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Patrick K. Freer
Georgia State University, pfreer@gsu.edu

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Patrick Freer
Georgia State University

Problem-Based Learning and Structural Redesign in a Choral Methods Course

This article describes the process of structural redesign of an undergraduate music education choral methods course. A framework incorporating Problem-based Learning was developed to promote individualized student learning. Ten students participated in the accompanying research study, contributing an array of written and spoken comments as well as drawn images depicting their experiences and perceptions. Visual and textual data were gathered, transcribed, and analyzed according to existing protocols. Students uniformly reported positive outcomes. A list of suggestions for implementation concludes the article.

Introduction

Methods courses in music are intended to provide solid theoretical, developmental, philosophical, and pedagogical grounding for future teachers. Many such courses include fieldwork experiences at multiple grade levels and in a diversity of settings, though the details of required fieldwork vary between states and institutions. Methods courses also involve a broad array of discipline-specific training that requires advanced musical skills and technique. This volume of course content can become overwhelming for both instructors and students.

This article focuses on a southeastern U.S. university's methods course, *Choral Music in Schools*, which, because of the state's requirement for embedded fieldwork, had gradually increased in scope, depth, time, and mandated documentation. Moreover, because of other major requirements, this was the only vocal pedagogy course in the program and had grown to include a preponderance of structured learning and direct instruction as well as a rising number of summative assessments; increased skill proficiency assessments and reading material; a decrease in student-led activity; and student end-of-course evaluations. Taking into consideration end-of-course evaluations, this article relates an effort to address these problems through a redesign of the course *Choral Music in Schools* centered on tenets of problem-based learning (PBL).

Problem–Based Learning (PBL)

Problem-based learning has its modern basis in medical education, with a premise that students learn more thoroughly by discovering and learning individually through the investigation of real problems rather than reliance on the mastery of decontextualized informational knowledge (Barrows & Tamblyn, 1980). When working with well-constructed problems crafted by their instructors, students working along the lines of PBL strategize each problem's solutions, seek information that will assist in solving them, and implement the resulting strategies as they work toward the solutions. In this conception, PBL is fully consistent with constructivist approaches toward teaching and learning and concurrently reflects theories and pedagogical techniques found in other forms of experiential and social learning (Savery, 2015). Grounded in constructive approaches, then, PBL can be viewed within a long arc of education reform that has included work by John Dewey (1913), Jerome Bruner (Wood, Bruner, & Ross, 1976) and James Beane (1997).

Research literature concerning problem-based learning primarily appears in two sources: the *Interdisciplinary Journal of Problem-Based Learning* and scholarly handbooks that summarize current research, trends, and pedagogical considerations involving problem-based learning. Of these, the recent *Essential Readings in Problem-Based Learning* provides a comprehensive view of PBL with chapters on different types of PBL contexts (Savery, 2015), pedagogical implications of problems developed for PBL learning environments (Jonassen & Hung, 2015), building the optimal classroom climate for PBL experiences (Hmelo-Silver, 2015), and guidelines for facilitating PBL learning in and beyond classrooms (Hmelo-Silver & Barrows, 2015).

Research has found that PBL enhances long-term retention, skill development, and satisfaction levels in students of all ages (Strobel & van Barneveld, 2009, 2015). And, PBL has been found to facilitate conceptual change in students more quickly and with greater permanence than other modes of instruction (Loyens, Jones, Mikkers & van Gog, 2015). Even so, few—if any—research studies in music education have focused on PBL. Two such studies briefly examined PBL in music teacher training programs (Burton, 2004; Killian & Dye, 2009) and another referenced the benefit of PBL techniques within the induction phase of teacher career development (Bell-Robertson, 2014). A recent series of blog postings detailed how PBL could be effective and reliable in group piano instruction, in music theory classrooms, and to fulfill assessment requirements in music survey courses (Duker, Shaffer, & Stevens, 2014). Beyond music education, numerous studies have noted the effectiveness of problem-based learning on student critical

thinking and application of course content in secondary and collegiate general education (Amandor, Miles, & Peters, 2007; Dabbagh & Williams Blijd, 2010; Strobel & van Barneveld, 2009) and more specifically in undergraduate teacher education programs (Celik, 2012; McCormick Peterman, 2012). The effect of PBL on student knowledge of course content is less clear, with most of the benefit derived from increased student motivation and self-efficacy (e.g., McCormick Peterman, 2012; Pecore, 2013).

The defining characteristics of problem-based learning can vary somewhat from author to author. For the purpose of the course redesign and parallel study reported here, problem-based learning was defined by the five characteristics articulated by Stepien and Gallagher (1993):

- Use of real-world problems; problems are relevant and contextual.
- It is in the process of struggling with actual problems that students learn content and critical thinking skills.
- Reliance on problems to drive the curriculum—the problems do not test skills; they assist in development of the skills themselves.
- The problems are only loosely structured. The guidance toward solving the problems must be omnipresent.
- There is not meant to be one solution. As new information is gathered in a reiterative process, perception of the problem, and thus the solution, changes. (pp. 25 – 27)

Purpose and Design

The purpose of this study was to gauge the impact of a course redesign around the principles of PBL. The primary research question was, "What are the effects of problem-based learning approaches on the content knowledge and self-reported affective response of students in a choral methods course?" All 12 students enrolled in the course were asked and 10 volunteered to contribute written, drawn, and spoken narratives about their experience of the process and its effect on individualized learning. The use of multiple forms of data reflects research suggesting that varied sources can amplify and validate elements of participant narratives. Multiple data sources, including drawings, have been previously used in narrative studies within education (Freer & Bennett, 2012; Mitchell et al., 2011).

This study was designed to gauge the influence of a problem-based learning approach on student reports of self-efficacy, motivation, and career-specific identity with students enrolled in the third-year *Choral Music in Schools* at a large southeastern U.S. university. The course described here included ten students ranging in age from 22 to 53 years and reflecting a diversity of races and ethnici-

ties. The students included six traditional undergraduate music education majors and four graduate students enrolled in a non-degree certification program. The semester-length class met one evening per week for three hours with an additional four hours of fieldwork every two weeks.

This study was a narrative inquiry that generated data from written, verbal, and visual sources. Data collected for the present study included responses to two questionnaires, focus group interviews, reflection statements, and student end-of-course evaluations (with both Likert-type indicators and qualitative statements). The questionnaires were administered at the beginning and conclusion of the course. A graduate research assistant gathered all data, with data withheld from the instructor until the course had concluded. The bulk of the course focused on a multi-tiered problem-based-learning project built on feedback from teachers who had mentored choral student teachers from the participating university in recent years.

The two study questionnaires included prompts for drawings and related interpretative text. The questionnaires were based on two models, one from music education (Freer & Bennett, 2012) and another grounded in a meta analysis of protocol validity within problem-based learning research (Belland & French, 2009). Questionnaires were distributed in weeks 2 and 13 of the 14-week semester (see Figures 1 and 2) reflecting a protocol developed by Freer and Bennett (2012) to explore self-perceptions of musical identity in young and early-career adults. That protocol followed principles of Participatory Visual Research Methodologies (Chalfen, 2011; Mitchell et al., 2011) in which participants are asked to develop drawings in response to specific prompts directed by the research questions. Freer and Bennett (2012) additionally gathered textual data from two sources: participants' written commentary about their drawings and participants' responses to a series of questionnaires. The researchers analyzed the textual and visual data for themes, categories, consistencies, and contradictions that grounded their study results.

The visual/textual questionnaires were distributed and completed during scheduled class sessions with an average completion time of 22:30 for each of the two surveys with results from the week-two questionnaire serving as questions for 30-minute focus group interviews in weeks five and nine. Weekly reflection statements were gathered from the students and from the instructor/researcher. Student end-of-course evaluations contained both quantitative and qualitative data and were examined for content related to the project.

Questionnaire #1

1. What is your major musical performance area (which instrument)?
2. Why do you want to become a Choral Music teacher?
3. In general, do you think that most college courses (education and music education) deal with "real world" problems? Why or why not?
4. In general, do you learn best from books or from doing projects & solving problems?
5. What is your number one career goal?
6. How many hours a week do you study [not including practicing your music] (honestly . . . not in an "ideal world"!)?
7. If you were to be hired to teach middle school chorus tomorrow (before taking this course), which aspects of the job will you be immediately successful in?
8. If you were to be hired to teach middle school chorus tomorrow (before taking this course), which aspects of the job might you be unsuccessful in?
9. Given your answers to Questions 7 & 8, what content do you think will be covered in this course that will be unnecessary for you?
10. What content would you like to focus on instead?
11. What are your strengths as a musician as they relate to teaching in a public school?
12. What do you see as your musical weaknesses as they relate to teaching in a public school?
13. How would you like to see this course strengthen those weaknesses?
14. What are your biggest hopes about this course?
15. What are your biggest fears about this course?
16. In the space below, please draw a picture of you as the middle school chorus teacher you would be if you were to start the job tomorrow—before taking this course. Include as much detail as you can.
17. On the lines below, please explain the picture you drew about yourself.
18. In the space below, please draw a picture of you as the middle school teacher you would like to be after taking this course. Include as much detail as you can.
19. On the lines below, please explain the picture you drew about yourself. Include a description of how this would be an improvement over the image you drew for Question #16.

Figure 1. Questionaire One

Questionnaire #2

1. How are you enjoying this course so far?
2. Do you think that working on "the problem" has helped you understand the course material (in the books and lectures, etc.)?
3. In general, have you enjoyed working on this problem with your class-mates? Why or why not?
4. How would you rate the structure of this course? Too structured? Not enough structure?
5. When "the problem" results in the reading of an article or chapter, in what ways do you approach that reading differently than if it were simply assigned on a syllabus?
6. How many hours a week are you studying for this course?
7. If you were to be hired to teach middle school chorus tomorrow, which aspects of the job will you be immediately *successful* in?
8. If you were to be hired to teach middle school chorus tomorrow, which aspects of the job might you be _unsuccessful_ in?
9. Given your answers to Questions 7 & 8, what content has been covered in this course that is unnecessary for you?
10. What additional content would you like to have focused on instead?
11. What have you discovered about your pedagogical or musical strengths as a result of exploring "the problem" in this course?
12. What have you discovered about your pedagogical or musical weaknesses as a result of exploring "the problem" in this course?
13. What skills have you gained by working on "the problem" in this course? In other words, in what ways will you be a better teacher because of what you are learning?
14. In the space below, please draw a picture of you as the middle school cho-rus teacher you would be if you were to start the job tomorrow. Include as much detail as you can.
15. On the lines below, please explain the picture you drew about yourself.
16. In the space below, please draw a picture of you as the middle school chorus teacher you would like to be. Include as much detail as you can.
17. On the lines below, please explain the picture you drew about yourself. Include a description of how this would be an improvement over the im-age you drew for Question #14.

Figure 2. Questionaire Two

The focus group interviews followed guidelines of the semi-structured "active interview" (Holstein & Gubrium, 1995). Holstein and Gubrium hold that all interviews are active, interactional and conversational. The focus group interviews were seen as occasions for constructing, not merely discovering or conveying information. Accordingly, the interviews were viewed as conversations, with only broad topic areas to be covered instead of highly structured, standardized interview protocols. Participants were asked a series of questions that led to more nuanced questions depending upon the specific response. Each of the six broad topic questions were grounded in the theories supporting Problem-Based Learning. The first focus group interview contained three topic questions: 1) How do you like to learn, what types of college course designs work for you, and which do not?; 2) What would you like to learn in this course?; and 3) What do you already know about teaching choral music, and how can you use that knowledge as you solve the problem posed by this course? The second focus group interview also centered upon three topic questions: 1) What has been challenging for you as you have grappled with the problem posed by this course?; 2) Do you feel that the problem is a real-world problem and do you think that confronting it now will help you in the future?; and 3) Do you feel that confronting the problem has helped you appreciate the resources (readings, lectures, observations) presented so far in this course?

Analysis of the resulting visual and textual data utilized the visual social semiotic methods of Kress and van Leeuwen (2006) and Jewitt and Oyama (2001) as described and implemented in previous music education research by Freer and Tan (2014). Kress and van Leeuwen (2006) refer to visual imagery as containing both narrative information that relates a process or event and conceptual information that relates stable essences or states of being. Narrative information is primarily conveyed through compositional relationships, called "vectors," between elements or objects in the image (Kress & van Leeuwen, 2006, p. 59). In Western cultures, drawn images typically contain the most important information at the top (Jewitt & Oyama, 2001). These visual analysis methods provided a complex framework for the analysis and interpretation of visual imagery with focus on object placement, compositional content, textual expansion, and related meaning as established though decades of supporting research. Transcription of the focus group interviews was facilitated by the use of *HyperTranscribe™* software (Version 1.6) that allows for rapid transfer of audio data to written format through a system of keystrokes that control audio playback. The companion *HyperResearch™* software program (Version 3.7.3) is designed for coding and analysis of qualitative data in written and visual form. This software was used for the initial open

coding of all transcript and questionnaire data, the development of themes and categories, and subsequent axial coding.

Developing and Stating a Multi-Tiered Problem for a PBL Project

With the majority of student teachers at this university completing their practicum in urban schools, and because the university simultaneously revised its Strategic Plan with the requirement that course changes reflect a relevance to urban issues, the PBL problem developed for this course was based on feedback from teachers in these urban contexts who had mentored choral student teachers in recent years. Among the feedback were concerns about a growing disparity between the methods course content and the realities of budgetary/scheduling issues; urban-specific manifestations of low PreK – 12 student motivation; student attrition from and retention in urban choral programs; and student teacher abilities to include popular music in the choral repertoire.

Within the context of problem-based learning, Jonassen (2011) has identified several types of problem constructs including story, decision-making, troubleshooting, strategic performance, policy, design and dilemmas—and the one that was used for the present study, rule-using/rule induction problems, which Johanssen describes as tending "to have a clear purpose or goal that is constrained but not restricted to a specific procedure or method" (2011, p. 98). The rule-using/ rule induction problem format was selected because college-aged students report that the single most important element of successful problem-based learning is the clear relationship between the problem and the intended learning issue/course content (Sockalingam & Schmidt, 2011).

The PBL problem statement and ensuing multi-tiered project were developed to reflect the above considerations and to prompt interaction with as many curricular components as possible. Along with being based on feedback from mentoring teachers, it was discussed with the university's cohort of graduate students in music education and subsequently refined prior to distribution. The PBL problem statement and project were then presented to methods course students during the third class session of the semester, in the class meeting following distribution of the first questionnaire, and reads as:

> *You have been hired as the choral music teacher at an urban middle school. Your classroom contains only a new acoustic piano and the same melodic/percussive instruments found in our university classroom. There is a $300.00 budget. There is no choral library. You may not hire an accompanist. Your main chorus consists of 36 total students: 20 seventh graders (8 boys and 12 girls), and 16*

eighth graders (7 boys and 9 girls). Your task will be to design, rehearse, and present a concert with these students consisting of 20 minutes of sung material, of which one piece must be your original arrangement ("a cover") of a currently popular, age-appropriate song suitable for changing adolescent voices. Mini-problems will result in the search for information using the books and other resources assigned for this course. You will have the opportunity to teach portions of your arrangement to a chorus of middle school singers during the school visits of this semester.

Over the course of the semester, several mini-problems and sub-issues became evident within the larger problem, most commonly in elements related to the cover arrangement. These included technical issues such as the application of conventions and "rules" in choral arranging, knowledge and application of ranges and tessituras for changing adolescent voices, and the need to generate supportive (and playable) piano accompaniments. Budget and management components included issues related to copyright restrictions and permissions, selection and ordering procedures for repertoire and uniforms, and the process of writing a mock application for permission to perform the arrangement. Working through the larger problem raised other mini-problems related to pedagogy and instruction. These included consideration of how to place the cover arrangement within a larger concert program of traditional choral repertoire, how to anticipate the vocal and non-vocal musical needs of the potential choral singers, how to construct a lesson plan for a performance-based musical rehearsal, the relationship of the cover song to a planned and cogent choral curriculum, and the specific pedagogical implications of teaching the piece to a choir of young adolescent singers.

Sample Assignments

Following an introduction and exploration of the PBL problem statement and project's inherent knowledge and skill components, students engaged in six related preliminary assignments including the following three:

Assignment 1
- Make a list of every task the teacher (you) will need to undertake in order to address this problem. Collaborate with your classmates to develop a single list.
- Make a list of every element on that task list that you (as an individual) can confidently address now.
- Make a list of everything you will need to know in order to address the other items on the task list.

Assignment II
- Place your need-to-know items in sequential order (what do I need to know first, second, third, etc.)
- Match each item on your need-to-know list with at least one resource (chapter in a book, article, video) in your syllabus.

Assignment V
- Select two age-appropriate, current pop songs that you would consider arranging for your ensemble. Justify these selections from the students' potential point of view. Justify these selections from aesthetic and pedagogical points of view.

Selected songs included "Home" (Philip Phillips) and "Dynomite" (Taio Cruz). From the work developed through these and related assignments, students negotiated with one another and the instructor to develop a sequential list of project stages, time lines for the completion of the stages, and a schedule to practice the teaching of the arrangement.

Drawing and Text Pairings

As described in the *Purpose and Design* section of this article, among a number of various background and forward-looking issues concerning choral teaching, students completed questionnaires asking for both textual and visual (drawn) responses. As the visual responses exhibit several dimensions of thought, I have chosen to highlight these here with drawings and interpretative comments from two students. Chino is a 25-year old Latino male student who worked in construction prior to entering undergraduate school. Becky is a 31-year old African-American female student who holds a temporary teaching certificate and is working in an underserved urban middle school. The prompts that generated these pairing of drawings and comments were the same, drawn from the questionnaires administered before and then after the PBL project:

- In the space below, please draw a picture of you as the middle school chorus teacher you would be if you were to start the job tomorrow. Include as much detail as you can.
- On the lines below, please explain the picture you drew about yourself.

Chino
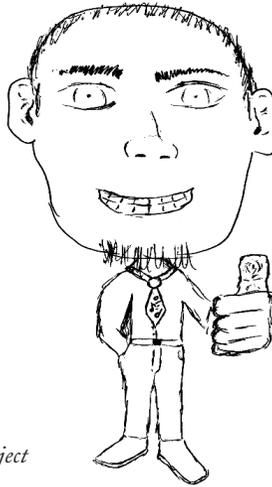
Figure 3. Chino, before the PBL project

Before the PBL project: Chino's self-portrait and accompanying interpretive comments were positive about teaching in general but focused on his personality without reference to music. He wrote: "I drew myself as a smiler because I always like to stay positive! I also enjoy working with students. The cartoonish style is to show my sense of humor, and that I don't like to take things too seriously, but in a laid back style. The thumbs-up is because I am a positive person and I like to focus on the positive things as opposed to the negative."

Figure 4. Chino, after the PBL project

After the PBL project: In this pairing of drawing and text, Chino presents a more refined view of his role and the subject material of music. He writes, "Well, I want to be an awesome choral director who students love and respect. I want to be a teacher who can help foster the love of music in my students. The difference between my two pictures has to do with time and experience."

Becky

Figure 5. Becky, before the PBL project

Before the PBL project: As a comparatively older student working in a middle school choral job, Becky brought an "insider's" perspective to the class. Still, Becky did not enter the course with confidence, as shown in the "thought bubbles" that surround her self-portrait. Read clockwise from the center top, the comments are: "We all are flustered; what now?," "What in the world am I doing?," They don't sound right; how do I fix it?," "What is LGPE [Large Group Performance Evaluation]?; Eek!," and "How did I get this job again?"

In her comments interpreting the drawing, Becky wrote: "I am clueless about a lot of things. I didn't have a good teacher so I don't have a role model in mind. I do the best I can when I work with choirs at church. I pray a lot! I model with my voice and tell singers to 'do what I do.' But, I can't really explain what I'm doing or what they're supposed to do. I act as if I know everything, but I really don't. I've learned to have a really convincing but totally fake smile."
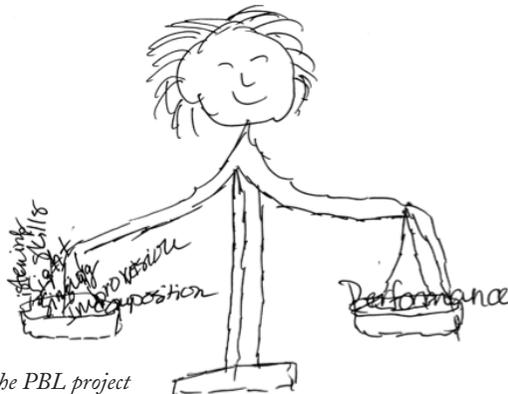

Figure 6. Becky, afterthe PBL project

After the PBL project: In this drawing, a smiling self-portrait of Becky depicts herself as a scale weighing "Performance" with "Listening Skills," "Sight Singing," "Improvisation," and "Composition." The developing maturity is evident in her comments: "I will be a balanced educator. I won't just focus on performance, but also move to other national standards. I will give my students a rounded musical education, not just working for perfection on stage or in competition."

Focus Group and End-of-Course Comments

The two focus group conversations occurred approximately one-quarter and three-quarters through the course. These discussions were directly centered on how students were experiencing the problem-based learning project as it unfolded. Student end-of-course evaluations elicited comments after the project had concluded. Representative comments included:

Chino (Interview, Week #5)
I actually think it's [the PBL project] a really good change, a very, very good idea. For the sheer fact that it actually puts you into trying to think about a situation. And not so much just thinking about an imaginary situation. We're actually gonna take part of this lesson which is arranging a piece and then teach it to a class of real kids. It puts a real world spin on it. It means more to me than just doing it for a grade. It will make me a better musician because I'll be actually able to arrange a piece for my students.

Becky (Interview, Week #9)
It was awesome working with the real students on what I had arranged for them. Some things worked, and others, well, not so much! But, my group had a lot of troubled kids, the ones that had the attitude problems and all that stuff and just seeing how they interacted and it was just really awesome. It was a heavy Hispanic, Latino and Black population and they responded really well to me and the song. I think they learned something. I sure did!

David (23-year old male; End-of-course evaluation)
This was the class I felt like I needed the most. I felt pretty comfortable with going out to do student teaching . . . as long as it wasn't in choir! I didn't have the experience in programming, running the concert, the vocal techniques you need to know. So I think it's really good the way this is set up because it's very practical and it's very like . . . you know this is what you are going to be doing. You're going to be having to figure out how to do this on a budget. How to find certain pieces, what ranges will work? What will not work with your students.

End of Course Evaluations

As mentioned in the introductory portion of this article, the choral methods course studied here had, over time, become filled with a complex array of assessments related to both knowledge and skill. This increase in course complexity became overtly problematic in the course iteration immediately preceding the one described in this article. That preceding semester, student evaluation scores were the lowest in more than a decade. The pertinent evaluation question at the host university is, "Considering both the limitations and possibilities of the subject matter and course, how would you rate the overall teaching effectiveness of the instructor?" On this measure, the instructor of the course had never received lower than a 4.9 mean rating (out of a possible 5.0). In the semester preceding the course redesign, the mean rating was 3.2. Each student comment referenced the large number of assessments as an impediment to sustained inquiry and learning.

Following the semester of the course redesign, student ratings of the course and "teaching effectiveness" returned to a mean of 4.9. Comments from students included one from a student who needed to retake the course, "This semester is a repeat. The approach and willingness to work with students where they were was much more effective this semester." Other comments included, "I have learned so much from this choral methods course, mostly because we got to work on our problem in groups," "The concepts, ideals, and methodologies discussed in this class will be used in my classroom to ensure the vocal health of my students and planning their journey through creating and performing music," and "I specifically feel that working on the course problem helped me make sense of all the different items to be learned."

Implementation Recommendations

This study was a narrative inquiry chronicling elements of an action research-type project grounded in pedagogical change. The experience of the researcher teaching this course before, during, and after the PBL redesign leads to several recommendations for implementation that are consistent with existing literature. These include implications for planning, assessment, and pedagogy. Four specific recommendations are outlined below.

Students reported that they enjoyed the problem and micro-problems presented by the course design. But, they had difficulty coordinating the group work time outside of class. Though some of this can be attributed to the nature of the particular university and its population, the shift from an instructor-focused approach to a student-centered learning environment is likely to raise similar con-

cerns (Henry, Tawfik, Jonassen, Winholtz & Khanna, 2012). It is suggested that instructors implementing PBL strategies allow ample unstructured time within regular class sessions at the beginning of the project when ideas are beginning to be articulated and toward the end of the project when students require time to reflect deeply on their nearly finished products. Students can also be supported by frequent whole-class debriefings.

This study's students, therefore, experienced difficulties in task management not unlike those experienced by instructors experimenting with PBL. Goodnough and Hung (2008) found that "a well-designed, effective PBL problem requires extensive preparation, analysis, and planning" (pp. 82-83). Since one of PBL's results is an increase in student self-regulated learning, it makes sense to discuss these steps with the students as they happen, blurring the boundaries between teacher and student. This also increases teacher candidates' awareness of the relationship between planning, pedagogy and assessment. One simple way to begin this discussion is to engage in conversation and deliberation about which texts (book chapters and articles) will next be assigned as the problem unfolds.

This element of self-regulated learning is central to the problem-based learning experience. Zimmerman (1989) defines self-regulated learning as the ability to set goals, plan a course of action, select appropriate strategies, self-monitor, and self-evaluate. In their review of research supporting self-regulated learning, English and Kitsantas (2013) found that "self-regulatory processes develop gradually, within an environment that balances structure with opportunity for autonomy" (p. 144). Transparency about the problem solving process and its instructional planning might foster even greater self-regulated learning as students progress toward their final student teaching experiences.

Problem-based learning requires changes in assessment techniques. It is difficult to give knowledge or skill-based exams in a PBL situation where learning is fluid and dynamic. One suggestion is that assessment and grading be strongly weighted toward the formative, with summative assessments only occurring upon completion of the finished product(s) or the solution of the problem. Of course, there is a conflict with some elements of methods courses that need to be assessed for regulatory and accreditation purposes. One potential approach might be to carefully map the areas where direct instruction will be required to provide course content not encountered during the problem solving process. Research indicates that a complex process of problem-based learning is more effective than direct instruction at promoting reflective thinking. But, a combination of PBL and direct instruction appears to prompt the greatest acquisition of content knowledge (Wagner et al., 2013). The experiences of the present project support this finding as there were moments when the students could not solve the problem or when

the solution would have taken an inordinate amount of time relative to the overall course structure. In those moments, direct instruction was effective at "removing the roadblock" and allowing students to resume forward progress.

This experience with problem-based learning also prompted a number of specific suggestions for methods courses in music education. First, it is recommended to increase the number of microteaching opportunities in PreK – 12 schools. In the course described here, ten hours of fieldwork were reapportioned from other courses to allow students to encounter required content beyond that prompted by the problem. This was important when the focus of the problem became the arrangement of the pop song, potentially drawing student attention away from the larger purposes of the methods course. The increase in public school-based microteaching experiences provided a broad view of choral music education even as students focused on specific tasks within the PBL project. It was for this reason that the visited schools housed exceptional programs that were both musically diverse and maintained impeccable performance traditions.

A second recommendation is that instructors develop systems of accounting for all course content requirements. Those addressed in the process of solving the problem can be noted, with the remaining items addressed in other ways as the instructor sees fit. Without such a checklist system, instructors may find themselves unable to accurately report content or standards-based assessment results. A third recommendation is that music education instructors working within a PBL framework allow for flexibility. In the project described here, the instructor/researcher revised the problem weekly to ensure that the required course content was addressed. These were posed as "new wrinkles" in the process, such as "The principal called and said that she found money to hire a pianist for your concert (not for the rehearsals). But, now you need to conduct the piece in the concert."

The necessity of assessments and grading prompts the fourth recommendation. Students were concerned about the sparse number of graded assignments in the class. It is recommended that instructors offer many formative assessments and feedback vehicles while constantly reassuring students that grades, especially skill-based grades involving musical proficiency, will be adjusted as the course progresses. Finally, this experience with problem-based learning resulted in an unexpected realization: PBL has the potential to make methods courses substantially more enjoyable for the instructor.

The process of restructuring the methods course, implementing the problem-based project, and receiving student feedback indicates that PBL may provide an effective framework for the redesign of methods courses in music education. This project represented, first and foremost, an attempt at pedagogical change—

the revision of an insufficiently effective course structure. A review of literature on pedagogical change led to the identification of problem-based learning as the central component of the course redesign. The accompanying research study was developed prior to the implementation of the restructuring as a vehicle for analyzing the impact of the changes. It is hoped that this study, and the course redesign chronicled here, will assist instructors of methods courses in need of change.

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