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## PROMOTION OF SELF-REGULATED LEARNING IN PROJECT-BASED APPROACH

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Project-Based Learning (PBL) allows learners to engage actively in authentic and personally meaningful projects. Characteristically, a modern conception of High-Quality PBL requires the application of essential critical elements throughout the learning process, which involves students to employ special skills of planning, searching, managing, analyzing, self-monitoring, and reflecting on their learning. Moreover, they need to take responsibility for evaluating the process while striving for specific quality demands of the end-product in the modern labor market. Therefore, it is significant to design the PBL learning environment to promote students' self-regulated learning (SRL) strategies. This paper describes the specific features of PBL as a learner-centered educational approach and its compliance and relationship between SRL to support learning in a self-regulated way and develop student responsibility in each stage of PBL.

**Key words:** project-based learning, self-regulated learning, PBL essentials, SRL strategies, learning environment

The Kazakhstani educational system is on its developing stages in complying with the requirements of the Bologna Process and the demands of the 21st-century within the transition to the recent language policy and new curriculum content, particularly in the secondary education. Foreign language education, being one of the core areas to comply with the demands of the modern world has reconsidered its role in contributing to the accomplishment of the expected outcomes regarding the state language policy. The idea of experiencing the values of real-life and placing learners in real-world scenarios in and beyond the classrooms has long been recognized to be productive and effective to meet the demands of the 21st-century education. Likewise, educators have long acknowledged the concept of Project-Based Learning (PBL) as one of the approaches to promote students' deeper learning, transmit the language skills into other aspects of life, as well as expose to wider information sources and be able to synthesize the data.

Project-Based Learning is not a new phenomenon, it was rather popular at the beginning of the 20th-century, notably advocated by John Dewey, who focused on the impact of experience on learning in *Experience and Education* [1], and further was developed by Kilpatrick [2], who believed that learners' engagement with meaningful activities promotes their acquisition. Dewey's work on the role of experience in a child's learning process is foundational to the development of PBL, which became a practical concept of Dewey's philosophy. Since that time several changes have occurred, which influenced educators' interests in Project-Based Learning. Obviously, one of the arising reasons is the increase in mastering the knowledge about how to implement appropriate and rigorous project-based learning so that teachers and students can recognize and evaluate its effectiveness and benefits. PBL is currently experiencing a renewed interest across the world and in the Kazakhstani secondary education as well, based on a need to comply with the changes in the global world requiring life-enhanced competencies from the global labor market.

PBL is known as a learner-centered, inquiry-based and constructivist approach with its deep roots reflected in Piaget [3] and Vygotskian [4] concepts that entail active learning to a *constructivism*. As a matter of fact, learners are provided with the environment of active and deeper learning to construct knowledge through the content based on their choice and interests. The underpinned idea of constructing and connecting new knowledge with existing knowledge and being able to apply it in the real-life in their target language is generated fundamentally.

According to the extensive research analysis on PBL literature, PBL is defined as a multi-dimensional, student-centered and collaborative tool to promote long-term, interdisciplinary deep learning integrated with authentic real-world issues and problem solving [5;6;7;8]. It engages students with the necessity of authentic use of language to communicate, hence build a bridge between language study and language use [9]. In terms of benefits of the PBL approach, it is an effective resort in developing the 21<sup>st</sup> century skills as: productivity, creativity, critical

thinking and problem solving, communication and collaboration, technology skills and digital literacy, time management, flexibility, self-organization, leadership and responsibility. However to succeed in PBL, eight essential components need to be included to facilitate aforementioned outcomes [7]:

- *significant content or key knowledge and understanding*: PBL requires students to actively investigate and explore critical content that is central to the students' interests and to the process of answering the driving question. The project should be based on critical knowledge and skills obtained from the key concepts and standards of each discipline that is involved [6].
- *challenging problem or driving question* refers to "provocative, open-ended, complex, and linked to the core of what you want students to learn" [10:35]. It should be connected to an instructional goal and help to drive exploration; thereby, students will be able to identify what should be included and excluded. In other words, they will be able to frame their exploration [11].
- *sustained inquiry* means *In-Depth* inquiry, which engages students with asking questions, finding, and using resources. It describes the learning process, which will definitely lead to the discovery of new questions, ideas, and draw their own conclusions.
- *authenticity* refers to devolving the learning process into real-life inquiry and issues focusing on multiple disciplined fields and STEMM (science, technology, engineering, mathematics, medicine).
- *student voice and choice* refers to one of the most important essentials in PBL and to one of the distinctive features from traditional methods that makes the project meaningful. Due to the students' significant voice in selecting the content area and the topic of the project, it is a learner-centered approach, which focuses on learners' understanding of its importance, contributing to the level of intrinsic motivation and active engagement. However, it is worth noting that the amount of voice and choices teachers give to their learners depends on learners' ages, language level, and PBL experience.
- *reflection* is another crucial part of inquiry learning, which plays a role in quality control throughout the learning process in the active experience. Dewey's statement, "we do not learn from experience, we learn from reflecting on the experience" [1], highlights the significance of 'cognitive act'. Besides, PBL literature describes reflection as one of the ways of assessing learners. Throughout the learning process, learners reflect after each task monitoring the progressing of the process or the culminated product. It is used to derive a grade or to evaluate the quality of the project for individuals as well as for groups .
- *critique and revision* should also be involved during the development phase of the product or solution to the driving question. The feedback given by the teacher or peers promotes the revision of the learning or entails further in-depth inquiry. The process of critique and revision prompts students to understand that not everything can be perfect within the first trial, thus makes them understand their learning gains, become more responsible for their learning, and be involved with peers in teaching together about gains in learning [12; 88].
- *public product* is an inevitable component in the project process in which students demonstrate their solutions or answers to the driving questions to the audience beyond the classroom [13]. The process of performing the work in public promotes students' motivation, responsibility, creativity, and meaningful for them a high-quality product. The sense of evaluation and interest makes them more aware of their product and learning process in which students develop 21st-century skills as well as language and cultural competencies.

Essential Project Design features, if well designed and planned, lead to high-quality or Gold-Standard PBL, which inspires students to acquire more profound knowledge about the content they are interested in the target language. Thus, the teacher's role in the inquiry-based PBL approach has important implications and takes multifarious responsibilities and roles, such as a facilitator, coach, partner, guide, manager, the role of a co-learner, and mediator. In the existing plethora of literature and studies on teaching practice and teacher roles in PBL [14; 15; 16], findings reveal that teachers face some potential challenging changes in their roles and PBL implementation. For instance, the study of Harris (2014) lists the most common challenges that 105 teachers experienced throughout the PBL enactment, as following: lack of time, "meeting all of the testing accountability requirements," "implementing the project within the school's schedule," "fitting all of the standards," and "designing the project" [15].

In recent years, PBL has also been implemented in many Kazakhstani secondary schools and has been integrated into its instructional policies. However, there is a shortage of studies reflecting the teachers' views and perceptions of the actual practice of PBL in the Kazakhstani context.

The author of this paper conducted the preliminary research on the ELT teacher perceptions of PBL teacher roles in Kazakhstani English-medium schools where PBL is a preferable policy [17]. The study was aimed to shed light on the current situation at schools, regarding the teachers' readiness to adopt the roles of the PBL environment, their compatibility, attitude, and integration with PBL teacher roles. Considering the PBL teachers as the participants, the study reveals how modern EFL teachers adapt to the new roles enforced by the PBL approach and its implemented version in Kazakhstan. It also demonstrates that the teacher roles compatible with a PBL approach are likely to be quite challenging in our cultural context, where teachers are traditionally expected to hold the single authority to decide about the learning-teaching process. The study reports that the schools tend to welcome PBL teacher roles in general, although there seems to be some confusion over what not to expect from PBL teachers. The most dominant roles are counselor-advisor, facilitator, and feedback provider. Although the rate of non-PBL teacher roles is less dominant, there are still prominent teacher roles, such as a source of knowledge, authority in the class, single assessor, which are not acceptable in the PBL environment. Furthermore, the study shows that participants expressed the tendency to maintain the role of authority in the class, and still strive to play a leading role in the classroom, which indicates a challenge to set up the PBL environment [17]. Despite the challenging process, PBL practitioners state that students are more likely to remember what they have learned through PBL rather than through traditional text book-centered learning [7]. However, in order for the potential of learner-centered, inquiry-based, constructivist approaches to be accomplished and achieved culminated outcomes, the responsibility rests not only on teachers but on learners as well. Learners must shift from traditional learners to their new role as an active learner and develop self-regulated learning skills [18].

### **The Importance of Self-Regulated Learning**

The ability to understand yourself and possess healthy self-esteem is crucial to develop in every person as well as the ability to be aware of different aspects of the self. This ability refers to self-regulation, which is defined as the ability to control and monitor one's feelings, behavior, thoughts in response to different life challenges. Self-regulated learners are able to set learning goals, organize an individual action plan, select appropriate strategies, and self-evaluate own learning. Besides, they are intrinsically motivated to learn and report high self-efficacy for learning and performance. Self-regulated learning (hereafter SRL) refers to learners' awareness and degree in which learners are metacognitively, motivationally, and behaviorally active in their own learning process [19]. Pintrich & Zusho advocate that, "individuals can set standards or goals to strive for in their learning, monitor their progress towards these goals, and then adapt and regulate their cognition, motivation, and behavior in order to reach their goals" [20; 64]. Thus, contemporary students do not represent themselves as passive recipients of the received information from various sources; instead, they need to have control over their learning process. Educators need to be aware of students' development of SRL and its implementation in academic contexts. According to Caine et al., self-regulated learners acquire the following attributes: sustained motivation; use of appropriate strategies; an awareness of analyzing their own thinking habits; setting appropriate goals that are attainable and challenging; and managing their time and resources [21; 22]. It is crucial for educators to promote this development and apply these skills in learning experience, and encourage students to confidently reflect and understand the use of self-regulatory skills in social settings.

However, numerous studies provide evidence that there is a strong and positive correlation between SRL and academic performance in PBL, students with well developed self-regulation skills have less problems with behavior, but have high academic achievements. PBL is believed to provide students with comfortable classroom environment, which is highly valued in the development of SRL. Moreover, PBL is a relevant foundation place to promote self-regulation and maintain successful academic skills. Hence, self-regulated learning and PBL are interrelated and inevitable concepts in effective learning and high academic performance.

One of the ways to promote students' self-regulation is to provide them with indicators on their learning progress, thoughts, and feelings while doing projects. PBL teachers aim to encourage their students' self-motiva-

tion that guides their study and implementation of acquired knowledge in real-life by maintaining learners' interests. This kind of atmosphere promotes the coaching interaction between the students and the teacher [22] and fosters learners' will to ask questions without hesitation in order to understand the meaning of given topics and associate the content with their own life experiences. A learner's ability to impact on self-motivation with the purpose of increasing own choices, efforts, and persistence in academic performance influences on his/her achievement and self-regulated learning. Student being the determinant of managing own motivation to study or complete certain tasks have become a paramount goal in PBL and education as a whole [23].

Based on the eight essentials mentioned above in PBL, students are provided with a supportive classroom environment in which PBL teachers encourage in them so-called “innate drive” to explore and pursue own suggestions, to comprehend and build their own meanings related to the demands of the global labor market. Due to this process, students develop healthy interaction and rapport with peers, as they are in their ways of looking for answers that matter to them [24]. This refers to positive experience and implies to two priorities: one is to broaden the range of interest by seeking to comprehend new materials or enhancing cognitive skills; on the other hand students establish emotional well-being. Boekaerts illustrates two parallel self-regulation processes, such as top-down and bottom-up self-regulation. The former refers to setting academic goals, which motivate them further to increase academic resources. Their motivation can be revealed in the forms of their personal interests, rewards, and expected results. The latter relates to the feedback and rewards they receive, which motivates them to orient their work processes [25].

Foreign language education requires effective self-regulatory strategies to enhance the foreign language competencies and the comprehension of other subjects. Self-regulated learning strategies are actions and processes directed at acquiring information or skills that involve agency, purpose, and instrumentality perceptions by learners. They include such methods as organizing and transforming information, self-consequating, seeking information, and rehearsing or using memory aids [26]. The National Research Center on the Gifted and Talented suggest three categories of self-regulatory strategies that are successfully used by learners around the world [27]. They are behavioral, personal, and environmental. This individual set of strategies, in its turn, plays a vital role in the PBL approach as well, with the aim of encouraging students to manage their actions and assigned tasks and to gain motivation to accomplish set goals.

Turning to details, the behavioral strategy of self-regulation involves particular actions made by the learner; monitoring their own learning progress and gaining the ability to self-evaluate are the advantages. Students need to analyze the given task by asking questions and searching for their answers. They are also, as in PBL, required to have control over instructions and be able to give feedback on outcomes by themselves. Students' full attention on subject content and task completion are prior. Besides, self-consequating is mentioned, and it is accomplished through the development of student's self-reinforcement. Rewards or feedback on the assignments motivates students to show better results.

Personal strategies refer to the process of student organizing and transforming their own learning by letting them summarize, outline, and arrange certain materials. Setting goals and planning are also crucial in this category. By accomplishing it correctly, students develop time management skills and understand the importance and effectiveness of planning and completing the tasks on time. With the help of different activities such as note-taking, error correction, and portfolio making, students have a chance to monitor the learning progress and keep records of it. Moreover, memorization skills and practicing are included, too, and it is carried out through mnemonic devices, repetition techniques, and peer-teaching.

Environmental strategies focus on structuring the physical study of the environment and social assistance. Environmental structuring involves an appropriate selection and arrangement of physical seating. Students develop the ability to eliminate appeared distractions and possible challenges effectively. As it is autonomous learning, students are required to self-regulate the process. However, peers, teachers, and other adults may assist the learner and guide him. Students should also find good examples and emulate the models in order to illustrate excellent performance.

The thorough analysis of literature on SRL indicates three domains of self-regulation: cognition, motivation/affect, and behavior [23].

Accordingly, cognitive self-regulatory strategies are based on the importance of proper control and regulation of cognition, including different approaches for reasoning, learning, thinking, and memory. Setting goals, planning, organizing the work, activating knowledge of the task, and the self-concerning task is considered as cognitive strategies. A significant amount of studies demonstrate a positive impact of the appropriate use of both cognitive and metacognitive strategies on overall learner performance.

The second category suggests strategies for regulation of motivation or achievement, stating that through them, a learner may maintain, initiate the willingness to work on the specific activity, aims to complete it successfully, thus encouraging achievements within academic settings.

Another classification includes strategies that are applied for regulations of behavior, in which individuals can observe their own behavior, monitor it, and attempt to control. Setting deadlines, assigning specific duties, and responsibilities for each member in teams, seeking help from various resources are considered as some of the strategies that could monitor and regulate student behavior during task completion.

Therefore, self-regulation draws the certain control over various aspects of language learning, such as cognitive, behavioral, emotional and motivational ones. Self-regulated learners are ready to manage and take responsibility of own learning process, as well as the environment and relationships with others.

Learning through PBL typically engage students with cycles of questioning, investigating, applying creative and critical skills, evaluating situations, synthesizing information, and integrating peer and teacher input that lead to deeper levels of understanding. These all tasks and stages occur in three main phases in PBL: 1) project launch, 2) guided inquiry and product/solution creation, and 3) project conclusion [28]. Thus, “a dynamic, reciprocal relationship exists between PBL activities and the SRL processes that are internal to the student” [18; 134]. Based on the nature of this interaction, each phase of PBL demonstrates the platform for specific self-regulatory processes to be applied; in turn, effective self-regulated learning can improve academic and behavioral performance in all three phases of PBL. The PBL entails the SRL process to be evoked [18]. Practicing this claim as a framework for project design, teachers will be encouraged to promote the development of self-regulation in PBL.

To sum up, Project-based learning is a constructivist and inquiry-based approach that has the potential to change teacher and student learning practices dramatically. The value of this approach rests on how well it is designed and implemented for the betterment of student self-development. In order for PBL and PBL learners to be successful and productive, students must be immersed in their own learning process, which entails self-regulatory processes of sustaining interests, motivation, and cognitive, behavioral, and environmental development. This process is not acquired easily; thus, the PBL learning and teaching environment must be designed with the purpose of developing students’ SRL, which undoubtedly impacts on their academic performance.

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### **Жобаға бағытталған білім беруде дербес оқып -үйренуге ынталандыру**

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Жоба негізінде оқыту (PBL) студенттерге шынайы және маңызды жобаларға белсенді қатысуға мүмкіндік береді. PBL-де жетістікке жету және сапалы жобаларды жасау үшін PBL-дің негізгі компоненттері оқу процесі барысында қолданылуы керек. Алайда бұл процесс өздігінен жүрмейді; студенттердің білім беру процесін өзіндік бақылау, басқару, бағалау, жауапкершілікті қабылдау және модельдеу қабілеті өмір бойы оқуда маңызды болып табылады, қазіргі еңбек нарығының талаптарын қанағаттандыруға мүмкіндік береді. Сондықтан, оқушының дербес оқып-үйрену стратегиясын қолдану үшін жобалық оқытуға арналған білім беру ортасын дамыту маңызды. Бұл мақала жоба негізінде оқытудың ерекшеліктерін оқушыға бағытталған әдіс ретінде қарастырып, өздігінше үйренуді қолдауды қамтамасыз ететін дербес оқып-үйрену мен жобалық оқытудың әр кезеңінде оқушының жауапкершілігін арттырудың арасындағы байланыс пен сәйкестікті сипаттайды.

**Түйін сөздер:** жоба негізінде оқыту, дербес оқып-үйрену, PBL негіздері, дербес оқып-үйрену стратегиялары, оқу ортасы.

### **Стимулирование саморегулируемого обучения, основанное на проектном подходе в образовании**

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Проектное обучение позволяет учащимся активно участвовать в аутентичных и значимых для себя проектах. Характерно, что для достижения успеха в PBL и разработки высококачественных проектов ключевые компоненты PBL должны применяться на протяжении всего процесса обучения. Однако этот процесс не происходит сам по себе; умение студентов контролировать, управлять, оценивать, брать на себя ответственность и моделировать свой учебный процесс имеет решающее значение в обучении на протяжении всей жизни, позволяет соответствовать требованиям современного рынка труда. Поэтому важно разработать образовательную среду для проектного обучения с целью применения стратегий саморегулируемого обучения студентов. Данная статья описывает особенности проектного обучения как подхода, ориентированного на учащихся, его соответствие и отношения между саморегулируемым обучением, обеспечивающим поддержку самостоятельного обучения, и повышением ответственности учащихся на каждом этапе проектного обучения.

**Ключевые слова:** проектное обучение, саморегулируемое обучение, основы проектного обучения, стратегии SRL, учебная среда.

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