

Designing a Problem-Based Learning Intermediate Composition Course

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We used Problem-Based Learning (PBL) as a new pedagogy in an intermediate composition course. Our course design was based in constructivist pedagogical practices, which suggest that knowledge is co-created through social interactions. Although professors have much to offer students, students can also learn important lessons through interactions with their peers. PBL makes it easier to implement the social and collaborative aspects of writing. Students began with a traditional teacher-led essay and progressed to subsequent writing assignments representing a variety of genres produced while working in teams. All three problems required students to independently apply student learning outcomes by analysing the writing situation for the concepts of discourse community, genre, and rhetoric. Each assignment was assessed using a rubric aligned with the course student learning outcomes. Students also completed self-assessments after each assignment. PBL allowed students to apply what they were learning in the classroom to contexts beyond the classroom in an immediate and relevant way. This article describes how PBL can enhance the development of an intermediate composition course.

Keywords: composition, course design, pedagogy, problem-based learning

As our university was planning to transition from quarters to semesters, courses and pedagogical practices came under review. The review of the English composition sequence brought about an institutional change in the required writing courses. Under the quarter system, students were required to take three quarters of first-year composition. But as more programs began requiring capstone projects, faculty were finding students unprepared to meet the expectations for the writing their capstone projects entailed. Students were not applying what they had learned in their first-year writing courses to the new writing expectations in the upper division courses. Additionally, students in our regional campus needed writing instruction to not only transition to the work place but also to play active roles in the communities where they live. Therefore they needed to develop an awareness of the demands of various genres they may need to write. Wardle (2009) argued that English Composition courses need to prepare students for genres they will encounter throughout their time at the university and beyond. She recommended helping students learn to analyze their writing situation; however, the issue

composition faculty encounter is that “genres make sense to the people who create, use, and change them, but they are difficult; if not impossible, to teach people to write out of context” (768). For example, English instructors would find it nearly impossible to teach students how to write chemistry lab reports because they lack not only the content knowledge but an understanding of how the chemistry discourse community organizes their ideas and what ideas should be emphasized.

Composition faculty can help students learn to analyze the demands of each writing situation to determine how ideas should be organized and what counts as important information in the discourse community. Therefore, the intermediate composition course at our institution has as its central goal to focus students’ attention on how meaning is made and communicated across academic disciplines. Meaning making requires critical thinking skills and meaningful contexts in which to practice. Thus, the university composition committee redesigned the composition sequence for the semester system so that one first-year composition course would prepare students for research and argumentative writing while a second mid-collegiate course was initiated to help students think critically about genre, discourse community, and rhetorical choices. To actively engage students in analyzing genre and discourse community as they make rhetorical

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choices appropriate to the situation, we designed and implemented problem-based learning (PBL) pedagogy in our sections of this course for the past three years. PBL promotes students to think independently as they use what they know about rhetorical choices when they encounter new discourse communities and genres described in assigned problems.

Problem-Based Learning (PBL)

Before we explain how PBL helps students understand rhetoric, genre and discourse community, we must first define PBL. Savery (2006) defined PBL as “an instructional (and curricular) learner-centered approach that empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem” (n.p.). Crucial to PBL’s success as an approach is the development and implementation of ill-structured problems and a well-trained facilitator who can guide the students through the PBL process in a way that encourages both independent and critical thinking using collaboration.

PBL was originally designed to help first-year medical students learn to become better problem solvers and self-directed learners; however, it has recently become a viable choice in other disciplines. Wood (2003) observed that “problem based learning (PBL) students use ‘triggers’ from the problem case or scenario to define their own learning objectives” and follow it with self-directed independent study to later share and collaborate with their group to enhance their learning process (n.p.). These features make PBL a very attractive choice for the student-centered composition classroom. Gentry (2000) identified important characteristics of a student-centered learning environment in which students assume ownership for their own learning. Students seek information, instead of memorizing and repeating information. Knowledge of facts, terms and content is replaced by process understanding. In the student-centered classroom the focus shifts from not just learning in childhood but to lifelong learning (9). Rhem (1998) asserted that “the list of reasons [for adopting PBL] includes the fact that [it] ends up orienting students toward meaning making over fact collecting” (n.p.). As mentioned earlier meaning making is a major aim of the course so these descriptions of PBL made it potentially an effective pedagogy to adopt.

Our course design is based in constructivist pedagogical practices, which suggests that knowledge is co-created through social interactions. Research conducted by Hmelo-Silver (2004) on PBL environments suggests that “students do work together to provide collaborative explanations, which is a key factor in student learning and motivation” (259). Amador, Miles, and Peters (2006) proposed that PBL “allows both us and our students to see the purpose of higher education: informed, thoughtful, and engaged citizens working together to solve problems that people really care about” (131). Social interaction is an important component in developing understanding of how discourse community influences

a writer’s rhetorical decisions and PBL helped to provide the social context that required students to think of themselves as engaged citizens as they solved the problems.

The use of teaching interventions in the form of problem-based learning, can lead to increased quality in student critical thinking among other skills such as improved independent thinking and metacognitive skills. The impact of PBL on students’ critical thinking has also been explored in a variety of contexts such as nursing education. In a nursing education study evaluating the impact of PBL, Ozturk, Muslu, and Dicle (2007) suggested that the requirements of PBL contribute to the development of critical thinking, broaden perspectives and help develop the ability to evaluate a wide variety of ideas. These traits of critical thinking are essential for composition students as they interact with diverse ideas to process and reflect upon them. Ozturk et al. argued that PBL helps students to reinforce ideas and develop multiple perspectives on a problem through collaborative work. This group analysis of various perspectives of a common problem, evaluation of what is useful or not in those perspectives to achieve a viable solution, and the synthesis of knowledge gleaned to develop a solution is at the core of critical thinking in PBL intervention.

In the last decade, PBL has been adapted for use in the composition classroom. Bernhardt (2006) advocated using PBL to improve student writing by providing students with “an exigency—a real problem, a strong sense of purpose, a sense of audience, and an understanding of constraints” (n.p.). PBL used as a means of teaching rhetorical analysis is described in Pennell and Miles’ (2009) article. They asserted “through PBL students are experiencing deep rhetorical learning, developing organizational sensitivity, learning to respect the local, and practice an ethic of change [. . .]” (393). Beckelheimer et al. (2007) implemented PBL in first-year composition courses. Based on their classroom experience of using PBL, they believe the PBL approach to composition results in more engaged, self-directed students who are able to use their critical thinking skills to interpret real world problems. Sapp (2002), who has used PBL in the first year composition classroom, rationalized that PBL, “provides professional teachers of writing opportunities to actively participate in the empowerment of students” which leads to more independent learners (6).

Because one of the main learning objectives of our mid-collegiate course is to help students learn how to make meaning and also understand the process of making meaning, the development of metacognitive skills is crucial. Downing and his colleagues (2009) argued that a PBL curriculum creates an environment appropriate for the development of metacognition because it provides new social contexts that test cognitive skills (609). Metacognition, according to Downing et al. “involves knowing how to reflect and analyze thought, how to draw conclusions from that analysis, and how to put what has been learned in to practice” (610). It is through metacognition that students become independent critical thinkers.

As the literature above shows, an ill-structured problem can become the exigency for the writing students do in a composition course. In our course, we developed a sequence of three inter-related problems focusing on citizenship. In writing courses, exigency is also referred to as the rhetorical situation that includes understanding the needs of the discourse community, selecting the appropriate genre and applying effective rhetorical choices. By allowing students to use the social interactions promoted by PBL, students become involved in meaning making as it relates to the course goals. As students engage in meaning making by working through problems, they also become aware of their own thinking and learning, which leads them to become more independent critical thinkers. We use additional reflective writing assignments to help students track their growth as writers and independent learners.

Setting Up the PBL Course for Students

All good course design begins with clear student learning outcomes (SLOs) that communicate what students are expected to learn through the course (Wiggins & McTighe 2006). The premise for the three inter-related problems was based on the following SLOs, which were used to guide the problem development process, choice of course readings and resources.

1. Evaluate and analyze sources and rhetoric from different genres.
2. Communicate effectively in oral and written formats in a variety of genres (argument, poster presentations, etc.)
3. Reflect on what students are learning and the connections between writing, critical thinking, and information literacy.
4. Assume different attitudes (voices) with different audiences.

The SLOs for this sophomore level course highlight the areas where our students struggle the most as they prepare to transition into writing for courses in their major and for some students it is the last course they will take before graduating with their Associates degree to begin their careers. At this stage, students need to conduct an effective evaluation of sources from different genres to support their writing because this is the last time they will receive guided instruction on this important skill. Exposed to a new range of writing contexts, they need to become aware of how to adapt their writing to the needs of different audiences and genres as they are expected to meet the rhetorical demands of different writing contexts. As they make the final shift into the workplace they are expected to have clearly defined skills to assume voices suitable for different audiences. Workplace and social contexts require adaptive oral and written communication skills.

Evaluating and analyzing sources and rhetoric is central to the course, so the first three weeks of the ten-week quarter were devoted to helping students understand the concepts of rhetoric, genre and discourse community as well as how to apply them before engaging students in the PBL process. Initial reading assignments from *Scenes of Writing: Strategies for Composing with Genres* presented students with the course concepts and later readings focused on the theme of citizenship, rights and responsibilities. We introduced students to various genres, their individual characteristics and demands. Students engaged in group exercises that require rhetorical analysis, which illustrate how culture and time period affect rhetorical choices. For instance, students read E. B. White's "The Meaning of Democracy" to analyze how the metaphors would appeal to the 1940's audience. After these initial group exercises, they were given the first rhetorical analysis assignment that was a traditional writing assignment in which students work independently to find their sources and write their papers. The assignment asked students to identify a document that describes the rights and responsibilities of citizens and write a rhetorical analysis of how the document is constructed demonstrating their understanding of the concepts of discourse community, rhetoric and genre.

This initial part of the course was structured using group work, class discussions, assigned readings and focused instruction. This more structured, instructor led format allowed students, who come from a variety of backgrounds and range of skills, to equip themselves with appropriate skills that they would later apply to solve the problem sequence. Freynius, Bergdahl and Silen (2005) cited the advantages of interactive lecturing in a PBL context since it "can give students a chance to follow and model the way an expert thinks, reasons and asks questions" (64-65). Additionally, before the problems were introduced, students participated in several in-class group exercises to introduce the PBL process and emphasize the significance of collaborative learning. For example, we used PBL consultant Mark Serva's scenarios to help students identify potential problems with collaboration and brainstorm solutions to avoid conflicts while working in their group. One scenario asked students to describe how they would handle a student who does not come to group meetings and does not care about the course. Students generated rules and consequences to prevent this behavior in their own groups.

The instructional librarian visited the class during the third week of the course to familiarize students with resources available at the library and online. She also used a PBL scenario to help students locate and retrieve articles, and then evaluate them as they seek to find solutions to the problems presented to them. Specifically, students worked to find credible, reliable sources for their hypothetical supervisor to use in making an important decision. The librarian's PBL approach gave the class activity a real life purpose so students could learn to critically evaluate sources in light of discourse community expectations.

Implementing PBL

We used the approach suggested by Algo Henderson (1965) in “The Design of a Superior Course” to graph how each problem supports a particular outcome, and identifies necessary resources, and links class activities related to that outcome. Since the overall theme was citizenship, the first problem of the three–problem sequence presented a scenario that involves students in the process of developing a founding document for an emerging democracy¹. The problem compelled students to think, discuss and explore citizen rights and responsibilities, their importance and how they would apply to a newly founded country seeking to establish itself as a democracy. Students were required to evaluate sources and rhetoric from different human rights documents such as the U.N. Declaration of Human Rights in order to create their own document. Students worked in groups in their search for an effective solution, which was ultimately presented orally. While engaged in solving the first problem, students were working on meeting the established SLO of communicating effectively in oral and written formats.

Problem two is related to the first problem in content but required students to develop their writing skills further. Each student chose an individual right identified during problem one and built an argument to defend it. The problem required students to find sources, evaluate and analyze them as they constructed their arguments in defense of a right. The problem design stimulated students to explore different genres and voices to meet the rhetorical demands of the scenario such as producing two different genres for two different discourse communities. Working collaboratively and employing critical thinking skills, students produced both an individually and collectively written product. Groups sought ways to distill information from their individual products to create a collective document in a different genre and voice. Guided by questions that accompany the problem, students conferred with their group members to fine tune their search, develop their arguments and plan the final presentation of their solution. All these activities moved them closer to the learning outcomes of the class.

The final problem required students to use and further enhance the skills acquired with the first two problems to address a social issue. Students were presented with a scenario during which they acted as experts in their field who were representing their country at an international forum on issues related to economic justice. Each student took on the persona of an expert (educator, researcher, reporter or politician) presenting their findings in a panel presentation and in an academic article in the conference proceedings similar to the World Economic Forum. They practiced how to write about social issues related to their majors by assuming

distinctive voices pertinent to the genres they were writing within. This final problem required students to apply what they had learned throughout the course to analyze the types of genres they needed to produce, locate the appropriate sources of information, and integrate that information in both the conference presentation and individual paper. Additionally, the problem encouraged students to apply information learned in the context of their majors to solve social problems that characterize real world situations.

All three problems required students to independently apply the student learning outcomes by analyzing the writing situation for the concepts of discourse community, genre, and rhetoric. In the process of problem-solving students need to communicate effectively using a variety of genres while assuming different voices. For instance, in problem two students had to assume distinctly different voices pertinent to particular discourse communities and genres. Students transitioned from a familiar genre of a letter to a more complex and unfamiliar genre of a white paper, which helped them learn to analyze the important rhetorical features of the genre they are trying to produce. The problems engaged students in mastering the student learning outcomes in a way that made them less dependent on instructors and more self-reliant in finding answers to their own questions. By problem three students asked fewer questions about what the instructor wanted and began to focus on how to solve the problem with their group.

A key component of PBL is encouraging student self-reliance through the development of metacognitive thinking. Downing et al. (2009, 619) found significant improvements in students’ metacognitive thinking among students using PBL compared against students using traditional teaching methods. They theorized “the challenging new social and academic context of working in the different culture of problem-based learning environment increases the use of metacognition because the student cannot call upon routinized or ‘automatic’ cognition.” It is through a series of heuristic questions common to most PBL courses that students are able to make the connections between the strategies they are developing to other situations. As Pennell and Miles (2009) described, when students were given a problem in their courses, they were asked, “What do you know, what do you need to know, and how will you learn it?” (377). Students first worked through these questions individually, and then students worked with their group to identify facts given in the problem, to restate the problem, to identify what they know that will help solve the problem, and to discuss steps the group could take to solve the problem. Students often struggled with this stage because they wanted to rush through it instead of exploring various interpretations of the problem. We spent an entire class period on this stage in order to force students to slow down and fully explore this aspect of problem solving because it is critical to developing a good product later.

Another activity students engaged in to improve their metacognitive skills was a reflective writing assignment on

¹A full description of the problems entitled “Examining and Practicing Genre and Rhetoric” can be found at the University of Delaware PBL Clearinghouse at <https://primus.nss.udel.edu/Pbl/>.

their problem-solving and writing processes. The process of writing is incomplete without the ability to understand how a text makes meaning. This process of reflection helps students recognize the intimate connections between writing and critical thinking. Dewey (1910, 6) argued that reflective thinking is “active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it, and the further conclusions to which it trends.” Hmelo-Silver (2004) recommended using “structured journals” in PBL to guide students’ reflections. She further suggested that reflection is instrumental in developing deeper student understanding. She said, “Key to developing such understanding is reflection on their [students’] knowledge and strategies” (247). Downing et al. (2009) suggested that metacognition and reflection need time to develop consciously before students are able to internalize these processes. A “structured journal” is a good way to guide students through these processes as they learn strategies to make connections between the learning they are doing in solving the problem and its applications to other settings.

Students answered a series of “structured” questions about their problem-solving and writing processes and identified how the problem helped them in mastering the student learning outcomes for the course as well as how they could use the skills learned in other writing situations. For instance, the reflective writing assignment asked students to evaluate the genres they needed to produce as well as how discourse communities use certain genres to include and exclude other discourse communities. For example, “What does an argumentative letter allow its users to do and what does it not allow them to do?” Evaluating genre in this way is difficult for our students, who for the most part, are in the second year of their programs. However, it is important for students to critically consider how the writing they engage in during their careers may have important social implications. Reflection guides students towards this type of evaluation.

Student learning outcomes not only directed the course content but are also used in conjunction with the writing situation to develop rubrics for assessing student products. We find that rubrics are the most effective means of communicating our expectations for student writing. Bean (2011) described various types of rubrics that can be used to assess student writing. Analytic rubrics give detailed information and points to each component of the assignment while holistic rubrics provide detailed information but do not assign points to the specific components. Bean also discussed generic rubrics that can be used across a variety of assignments versus task-specific rubrics. In our courses we use a holistic, task-specific rubric to assess student work. The trick in writing rubrics for PBL assignments is to make them generic enough to effectively evaluate a variety of potential products while also clearly delineating the evaluative criteria. For instance, we developed a criteria for evaluating how closely students followed the genre they produced to address the problem. Criterion for the “A” category is “The text is

structured as belonging to a certain category with characteristics appropriate to the genre.” Each problem required an individual component because we wanted to assess each student’s individual skill development. We used similar rubrics for the individual and group projects. Groups worked together to analyze the problem and used the rubrics as they collaborated. In order to demonstrate to students the usefulness of these rubrics, we led a group discussion of components of a student paper using the rubric’s criteria. We also encouraged students to ask questions about the rubrics and how they are applied. Since the rubrics were available before the final products were due, students were required to use them to guide their review of each other’s work.

Challenges and Opportunities of PBL

Students in PBL courses often have difficulties specific to the way the course is taught. At first, many students in our courses were reluctant to take control of their own learning. Some recognized that as the instructors, we control the grades so they wanted to know what we want. These students often want clear and complete directions for the assignments. As these concerns came up, we discussed other high stakes writing situations where the directions are not clear, like writing cover letters and resumes. We suggested that these genres have specific rhetorical features that are shaped by the discourse community, which are important in identifying insiders and excluding others. In these high stakes situations, students will need to be able to independently assess their writing situation to apply the appropriate writing strategies to meet the demands of the audience. PBL gives students the opportunity to begin taking ownership of their learning, while in a supportive environment where they can consult with other members of their team.

Students at our two-year regional campus had difficulty identifying the important aspects of the problems. We have found that the use of questions following the scenario helped focus student attention on important aspects of the problem. For instance, in the second problem, we asked students to consider, “What are the freedoms that you think are the most vital for a democracy and the possible roles you may take into consideration to develop a perspective of the freedoms you choose?” They use this question to improve their understanding of the problem as they analyze the critical features of a document’s genre and rhetoric as well as the purpose it serves in a discourse community.

Another common student complaint related to PBL is the fairness of assessment. PBL requires students to collaboratively produce a finished product for assessment. Groups also engage in peer review and grade each member’s participation in completing the project. However, some students are concerned that their grade will be negatively affected by weaker students in the group. The fears of high-performing students may not be unfounded. Researchers (Slavin 1987a, 1987b, Williams et al. 2005) have suggested rewarding the

group while also requiring individual accountability results in the best performance of all students. Williams et al. (2005) in a large scale study with 554 college students enrolled in a course on human development found that high-achieving students placed in cooperative learning groups that rewarded both individual and group achievement performed better on a unit test than high-performing students placed in groups where students all received the same reward. They also discovered that high-achieving students took on more of a leadership role within their group when they were rewarded for both their individual and group's performance. Therefore, we require the completion of an individual assignment that is used to produce the group project. These individual assignments allow high-achieving students to perform their best and take on more of a leadership effort.

In spite of the initial student resistance such as concerns related to grading, by the end of the course most students have become more independent learners who know how to find the answers to their own questions. When students are given the first problem, they ask the usual structural questions of how long should it be, how many sources, what format, etc. As it becomes apparent that we are not going to answer those questions, students start working with their group members to develop strategies for finding similar texts to the one they need to produce so they can analyze the genre and its important rhetorical features. They also begin discussing with their group how the text will serve the needs of the discourse community. By the time the third problem is introduced, students no longer ask structural questions, working instead with their group to define the problem and devise their strategies for addressing it. We see this self-reliance as an important indicator of PBL's success. At the end of the course, most students are beginning to think about the context for their writing more deeply as they begin to rely less on the instructor and more on their own intuition and research to solve the problems.

Conclusion

PBL course design is a continuous process requiring frequent examination of its effectiveness on student writing. A close consideration of our courses showed many students were unclear as to what PBL was so we have included more concrete description of PBL pedagogy in the syllabus. We also clarified the rubrics used to assess student products. We worked to improve the presentation of core concepts such as genre, rhetoric and discourse community to strengthen students' foundation in these concepts before they began to solve the problems. In the future, we also would like to revise the reflective assignments. Reflection is an important aspect of writing since it focuses students' attention on what they have or have not learned. Another important component of this reflective assignment is getting students to see the social responsibility they have as writers. They need to see that some genres privilege some discourse communities over others, so they can be aware of these implications as they en-

gage in writing in their careers and community. One way to help students to understand the significance of reflection is to share samples of reflective writing that demonstrate why and how reflection helps writers to look back at their own writing to learn from it. Making connections between real world and classroom contexts is vital to effective PBL pedagogy. Examples of reflective writing drawn from the workplace can be especially useful to reinforce the benefits of reflective writing for improving performance. Additionally, analysis of reflective writing examples early in the course may show students what characterizes effective reflection. Such preliminary discussions and demonstrations may provide students with skills that they can draw on later as they engage in problem solving.

PBL can be effectively adapted to implement the student learning outcomes of any writing class. PBL allows students to apply what they are learning in the classroom to contexts beyond the classroom in an immediate and relevant way. In our course, students needed to assess the writing exigency presented by the problem in order to effectively solve it. This assessment of their writing situation provides critical skills for students to transfer to the writing situations presented in their upper division and capstone courses and for those students in our college who are transitioning into their career. PBL facilitates this process by providing a problematic scenario reflecting diverse discourse communities characterized by different genres with specific rhetorical demands.

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