Implementations of Project Based Learning in Primary Schools

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Abstract
Recently, there has been great interest in Project Based Learning (PBL), a relatively new instructional strategy that helps elementary school students engage in critical thinking, creativity, and collaborative learning. The objective of this systematic literature review (SLR) is to give a synthesis of the literature on the implementation of PBL in primary education, since it discusses the problems educators and students can have with this. A comprehensive search strategy across selected academic databases for the last decade is used to cover the studies reviewed. Several recurring challenges are illuminated by the findings: lack of teacher training, scarce resources, lack of rigour in assessment and, depending on the students, varying levels of student engagement and motivation. Additionally, the key ways of overcoming these challenges are identified, i.e. professional development programmes for the teachers, enhancing the use of technology and nurturing a good learning environment. This review highlights the implications which persist in suggesting that while PBL is well positioned to significantly improve primary education, a successful dissemination of PBL would depend on resolution of the problems identified through targeted intervention and policy support. Finally, future research directions are suggested for studying PBL effects over the long run, and developing scalable models for varied educational settings.
Keywords: PBL, Project Based Learning, Implications, Interventions, Tecnology, Resolution

Introduction
One of the many educational methodologies currently implemented in the educational activity is Project Based Learning (PBL). Moreover, PBL has become a popular teaching approach in learning field of English education. Although referenced for his clarity on the use of experiential learning in creating meaning and appeal for students' educational experiences, Dewey (1938). This approach over time has evolved and it is now applied in the fields related to language acquisition. PBL is a process by which knowledge and skills are acquired by active engagement in projects sustained over a fixed period of time.

As asserted by Pieratt (2023), PBL is an instructional approach that enables entails student participation in learning activity to heighten students' motivation, curiosity and interest. It brings together real world problems that are compelling enough to solve with opportunities

for design and creation, and avenues to present their work to others. PBL has been used in numerous studies in different education settings to accomplish different learning goals (Sirisrimangkorn 2018; Huang and Sun 2022; Yin 2020; Bakar et al. 2019; Iriani et al. 2019). The findings from these investigations offer suggestions to educators regarding the methods to bring in PBL into the school room surroundings to spice up pupil engagement, delight in, awareness of discovering whereas meeting academic targets. Moreover, PBL is meant to provide students with abilities of knowledge, linguistic competence and problem solving as they work on the tasks or projects.

In the classroom, the main deal is that students couldn't master and understand the instructional materials that are taught by the teachers. Students academic performance is closely tied to the teaching and learning of activities done in the classroom. Therefore, PBL is used as answer to the challenges faced through the students' educational journeys.

In fact, Mioduser and Betzer (2018) emphasise that in order to be successfully implemented PBL requires that the students are active in their groups, they are seeking information from many different sources, and they have basic skills in problem solving. Diverse tactics and methodologies are used in the educational activities to engage between learning. A more recent trend, as Zamri (2014) indicates, is the high value placed on student centered learning. According to Khair (2016) educators are agents or enablers of learning inside the classroom.

The bane of teachers who attempt to apply PBL in classrooms is the huge weight they carry in the form of nonacademic work. Now, teachers have to accomplish so many more responsibilities apart from academic ones, and one of them is carrying the responsibility for administrative duties like data entry as well as work corresponding to these tasks. Sometimes teachers are expected to work during the break. Because of this, project based learning activities are becoming increasingly impractical to incorporate into classroom instruction.

The PBL is an excellent way to improve students' academic results. It provides learners with this skill and knowledge she may need to be successful in real life. As a result educators working with different teaching and learning tactics can be utilized to help trainees to understand the learning materials at a quicker and more effective manner. As Lessard Clouston (1997) outlines in his study into learning strategies, the application of project based learning strategies by teachers can dramatically assist with student understanding throughout the learning cycle.

The Malaysian Ministry of Education (MOE) approved PBL as an one of the recommended methods of instruction in Malaysian educational system. The purpose of this approach is to enable students to generate ideas when completing tasks. Teachers who use the traditional methods should be introduced to the advantages of integrating project based learning activities. However, instructional strategies that emphasize the use of descriptive language by teachers do not meaningfully increase students' academic performance. Traditionally, the learning environment, and hence the learning process, is teacher centered, with the resultant lack of student involvement. Trusting in their students' independence to learn, acquire knowledge and to do their assignments is what educators should do. This empowerment will

empower learners in the undertaking of initiating to look for solutions and the seeking of their own answers.

PBL is a non structured educational technique which involves both learning and teaching process. Through assignments like collaborative discussions, portfolio creation and tangible outcomes it helps foster student development. This rationale is because project based learning puts students at the center of educational activity. Project based learning activities have been shown to foster students' inquisitiveness and in formulating desire to accomplish objectives. In addition, by doing project based learning, students are engaged, in fact they are also part of their educational journey. Group discussions are an opportunity for them to participate in new experiences and develop the skills they will need.

The 21st Century Learning Document (2017) as posted by KPM states that the project based learning can teach the students how to deal with real world problems and to identify with other solutions. Teachers set project assignments which students use advanced technology or digital resources, such as computers, to accomplish. Using digital tools and advanced technology in project based learning makes project creation more efficient and more student engagement able. Moreover, a few process of technology also help that the learners get advantage of critical thinking abilities, knowledge seeking skills and problem solving abilities. It is consistent with the Malaysian Ministry of Education's mission to create a top class education system which propels a thought leadership of a generation that is critical in terms of thinking, creative and innovative.

Because project based learning methodologies involve students actively collecting and analysing data during execution and producing tangible results that increase their ability to complete assigned tasks, they are able to implement methodologies that will foster great student creativity. In addition, teaching students using project based learning can help them do so and it will help with better academic performance. Participation of students in educational activities can result in enhanced academic achievement that promotes improved motivation and perhaps increased self confidence.

Literature Review
Issues and Challenges in the Implementation of Project-Based Learning in Primary Schools
Because of its potential for meaningful learning activities, Project Based Learning (PBL) is gaining in popularity in the educational strategy. Unlike traditional teaching techniques, PBL immerses students in challenging real world projects that require students to work together, think critically and solve problems using a variety of communication modes. In this literature review, issues and difficulties experienced during the implementation of PBL in elementary schools were examined and solutions, which need to be proposed to address these challenges, were discussed.

Historical Context and Theoretical Foundations
Project Based Learning (PBL) is based on constructivist learning theory such as as John Dewey who stressed the character of experiential learning. For PBL, Dewey's faith in the problem solving and critical thinking is central. The research of Jean Piaget and Lev Vygotsky has also influenced the way that PBL is founded on its principles; both underline the role that social interaction and scaffolding play in their cognitive development.

Advantages of Project Based Learning
The amount of studies concerning the benefits of Project Based Learning (PBL) in an elementary education setting are innumerable and many. PBL potential enhances student motivation, engagement, and knowledge retention in empirical research. It offers the oppotunity for students to develop their 21st century skills including collaboration, communiaction and critical thinking. PBL not only enables students autonomy and would lead them to use knowledge in real situations, it also helps them retain subject material better and longer (Krajcik and Blumenfeld, 2016).

Project based learning is one instructional approach where students have to work together in finding solutions to issues, create outputs within determined time frame and then present what they have been doing to others. Stanley (2021) provide more comprehensive explanation of PBL as inquiry based learning rooted in real world experiences, generally involving teamwork, open ends, requiring new project per student group, and centering on students. Furthermore, according to Colley (2018), PBL is a learning method where students design projects on assigned topics as authentic assignments.

In order to fully understand the nature of project based learning it's important to understand the characteristics of project based learning. Based on Stanley (2021), he gave several key features of PBL which included an inquiry focus, student centered and directed learning, and a collaboration focus either in small groups (3-5 students) or larger groups (8-12 students). Project based learning also involves students creating unique final products, as well as open ended and experiential learning. It also gives students a chance to don the role of an expert as they work through their projects, and they have a lot of choice in nearly everything about it.

Apart from acquiring academic knowledge, students are asked to develop their problem solving via project based learning. PBL's aim is to help students develop their skills by engaging them in project focused activity they have designed. Students are invited to participate in a variety of activities and also to conduct investigations. In addition, since the projects they develop can be applied to real world application, this motivates the students to show their knowledge in an application.

There is some amount of processes involved in implementing project based learning, and these processes include; planning, implementing plan, presenting the result and assessing the outcomes. The first thing students need to consider when creating a project is the title of the project, participation events, and the guiding questions. During this phase the instructors and students question about the project topic by posing various questions. After this one, students are going to propose titles for the projects that each group is going to do. Later, they will add in relevant events to their plans. Secondly, students work with their classmates to work on a project and to accomplish that they have to choose a specific theme. During this stage, the instructor will track the progress which is being made by students. Students will then pitch their work amongst themselves and discuss with one another as they are assigned. The third benefit is when they have finished their assignment then it helps them get finished outcomes. The final projects are to be presented to the class as a group. In the end, the instructor will grade not only the work that the students produced, but also the processes that were used to make it.

Obstacles in Implementation

Although Project Based Learning (PBL) appears to be advantageous, there are many challenges to using PBL in elementary school. These obstacles can be categorized into various domains: I believe assessment concerns, student related barriers, teacher preparedness and resource availability.

A main challenge in using PBL is to be sure that teachers are adequately prepared. Project based learning initiatives may be designed and supervised by some educators who may not have all the training and expertise to do so. In Thomas (2013), he reported that teachers feel they are often inadequate while trying to manage the openness of PBL as a way to approach it. It is assumed that this requires the teachers to take a shift from traditional teaching methods to a facilitative role.

Resource Availability: In order for a PBL to be successful, many resources are needed: technology, materials, and time. But the vast majority of schools, especially those located in low income areas, barely ever have them. As Bell (2013) emphasises, insufficient financial resources can hamper the carrying out of high quality PBL activities. Bell points out that due to limited funding, schools are often restricted in their ability to provide those materials and support needed for successful PBL.

Assessment Challenges: For the characteristics which are unstructured and process-based with PBL, there are **challenges evaluating student learning** itself. Traditional examination techniques may be insufficient to assess the realized skills and understanding that a pupil gets in a project based learning. Harada, Kirio and Yamamoto (2018) have stated that what the alternative assessment technique should mainly rely on is the students' ability to solve the problem, to use the analytical thinking involved and practical use of knowledge on real life situations.

Student-Related Challenges: Deriving difficulties about the implementation of PBL may include student engagement and adaptation. One can't assume that all students are motivated in the same way for PBL or that everyone can handle being independent and self directed in project work. Furthermore, there must exist a need on the part of teachers to create instructional strategies and techniques to meet the needs of all the students. Grant (2022) stresses that in project based learning settings it is imperative to not only include scaffolding and support for every student, but make those elements explicit.

Approaches to Overcoming Obstacles

Studying the theories on challenges of implementing Project Based Learning (PBL) in elementary schools reveals a number of the approaches that can be used to resolve such challenges. Teacher training, resource provision, assessment, and student support are prioritized as the work of these initiatives.

Need to make sure that teachers go through the most comprehensive professional development available in order to be implemented by them. The main purpose of such programs is to improve teachers' abilities to develop, make, and evaluate PBL tasks. According to the Buck Institute for Education (BIE), workshops and materials help professional development programs assist educators in gaining the capacity to successfully carry out Project-Based Learning.

This work is centred on the issue of inadequate allocation of and support for the resources necessary to make PBL work well within schools. It means not only allocating some sort of financial resources for materials and technology, but also some amount of time each week dedicated for teachers to meet together and to work through problems on their own. Yet partnerships with community organizations and businesses offer additional resources and sometimes specialized knowledge as do the success stories of community centered PBL programs outlined in Larmer and Mergendoller (2015).

Alternative Assessment Strategies: These PBL problems may be difficult to assess, but there are a number of alternative assessment techniques that educators could use to address the problems. Performance based assessments, collections of work samples, grading rubrics that emphasize development of procedural skills and practical application of knowledge in people's lives in real life situations. Formative assessment procedures like peer feedback and self assessment can make student learning better and allow us to see how they're progressing.

Enhancing Student Engagement and Encouraging Differentiation: There are many strategies that educators can use in order to make effective use of Project Based Learning to involve all the students, including projects based on student interests, the use of various teaching methods and scaffolding. One way to increase students' motivation and participation is to provide a variety of options culture students can explore their interests of project topics. Additionally, when scaffolding and support like explicit instruction and regular check in is provided students can successfully navigate the autonomy involved in project based learning.

Future Directions and Research Gaps
Despite the current body of literature that provides useful contributions about the application of Project-Based Learning (PBL) in elementary schools, the fields need more research. The studied programming constructs have a profound effect on student learning outcomes and skill development, and longitudinal studies are needed to examine the sustained effect of PBL on those outcomes and skill development. Finally, further research is needed to understand the gap between different student demographic and the impact of the PBL between various educational constructs. Research on how technology can support PBL and which professional development programs tend to yield changes in teacher behavior might deepen our knowledge about implementing PBL.

The motivation of Project Based Learning, which is a promising way to educate the children in elementary education, is that it provokes children in understanding experiences which cultivate necessary skills. Nevertheless, implementation of this initiative is contingent on overcoming several barriers for teacher preparedness, resources, and assessment and student engagement. Admittable resource provision, the appropriate use of alternative assessment methods, creating a conducive project based learning environment through focused professional development and student participation are the ways educators can go through these challenges. More investigations should be conducted in order to find out what gap or gaps exist in the existing body of knowledge and to further strengthen the implementation of Project Based Learning in elementary education institutions in relation to the present body of knowledge.

Research Objective

This research aims to systematically review and synthesize current literature on implementation of Project Based Learning (PBL) in elementary schools, particularly to understand the problems and challenges encountered by teachers and learners in its implementation. The research aims to:

1. Examine common problems and roadblocks to the implementation of PBL in the elementary environment.
2. The strategies and solution proposed in the literature to address these challenges are analyzed.
3. Examine the effect of PBL on student learning outcome, engagement and motivation.
4. To provide insights to the successful adoption and use of PBL in elementary schools for educators, policymakers, and researchers, the next section proposes recommendations.
5. It highlights continues research gaps and offers suggestions for future research to explore and develop PBL practices in the elementary education.

Research Methodology

The purpose of this systematic literature review (SLR) is to synthesize how existing research on the implementation of Project Based Learning (PBL) in elementary schools addresses the issues and challenges faced. A structured methodology to identify, evaluate and interpret relevant research studies is followed. Here, the process has been defined involving defining research questions, selecting appropriate databases, developing inclusion and exclusion criteria, carrying habit systematic search, and a comprehensive analysis of the whole findings.

Research Question

The primary research questions guiding this systematic literature review (SLR) are as follows:

a. What are the common challenges and barriers towards the project based learning (PBL) in elementary school?
b. How has it been proposed to address these challenges?
c. What are the effects of PBL on student learning outcomes, engagement and motivation for elementary education?

Literature Search Procedure / Protocol

A detailed protocol has been developed to run the review process. This includes the setting up the inclusion and exclusion criteria, describing the relevant databases and methodologies to be used for literature search, the extraction and synthesis of the data.

Article Search Keywords

To ensure that a diverse range of studies was included, a comprehensive search was conducted of several academic bases. The databases utilized include:

a) Google Scholar
b) Education Resources Information Center (ERIC)
c) JSTOR
d) SpringerLink
e) Wiley Online Library

A keyword and Boolean operator based search strategy was used. Key words were "Project Based Learning," "Elementary School," "Implementation," "Challenges," "Issues",

"Strategies." To the maximum possible degree, the search for findings was limited to relevant peer-reviewed journal papers, conference presentations, and theses dating from within the last decade (2013-2023).

Instrument Criteria
Publication year, language, reference material type, and research field of the journal articles on which papers were based were used to establish selection criteria for the articles so that the papers met the scope of the study. Table 1 outlines these criteria and gives the guidelines for the accepting and rejecting of publications. The requirement that the publication year have to be during the past 5 years, in particular the period from 2013 to 2023. This was ten years because it is a period of time during which the topic continues to be of active discussion and is covered with new issues arising, thereby excluding articles from other time periods in the present study.

Additionally, these analyses were limited only to articles written in English and Malay, from the databases we have selected. Hence, the selected articles are in these as the stated databases have content only in these languages. For the study, reference materials have been chosen from journal articles, not conference proceedings, books, or research reviews. This approach guarantees that journal articles will act as reliable reference sources in detailed and an exhaustive reporting for readers.

Table 1
Article Selection Criteria

General Criteria	Acceptance Criteria	Rejection Criteria
Tahun Penerbitan	2013 - 2023	Selain dari 2013-2023
Document Type	Journal articles, Proceedings and Theses	Book
Language	Malay and English	Other languages other than the languages listed
Field of study	Education and Information Technology (ICT)	Apart from the field of education

Acceptance and Rejection Criteria
To ensure the selection of relevant studies, the following inclusion and exclusion criteria were applied:
Acceptance Criteria
This is studies on the implementation of Project Based Learning (PBL) in elementary schools.
- Between 2013 and 2023, research articles, conference papers and theses.
- Peer reviewed journal type, or reputable academic sources such as reports, etc.
- English and Malay topic articles available.
- These are studies, which discuss the challenges, barriers and strategies regarding PBL.

Exclusion Criteria
- Second and beyond secondary education PBL related studies.
- Opinion pieces and editorials as well as articles that are not peer reviewed (e.g. survey, systematic review).

- Articles that are full text unavailable.
- Not studies addressing the research questions.

Study Selection and Data Extraction
The study selection process involves several stages:
a) **Initial Screening:** Screened the identified studies on the titles and abstracts to see if they were relevant based on acceptance of exclusion criteria.
b) **Full Text Review:** To confirm their relevance and acceptance, we examined the remaining full texts of the studies.
c) **Data Extraction:**Information about some of the challenges and barriers to PBL implementation, proposed strategies and PBL effects on students' achievement was extracted from the selected studies.
   To ensure consistency and comprehensiveness a standardized data extraction form was used. The study objectives, the research methods, the characteristics of the sample, the findings of the study with respect to challenges and strategies, and conclusions were the key data points.

Quality Assessment
Included studies were assessed using criteria including the robustness of the study design, clarity of the research questions, appropriateness of the methodology and validity of the findings. The Mixed Methods Appraisal Tool (MMAT) was used to facilitate full evaluation.

The quality of the selected studies was evaluated based on established criteria, including:
a) Of the research questions, clarity and relevance.
b) What is the appropriateness of the research design and methodology.
c) Data collection and analysis validity and reliability.
d) Reporting finding and conclusions being transparent.

Based on these criteria the quality of each study was rated high, moderate or low. In order to ensure the reliability of the findings, the final synthesis included only studies rated as high or moderate quality.

Data Extraction and Synthesis
A thematic analysis approach has been used to synthesize data from included studies. Themes around the problems and barriers to PBL implementation, strategies to address these problems, and the consequences on student outcomes were then recognised and placed into categories. The findings were summarized in a narrative synthesis which also served to summarize current research on PBL in elementary schools. The synthesized data were produced by using a narrative approach which combined qualitative and quantitative findings. Here, we identify common themes, patterns, and gaps in the literature using the results of this synthesis as a basis of focus.

Limitations
The methodology acknowledges several limitations:
a) Potentially a bias in selecting of studies because the selection of only the English language articles.
b) Exclusion of grey literature and non peer reviewed source may have precluded the inclusion of important findings.

c) Variation in the quality and rigour in which the included studies' methodologies were employed.

Article Selection Process
The qualitative research approach of this study was systematic literature review (SLR). This approach will then carefully study past research specifically to determine the impact of PBL integration in the classroom. The articles were drawn from the period circulating between 2013 and 2023.

The research is mainly aimed towards collecting research data based on effects, implementation and utilization of Project Based Learning. Google Scholar, Web Of Science (WoS) and ResearchGate are among the database that is used commonly for searches. From 2013 to 2023 a total of 1,137 articles were obtained from these three databases and specify this timeframe. Unfortunately there were five instances where articles were duplicated. With the overlap issue resolved, 1,132 articles were screened by a complete review of their titles and abstracts. From screening, 1,075 articles were excluded because of language and document type. After examination, 57 articles were accepted. Unfortunately, 36 articles were excluded because they lacked empirical data and gave information only about PBL implementation. Consequently, the search strategy brings out 21 articles (n=21) that fit in with the focus of this study. In this study, Figure 1 depicts the systematic search process based on PRISMA flow diagram developed by Moher et al. (2009).
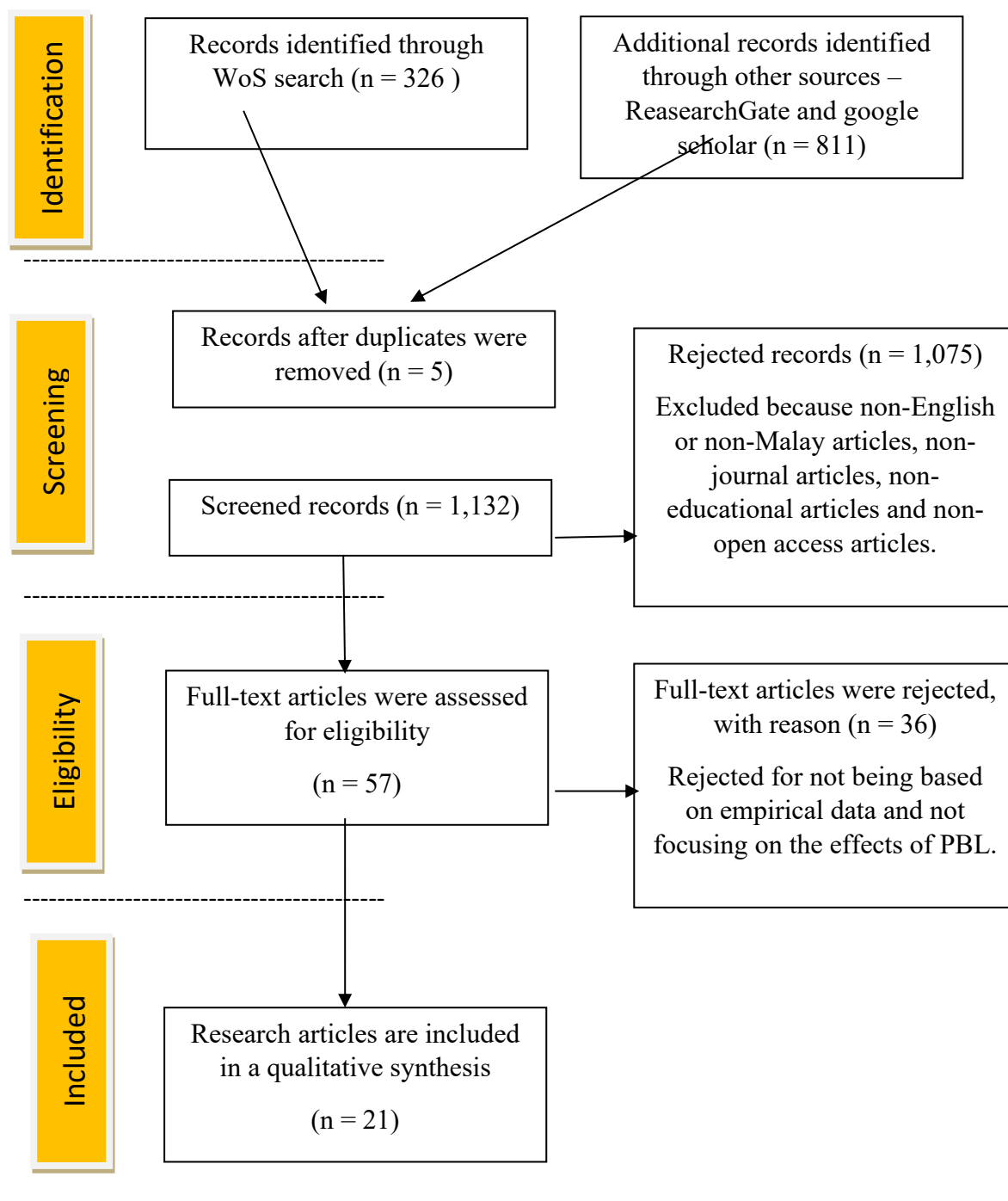
Figure 1 Flow Map of Systematic Literature Review (SLR)

Conclusion

This SLR aims to systematically and systematically survey literature on the implementation of Project-Based Learning (PBL) in elementary schools and based on that, to identify challenges and suggest solutions. This methodology gives a complete and accurate synthesis of present research and provides valuable information for educators, policymakers and researchers involved with elementary education.

Findings

Issues and Challenges in the Implementation of Project-Based Learning (PBL) in Primary Schools

Project-Based Learning (PBL) refers to an essential departure from conventional pedagogy, away from teacher directed instruction to learning on the part of the student. This is a positive approach where active exploration is important, the problems are solved in real word and also we are working in collaborative way. Yet specific concerns and barriers that educators and organizations must address in the introduction of PBL in elementary schools. In this essay the main barriers to the use of PBL in elementary education, including teacher preparedness, resource accessibility, the difficulties of assessment, and student issues are addressed.

Teacher Readiness

The challenge lies in the fact that educators need to be well prepared to carry out Project Based Learning (PBL) in elementary schools. In PBL teachers play a new role, that of facilitator instead of traditional knowledge transmitter. This transition requires insight into PBL principles, project planning, classroom management and method formative assessment. Unfortunately, however, many educators don't have adequate training and expertise in these areas.

At a time when PBL requires teachers to guide students through complex problems, foster inquiry and successful collaboration, a study such as Thomas (2000) found that teachers often do not feel equipped to take on this unstructured nature of PBL. Educators who are not adequately trained can develop less meaningful projects, insufficiently support the students and not discern the student's progress. There is an urgency for professional development programs for project-based learning approaches. Unfortunately, some institutions don't provide enough training opportunities for instructor or ongoing support. PBL requires professional growth in this area in which absence can hamper the correct implementation of PBL and its potential benefits to students.

Resource Availability

To successfully implement Project based learning (PBL) there should enough of the resources that one needs to have; for instance, technology, materials and enough time to prepare and implement. Yet resource constraints are huge barriers, especially when there is not enough equipment available. Lacking the funds blocks capacity to provide critical materials and enable technological resources to support the work of the project and improve the learning experience.

When educational institutions have limited resources, Bell (2010) points out that educational institutions, for instance, struggle to implement PBL activities of high quality. For some projects you want access to digital devices, internet connectivity, and specialized software. Unfortunately, elementary schools often don't have access to these resources. Moreover, the allocation of time for planning, collaborating and reflecting in the PBL framework are also limited by the format of conventional school schedules. While Teachers may find themselves unable to allocate time in the classroom to PBL activities which meet curriculum requirements and standardized testing, ultimately resulting in superficial implementation of PBL rather than an experiential educational learning experience.

Assessment Complexity
Inherent in the process oriented and open ended nature of Project-Based Learning (PBL) assessment of learning is complex. Although PBL assessment techniques are used, traditional exams and quizzes may not effectively represent a student's ability to integrate and apply different skills and knowledge learned. Assessments of PBL outcomes are better suited to performance based assessment, portfolio, rubric but would require very substantial changes in assessments methodology.

Harada, Kirio & Yamamoto (2008) argue that various of assessment methods are necessary to evaluate process skills, critical thinking, and the ability of the students to use information in practical situations. However, teachers who are fit accustomed to traditional dichotomous tests' way may have difficulties when designing and planning these tests. It takes a lot of time and expertise to develop effective rubrics, and to conduct ongoing formative assessments, and to provide useful feedback. In addition, evaluating collaborative efforts with consistency and fairness to match differences in contributions of individuals is also challenging.

Student Related Challenges
Additionally, PBL also has some challenges in the elementary schools: the engagement of student, motive of student, and the individualization. Although PBL has the potential to give a boost to student motivation and engage them in a process of ownership in the learning process, this does not mean that all students have the same form of engagement with activities within PBL. However, PBL has a natural, autonomous character and some students may have difficulty managing their time, maintain their focus and work with their peers.

Grant (2002) insists on the necessity not only of providing scaffolding and support, but also the success of all students in PBL context. This is because students have diverse backgrounds, abilities, learning styles. Teachers face issues of providing appropriate support and stimulation to all of the students in PBL situations. As an example, younger students or those with minimal experience in self directed learning may require additional structure guidance as well as regular check ins to continue with their learning. In addition, many training projects involve varying levels of existing knowledge and skills. Making this even more complicated is the fact that teachers need to think about varying levels of existing knowledge and skills when they design and implement their projects.

Such research suggests that appropriate scaffolding strategies are necessary to handle these challenges. Through projects incorporating student interests and individualized support based on each child's needs, teachers can provide that much needed engagement. In addition, building a collaboration environment that suits everyone's learning style can improve the overall participation and success in PBL initiatives to some extent.

As PBL has some benefits for engaging and owning in learning overall, PBL is effective, however, it also needs to be implemented carefully and in a way that carefully manages individual student needs and deployed support mechanisms that make it through the complexity of this type of learning.

Administrative and Policy Support

The success of Project Based learning (PBL) permeates to the endorsement of school officials as well as educational policies. Administrative support is critical to the availability of needed resources, sufficient time, and avenues for professional development, so educators can do their jobs. If the school culture does not support and value project based learning, then teachers are likely to find making project based learning work very difficult.

Larmer and Mergendoller (2015) stress that the successful PBL requires a conducive learning environment on which innovation and experimentation can be nurtured. That's a list of things like creating enough time to plan, reducing bureaucratic barriers, and creating a culture of collaboration and continuous improvement. Thus, policies on education at the local, state or national levels can as well shape the feasibility in the implementation of PBL. Implementation of PBL may be impeded by policies that encourage standardized testing and rigid curricula, and policies that allow for innovative teaching pedagogy and broad based assessment can alleviate such constraints.

The fact that there is ample research that evidence the idea that strong administrative backing is required for successful PBL integration. They have a huge role in creating a school culture that supports experimentation and risk taking of educators. If school leaders make investments in even meaningful professional development opportunities, teaming up teachers, and supporting flexible schedules to accommodate project work, PBL efforts can be hugely improved.

Additionally, there should be a review of educational policies so that they are in agreement with PBL goal. That may include changing curriculum requirements to accommodate for more student centred learning experiences which focus on critical thinking and problem solving skill rather than rote memorization. The ultimate way to promote an environment that is open to supporting PBL is though an intentional commitment from school leaders, educators and policymakers to establish a path for PBL innovation in teaching and learning that can promote sustainable practice.

Strategies for Overcoming Challenges

To address the challenges of implementing Project-Based Learning (PBL) in elementary schools, several strategies can be employed:

Professional Development

Schools should invest in ongoing professional development programs orienting on PBL methodologies, project design, classroom management and alternate assessment. Support for teachers can also be gained from collaborative learning communities and mentoring programs.

Partnership and Resource Allocation

Schools need to be ensured of having necessary resources available. Reallocation of existing resources, prompting external funding or entering in partnerships with community organizations/businesses and institutions of higher education to provide adjunct support and expertise may be involved.

Flexible Scheduling and Curriculum Intergration (Flex)
Schools will explore alternative flexible scheduling options such as extended project work periods. Because PBL projects can fit in with other parts of the student's learning, PBL can be integrated into a standard curriculum.

Alternative Assessment Methods
Alternative assessment methods that parallels PBL principles can be developed and can deliver a more accurate measure of student learning. However, PBL cannot be easily assessed through paper and pencil type performance based assessments, portfolios or self assessment tools.

Differentiation and Student Support
Scaffolding and differentiation as well as provided structured guidance can help make sure all students do well with PBL. It involves providing clear expectations, check in regularly, and with individual as per students' needs and demands.

Administrative Advocacy and Policy Support
Policy and administrative practices which help support a PBL environment can positively contribute to the implementation of PBL. That's about creating constituencies – stakeholders inside and outside the school – who are willing and able to rally around the support, promotion and adoption of PBL.

Project Based Learning has the capacity to change elementary education through students' engagement in effective real world learning experiences. Nevertheless, efforts towards implementation of Teacher Preparation Program require consideration of several significant difficulty issues, for instance, teacher preparedness, resources availability, assessment practices and student support. With sufficient investment in comprehensive professional development, sufficient resources, flexible scheduling and alternative assessment and supportive policy, the challenges can be overcome, and an effective PBL environment created. Focusing on these efforts, PBL can become a powerful modality to teach critical thinking, collaborative and lifelong learning skills to elementary school students.

Conclusion
Incorporation of findings from previous literature points toward the revelation that there are enhancements in the performance among students due to project based learning strategies. Therefore, the use of integrated project based learning teaching methods offer students chance to participate in variety of activities that they find interesting. There is likelihood of improving on the techniques of conveying knowledge through identifying a set of strategies that of course suit the students' competency levels. Among the key ideas emphasized during this project based model, the learner is central. Thus, conditions that exist have to be taken into consideration in order to facilitate conduct of teaching and learning activities coherently and a proficiently.

Hence teachers should counsel the learners in order for them to assist in the achievement of goals by the students and improvement on performance. This is because learners' performance in their studies acts as reference point in assessing success within the institutional setup.

A thorough discussion linking these findings with constructivist learning theory, self-motivation, and the multimedia cognitive model provides strong support for the effectiveness of this approach. The practical implications emphasize the need for integrating learning, while the theoretical implications contribute to the development of technology-based pedagogy concepts. Limitations such as the small sample size, short study duration, and limited technological infrastructure open up opportunities for more comprehensive future research. Overall, this study makes a significant contribution to Project Based Learning, particularly in supporting 21st-century learning that is more interactive, relevant, and effective.

Conflict Of Interest
The author wholeheartedly affirms that there are no conflicts of interest in the research, writing, or publication of this work.

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