, therefore an act such as voting, is often viewed as a waste of time. In addition, younger Americans typically demonstrate a lack of understanding as to how government influences their lives, both present and future.

The previous numbers of youth involvement in politics are only for the presidential level. A presidential election usually sees the highest level of voter turnout at all demographic levels (Ragsdale, 2009), but what of congressional, state, and local elections? The statistics for these elections are quite abysmal for all ages, but especially for younger voters, for participation in so called "lower" elections often range below 30 percent for the younger age demographics (Dye and MacManus, 2008).

Such a pattern of voting, while perhaps trivial, does present a series of policy consequences for those who govern, and for those who are governed. Yale Political Scientist David Mayhew suggests in his landmark study, *Congress: The Electoral Connection,* that congressional members collectively have three goals in mind: first, to make good public policy; second to serve their constituents; and third to win reelection (Mayhew, 1974). With respect to Mayhew's third noted goal, members of Congress, if truly desiring reelection, must establish a record of voting in favor of the policies and programs of those who vote, specifically older Americans. One might deduce from this premise that a member of Congress will find it much easier to vote in favor of cutting appropriations for education, rather than social security. In a period of record budget deficits and a near $13 trillion dollar nation debt, members of Congress are often faced with difficult decisions over where to cut expenditures. Often these cuts fall in the area of public education at both the K-12 and higher levels, along with cuts to student loan programs.

Few would argue with the contention that an undergraduate curriculum should include a series of required courses in English, Mathematics, and Communications. Courses in such fields of study are certainly necessary for successful careers. Yet, few universities mandate a course, even of introductory level, in Political Science.

This is despite the fact that politics, and the world of government, will affect the lives of every American citizen through a wide range of public policy decisions ranging from student loans, taxation, and war, from the moment a person is born to the moment that person dies. The lack of basic information held by Americans regarding government and politics is quite disturbing. A recent survey of Americans conducted by the Pew Research Center for the People and the Press found that less than half of respondents could identify the Speaker of the House of Representatives (Nancy Pelosi) and that only a staggering *15 percent* could name the Majority Leader of the United States Senate (Harry Reid) (Pew Research Center, 2007).

Given the importance that government plays in the life of every citizen, and the documented lack of knowledge held by a large portion of Americans with respect to government, universities not only need to develop new and innovative ways to educate students, but also make them excited about government. It is the contention of this paper to suggest that a Learning Community presents an appropriate way to achieve these goals.

**The Learning Community**

Three scholars are noted for their influence on the contemporary definition and formations of learning communities: John Dewey, Alexander Meiklejohn, and Joseph Tussman. Each stressed programs that challenged the norms of their times by suggesting a curriculum based upon integrated experiences. Gabelnick, Matthews, and Smith (1990) provide a common definition of Learning Communities:

"Any one of a variety of curricular structures that link together several existing courses—or actually restructure the material entirely—so that students have opportunities for deeper understanding and integration of the material they are learning, and more interaction with one another and their teachers as fellow participants in the learning enterprise."

Astin (1993) provides a broader description:

"Such communities can be organized along curricular lines,

common career interests, avocational interests, residential living areas, and so on. These can be used to build a sense of group identity, cohesiveness, and uniqueness; to encourage continuity and the integration of diverse curricular and co-curricular experiences; and to counteract the isolation that many students feel."

Shapiro and Levine (1999) identify five basic models for the design of learning communities. The particular learning community being addressed is known as a "Clustered Courses" community. The characteristics of a Clustered Courses community are: (1) three or four courses are taught individually and revolve around a particular theme; (2) courses are small, ranging from 25 to 30 students; and (3) Faculty work collaboratively to design courses.

Given the various working definitions of Learning Communities outlined, similarities can be found. First of all is the notion of a common theme or curricular lies. With respect to this point Political Science courses are particularly suited for this task. Political science as an organized discipline can claim to have quite a large "family tree." The disciplines of Economics, Sociology, Psychology, Public Administration, Philosophy, Communications, History, and even Statistics and Mathematics all find their way into the field of Political Science. This fact makes it quite easy for a learning community to be developed that includes a political science course. There are additional benefits to Learning Communities. First, Learning Communities are especially suited at fulfilling a goal of any institution of higher learning: fostering diversity in the classroom. Lardner (2004) suggests that learning communities are especially suited to achieving this task. In 2010, 37 percent of college students were minorities, compared with 28 percent in 2000 (U.S. News and World Report, 2010). This represents a substantial increase, but room for improvement remains. Learning Communities can be developed to engage students from underrepresented groups and enhance their chances for academic success. Because learning communities are interdisciplinary in nature, they can be designed to address problems and issues faced by different groups of individuals from around the world. The second benefit that can come from learning communities focuses on increased retention. Shapiro and Levine (1999) suggest

that Learning Communities are well suited at increasing retention. The reasons for this are straightforward. Learning communities foster strong relationships between both faculty and students, and between students themselves. This increases the likelihood of students remaining at an institution to finish their degree. In fact, two of the students who participated in the data set utilized in this paper would eventually become husband and wife!

The Learning Community of focus in this study was named "Political Leadership and Communication in America" and consisted of three freshmen introductory courses: (1) Introduction to American Politics; (2) Introduction to Human Communication; and (3) Freshmen Orientation. The stated goals of the community were to "investigate the ways communication is used to achieve and exercise political leadership, and explore the impact of political institutions on communication. The three courses will jointly explore themes like leadership, decision making, audience analysis, and message design and delivery in the context of the executive, judicial, and legislative branches of government" (Spiker, et al., 2004).

With respect to American government and politics, the Learning Community focused on three specific goals: (1) to develop an understanding of the functions essential to American government; (2) to understand the importance of communication and decision-making skills in the political environment; and (3) better understand the interdependent roles of citizens and political leaders.

To foster a sense of community and "family" several activities were created that allowed students to bond and interact with one another. Immediately following the beginning of the semester all students participated in a Friday afternoon of team-building exercises. These exercises were coordinated by an off-campus instructor who specialized in team-building and communications. The events stressed communication, collaborative learning, critical thinking and decision making skills. The day concluded with a pizza party for all students and participating faculty. During the remainder of the semester, there were three additional Friday afternoon pizza parties where students and faculty members gathered.

The most significant student activity of the community was

a day-long field trip to Washington DC. A schedule of events at the United States Capitol was created with the purpose of providing students with first person interactions with members of Congress and their staff. Students met with leading staff members from both the House and Senate, watched a congressional committee hearing, and viewed both the full House and Senate as they deliberated on the floor.

**Methodology**

To assess the overall effectiveness of the Political Science Learning Community, a survey instrument was created and administered to all students enrolled in the community both prior to, and following the class. The survey consisted of 23 questions created to measure a student's knowledge of American government and feelings about the content of the Learning Community (See Appendix A for a full copy of the survey). An ordinal scale was developed ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The survey was administered upon the complete condition of anonymity, and by a graduate student not affiliated with the course. Students were encouraged to record their initial response to each question, and informed that in no way would the survey serve as an influence on their semester grade. In addition, an "open-ended" question was posed at the end of the survey that allowed the students to discuss the overall Learning Community and their experiences in comparison to other course that they had taken during their freshman year.

Given that this paper seeks to explore the benefits of the learning community and American government and politics, of special concern are questions 13 thru 17, along with question 21. Each question in the survey seeks to measure a student's knowledge related to some aspect of government and politics, political communication, and political research. A mean and standard deviation will be calculated for each question. These results will be supported by a paired-sample t-test. This test will demonstrate whether there is a statistical difference in the means of the pre and post tests for each question. Following the presentation of the statistical results, a synopsis of the open-ended question will be presented.

**Results**

Table One shows the mean response and standard deviation of each question for both the pre and post test.

**Table One**

| Variable | Mean | Std. Deviation |
|---|---|---|
| Question 13 Pre-Test | 3.52 | .963 |
| Question 13 Post-Test | 4.20 | .764 |
| Question 14 Pre-Test | 3.12 | .881 |
| Question 14 Post-Test | 3.96 | 1.09 |
| Question 15 Pre-Test | 3.68 | .900 |
| Question 15 Post-Test | 4.16 | .898 |
| Question 16 Pre-Test | 3.24 | .970 |
| Question 16 Post-Test | 4.36 | .638 |
| Question 17 Pre-Test | 3.04 | .735 |
| Question 17 Post-Test | 4.05 | .866 |
| Question 21 Pre-Test | 3.20 | .912 |
| Question 21 Post-Test | 3.76 | .915 |

N = 25 students

Table Two shows the results from the paired-sample t-test.

**Table Two**

| Question # | *T* |
|---|---|
| 13 | 2.971* |
| 14 | 2.929* |
| 15 | 2.295* |
| 16 | 5.527* |
| 17 | 4.707* |
| 21 | 2.347* |

* = significant at the .001 level.

N = 25 students

**Discussion**

The results shown in Table One demonstrate that for each question there was an overall increase in the reported mean between the pre and post test evaluations. For questions 16 and 17, there was a full one point increase between the pre and post test. This is a meaningful increase, for it suggests an increase from a response of "Average" to "Agree" on the ordinal scale found in the survey.

The results shown in Table Two demonstrate statistical significance for each of the observed questions. For each question, a *t*-score was reported with significance at the .001 level. These results demonstrate that for each question, there was a statistically significant increase in student responses from the pre-test to the post-test.

While the statistical analysis demonstrates positive results, extremely positive results can be found in the comments made by students in the open-ended portion of the survey instrument. The open-ended question asked students "Please discuss how this Learning Community, as opposed to other classes you have taken, added to your understanding of specific topics related to the courses." The following represents a selection of comments:

- "I now understand how politics relates to my life."
- "It was fun having the three courses related. It helped with studying."
- "The class felt like a family."
- "I had no idea how politics relates to everything."
- "Most of politics is communication."
- "These classes taught me to pay closer attention to the things that politicians say from now on."
- "It made me realize how things are connected in the world."

The above comments are a representative sample of the several dozen offered by students who participated in the Learning Community. While different, the comments collectively suggest several positive benefits. First is the notion that the format of the Learning Community fostered a sense of "family" among the students. This is obviously based upon the fact that all students shared three

courses together, and in doing so, formed close friendships. The second common response focused upon the connection that politics has with most of everyday life. As depicted by the comments, students strongly suggested a new found realization of how politics relates to their daily lives. A third common response centered upon the realization that students obtained for the actual words spoken by politicians and elected officials. It is hoped that this will allow students to more critically analyze campaign propaganda and media outlets.

**Conclusion**

It has been suggested throughout this paper that students and Americans in general, lack a basic understanding of American government. Reducing that lack of understanding will require colleges and universities to present politics to students in new and innovative ways. The results of this paper suggest that a Learning Community presents an appropriate and exciting way to demonstrate to students how politics and government relates to their daily lives.

**Appendix A**

**"Learning Community Assessment: Political Leadership and Communication in America"**

This instrument is composed of twenty-three statements concerning your knowledge and feelings about the content of this learning community. As you respond, remember that there is no right or wrong answers, so work quickly, just recording your first impressions. On a scale of 1-to-5, please indicate in the space next to each question a number showing the degree to which you agree with each statement, from 5 = "Strongly Agree", to 1 = "Strongly Disagree".

5 4 3 2 1
Strongly Agree Strongly Disagree

____ 1. Aside from academic courses, I know a lot about the educational opportunities available at the university.
____ 2. I know where to go on campus to get extra help with adjusting to college life.
____ 3. I have a good idea of what career I plan to pursue.
____ 4. I know a number of strategies for creating academic and personal success at college.
____ 5. I know what my strengths are when it comes to working as part of a team.
____ 6. I have many skills that support my potential as a leader.
____ 7. I can clearly explain the difference between "Critical Listening," "Listening for Information," and "Empathic Listening."
____ 8. I believe I have very good listening skills when listening for information.
____ 9. I can clearly identify characteristics of individuals to which I need to adapt in order to communicate with them successfully.
____ 10. I have very strong communication skills for participating in small groups and work teams.
____ 11. I can clearly explain the ways in which "supportive" and

"defensive" features of communication affect the quality of decision making in small groups and work teams.

____ 12. I am very good at making decisions based on clear criteria and a systematic approach.

____ 13. I can clearly explain how, as an individual, I can participate in American government and politics.

____ 14. I can clearly explain the fundamental institutions of American government.

____ 15. I can clearly explain the ways in which communication affects attaining, maintaining, and exercising leadership in government.

____ 16. I can clearly describe to another person how government affects their life.

____ 17. I can clearly explain the impact of political institutions on communication and leadership styles.

____ 18. When doing a research for a paper, I can distinguish scholarly sources from popular or biased sources.

____ 19. When doing research, I know how to combine and integrate information from a variety of sources.

____ 20. I feel confident that I could use the resources of the Library to successfully complete a research paper.

____ 21. I can quickly and clearly describe to another person where to obtain information regarding American government or public policy issues.

____ 22. I can clearly explain the disadvantages, as well as advantages, of relying on Internet web sites to conduct research for reliable information.

____ 23. I can clearly explain how to cite the sources of researched information in my written and oral communication, and explain why those citations are necessary.

**Additional Response**

1. Please discuss how this Learning Community, as opposed to other classes you have taken, added to your understanding of specific topics related to the courses.

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Dr. Kevin Spiker is an Assistant Professor of Political Science at Ohio University-Eastern Campus. He earned his Ph.D. and M.A. in Political Science from West Virginia University and his B.A. in Political Science from The Pennsylvania State University. He teaches and conducts research in the fields of American politics, public policy analysis, and research methodology. His most recent publications include: "Does the Size of Midterm Election Loss Matter?" *White House Studies* (2008), and *Erskine S. Allin and the Arsenal of Freedom,* The Edwin Mellen Press (2010). He can be contacted at spiker@ohio.edu.

# 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 State University ATI—Wooster
16. Ohio University—Chillicothe
17. Ohio University—Eastern
18. Ohio University—Lancaster
19. Ohio University—Southern
20. Ohio University—Zanesville
21. University of Akron—Wayne
22. University of Cincinnati—Clermont
23. University of Cincinnati—Raymond Walters
24. Wright State University—Lake