International Journal of Teaching and Learning in Higher Education 2007, Volume 19, Number 3, 315-324
http://www.isetl.org/ijtlhe/ ISSN 1812-9129

Advocacy as a Problem-Based Learning (PBL) Teaching Strategy

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Designing a course requires that the teacher pays attention to both the context and the content of the course, implementing an appropriate teaching strategy to keep students interested while they learn. Advocacy provides students with opportunities to apply what they know to a compelling human need, sharpens student engagement, and situates content to be learned within a human context. Problem-based learning (PBL) provides a method to structure tasks that are engaging and relevant to students, encouraging increased learning and commitment to the task. Two cases using advocacy as a teaching strategy and learning outcome and PBL as a guide for task structure are described in terms of course design, student learning, and revisions. Successes and challenges are discussed, and guidelines for implementing advocacy as a teaching strategy are suggested in terms of course design, implementation, and revision.

Teaching Decisions

Designing a course requires clear decisions about teaching strategies and approaches early in the process. Teaching decisions center around what is to be learned, student differences, and how one assists learners to learn and how one determines whether they have learned (Shambaugh & Magliaro, 2007). Issues of student attention and engagement are addressed within these teaching decisions, rather than as separate issues. Many strategies are available that address these factors, and choices should be made based on the content, student needs, and context. One teaching strategy is to give students opportunities to apply what they have learned from an academic program to develop true understanding (Wiggins & McTighe, 2006). Problem-based learning (PBL), a common feature in medical schools, is a teaching strategy that provides these opportunities. PBL presents students with significant, authentic situations to "solve" or address, while the instructor acts as a subject matter expert, task designer, and formative evaluator (Aspy, Aspy, & Quimby, 1993). The terms problem-based learning and project-based learning are sometimes interchangeably used. Both are similar involving students in authentic tasks. The learning focus for problem-based learning is the problem, inquiry is the approach, and the end result is summative, group findings, for example. The learning focus for project-based learning, typically associated with K-12 settings, is a product, a production process characterizes the approach, and the outcome is an artifact (Esch, 1998).

Research conducted on the effectiveness of PBL in higher education has reported increases in student motivation as well as improved problem-solving and higher-order thinking skills (Barrows, 1996). Those using PBL in medical education (Albanese & Mitchell, 1993; Vernon & Blake, 1993) reported that students in PBL programs performed as well as those in programs using conventional tests of knowledge. However, as with other teaching innovations, PBL is implemented in different contexts in different curricula, and results are difficult to compare. The nature of the learning outcomes involved in problem solving is a critical factor. Sugrue (1995) modeled problem solving learning in terms of (a) concept understanding, (b) concepts-principles understanding, and (c) applying concepts-principles. In a meta-analysis of 40 studies (Gijbels, Dochy, Van den Bossche, & Segers, 2005), PBL had the most positive effects when assessment looked at the second aspect of problem solving: the understanding of principles that linked concepts. Their overall conclusion was that the method and context of assessment is an important influence in studying PBL effectiveness.

The choice of PBL is not made based on the features of the teaching approach alone but rather on the nature of the content to be learned, where students are developmentally (cognitively, socially) and where they are within a curriculum, which typically sequences courses in terms of knowledge and skills (Bransford, Brown, & Cocking, 2000). The core characteristics of PBL (Barrows, 1996) provide a teacher with a checklist of features to be designed into courses. These characteristics include the following:

1. Learning is student-centered.
2. Learning occurs in small groups.
3. A teacher is presented as a facilitator or guide.
4. Authentic problems are presented at the beginning of the course.
5. The problems encountered are used as tools to achieve the required knowledge and problem-solving skills necessary to solve the problem.
6. New information is acquired through self-directed learning.
7. Learning is achieved by analyzing and solving representative problems.

The above characteristics can be helpful in making teaching decisions that support the nature of the content and the range of students. Many programs include a class in the final term that requires students to produce evidence of their mastery of a particular topic relative to their major area of study. This class is called a capstone class, and the evidence of mastery may take many forms. In a capstone course an instructor could organize students into work groups based on several clients who have contracted with the instructor to provide a design problem. The instructor will need to invest some time in selecting clients prior to the semester start-up. For an introductory course the selection of the problem is crucial, a problem which motivates students, provides an authentic problem, and is doable. Task structure may need to be simplified and the problem sufficiently narrowed.

Advocacy as a Teaching Strategy

Academic programs today are incorporating more community service into their student offerings to help students realize their responsibilities to others, primarily in the form of service learning. Service learning projects offer students real-world, hands-on opportunities not available in the typical classroom structure and can promote an attitude of understanding and advocacy for individuals within their locale. Research conducted on these activities tells us that student involvement in the community, and the opportunities to help others within this service learning context, increase student engagement and commitment to individuals and groups outside of their typical sphere of contact (Taylor & Pancer, 2007; Shumer, 2005). As student diversity in university communities grows, so does the interest in expanding the groups helped by this community service (DiMaria, 2006). With the apparent success of service learning projects that involve the students in the community, more programs are striving to move this community involvement of students to the next level. Both education and interior design programs have shown great interest in trying to integrate some type of empowerment, advocacy, and concern for individuals and groups outside of the individual student (Hammett, 2006; Panao, 2006). Activities are beginning to go beyond immediate service learning projects to try to promote a long-term commitment to advocacy for different causes in their students. This academic move reflects the interests shown within the professional world to advocate for disadvantaged populations (Pable, 2006; Lakin & Mahoney, 2006).

Advocacy is an activity in which one or more individuals actively work toward the betterment of people, living things, and the physical world. Advocacy becomes a teaching strategy when it is used to directly support student learning outcomes. The following challenges were posed to students in two courses that will be described below:

- Introductory course: develop a proposal showing how technological innovations will improve the life of someone with a serious health condition.
- Capstone course: design an interior space to promote global peace.

These are compelling tasks that will attract and hold the attention of students. Advocacy sharpens the focus of student activity over the length of a course because a goal is focused on people students care about. In this way, students directly experience how course content can be used to help people. We characterize a compelling task as having the following three elements: relevancy, challenge, and uniqueness.

Compelling tasks must be relevant. The more one knows about students the more relevant teaching decisions will be. Presentations, activities, examples, and learning tasks will connect the content with the context of students. Rather than searching for ways to maintain student attention, which can be time-consuming, look for compelling tasks that give students meaningful opportunities to apply what they learn and keep them engaged over the entire course.

Compelling tasks must be of sufficient challenge for individuals or groups. Instructors tend to edit, abridge, or ignore interesting options as too difficult or too complex for a semester course. While the choice of learning tasks needs to be made in light of student knowledge and ability, as well as contextual realities of the semester and the instructor's workload, for student and instructor growth to occur sufficient challenge must be in place. Tasks must be structured with clear explanations, clear and appropriate assessment, and responsive feedback.

A third feature of compelling tasks is uniqueness. Students react to "same old, same old" in predictable ways, and a novel task initially interests students but fails to hold their attention and motivation. As students need practice, examples, and time to learn, activities need to be relevant, challenging, and different. A challenge here is to balance structure and variety, both of which students need.

One of the course's learning outcomes may include advocacy. Thus, advocacy becomes both a teaching strategy and a learning outcome. Outcomes could include learning more about a person, a people, or an environment; developing an affective stance, such as internalizing some value and acting upon this value; or improving the condition of the world in some way.

Two Cases Using Advocacy

We summarize two instances where advocacy was used as both a teaching strategy and as a learning outcome. Each case is described individually by the instructor teaching the course. The first case is an introductory graduate course in a technology education program. The second case is a capstone course in an undergraduate interior design program. We obtained Institutional Review Board (IRB) approval in both cases, required by US universities to assure humane and ethical treatment in the study of research subjects.

Introductory Graduate Course: "Saving A Life"

Content. *TE730: Introduction to Technology* is a first course in a master's and a doctoral program in Technology Education, an academic program that develops in students an awareness of the mutual influence of technology and human society. Students receive an introduction to technological themes (e.g., technological optimism, technological "fix," positive-negative consequences, unforeseen impacts), the varying perspectives on technology and culture, and how technology education is addressed in public school, corporate, and institutional settings.

Students. In earlier course deliveries using a readings/writing approach, I[1] found that students were not fully engaged in the readings until the topics were related to their immediate situations, particularly those that involved bio-engineering issues, cloning, and stem cell use.

Teaching. A traditional approach to teaching this introductory course included readings, discussion, and papers. For three years a book of readings (Teich, 2000) was used, and students developed a system design of a technological product or process. Across another three years a media strategy provided students with a different way to explore technological themes. In addition to short readings (Rhodes, 1999), students summarized in a paper and a presentation how authors and playwrights depicted technological themes in books and movies. Students developed their own media representations of one or more technological themes.

Based on students' laid-back reactions to the use of readings and my observations that students did not engage in the content unless it was connected to their world, I decided to develop a compelling problem for them to solve in an effort to have them "experience" technological themes. The choice of using technology to improve, even save a life, was prompted by the reading of *His Brother's Keeper* (Weiner, 2004), in which a man devoted an entire year to come up with a cure for his brother who was diagnosed with Amyotrophic Lateral Sclerosis (ALS, Lou Gehrig's Disease). The question that framed the inquiry for students and that provided the advocacy context to improve a life was "What is technological progress?" To help students understand this question, a text that focused primarily on the nuclear and electric power industries (Pool, 1997) gave students practice in three tasks they would perform later in the course: developing a conceptual map of one or more technological themes, documenting an innovation history of a system or process, and profiling one or more inventors, scientists, or officials. These activities were needed to give students tools to understand the complexity of disease and treatment, and the consequences of technological innovation, and that newcomers need these tools in order to better assist someone with a serious medical condition.

At week five of a 15-week semester course, 13 students submitted and shared profiles of anonymous individuals they chose to advocate for, each with a serious health condition. Students wrote up an Advocate Research Plan, a baseline of what was known on the condition. Students developed a Critical Innovation Map, a visual representation of their conceptual understanding of how one or more technological innovations addressed the health condition. They also summarized case studies describing similar conditions and treatment and how technical, social, ethical, or legal issues played a role. Finally, students wrote an Advocate Proposal, which described treatment and recommendations, and addressed the technical and social impediments such a proposal might encounter. All work was submitted to an online Web board, which enabled everyone to review, critique, and provide suggestions.

Learning. Students experienced the most challenge with the Critical Innovation Map, which visually represented technological themes using metaphors. Two examples included the use of a light bulb and oscillating metal balls to represent the various issues and give-and-take challenges Edison faced in implementing his innovations. Although I had demonstrated how to do this several weeks earlier, conceptually representing innovations using pictures and metaphors proved challenging. "I learned how to think differently," reported one student. Their ability to apply conceptual metaphors was limited to explaining existing treatment approaches rather than explore new approaches.

The health conditions studied by the students included Graves Disease, hypothyroidism, sinusites, keratoconus, migraines, adult ADHD, Type 2 diabetes,

[1] The "I" in this case refers to the second author who was the instructor for this course.

debilitating back pain, nicotine addiction, clinical depression, and Type I HIV. Advocate Proposal documents included a Profile & Needs Summary, Research Plan, Case Studies, and Recommendations. These tasks were needed to support students' systematic study of the medical conditions of their identified individual. In their proposals students were unable to provide innovative solution options. They did, however, survey the literature and described treatment options. Although their proposals did not report "saving someone's life," several students acknowledged learning much about the health condition as well as learning more about the individual and the very different life that person lives. One student commented that "in my research I was able to discover one simple factor that could change my aunt's life as well as others." Another student reported that the research helped in multiple ways: namely, to "dispel previously held myths, offer advice for friends... and direct them towards professionals, and gave me insight into my son." The notion of progress was defined by one student, not as technical innovation, but "how to effect changes in the medical community because that is the key to progress."

Most students tend to be technological optimists, but in this course, the students found that optimism was insufficient alone to save someone's life. Proposing action steps and seeing the conflicts between the medical and pharmaceutical communities and governmental units severely tested this optimism. Students reported that they learned more about each health condition than they had known before. Some students changed their view of a learning activity from "not being an assignment anymore... but a personal commitment." Several students reported reconsidering the importance of one person's efforts, that "there is always a glimmer of hope in an impossible situation," and that "starting from a simple desire of helping widened my knowledge in certain areas that I never expected to learn." One student viewed the task as "examining the topic from an outsider's perspective, to see things as they are not usually seen, and to ask questions never asked before." The overarching concept of advocacy as an activity to improve people's lives is a guiding component of this task. As indicated in their comments, students discovered that they were capable of using technology to explore unfamiliar contexts and identify elements to help others.

Reflection and revisions. Evaluation of the course centered around the course objectives, which were to (a) develop an awareness of the influence of technology in human culture, (b) develop critical reading, discussion, research, and oral and written communication skills, (c) research, discuss, interpret, and document views of technology through different perspectives, and (d) apply this awareness and skills to a real human problem. These were assessed through nine learning tasks and included technological themes list, innovation history, advocate profile, research plan, innovation map, case studies summaries, advocate proposal document, a presentation, and course reflection. I also used the Barrows (1996) PBL features list provided earlier as my own self-assessment to double-check on my use of PBL as a teaching strategy. The PBL characteristic that new information is acquired through self-directed learning was mediated by the fact that the activity was an academic task and students only went so far as they believed was necessary to complete the task.

What I learned from using advocacy as a teaching strategy can be summarized as follows:

- Advocacy can be used in an introductory course to orient and engage students with content.
- Advocacy provided a deeper understanding of students than previous course tasks.
- Advocacy shifted the view of a task from "just an assignment" to a "personal commitment."
- Advocacy was regarded initially as a "risky" approach but ultimately yielded steady student engagement. Unforeseen learning (e.g., personal agency, views of progress) may occur.
- High degrees of student involvement require careful attention to feedback that is specific, personal, iterative, and promotes additional thought.

The following changes need to be implemented in the use of advocacy as a teaching strategy in this introductory course:

- Conceptual problem solving requires another course in educational psychology for students to acquire problem solving knowledge.
- Periodically return to the conceptual foundations (e.g., textbook) to reinforce knowledge outcomes.
- Provide examples of previous student work.
- If advocacy is also a learning outcome, think through how this learning is to be accomplished by students. A rubric may be useful to specify categories of performance and identify a range of performance across each category.

Capstone Undergraduate Course: "Promoting Peace"

Content. ID 455: Contract Interior Design 2 provides students with the final design studio in their

undergraduate interior design course sequence. The class is structured as a capstone course, as explained earlier, and students are required to demonstrate their competency in using the design process to create appropriate interior spaces. The final studio is primarily focused on commercial design (e.g. offices, restaurants, medical facilities, etc.), and students are expected to compile all of their knowledge to represent their professional abilities in research, design, and presentation.

Students. The seniors have completed all previous coursework and are in their final semester preparing for entry into the work force. During the semester most students are not only completing coursework and studio projects, they are also finalizing their portfolio and entering into the job search in earnest. In addition, they have hit the "senior slump" and are trying to enjoy the last of their college days before the end of their final semester. The varied areas of focus in this semester demand that project work be engaging, interesting, and relevant to keep them connected through the 15 weeks.

Teaching. Task requirements for this course have centered around project work and the application of knowledge and skills acquired throughout students' previous years of design school. Previous project approaches have typically been instructor-driven, but they have elicited lower levels of commitment than desired in this final design studio. A new approach freed the students to choose the direction of their design. My[2] goal for this change was to give students a chance to create a project of particular personal interest that would create a greater investment and motivation within the student to perform. All projects in the professional arena have some parameters, so the assignment I provided was to "design an interior space that promotes global peace." Most of the students in this class had participated in our program's mandatory Study Abroad in their 3rd year and had spent 6-15 weeks studying in an international setting. This experience provided a basis for the global component and integrated their heightened understanding of American citizens in the larger context of the world.

Two of my primary goals were to use advocacy for peace as a teaching strategy and use evidence-based (or research-based) design as the foundation. I wanted the students to learn that design is a pro-active methodology, and that they can use their professional skills to become advocates for social and personal issues important to them. This advocacy, in turn, can lead to the betterment of people and the physical world. With freedom of choice, however, comes more responsibility; this project demanded more time and effort from the students to generate information typically provided by the instructor. At the beginning of the semester, several weeks of discussion and research were undertaken before they began their designs. The discussions helped them see the task from many different student viewpoints. In-class talks showed students that views on peace were wide-ranging and that ideas about advocacy regarding the topic were not universal. Research during the first weeks gave them a foundation for design thinking and helped them understand the assignment in a context that reached beyond the classroom.

Submissions for this project included article summaries, client descriptions, requirements, designs for the space that addressed the identified requirements, construction drawings, and specifications necessary to complete the project. As with the previous technology course tasks, these products were needed to make specific design decisions. Additionally, students were required to keep a reflection journal on their experiences throughout the semester and submit at the end of the term.

Learning. Learning outcomes for this project were divided into three categories: competency in design, research, and advocacy. Learning in each category was assessed and feedback provided throughout the semester.

Students chose an array of project approaches to address global peace. Eight spaces focused on families and children and included one camp, three after-school programs, two homeless/abuse shelters, and two activity/art centers. Three students chose to design educational centers including a university classroom facility, a museum, and a sustainability center. Other projects included cultural/community centers (2), spiritual or faith-based projects (2), hostels (2), a restaurant (1), and a healthcare facility (1). No two projects were similar, even where the client group appeared to be comparable.

Design competency was assessed using required accreditation standards provided by the Council for Interior Design Accreditation coupled with additional programmatic requirements. Demonstrating competency in design commensurate with the students' positions as graduating seniors was a critical outcome for this project, and appropriate support was provided throughout the semester. Research was assessed based on the students' ability to find and use relevant research topics in the context of their project. Information from no less than 10 articles was required to inform their design decisions and provide a defensible foundation for the design. Assessment of the students' understanding of and commitment to advocacy was done through self-report within their reflection journals. They were to address the following specific questions on a weekly basis to track their advocacy awareness:

[2] The first author was the instructor for this course.

1. How has my understanding of design as a vehicle for advocacy changed this week?
2. How have my feelings about the designer's responsibility as advocate changed or grown this week?
3. What influenced that change/growth?

I periodically reviewed student journal entries and subsequently engaged students in class-time dialogues based on their narratives. Student journal entries indicated that a dedicated advocacy grew out of their commitment to the population they chose to design for in their project. Of the nineteen students in the class, each submitted a reflection journal that addressed their growth in advocacy throughout the semester. No student indicated that they had not expanded their appreciation of the groups they chose to design for. The predominant sentiment shared in the journals (17 of 19) was that they had really become committed to promoting peace for the groups they had chosen, and they had become more empowered to make a difference in people's lives through their designs. The two journals that did not express common sentiments dealt with the required questions in a less than dedicated manner (i.e., they did not finish the assignment as required). For example, one student began researching domestic abuse. She was unfamiliar with the problem beyond typical media exposure, and as she delved into the problem through her research she became more and more committed to helping women and children who are victims of violence. Another student used her experiences abroad to inform her research into the culture of backpackers and their world travel needs. She believed that through understanding other cultures and acceptance of diversity, seeds of peace would be sewn. As she learned more about the "backpacker culture," she advocated for this group as a vehicle to promote global peace. Each student, by focusing on improving the world by promoting global peace, increased his/her awareness about a group that they identified as important. Through this increased awareness, they became advocates by exploring methods to improve the physical environments which in turn improved people's lives.

In addition to design, research and advocacy, this project provided an opportunity to help students see their profession in a larger context and understand the potential impact they have on the lives of the public. Student comments reflected the success of incorporating advocacy as a learning strategy and outcome:

- "I'm totally convinced that as designers we have a significant role in affecting world peace."
- "We can't create world peace in one day, but we can cause change."
- "We can make change happen! I realize that we can spark change through our designs."

Reflection and Revisions. I learned many things about using advocacy as a teaching strategy during the course of the 15-week project. Below are some of my insights:

- In a senior-level class, advocacy creates a context for learning that helps students explore deeper levels of performance. They go beyond themselves and make more appropriate decisions for a greater cause.
- Advocacy provides a strong motivator for experienced students.
- Research and advocacy are complementary and need to be used together to encourage students to invest both cognitively and emotionally.
- Sharing control with students is critical, and the instructor must provide both guidance and freedom to empower students to work to their fullest potential.
- The instructor must pay close attention to each student and provide relevant, timely feedback for all work submitted. Feedback should address the relationship between the designer as an advocate and the decisions made.

Based on this teaching experience, the following changes would more fully support the use of advocacy as a teaching strategy:

- Discuss particular advocates and their accomplishments early in the course to "set the stage."
- Provide articles that reflect specific student interests early in the semester may help clarify the relationship between design issues and advocacy responsibilities.
- Include student reflections regarding advocacy in their submissions on a regular basis.
- Include assessment strategies beyond journal entries that evaluate the success of the use of advocacy as a teaching strategy.

Figure 1 summarizes the features of the two courses.

Guidelines

Suggestions for using advocacy as a teaching strategy can be organized by an instructor's thinking

FIGURE 1
Features of Two Courses Using Advocacy

TE730: Introduction to Technology		ID455: Contract Interior Design 2
Technology Education	**Program**	Interior Design
Graduate, masters, doctoral	**Educational Level**	Undergraduate
UG ➔ First Course in graduate program	**Curriculum Sequence**	(Y3) Study Abroad ➔ (Y4) Capstone course
• Advocacy • Technological themes • Research skills • Writing skills • Conceptual problem solving	**Learning Outcomes**	• Advocacy • Research • Programming • Design • Presentation
	↑ **Advocacy**	
"Save someone's life"	*How to experience the content?*	"Promote world peace"
	↓	
Specify an approach to improve the life of a person with a serious health issue	**Learning Task**	Design an interior space that promotes global peace
11 weeks of 15-weeks	**Duration**	15-weeks
• Profile & Needs Summary • Research Baseline • Critical Innovation Map • Case Studies • Advocate Proposal • Presentation • Reflection and Feedback • Graduate assistant observations	**Subtasks – Assessment**	• Client identification – description • Adjacent analysis • Conceptual sketches • Presentation boards • Renderings • Construction documents • Specifications • Budgets • Project Journal • Presentation

before teaching, during teaching, and after teaching, thus providing a developmental cycle to document teaching decisions. Figure 2 summarizes these decisions in terms of general guidelines for the use of advocacy and specific recommendations for introductory course and a capstone course.

Course Design

Teaching decisions can be systematically examined by asking three questions. First, what is to be learned in the course? Second, who are your students and what do students know or not know coming into the course? Third, what teaching options are appropriate? Teaching options include issues of curriculum, sequencing, teaching model/strategies, assessment, and technology. The benefits of advocacy as a teaching strategy are that you provide students with a rich learning task situated in a human context, thus depicting a relevant use for the content.

The next set of design decisions address student activity. The choice of a compelling advocate problem is key: a task that is relevant, sufficiently challenging, and doable given the learning setting and student characteristics. Initially, a case needs to be made to help students understand the potential impact of their project and their responsibility to the public. The problem to be addressed requires breaking a complex task down into subtasks, sequenced along some principle, such as simple skills to complex skills or phases of activity. The affective nature of higher-level thinking is worth taking into account as well, such as moving from listening to valuing to internalizing an attitude (Krathwohl, Bloom, & Masia, 1964). Each subtask requires structure and clear explanations of student performance. The overall assessment plan needs to be clear and explain how each task contributes toward a student grade. Decide to what extent problem-solving activity is joint and/or individual. Design in adequate time for sub-tasks and provide some slack into the schedule to allow for variability and unseen occurrences. Students can easily get caught up in learning about their advocacy subject not leaving enough time to complete the project.

FIGURE 2
Guidelines for Advocacy as a Teaching Strategy

Course Design	Implementation	Course Evaluation
General guidelines: *Teaching decisions*: learning outcomes, student characteristics, teaching options. *Benefits of advocacy*: provides a rich and challenging task; a human context and rationale for learning course content. *Student activity*: problem choice, task breakdown, task structure and explanation, assessment, group or individual activity. *Teacher activity*: text, materials, mini-lectures, presentations, reviews, tutorials, feedback depth and frequency.	General guidelines: Students still view any learning task as an academic task (e.g., What do we need to do?) Ongoing balance between academic task expectations and authentic task requirements Share control with students Provide examples from previous teaching, if available. Use task to continually learn about students; summarize student performance and share with class Nature of and scope of feedback will need to evolve to fit the complexity of the problem and the range of students.	General guidelines: Evaluate against learning outcomes, student characteristics, teaching options. Incidental learning may occur; fold into explicit course outcomes? How might teaching assistance need to change? What changes need to be made in providing feedback to students from instructor, other students? What changes need to be made to the assessment plan? How does this course contribute to the overall curriculum? Obtain IRB approval if disseminating.
Introductory course: Text may be needed to provide sufficient knowledge Advocacy will motivate most students, but a minority will favor "less work" and prefer knowledge transmission.	Introductory course: Course sequence may require continual referencing of basic knowledge/skills.	Introductory course: How does this course provide a good first experience?
Capstone course: Advocacy provides a means for students to apply what they have learned in a program. Provide thinking time in advance of course or early in course before production begins.	Capstone course: Possibly involve students in the design of rubric (performance criteria and differences in performance). Individual or group meetings may need to be scheduled. Juries of professionals can be used to assess some aspects of student performance.	Capstone course: How does the course provide an appropriate capstone experience? Does the course incorporate sufficient knowledge and skills? How might this course connect with professional goals of students?

A third set of design decisions addresses instructor activity. Task explanations and supporting materials always require time to develop. Provide readings and suggested resources to support student project choice and to get them started. What mini-lectures, presentations, tutorials, or reviews need to be developed? A baseline of presentations may be developed in advance and adjustments made over the semester. An equal amount of feedback and instruction may be necessary in a PBL environment. Feedback mechanisms need to be developed in advance and the time demands of such feedback may need to be adjusted over time.

An introductory course that uses advocacy as a teaching strategy may need a supporting text to provide sufficient background knowledge. A majority of students may react favorably to the challenge of PBL, but some students will prefer lecture and notetaking. Advanced students who have the foundational knowledge and skills tend to see PBL as an opportunity to apply what they have learned and to develop portfolio artifacts or evidence of real-world work. Provide these advanced students with some "thinking" time prior to the beginning of the project, either before the course begins or 1-2 weeks before they are to produce something.

Implementation

Any new teaching approach will require some adjustment across a semester, so it is helpful to build in some slack to the schedule. Adjustments to teaching

and student activity are based on an ongoing assessment of student progress. Judgments of progress will dictate to what extent an instructor intervenes individually or for the class. Summarize individual student performance and share with the class. Providing examples of previous student work helps students to visualize what is expected and that such a task is possible. Teaching using this strategy the first time is more of a challenge, as one does not have past student work to showcase. However, it is possible to show students case studies connecting advocacy, research, and problem-solving.

Innovative tasks, no matter how motivating, will still be viewed by students as academic tasks, meaning they will still ask, "What do we need to do and when is it due?" One has to be aware of task demands and program requirements. Advocacy requires that decisions be made. Students may dwell on studying the problem and avoiding the responsibility that comes with decision-making. Peer review sessions can be used to keep everyone on schedule as well as establishing the social value of sharing and learning from each other. Another possibility for peer review might be have students post work or critiques to an electronic Web board or use Web chats to talk about the work. Individual self-assessment may use a reflection journal, which records topics and questions for students to bring up in class. The journal also provides the instructor with a developmental assessment of student thinking.

Ongoing adjustments in an introductory course involve frequent reviews of main ideas so that students make the connections between the problem and the content. Use class time to discuss broad advocacy issues and specific issues related to projects. Experienced students in a capstone course can contribute to the design and improvement of assessment, particularly rubrics which help structure instructor judgment on student performance. Peer review might be supplemented by external juries of faculty or other professionals. Experienced students may also benefit from an individual or team meeting (Major & Palmer, 2001).

Course Evaluation

Teaching decisions can be examined by determining what students learned, always an important category of evaluation. Create your own instructor-developed course evaluation to find out student perceptions of their learning, your teaching, and what changes need to be made. Be alert for incidental learning that may not have been explicit, such as team performance. If used in an introductory course, how did this course contribute to a student's first experience? Although not directly a learning outcome, a "first course" provides an important opportunity for setting the stage for student interest and motivation in a program. For a capstone experience, was the PBL approach appropriate to advanced students? The Barrow's (1996) PBL provides a checklist for self-assessment. Did the problem to be solved incorporate sufficient knowledge and skills? Courses like this will always require a significant amount of work, but if the course is structured carefully students will voice this commitment and acknowledge its worth to their future career plans.

Concluding Comments

Problem-based learning (PBL) provides a strong context for students to engage in hands-on learning activities. Within a well-designed PBL class, a relevant context must be provided for students to become personally invested in the project. This paper discusses two cases where advocacy provided the context for learning in one education class and one interior design class. Advocacy was chosen as the context based on the current academic focus to have students more involved in community issues and to foster a greater commitment to serving the public through their future profession (Lakin & Mahoney, 2006). The intent within each class was to have students increase their personal commitment to a particular group and act as an advocate for that person or group through their project work.

Based on self-reports through web-based assignments, class activities and dialogue, and personal reflection journals, advocacy did provide an appropriate context for students to increase their awareness of social and health issues. The problem-based learning approach helped to increase students' empowerment and beliefs that they can make a difference in people's lives by using their professional activities to advocate on behalf of those issues. As such, advocacy becomes not only a teaching strategy but also a learning outcome. Therefore, combining PBL and advocacy was shown to be a successful approach in fostering an appreciation within the students for their personal power relative to chosen issues.

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