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A Case Example of Integrating Team-Based and Problem-Based Learning in Sex Therapy Courses in the U.S. and Austria

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ABSTRACT

Introduction: Team-based learning and Problem-Based Learning can be integrated for in person and online psychology or behavioral health related courses in higher education.

Statement of the Problem: Historically, team-based learning and problem-based learning have been considered separate (and seemingly competing) activities and not often conducted concurrently during a course.

Literature Review: A review of the literature on team-based learning, however, has uncovered some cases where team-based learning and problem-based learning were integrated together in a course.

Teaching Implications: The purpose of this article is to present a case example in which team-based learning and problem-based learning were integrated together in two master's level sex therapy courses: one in the U.S. and one in Austria. The article describes how this integration was achieved through outlining the activities of the class and the possible benefits seen based on self-report.

Conclusion: Integrating team-based learning and problem-based learning was an effective method for teaching two master's level sex therapy courses and may have relevant application to psychology classes and/or treatment-oriented topics in behavioral health.

Keywords: Sexuality, sex therapy, case studies, vignettes, psychotherapy

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INTRODUCTION

Since the COVID-19 pandemic caused in-person learning to be limited, educators all over the world have been tasked with the responsibility of taking offline courses and transitioning them into an online environment. Instructors have had to adjust their teaching of didactic courses to remote or online versions, which required a quick evaluation and selection of web-based teaching platforms, recording lectures, the development of new assessment processes, alterations in assignments, integrating document sharing and other changes (Dhonncha & Murphy, 2020). For those disciplines teaching professional knowledge, new strategies must be created to provide clinical and/or simulation training to replace the lack of practical and rotational experience while continuing to ensure a high level of quality of care (Dhonncha & Murphy, 2020; Savard et al., 2020; Torres et al., 2020). As the education continues to adapt to an ever-changing world, the advancement of Problem-based Learning (PBL) and future use of PBL in education must also adapt.

This article explores the integration of two learning approaches in psychology and behavioral health related courses: Problem-based learning (PBL) and Team-based learning (TBL). Specifically, this article looks at a case example in which two graduate level courses, one in Austria and one in the United States, found PBL and TBL to be compatible in their integration, though typically treated as mutually exclusive forms of learning, and were applicable to both in person and online learning. In short, our guiding question was: Would integrating PBL and TBL be an effective method to teach sex therapy? The integration of PBL and TBL as outlined in this case example may have wider applications to be studied regarding the delivery of psychology courses in an ever-adapting teaching environment amid a pandemic. While PBL has grown to incorporate many different approaches, the integration of PBL and TBL diversifies the application of PBL and furthers our understanding of the use of PBL as a teaching methodology.

TEACHING CLINICAL MATERIAL: TWO COMMON APPROACHES

Overview of Problem-Based Learning

Problem-based learning is often used in medical/clinical training. Medical educators first introduced PBL in the 1950s and it continues to be a favored method of learning in many medical schools (Allen et al., 2011). The introduction of PBL in medical/clinical training originated from the students needing opportunity to apply their academic knowledge to increase their skillset in solving real-world, complex problems (Barrows, 1996). Hypothetical cases are presented to groups. The hypothetical cases do not have an obvious solution. Thus, the group members must discuss the relevant elements of the case as it pertains to differential diagnoses. The role of the instructor differs from lecture-based

teaching in that in a traditional classroom environment, the instructor serves as a "presenter of information, whereas the instructor of a PBL classroom becomes a facilitator of a problem-solving process (Allen et al., 2011, pg. 23; Khatiban et al., 2019). In a problem-based learning environment, the students are organized into groups where they collaborate and learn by solving real or realistic problems (Allen et al., 2011). PBL is focused on data acquisition and has a similar "process of inquiry" to that of a medical practitioner, which explains why it is appealing in medical and clinical training (Yew, 2011). The application of PBL has been expanded to many unique approaches and has been widely adapted for use in education of many different fields such as engineering, law, and economics (Savin-Baden, 2014).

Components and Structure of Problem-Based Learning

Although students are challenged intellectually, teamwork enhances their participation. PBL provides students with an active learning environment and fosters cognitive development through the exchange of knowledge between students (Allen et al., 2011; Savin-Baden & Major, 2004). PBL activates prior knowledge which learners then build upon in collaborative groups. To problem-solve, students are motivated to fill knowledge gaps through research and the study of related materials (Savin-Baden & Major, 2004). PBL benefits students by providing them with an environment in which they can interact both socially and academically. In PBL, group discussion deepens understanding, elaborates student's prior knowledge, and stimulates intellectual growth (Yew, 2011).

Overview of Team-Based Learning

Team-based learning (TBL) requires students to work together to gain knowledge with an explicit focus on the process by which that knowledge was acquired (Michaelsen & Sweet, 2011). TBL has been used across a variety of professional disciplines such as nursing, medical education, pharmacy, sociology, social work, business, and education (e.g., Branney & Priego-Hernández, 2018; Burgess et al., 2014; Burgess et al., 2017; Huang & Lin, 2017; Macke & Tapp, 2012; Ofstad & Brunner, 2013; Ozgonul, & Alimoglu, 2019; Stepanova, 2018). TBL focuses on the decision-making processes in education as opposed to an emphasis solely on students generating one correct answer (Ofstad & Brunner, 2013; Parmelee et al., 2012). Such learning hold students accountable for the material and fosters high levels of engagement in the learning process (Currey et al., 2015; Oldland & Currey, 2020; Oldland, et al., 2017). This approach is favorable in complex problem-solving situations where there may not be one correct answer. TBL encourages students to examine a host of possibilities through the exchange of knowledge between team members.

Components and Structure of Team-Based Learning

Essential to TBL is the element of pre-class preparation. Preparation beforehand may take many forms: visual, audio, text-based readings, etc. Another component is the taking of

the Readiness Assurance Tests (RATs). These tests are completed at the beginning of the class and assess a learner's readiness to participate in the lesson. Testing is also conducted in a nontraditional way. First, learners are tested individually through Individual Readiness Assurance Tests (IRATs). During this administration, they are not told which items were correct. The students are then arranged into their established teams and take the same test collectively via Team Readiness Assurance Tests (TRATs) and receive immediate feedback regarding which answers were correct. Once the class convenes as a large group, teams are given a chance to explain their reasoning behind choosing an answer that is not correct.

After the class has completed both readiness activities, the class may review course material with the instructor. Subsequently, learners reform their groups to complete an application activity. The application activity is meant to give the students an opportunity to apply their knowledge to a real-life scenario relevant to the concept that they just learned. Each team works on the same scenario and chooses an answer (usually multiple choice) to discuss with the professor and the rest of the class by explaining their reasoning behind choosing it. The instructor awards points based on accuracy as well as critical thinking. Even if answers are "incorrect," logic is still taken into consideration when assigning grades.

Comparing and Contrasting PBL and TBL

Parmelee et al. (2012) note the primary differences between PBL and TBL in their assumption, their methods, the incentives shaping learner behavior, and the outcomes. In the assumptions about learning, PBL emphasizes student-directed knowledge whereas TBL focuses on the teacher identifying clear goals for each module and having students solve specific clinical problems. It is designed to assist students in solving real-world problems (Stegeager et al., 2013). The method of PBL is for the instructor to progressively disclose elements of a case and, with each disclosure, the learners discuss the important facts and information which will lead them to a diagnosis and/or treatment plan. In TBL, however, learners prepare in advance for the material and use the time to demonstrate their knowledge of potential solutions based on their preparation. Incentives for PBL can be the interest in the topic of the case, an end-of-term exam, or team evaluations. In TBL, the motivators are the individual and group readiness assessments, which are the primary (if not only) grade in the course (Parmelee et al., 2012). The outcome in PBL is to understand, in a small group format, how to identify what information is needed to learn to solve a complex clinical problem (Anwar et al., 2012); in TBL, the emphasis is on critically thinking about a problem and developing a way to be collaborative but still retaining autonomy within a larger group setting (Parmelee et al., 2012).

INTEGRATING TEAM-BASED AND PROBLEM-BASED LEARNING

Problems From Lack of Integration

Using TBL or PBL has frequently been handled in a mutually exclusive fashion (Burgess et al., 2017). Applying these frameworks separately can be problematic for student learning outcomes, curriculum development, and assessment of skills. First, to teach either of these approaches singularly can limit the potential for students to achieving learning objectives. Most of the application for PBL and TBL are in courses which require complex things and problem solving such as health care professional training programs. Non-integrative stances in any profession contribute to a further widening of health disparities (i.e., Pérez et al., 2020; Rice et al., 2019). Integrating both of these perspectives can model for students how to incorporate different perspectives in their own practices as they move forward in their professional lives.

Secondly, the value in what is learned through both PBL and TBL independently is significant and focusing solely on one can interfere with learners' outcomes. For example, grading readiness tests – a key part of TBL – has been demonstrated to result in students more frequently downloading reading material and receiving higher scores on the readiness tests (Koh et al., 2019), suggesting that not using a TBL approach may inhibit learners from accessing important course materials and readings. Similar problems are encountered by using a pure PBL approach; in some cases, it has been associated with students getting stuck on a problem and necessitating instructor intervention (Ishizuka et al., 2023). To tap into the benefits of both when feasible is advantageous to students.

Finally, teaching without consideration of team conversation, problem solving, and critical thinking way might negatively impact curriculum and result in individual course being taught with limited intentional connection to the other courses offered in a curriculum and ignores the developmental level of the student. Over the course of programs (and graduate work in particular), students are developing skills and building on those skills to be able to complete a capstone (a professional project, practice element, research product, etc.). Each successive course builds on the others when curriculum is designed well. Integration of PBL and TBL can help programs to identify spaces in degree programs when it is important to measure how well students can apply the material in real world settings.

A Call Toward Integration

Despite the primary differences in preparation and tone, there are some overlaps which can facilitate integration of PBL and TBL. In both modalities, student teams are formed and are the setting for the conversations about the clinical case. Another potential overlap exists in that both PBL and TBL have previously been implemented separately in medical training (Burgess et al., 2018). In Burgess et al.'s (2018) integrative approach, learners

were to analyze a practice problem, develop a hypothesis, and work toward self-learning. The sessions were conducted by taking the established PBL teams and dividing them into smaller teams to participate in the TBL. The TBL sessions went over four weeks, a small portion of the yearlong PBL arrangements. Each modality had its strengths and weaknesses: the students were more competitive in the TBL format and appreciated the smaller groups and discussion. In the PBL opportunity, students enjoyed practicing problem solving and critical thinking in the case examples (Burgess et al., 2018). Similar results were found by Anwar et al (2012), who described a "significant synergy" (p. 722) when PBL and TBL are both utilized in a course, with groups consistently outperforming individuals.

This finding speaks to the diversity of PBL in its ability to integrate with TBL and enhance the learning experience of the students. The integration of the two approaches adds to our understanding PBL as a whole and offers a new approach to the use PBL which had previously been treated as mutually exclusive from TBL in the classroom. The specific use of PBL and TBL in master's level sex therapy courses provides a new PBL methodology that benefits the counseling profession and may provide a roadmap to improving sex therapy courses in their ability to strengthen critical thinking and problem solving as it relates to diagnosing, working through ethical issues, and other complex problems encountered in real-world applications of counseling. This PBL perspective in one's teaching can allow programs to plan across several developmental periods. For example, second-year engineering students using PBL were focused on solving complex problems; third years focus on application in practice and fourth years focused on design (Chen et al., 2021). Similar processes could be applied to a program's overall curricular design.

TBL-PBL INTEGRATION IN SEX THERAPY COURSES

Rationale for Integration within the Discipline of CFT

PBL and TBL could work well in a sex therapy course since the course is clinical and corresponds with the application types of courses with which PBL and TBL has historically been used. It has already been cited as an appropriate option for teaching in psychotherapy courses due to its emphasis on comprehension, critical thinking, and retention (Anwar et al., 2012; Touchet & Coon, 2005). The integration of the two approaches gives opportunity to the students to not only increase their academic knowledge, specifically through the preparation required outside of class for the TBL, but also to use this academic knowledge in application with complex problems through the PBL discussions. In addition, PBL has been shown to positively support professional identity development (Du & Naji, 2021), a criterion that needs to be taught in graduate training as cited in the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE, 2022).

Second, the complexity of sex therapy cases demands a complex method of teaching. Effective sex therapy is an integrative effort, with both diagnosis and treatment reliant on understanding the impact of several systems contributing to symptom development and maintenance. This involves teaching students to attend to a variety of domains: biological systems, individual psychology, couple dynamics (power, communication, neglect), cultural roles, norms, mandates, family-of-origin patterns, etc. (Hertlein et al., 2019). Pedagogically, were driven to integrate PBL and TBL as a way to teach students to address these significant complexities and provides an approach that emphasizes a well-rounded development of the acquisition and application of clinical knowledge. In sex therapy, it is unrealistic that one domain (biological OR psychological OR culture) is responsible for a client's symptoms. Therapists who are able to consider and account for each of these systems in their treatment of sexual cases are more successful than therapists who cannot attend to all of these domains.

Third, because of the complex interplay of biology and psychology inherent in sex therapy cases, the sex therapist-in-training needs to learn how to work in an interdisciplinary team setting as it pertains to treatment planning. Combining TBL and PBL into an integrated approach sets up a learning environment that both values individual knowledge, but also relies on teamwork to justify a solution to complex, clinical problems. In terms of counseling and specifically the sex-therapy field, clinicians will rarely be practicing outside of the supervision, discussion, and participation of other clinicians which requires the skills to not only effectively provide clinical services but to administer these services within a team-based, professional setting. Integrating TBL and PBL during the training of clinicians will prepare them to create their individual clinical judgements while delivering these judgements within inter-disciplinary environments.

ABOUT THE COURSES

Sexual Issues in Couple and Family Therapy (CFT 719)

This course was part of the required curriculum within a Couple and Family Therapy Master's of Science degree program. The program is housed within a department of psychiatry within a medical school associated with an R1 university in the Southwestern U.S. The course was a 16-week semester course that met once a week for two hours and 45 minutes each class meeting. There were 30 students enrolled in the course. This course started off being conducted in a classroom setting but was later moved to remote learning due to COVID-19. The hybrid structure was inspired by Franklin et al.'s (2016) example of teaching TBL both online and in-person in a hybrid course.

This course was taught using a combination of active-teaching methods such as team-based learning, problem-based learning, team events, and didactic information. Among

these various methods, TBL was used predominantly where students were required to read the content prior to the class. At the beginning of the semester, students were divided in teams of six where most of the discussion and activities happened. This allowed for students to learn from each other, as well as collectively apply the content into therapy scenarios using case study examples.

Modern Sexology: Brain, Biology, and Behavior (PSY 840)

This course was structured as two full teaching days over two weekends. The class met twice a week for two weeks, five or eight hours per instructional period (26 hours teaching total). The course was housed within a graduate program at the University of Salzburg in Austria. Due to COVID-19, this course was taught online. The same structure used in the U.S. course was applied to the Austrian course. Students completed IRATs and TRATs, examined case examples with associated questions about diagnosis and treatment, engage in simultaneous sharing via an electronic poll in response to the questions in the case example, and periodically given PBL case examples through which to create a treatment protocol.

Team-Based Learning Activities

As aforementioned, TBL incorporates readiness assessments and focuses heavily on application of the material (Franklin et al., 2016). Periodically, students were required to take two Readiness Assessment Test (RAT) based on the readings for that week (see Appendix B). Each student first took IRATs independently. They then took the same test as a part of the team (TRAT). This was done so the students could also learn from each other and gain new perspectives on the same topic. Individuals completed the IRATs on a multiple-choice form; they then used the Immediate Feedback-Assessment Technique (IF-AT), a multiple-choice scratch-off card to complete the TRATs. The IF-AT allows teams to select one answer and scratch off that answer spot; if they are correct, a symbol will appear and they can move onto the next question. If they were incorrect, there will be no symbol and they have a chance to discuss as a team what the answer might be. Once the team made another selection, they could scratch off another response and see if they were correct. When the class transitioned to remote instruction, the TRAT was accomplished through setting up a quiz on the course electronic blackboard where the students had multiple attempts to answer the questions.

After the RATs, teams were led through an application activity. A case example was provided to all teams. Each team was asked the same questions about how to process the case. When in the physical classroom, the simultaneous sharing was accomplished through a point person from each team holding up a card that designated the team's answer. When that class transitioned to remote instruction and in the course in Austria which was entirely remote, the instructor used the "Poll" function in Zoom® for simultaneous sharing. The case applications consisted of a detailed example related to the

topic and at least three multiple choice questions for team discussion. That process was as follows: (1) the team reads the overall case, (2) the team reads the questions, (3) the team goes over each answer and the logic behind each one, (4) the team votes on an answer, (5) the team presents the answer to the class and explains the logic behind it. For sample questions to the case example application exercise, see Appendix A. The remainder of the class period was used primarily for discussion and clarification of the content material.

In addition to the RATs, students engaged in three PBLs over the course of the semester. Case PBLs were used to help students develop specific skills in treating a certain condition or presenting problem and were detailed case examples carefully constructed by the instructor (Stentoft, 2019). At the beginning of the PBL class periods, the instructor used "Wheel Decide" (an online tool) to list theoretical frameworks that might emerge on the National Marriage and Family Therapy licensing exam and assign each team a theoretical framework. The students were then expected to create a treatment plan that attended to the following areas: defining the problem, identifying strategies, proposing solution/hypotheses, and evaluation of the success of their treatment. After each PBL was completed by the teams, the class reconvened, and the teams shared how they elected to treat the case based on their framework.

Another application exercise that was used in the course was the gallery walk (Francek, 2006; Rodenbaugh, 2015). In this TBL activity, each group is assigned the same problem. Once the teams have discussed and identified how they wish to solve the issue, they create a product (document, chart, etc.) that depicts their proposed solution. Each of the solutions are presented to the other teams during a simultaneous sharing event. The learners review the solutions provided by the teams through viewing the gallery of provided solutions (Francek, 2006). Prior to COVID-19, this was accomplished by physically walking from station to station (Francek, 2006; Rodenbaugh, 2015). Post-COVID-19, however, the gallery walk was achieved through having a leader from each group share their screen and present their solution, rotating through the groups, and then having a conversation as a class about the relative strengths and limitations of each approach.

Evaluation

Readiness Assessment Evaluations. The final component of TBL is evaluation. The scores on the RAT were calculated based on the number the student got correct. In this course, IRATS were worth 5 points each (one point per response; correct answers were awarded a point and incorrect answers were awarded no point). The TRATs were worth 15 points each. As aforementioned, TRATs were completed using IF-AT scratch cards. Team members were given three points for each answer correct at the first scratch; two points

if it took two scratches; one point if it took three scratches; and no points if it took all four scratches.

Problem-Based Learning Evaluation. There are many rubrics widely available online to use for evaluating the PBLs. For this course, we used a modified version of the form offered by the Association of American Colleges and Universities located here: https://www.aacu.org/value/rubrics/problem-solving (McConnell & Rhodes, 2017). For a discussion of considerations in different PBL assessment rubrics, please see Brodie and Gibbings (2009).

Peer Evaluation. The students evaluated each team member on their contribution to the learning process. The rubric used was modified from the American Association of Colleges and Universities located here: https://www.aacu.org/value/rubrics/teamwork (McConnell & Rhodes, 2017). This was done twice during the semester: once mid-semester and once at the end of the semester. The evaluations were computed and added to the student's final grades. Each member of each team had to rate their team members on effectiveness and ability to work with others. This was an important part of the process because it showed who was helpful and a leader within the team. Each evaluation was considered during grading at the end of the semester. This provided each member with the opportunity to express any concerns or gratitude for any team member without causing commotion in the classroom.

DISCUSSION

The integration of TBL and PBL for psychotherapy and counseling courses may be favorably indicated in those professions where there are case examples to be discussed or scenario-based learning is appropriate, even outside of the medical profession. For example, any of the mental health professions who have scenario-based learning in their licensing exams would benefit from having the TBL-PBL integrated experience. Instructors may choose to represent case vignettes that test concepts on the scenario-based exams. The problems faced by sex therapy students are those that are best suited for both PBL and TBL because of the nature of the licensing exams (case-based), will improve their effectiveness as a treatment professional by teaching skills to facilitate problem solving and negotiation to their own clients.

In addition to the benefit afforded to students, the integration also positively impacted the role of the instructor. To effectively integrative TBL and PBL, instructors need to be able to effectively facilitate group processes and discussions as well as being able to generate appropriate probing questions (Rico & Ertmer, 2015). In the Sex Therapy course, integrating TBL and PBL enabled the instructor to approach the classroom with enhanced creativity, openness, and provides a mechanism for the instructor to be more intentional about selecting reading and case vignette materials, and to be intentional about organizing

students from different backgrounds to work together to solve a complex clinical problem. The instructor's role was finding problems (i.e., generating sample sexual problems that comprise a variety of dimensions typically presented in clinical care) and problem solving by guiding students to what needs to be considered to promote effective and inclusive care. In short, the PBL-TBL instructor has to be confident enough in their ability to mange group conversation and work with students to negotiate differences in their perspectives rather than offering the answer. Common questions the instructor asked in the sex therapy course was "How did you decide to value one perspective over another?" and "What decisions did you make in terms of whose voice was favored and why?" The instructor becomes a facilitator on process, not a disseminator of fact.

The role of the instructor is also to enhance communication and critical thinking skills for students (Latif et al., 2018). As future relationship therapists, the students need to be able to build and maintain working relationships with others, and teach and model effective communication. This in part is achieved through the instructor's thoughtful team assignment and organization (Walker et al., 2020). Students in the sex therapy courses were assigned based on their backgrounds in order to bring different perspectives to each problem to be solved but more importantly focused on building relationships with those who are different from themselves.

The integration described in this article was application in sex therapy courses. We have, however, also included this integration in Counseling Across the Lifespan. In that course, we provided cases of different issues from infancy to geriatric populations and had similar success. The integration compels the team members to identify the pertinent information in a case, whether it be assisting them to pull out information for diagnostic, rule-out, or treatment planning purposes. When students can extract information, present their rationale, and discuss these perspectives as a group, they integrate the knowledge from others into their critical thinking processes. They uncover more areas of consideration as they work through a complex clinical issue and how to solve it. Therefore, the PBL-TBL integration can be learned when there is a call for more experiential learning.

Implications for Practice

The integration of PBL and TBL diversifies the already expansive methodology of PBL and a learning practice and gives way to the possibility of its use in education for the foreseeable future. In a post-pandemic learning environment, the adaption of established courses is inevitable and with those changes will come changes in the learning styles of the courses. PBL and TBL as an integrated approach provides benefits to the counseling field in that it allows for the development of individual clinical knowledge while emphasizing the importance of using that knowledge within interdisciplinary teams. he integration of PBL and TBL can be used in inter-professional training programs where each team member can offer expertise specific to their discipline toward case

conceptualization and treatment, thus fostering a value in interdisciplinary teams as the team member navigates their future profession. Counselors will often work with other professionals to provide wrap-around services to clients who may be experiences complicated issues that have play within multiple systems. Training clinicians to exercise clinical judgement within a team setting is paramount, and the integration of PBL and TBL gives new counselors the opportunity to develop this ability. The future of PBL in education within the therapy field highly benefits from its integration with TBL given the team-based delivery of counseling services in the real-world.

CONCLUSION

Effective teaching provides a mechanism for students to apply the information learned in nuanced ways that attend to context. The incorproation of TBL and PBL provides a gateway to not only learn the material, but provides a chance for application to unique systems and populations. Team-based learning and problem-based learning are two teaching methodologies which are often taught in mutually exclusive ways, yet both have a great deal of overlap and make a significant contribution in their efforts to teach problem solving in complex scenarios. Incorporating both approaches in mental health training encourages professional collaboration, assists students with identifying which information is relevant for diagnosis and treatment, furthers consideration of alternatives, and better prepares clinicians for licensure exams featuring clinical scenarios and decision points. Specifically, it enables instructors to ensure that the skills gained in the classroom will be generalized outside in real world settings.

PBL has seen much growth and adaption since its inception nearly 70 years ago (Servant-Miklos & Noordzij, 2021). While the world continues to adapt and change, the methodologies of PBL have also evolved. The integration of PBL and TBL is another cog in that evolution and speaks to the future of PBL. It is an approach that is highly adaptable to the needs of the education program. In the counseling profession specifically, there is great benefit to integrating PBL with TBL to give clinicians the opportunity to develop their individual clinical judgement and create team-based environments within which they can exercise that judgement. Clinicians will likely encounter team-based environments in real-world clinical practices, which calls for their training to occur within team-based environments as well. PBL enhances the TBL method and the integration of the two is an approach that expands our understanding and application of PBL in education.

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