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ABSTRACT

This paper describes the introduction of a problem-based learning program in a new doctoral program at the University of Texas--Pan American in 1998. Students were assigned the problem of studying the implementation of a two-way bilingual education in their Educational Leadership Laboratory and making recommendations regarding the use of one or more of 10 interventions. The paper describes this attempt at problem-based learning which was unsuccessful due to several problems: complaints by students, and underestimation of the importance of having students actively involved in and informed about the emerging structure of the program design. The author concludes that the problem-based learning approach should not have been assigned so soon and on such a scale. (Contains 15 references.) (DFR)

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Learning about Problem-Based Learning

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I first became interested in problem-based learning when I had the opportunity to help plan a new doctoral program in educational leadership for The University of Texas-Pan American. One of the first things I read on the subject were two chapters in New Ways of Training for School Leadership, a Peabody Journal of Education, edited by Glasman. One of the chapters was written by Bridges and Hallinger and was entitled, "Using Problem-Based Learning to Prepare Educational Leaders". They conclude,

> This mode of instruction forges meaningful links among theory, research, and practice through using problems that students will face as school leaders. In fact, a powerful feature of PBL . . . is linking knowledge from a variety of disciplines to the problems of school leaders. Moreover, these problems are designed to assist the student in recognizing when to use this knowledge and in learning how to use it appropriately. Equally important, PBL projects provide students with opportunities to exercise leadership and to experience what it feels like to occupy this role. (Bridges and Hallinger, 1997, p. 145)

The second chapter I read in the book was written by James H. Block and was entitled "Reflections on Solving the Problem of Training Educational Leaders". Block reviewed all of the approaches described in Glasman and stated,

> Is there any way to make these and other tries at the training of educational leaders more successful in the learning-teaching arena in the future? I believe the answer is a resounding yes and that at least one key to that success can be found in this issue in the elegant work of Bridges and Hallinger on problem-based learning (PBL).
>
> From the description given, PBL is superb and turns out precisely my kind of educational leaders. It contains an image of learning that is student centered, and, consequently, it focuses clearly on learning, in an explicit manner and with due attention to matters of both skill and will to lead. Moreover, PBL's transfer-of-training model directly teaches its students for the transfer of learning. (Block, 1997, p. 176)

Using such references and having read other materials on the subject (Bailey and Smith, 1998; Barrows and Tamblyn, 1980; Boud and Feletti, 1997; Delisle, 1997; Ford, Martin, Murphy, and Muth, 1996) and using two consultants from the University of Colorado, Denver (Michael Martin and Michael Murphy), who had experience with the methodology, we embarked on the use of problem-based learning in our new doctoral

program during the fall of 1998 (Estes, 1999). We read and discussed with the students ASCD's publication, How to Use Problem-Based Learning in the Classroom (Delisle, 1997) and assigned the following problem:

> There are ten interventions (Estes, 1995) that need to be put in place if an institution is to maximize the use of an innovation. Students are to study the implementation of two-way bilingual education in their Educational Leadership Laboratory and make recommendations regarding the use of one or more of the interventions.

We were not successful in our attempt at problem-based learning, although other factors played a part in our lack of success as well. Several of the students did not like the approach and voiced their complaints to the dean and she killed the effort at the end of the first semester along with the other innovations we were trying to implement. We probably tried to do too many things too soon and this contributed to our downfall. In addition to problem-based learning, we attempted all of the following during the first semester (Estes, 1999):

1. The use of portfolios, reflective journals, and action research
2. Study of two-way bilingual education in an educational lab
3. Participation in a collaborative network with schools implementing two-way bilingual education
4. Involvement in a conference in Mexico at which the students were asked to make presentations in Spanish
5. The development of leadership teams in the educational labs, and
6. The use of a block-of-time approach to instruction versus scheduled discrete courses.

We underestimated the importance of having students actively involved in and informed about the emerging structure of the program design as it was still emerging. We should have been more careful in the selection of students for the new program to make sure their vocational objectives fitted into a career in educational leadership. We should not have attempted a block-of-time approach to instruction, but let various professors have their own course time for their respective content. What this would have meant was that two of the professors might have pursued problem-based learning with the students during the time they had with them and the other professors would have presented their courses in traditional ways. We should have selected educational laboratories in which to implement the problem stated above in situations other then the two-way bilingual programs. Some of the professors associated with the bilingual program were too protective of their vested interests in the program and this did not allow for others to be looking too carefully at its implementation. We were distracted in our planning by another professor who was planning a doctoral program for a group of students for which he had gotten scholarship money. In trying to keep the two programs merged, a concept that the professor did not buy, we wasted important planning time, and ultimately were not successful in being able to have just one program.

In short we should not have attempted problem-based learning so soon and on such a scale, but should have spent time thinking about the elements of getting a problem-based curriculum started as listed in The Challenge of Problem-Based Learning.

A clear purpose and philosophy outlined to students and faculty
Acquisition of sufficient resources: funds, teachers, equipment, clerical and educational support, teaching space
Dean's support or leadership
Nominal support (at least) from departmental heads
Faculty genuinely committed to its trial and further improvement
Students willing to accept greater responsibility for their learning
A curriculum committee with clear communication to faculty
A suitable project leader with acceptable autonomy to proceed
An explicit commitment to specific project deadlines
Facilities for appropriate staff-student contact and self-directed studies
Plans for the recognition of teaching effort and excellence (rewards not just for research achievements)
Regular planning and review meetings involving faculty, support staff and students
Adequate support networks and encouragement for both faculty and students
Opportunities for faculty to reflect, expound, benefit from their experiences, with the approach
Political support for innovators when facing strong faculty 'resistance'
Observation of problem-based learning in action, access to consultants. (Boud and Feletti, 1998, p. 50)

We could have also paid attention to principles listed by Abrahamson in the same book in a chapter entitled, "Good Planning is Not Enough". (Abrahamson, 1998, p. 55)

1. Faculty has to learn what the problem-based curriculum really is.
2. Political allies have to be located and recruited.
3. A key cadre of enthusiasts has to be developed.
4. Funds for implementation have to be obtained.

Abrahamson concludes his chapter with the following statement:

> Like any other significant innovation, this curriculum approach is bound to meet with mixed reviews and will require careful emotional nurturance and political dexterity. Indeed, it is only through emotional nurturance and political dexterity that this educationally sound and logically correct problem-based curriculum can be successfully introduced. (Abramson, 1998, p. 57)

Taking Boud and Feletti's admonition to heart that "individual teachers in higher education have greater opportunity for innovation within their own courses than most ever realize" (Boud and Fellitti, 1998, p 181) and not wishing to accept total defeat with my experience with problem-based learning, I began on a smaller scale by using the methodology in graduate courses that I taught at the master's degree level. I introduced students to Delisle's, How to Use Problem-Based Learning in the Classroom (Delisle, 1997) I also had them read, "What Does It Take to Become a Teacher of Problem-Based Learning?" (Sage, and Torp, 1997, pp. 32-36), and "Problem Based Learning: Where Did It Come From, What Does It Do, and Where Is It Going?" (Gallagher, 1997, pp. 332-362) We discussed the concepts and processes contained therein and I formed the

students into teams that tackled problems in which they expressed interest. They followed Delisle's structure in working through the problems. They organized their work under four headings:

1. Ideas they had about solving the problem
2. Facts which included what they knew about the problem
3. Learning issues which included what they needed to know about the problem, and
4. Action plans that described what they needed to do to gather the information they needed to solve the problem.

They culminated their work by producing a product reflecting their solutions to the problems. This took the form of presentations to the class regarding their findings. In two of the classes students were asked to invite their administrators to hear the presentations and to help the class critique them. In addition to the PBL projects, students read one or more texts assigned for the courses and related how the contents contained therein impacted the problems they were studying. In this manner, I felt I was making sure the students were getting exposed to the concepts that needed to be covered in the courses. Certainty of coverage of course concepts is a major issue in the utilization of PBL. (Estes, 1999) We also participated in authentic assessment of the study of the text material by relating it to the problems they were concerned about.

The problems the students chose to study in the three courses included those listed below. Two groups were concerned about crisis management plans and stated their problems thusly:

1. In light of the increasing amount of student violence and crisis situations throughout the United States as well as the natural disasters that our country is threatened with each year, there exists an urgent need for each public school to develop a detailed Crisis Management Plan. However, presently, there is a lack of detailed Crisis Management Plans in the public schools. In addition, implementation and training for staff, students, and community members to accompany the plans are minimal. Our responsibility is to develop an effective Crisis Management Plan that outlines implementation procedures and provides the necessary training to ensure the effectiveness of the plan.

2. The events that occurred in Arkansas, Colorado, Kentucky, and Mississippi, strike fear of the possibility that those same violent acts can happen in our schools. The majority of our secondary schools are open campuses. The students must walk outside to reach their classrooms, main office, gym attendance office, and cafeteria. This type of school design poses several problems in monitoring safety for students. The first is the potential for an outside source interfering with the school environment. We feel a well-thought-out and developed crisis management plan is necessary to address potential problems that may occur on these campuses. The crisis plan may not prevent the same crisis as in Columbine, but it may decrease any unnecessary casualties due to panic and inefficiency in managing the situation.

Four groups were concerned about parental involvement in the schools and described the problems as follows:

1. There is a lack of a comprehensive and beneficial parental involvement plan at Hidalgo High School. We have been tasked by our principal to refine and revise the plan so as to improve and increase parental involvement.

2. There is a lack of parental involvement in the plan that is presently in place at Ringgold Middle School. There is a strong correlation between parental involvement and student success. Our task is to improve the current parental involvement plan to increase student attendance and enhance academic achievement and ultimately help decrease the dropout rate.

3. There is a lack of parental awareness of the academic and social activities that occur at a campus on a regular basis.

4. How can we, as educators, promote empowerment of parents, community, and administrators to ensure student success?

Two groups were concerned about teacher shortages and teacher turnover and expressed their concerns thusly:

1. Studies show that a high percentage of teachers leave the teaching profession during the first five years. It is our responsibility to find out why the large turn over occurs in our districts and determine what can be done to keep these highly qualified teachers in the classroom.

2. There is a critical shortage of teachers throughout the nation. School districts have been forced to find alternative means of filling their growing number of teaching vacancies. Many school districts have filled their vacancies by placing a larger number of uncertified teachers in the classroom. A recent study of achievement of Texas students concluded that students do better on state exams when their instructors are fully certified in the subjects they teach. School administrators are faced with a dilemma. Should they release their uncertified personnel and run the risk of not being able to replace them or keep these individuals in the hope they will eventually become certified? This group will look at the background of this problem and create a recommended plan on how a school district can best deal with the issue of uncertified teachers in their districts

Several groups looked into different aspects of reading and stated their problems in the following manner:

1. In January 1996 Governor George W. Bush announced his reading initiative for the State of Texas. His goal is for all students to read on grade level by the end of grade three and continue to read on grade level throughout their schooling. How can we implement and assess an appropriate reading program that will prepare our students to read on grade level?

2. How can regular classroom teachers be trained in Reading Recovery strategies to improve students' reading abilities?

3. How can we implement and assess an appropriate reading program that will prepare our students to read on grade level?

One group was concerned about writing instruction and stated their problem:

1. The State of Texas will be assessing writing skills for all fourth graders across the State in February. By law, 45 percent of fourth graders in a school must pass the test in order for the school to be rated at least "acceptable" by the Texas Education Agency. Develop a plan for a school to implement to insure its acceptable status.

Finally, one student wanted to try out problem-based learning with a group of secondary students and described her problem as follows:

1. Problem-based learning has been used in the medical field for many years. Researchers state that PBL can be implemented in the elementary and secondary schools. You are a secondary teacher who is interested in testing the process. Select a problem and a group of students to participate in the problem-based learning process and present your findings to the staff.

   The problem selected was stated as follows: For several years, KEYS Academy has been involved in the R. O. P. E. S. course. TSTC has been bringing their equipment over and conducting the course. Unfortunately for KEYS Academy, TSTC has doubled their fee. The cost is more than what KEYS has in its' budget. You are on the committee to find a way for KEYS to continue the R. O. P. E. S. program without contracting with TSTC.

I had the students evaluate three phases of their experience using PBL. The evaluation forms I used were adapted from Delisle, How to Use Problem-Based Learning in the Classroom.

The three phases included a student evaluating his own performance with the problem, evaluating the performance of the group of which he was a part, and evaluating the PBL process. The three forms appear in Figures 1, 2, and 3.

Figure 1. Student Self-Evaluation Form

Name of Group Presentation _____

Name of Student _____

Activity	Excellent	Good	Fair
1. I contributed ideas/facts			
2. I came up with some learning issues			
3. I used a variety of resources when doing my research			
4. I helped think through the problem			
5. I contributed new information			
6. I helped my group in doing its work			

Justification for the ratings I gave for each of the above.

1.

2.

3.

4.

5.

6.

Figure 2. Group PBL Evaluation Form

Name of Student _____
Name of Group Presentation _____
Date of Presentation _____

Activity	Excellent	Good	Fair
1. Each member of the group contributed ideas/facts			
2. Each member of the group came up with some learning issues			
3. Each member of the group used a variety of resources when doing his/her research			
4. Each member of the group helped think through the problem			
5. Each member of the group contributed new information			
6. Each member of the group helped my group do its work			

Justification for the ratings given to each category above.

1.

2.

3.

4.

5.

6.

Figure 3. Evaluating the PBL Process

The following areas need attention in developing and implementing a PBL problem. Evaluate each area in terms of the group's work.

Area	Excellent	Good	Fair
1. Ideas- Did the group record appropriate ideas to the problem? Did the ideas indicate what research was needed to determine which solution was best?			
2. Facts – Were appropriate facts recorded for the problem? Were the facts comprehensive?			
3. Learning Issues – Were appropriate questions raised in this area? Did the questions indicate the need for further elaboration, definition, or research? Were all of the learning issues addressed?			
4. Action Plan – Did this area indicate how the research would be performed? Was the research carried out in an appropriate and comprehensive manner?			
5. Product			
a. Were appropriate research data used?			
b. Was the material organized and synthesized?			
c. Was a reasonable presentation made?			
d. Were varied research tools used?			
e. Was the research sufficiently broad?			
f. Was the information accurate?			
g. Was the group successful in developing new questions and answering old ones?			
h. Was the issue covered adequately?			
i. Was the presentation clear and understandable?			
j. Did the group seem to work collaboratively?			
k. Did the group develop appropriate solutions?			

1. Feed back for the group
   a. Indicate three strong efforts of the group.
      1.
      2.
      3.
   b. Indicate three things that the group could do to improve.
      1.
      2.
      3.

The students seemed to have liked the problem-based learning approach and seemed to have put in quite a bit of effort on the solutions to the problems. By using this approach, I tried to move toward the goals set by the medical school creators of problem-based learning. They wished to make education more enjoyable for the learner and sought to put the emphasis on learning rather than teaching by:

1. making the student an active partner in the learning process
2. increasing the perceived relevance of what is being learned,
3. focusing more on conceptual or deep understanding than rote memorization, and
4. having less scheduled time in the curriculum. (Woodward, 1997, p. 295)

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