Short Report

An Inquiry into the Evolution of the Project-based Instructional Approach “Three” from “A Program” to “A High-quality Course”

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Abstract: Within the context of education reform, there is a pressing need to overhaul and enhance the existing educational approach. As part of this endeavor, it is imperative to establish a more adaptable and multifaceted project-based teaching methodology. However, it is important to acknowledge that this approach also exhibits certain inherent limits, which become increasingly apparent during its implementation. However, it is worth considering if this particular pedagogical approach can effectively address its inherent limits and successfully facilitate the desired transformation and advancement of the educational system. This research aims to examine the efficacy of the “three” teaching approach in facilitating the transition from a mere instructional plan to an effective classroom experience.

Keywords: project-based teaching method, “three” teaching approach, pedagogical techniques

1. Introduction

Project-Based Learning (PBL) is a pedagogical approach rooted in the constructivist theory of learning (Kokotsaki et al., 2016). It posits that optimal learning occurs when individuals actively engage in educational activities, employ critical thinking skills, and engage in problem-solving endeavors. Simultaneously, Project-Based Learning (PBL) is a pedagogical approach that emphasizes extensive student engagement, autonomy, and practical application. This approach places emphasis on the application of acquired knowledge by students in real-world projects or projects that incorporate authentic contextual elements. By engaging in problem-solving activities, students are able to deepen their understanding and mastery of the subject matter (Kizkapan & Bektas, 2017). Additionally, this approach fosters the development of problem-solving skills and creativity among students, while facilitating the seamless transfer of knowledge between new and existing concepts. Ultimately, this approach aims to enable students to construct a comprehensive cognitive framework.

Nevertheless, the project-based teaching approach is a novel instructional method that possesses distinct attributes such as visualizing teaching outcomes, encompassing comprehensive teaching content, fostering open teaching connections, and promoting collaborative teaching dynamics. Consequently, there is a growing concern regarding whether this approach should be regarded as a mere program rather than an exemplary class. The fundamental foundation of a “high-quality educational course”.

2. Focus on the interpretation of the problem of project-based teaching methods

2.1. Teachers’ heavy workload

A major challenge in implementing project-based curricula is the simultaneous need for changes in curriculum, instruction, and assessment practices, which can often be unfamiliar to both students and teachers (Barron et al., 1998). The successful implementation of project-based pedagogy requires a significant commitment of time and effort from teachers. This commitment involves tasks such as analyzing teaching content, establishing project objectives, designing projects, formulating implementation guidelines, and providing timely support to students.
guidance and feedback on student performance and outcomes. One of the primary challenges faced by educators is the transition from a traditional instructional role to that of a facilitator, mentor, and guide in the learning process. Teachers should design projects that align with both their own teaching style and the level of student choice (Larmer & Mergendoller, 2010). This implies that teachers must delegate a certain level of authority to students within the classroom, while also demonstrating trust and setting high expectations for them. Effectively integrating these various aspects of transformation is crucial for implementing project-based education logically.

2.2. Higher requirements for students as a whole

The implementation of project-based teaching necessitates that students possess a particular level of collaborative skills and self-directedness, hence presenting a notable obstacle for certain individuals. In the context of project-based learning, it is customary for students to engage in collaborative group work, necessitating the cultivation of effective collaboration abilities. This entails the ability to interact harmoniously, communicate effectively, and collectively accomplish the project objectives. Students possess the capacity for autonomous learning and inquiry, enabling them to proactively identify and address challenges while continuously broadening their knowledge and skill sets.

2.3. Difficulty in determining the assessment standard

The outcomes of project-based education methods exhibit a wide range of variations, rendering the evaluation criteria susceptible to subjective influences and challenging to accurately quantify. In the context of project-based learning, it is common for students or groups to exhibit varying levels of performance and outcomes. Consequently, the establishment of evaluation criteria typically falls within the purview of the instructor or evaluator. However, it is worth noting that different instructors or evaluators often adopt distinct evaluation standards, thereby introducing subjectivity into the assessment process. Furthermore, the project-based instructional approach also emphasizes the development of students’ practical and problem-solving skills, which pose challenges in terms of quantification. Consequently, the evaluation criteria associated with this teaching technique are similarly arduous to measure.

2.4. The actual conversion effect is not obvious

The implementation of a project-based teaching approach necessitates that students possess specific practical skills and an inquisitive mindset. This method involves engaging in project-based learning and practical application over a designated timeframe. Furthermore, it necessitates that teachers possess a certain level of teaching experience and management proficiency. Additionally, project-based teaching requires a longer duration compared to traditional teaching methods. Nevertheless, the learning outcomes of this particular subject mostly manifest in the development of practical skills and problem-solving capabilities. However, the translation of these acquired talents may not be readily apparent and may not be directly correlated with students’ academic performance, making their application more challenging.

3. Project-based teaching method of the “three” construction

3.1. Project design refinement

The design of a project-based teaching approach should thoroughly consider the specific specifics in order to ensure the successful implementation of the project and the desired learning outcomes for students. Drawing on the analogy of a script, a well-developed project encompasses various elements such as the project’s objectives, contextual factors, time management, and spatial considerations. Moreover, it intuitively embodies the fundamental concepts underlying the project, enabling a comprehensive understanding of the physical and mental development of students. Furthermore, it establishes connections between these concepts and their original counterparts, ensuring that higher-order learning builds upon foundational knowledge and constructs a coherent cognitive system.

3.1.1. Project Objective Clarity

Within the realm of project design, it is imperative to establish clear objectives and articulate the anticipated learning outcomes of the project. The project’s objectives must align with subject standards and curriculum objectives. Additionally, it is crucial to assess and provide feedback on students’ learning outcomes upon project completion. This process will facilitate students’ mastery of relevant knowledge and skills, enabling them to apply them effectively in real-world scenarios. The alignment of project objectives with subject standards
and curricular objectives can facilitate the integration of key concepts into the project, benefiting both teachers and students by promoting cooperative thinking and learning. Furthermore, it is imperative to establish a comprehensive understanding of students’ learning outcomes, taking into account their physical and mental developmental patterns as well as the prevailing circumstances. This will enable the adjustment of project objectives to ensure that students are afforded sufficient time to successfully complete the project and meet submission deadlines.

3.1.2. Rationality of task allocation

Within the framework of project design, it is imperative to allocate tasks in a reasonable manner, duly considering the unique characteristics and capabilities of each student involved. Prior to allocating tasks, it is necessary to categorize them based on the project’s requirements and the inherent characteristics of the tasks, taking into account the concept of synergy and a rational distribution of work. In order to ensure the quality and efficiency of work completion, it is imperative for students to engage in cooperative and coordinated efforts. Simultaneously, it is crucial to establish a rational division of labor to prevent the occurrence of task duplication or omission. When assigning assignments, it is imperative to consider not only the potential for collaboration but also the students’ real capabilities, in order to maintain a balance between the project’s level of complexity and achievability. Prior to forming groups, students can be categorized based on their academic performance, current performance, and professional history. Subsequently, work can be allocated based on the specific circumstances of each group, so ensuring a more equitable distribution of duties.

3.1.3. The rationality of time management

When designing a project, it is essential to carefully plan the allocation of time, considering both the specific circumstances of the students involved and the level of complexity associated with the project. The level of difficulty and intricacy associated with a work is a crucial determinant of the time required to complete it. In order to effectively allocate task time, it is necessary to conduct a thorough evaluation and organization based on the activity’s level of difficulty and complexity. This approach guarantees that students are provided with the time and resources to successfully accomplish the task and meet the submission deadline. The significance and immediacy of the work are also key considerations in the planning of task duration. When determining the allocation of task time, it is necessary to conduct a rational assessment and organize the tasks based on their level of relevance and urgency.

3.2. Changes in project guidance

During the project implementation phase, it is crucial for professors to provide timely guidance to students, ensuring the seamless execution of the project while also facilitating deeper levels of thinking and learning among students. During the process of guiding, it is imperative for teachers to be mindful of the diverse issues that may arise, including but not limited to employing a singular approach to guidance, excessively prolonged guidance sessions, and an excessive frequency of guidance interventions. These issues will have an impact on the students’ real learning outcomes and will also impede the successful execution of the program. Educators must exhibit a keen focus on students’ learning circumstances and the execution of extracurricular projects, while also possessing the capacity to address diverse challenges and promptly adapt instructional guidance as needed.

The implementation of diversified guiding techniques allows students to select an appropriate type of advice based on their individual needs and preferred learning styles. In the context of project guidance, various tools can be employed to enhance the learning experience. These tools encompass narratives, games, demonstrations, and other interactive elements. By utilizing such diverse methods, project guidance becomes more engaging and captivating, thereby fostering learners’ interest and motivation. Furthermore, the provision of varied learning materials, including text, images, audio, and video, caters to the distinct needs of learners, facilitating their comprehension and mastery of project content. This approach also enhances learners’ involvement and satisfaction. Additionally, fostering different forms of interaction, such as online discussions, interactive games, and group collaboration, promotes communication and cooperation among learners. This, in turn, cultivates a positive team dynamic and augments learners’ participation and learning outcomes.

The rationalization of time allocation in project guidance encompasses not only the implementation phase of the project itself, but also the scheduling of instructor guidance. Prior to commencing the project, it is imperative to establish a comprehensive project guidance plan encompassing specific objectives, content, and timeframes. This will facilitate efficient
management of time and resources throughout the project implementation process. Additionally, it is essential to determine the prioritization of project guidance activities, enabling the completion of critical tasks in situations where time is limited. This approach ensures the quality and effectiveness of project guidance while optimizing the utilization of time and resources. During the execution of a project, it is imperative to minimize unproductive project guidance time and adaptively modify the project guidance schedule and progress. For instance, the utilization of repetitious learning materials and elimination of invalid learning activities can lead to time and resource savings, as well as enhance the efficiency and efficacy of project supervision.

3.2.1. The level of guidance intensity

Within the context of project guidance, it is necessary to comprehend the students’ proficiency at each stage and afterwards modify the level of guidance intensity accordingly. During the guidance process, excessive urging and direction from teachers might potentially disrupt students' ability to engage in autonomous thinking. Consequently, several variables may impede the development of students’ original ideas. Even in situations where the teacher’s supervision is overly involved, pupils tend to heavily depend on the teacher’s advice, resulting in the development of a singular perspective or viewpoint. During the implementation phase of a project, it is crucial for teachers to effectively monitor students’ comprehension and development in each aspect. This should be done in a timely manner, taking into account their learning trajectory and level of guidance required. It is important to avoid allowing the guidance provided to become perceived as intrusive or disruptive. For instance, when students demonstrate a strong understanding of a concept, it may be beneficial to loosen the level of supervision provided. This approach allows students to have greater autonomy in their learning, fostering independent thinking and expediting project advancement, so facilitating the growth of activities.

3.3. Quantification of project evaluation

The utilization of project-based pedagogy in the execution of the entire evaluation process aims to provide an autonomous and all-encompassing assessment metric. Evaluation during the entire process encompasses several forms of feedback, such as input from teachers, students, teams, and self-reflection. The utilization of multidimensional feedback in project-based pedagogy has the potential to facilitate deep learning and enhance the production of high-quality outcomes among students.

1. The inclusion of extensive evaluation in the project’s implementation is a crucial aspect that will significantly influence students’ learning outcomes. Within the realm of project activities, the absence of a comprehensive evaluation hinders the identification of student errors, the measurement and scoring of their outcomes, and the ranking of their performance. However, it is through the implementation of a complete assessment that students are able to progressively advance towards achieving accuracy and proficiency. Effective assessments are crucial in facilitating students’ ability to refine their most promising ideas and offer them at the appropriate juncture. Furthermore, these evaluations aid in the development of a comprehensive framework for learning, striking a harmonious equilibrium between individual and collective assessment. Furthermore, during the project evaluation session, it is imperative for teachers to employ an evaluation scale that aligns with the class schedule in order to comprehensively assess their performance. It is important to note that any project strategy employed is an essential component of the comprehensive evaluation and remains in effect throughout the duration of the project.

2. Formative evaluation encompasses the assessment methods employed during the course of a program, which can be disseminated to students through diverse modalities. There is a prevalent belief among individuals that formative evaluation, such as the use of grades, serves as an indicator of conclusion, signifying the completion of a certain phase of the job. In contrast, formative assessment is not only pertinent to subsequent stages of learning, but also offers supplementary informational resources for the purpose of designing instructional strategies and facilitating subsequent learning activities. Formative assessment plays a crucial role in the process of learning by providing learners with prompt feedback, enabling them to effectively structure their information, showcase their comprehension, and generate products of superior quality. Formative assessment places emphasis on the learning activities of students, as opposed to solely evaluating their performance at the conclusion of these activities. Each instance of formative assessment serves to furnish students with timely, thoughtful, and actionable opportunities for feedback.
4. Conclusion

Within the context of educational reform, there is a pressing need to overhaul and enhance the existing educational methods. In particular, there is a growing recognition for the development of a more adaptable and varied project-based teaching approach. However, it is important to acknowledge that this teaching method also has its own limitations, which become increasingly apparent during its implementation. These limitations are particularly pronounced in relation to teachers, students, teaching evaluation, and the overall effectiveness of the teaching process. This study examines and enhances the implementation of a specific teaching methodology by considering project design, project guidance, and project evaluation. The aim is to address the limitations of the methodology, achieve a genuine transformation and improvement in educational practices, and explore strategies for effectively transitioning from a theoretical plan to an effective classroom practice. In this discourse, we shall explore the methods by which the transition from “a program” to “a well-constructed lesson” might be effectively achieved.

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