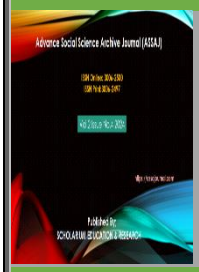

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EXAMINING THE IMPLEMENTATION STRATEGIES, OUTCOMES, AND CHALLENGES OF PROJECT-BASED LEARNING IN TEACHING PRACTICES: A QUALITATIVE STUDY ON BS EDUCATION STUDENTS AT THE UNIVERSITY LEVEL

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ABSTRACT

This research explores the efforts to implement Project-Based Learning (PBL) into teaching practices at the University of Narowal. PBL, an innovative pedagogy that prioritizes active learning, student interactions, and collaboration has generated considerable interest due to the potential to improve student engagement and critical thinking. However, application of such a model in higher education is difficult. This study aims at exploring how PBL is implemented in BS Education programs as well as the outcomes and challenges experienced by students and faculty. The research used qualitative research involving interviews of 40 BS Education students from University of Narowal. The sample was purposively selected for content knowledge of PBL through course work. Thematic analysis was used to analyze the interviews data with attention to the operationalization, perceived impact and obstacles in implementing of the strategies. The results show that students have a favorable impression of PBL, including motivation and collaboration effects; however, there are also notable problems to overcome. These challenges consist of: the lack of resources, clear evaluation tools, and the ability to balance project work with more traditional coursework. Students also felt that faculty support should be more structured and guidelines for project evaluation should be clearer.This study helps to explain what problem-based learning can be combined with effectively in higher education. The study offers useful insights for further effective implementation including faculty development, resource allocation, and preparation of standardized assessment rubrics. The implications of the results are critical for schools intending to implement PBL as a teaching approach.

Keywords: Strategies, Outcomes, Challenges, Project-Based Learning, Teaching Practices

1.Introduction

The use of PBL in the teaching-learning process is an increasingly prevalent pedagogical perspective that promotes the active and real-life problem-solving of students. The process, underlying principles, outcomes and the issues involved in policy implementation, however, are some of the less studied areas in the context of higher education in Pakistan. The purpose of this research is to find the strategies of PBL, results of PBL on students and problems` confront by students and teachers both in BSEd in the University of Narowal.

PBL is an instructional method that encourages learners to actively engage in personally meaningful projects for extended periods of time, with the intent of solving real-world problems and challenging questions. In PBL, students work together in a group and apply the learned knowledge into a real life experience (Thomas, 2000). This is the antithesis of the traditional approach to teaching, which in many cases is orientated around rote learning and passive information feeding. PBL facilitates critical thinking, creativity, and teamwork that are all imperative in 21st century Living (Bell, 2010) On its surface.

Its practice in Pakistani higher education institutes, particularly in teacher education programs, is not well-research and is quite limited, despite its increasing popularity worldwide. Studies that have examined how PBL is applied by faculty in Pakistani universities, its strategies use, and the results they obtain are very limited. In addition, literature indicates that PBL has a great effect on students' achievement and skill development (Darling-Hammond et al., 2008) but research about them among BS Education students does not exist in Pakistan. This research dearth is more pronounced in universities including that of Narowal, in which PBL is not systematically explored and no in-depth analysis or investigation into its application is found in the curriculum.

It's teaching style, PBL, also brings its own challenges. For faculty, the open problem-based nature of the task often makes it difficult to assess and manage, and they may have trouble planning the tasks in advance to ensure that they achieve the learning outcomes for this approach, they often need additional help with understanding how to set up a project in these types of courses. … For students students can struggle with the guiding questions, the self-starting nature of PBL, and the complex nature multi-factorial problems these present. These issues can act as an impediment to the successful implementation of PBL and can reduce its expected effects. Therefore, the importance of this work is that to work such concerns and to know how PBL is developed, the results obtained and the problems encountered both by students and teachers.

1.1 Research Objectives:

The main objectives of this study are to:

1) To examine the strategies employed by faculty in the implementation of Project-Based Learning (PBL) in the BS Education programs at the University of Narowal.
2) To assess the outcomes of Project-Based Learning on students' academic performance, skill development, and their readiness for real-world teaching practices.
3) To identify the challenges faced by both students and faculty in implementing and participating in Project-Based Learning activities.

1.2 Research Questions:

To achieve these objectives, the study will explore the following research questions:

1) What strategies do faculty members at the University of Narowal use to implement Project-Based Learning for BS Education students?
2) What are the perceived outcomes of Project-Based Learning in terms of academic achievement and skill development among BS Education students?
3) What challenges do students and faculty encounter in the implementation of Project-Based Learning at the University of Narowal?

1.3 Problem Statement:

Project-Based Learning (PBL) is considered a successful pedagogical practice internationally; it has not been studied and is not implemented in Pakistani higher education system and specially in University of Narowal. This report fills this gap by examining how PBL was implemented, the academic and personal outcomes of BS Education students, and the challenges, which students and faculty encountered. Knowing about these factors is essential to optimize the incorporation of PBL in the curriculum and to increase its effectiveness as a teaching method.

1.4 Significance of the Study:

The study is important because it will add to the literature on PBL by looking at PBL in the context of a Pakistani university and specifically the BS Education program. Results will have potential importance to educators and policy-makers as they provide evidence based information on how best to integrate PBL into curriculum. Furthermore it will provide an overview of shared issues in PBL application as well as provide solutions for such barriers, school leaders to improve student learning and teacher readiness. It will particularly be useful for University of Narowal for the reason that it will give fact-based recommendations for improving quality of education and teaching & learning in the institution. Furthermore, this research will contribute in a worthwhile manner by shedding light on the specific thinking regarding higher education in Pakistan, where the majority of work conducted with respect to PBL is from western countries. The findings of this research could be helpful in practice of learning in the

rest schools and colleges in Pakistan particularly the teacher education institutions which are considered to be the nursery of teachers.

1.5 Limitations of the Study:

Several limitations of the study need to be considered. First, the study is limited to the BS Education program at the University of Narowal only, so its findings cannot be generalized to other programs or even other institutions of Pakistan or the whole world. Second, the present study utilized qualitative methodology, so that the results obtained cannot be generalized widely. The small number of participants may not be representative to all the students or lecturers in the institution. Third, the study is limited to one academic term or year; it is unclear to what extent, if any, the impact of Project-Based Learning is sustained over time in terms of students' academic performance or their careers in teaching. Last, this study will collect perceptions of students and faculty, but it may not include all the possible challenges or outcomes related to the PBL implementation.

2. Literature Review

In recent years, Project -Based Learning (PBL) has gained a good reputation as an instructional strategy in education as it promotes students' engagement, critical thinking and knowledge application for real life situations. There is a large and growing literature that has investigated how PBL has been operationalized in different educational contexts and evidences its value in in relation to deeper learning and skill acquisition (Thomas, 2000). Within pre-service teacher education, several studies have reported that PBL can increase content knowledge as well as practical aspects of teaching such as communication, collaboration and problem solving skills (Bell, 2010). Although it is well known that PBL is beneficial, little has been done in terms of applying PBL in higher education, as particularly PBL has not been fully explored in Pakistani context.

Previous research on PBL within higher education mostly takes place in Western contexts where it is more mature and utilized. Research in these contexts has shown positive student outcomes, with improved academic performance, motivation and teamwork skills; (Blumenfeld et al., 1991). In addition, these studies highlight effective ways that PBL can be implemented, such as by including teamwork learning projects, promoting student autonomy, and using authentic projects where students are required to think through problems (Hmelo-Silver, 2004). However, PBL studies in Pakistan are few, especially in universities such as the University of Narowal. The majority of studies in Pakistani education system base their findings on conventional teaching techniques and not much has taken place to investigate the use of emerging teaching models such as PBL. Therefore, the purpose of this study is to address the

literature gap by exploring the methods of implementation of PBL, output of PBL, and the problems encountered by the Students and faculty at University of Narowal.

2.1 Theoretical Framework

This study focus on theoretical underpinning mainly constructivism learning theory and experiential learning theory to investigate the actions researchers set up as PBL, Outcomes of it and Challenges in PBL adaptation in teacher education.

Constructivist Theory of Learning: Constructivism, attributed to theorists like Piaget (1976) and Vygotsky (1978), holds that learning is an active experience in which students construct new knowledge from their existing knowledge and their encounters with the world. In PBL, constructivism aligns the priority of problem-solving, reflection, and collaboration by students in tackling authentic problems in the real world. This theory matches with the PBL model, which promotes the students to generate knowledge via hands on experiences, peer communication and self-reflection, as fundamental aspects of PBL philosophy (Hmelo-Silver, 2004). By using this theoretical lens, the research will examine how the approaches for the integration of PBL into the BS Education program are rooted in the ideals of active learning, collaborative learning, and student-center learning.

2.2 Implementation Strategies

The literature shows that successful implementation of PBL is demanding, and good support from teachers is essential (Williams et al. Following Thomas (2000), Thomas (2000) recommends features for successful PBL, such as explicit project goals, an overview of expected student outcomes and an equilibrium of individual and group work. Faculty must also provide continual guidance and feedback throughout the project. Within the realm of teacher education, the utilization of PBL necessitates that teachers take the role of learning facilitators, and they should steer students through inquiry for problem solving and not direct instruction (Bell, 2010).

One conceivable conclusion from this review is that the requirements of the instructors to well-navigate complex, longer-term projects, balancing supportiveness with direction and visiting both domains frequently is very high (Blumenfeld et al., 1991). In much of the time, the effective implementation of PBL depends on whether the course content is related to real world problems or not, and the use of technology can foster student learning (Darling-Hammond, et al., 2008). However, such approaches have been predominantly investigated in the West and little has been learnt about how they are adopted in Pakistani organizations. Hence, this study aimed to investigate how teachers at the University of Narowal modify and actualize PBL methods in local perspectives.

2.3 Outcomes of Project-Based Learning

PBL research is reflecting its influence on the student learning outcomes. PBL has been found to enhance critical thinking skills, problem solving skills, and academic performance (Hmelo-Silver, 2004). In addition, PBL leads to better comprehension of content as students connect theoretical knowledge to practice (Blumenfeld et al.,1991). Research has also shown a multidisciplinary group of students working in teams can be better prepared and develop better teamwork and communication as well as time and resources' management skills (Bell, 2010). Although PBL is frequently linked with favorable academic outcomes, literature reports inconsistent findings in terms of the effectiveness of PBL, especially when PBL is recently implemented or is not well supported by faculty and institutional contexts (Darling-Hammond et al., 2008). In Pakistan PBL outcomes have not been largely investigated but however not in teacher education institutes. This study tries to fill the gap in the research by investigating the benefits of PBL in terms of academic achievement and skills' development as perceived by BS Education students of the University of Narowal.

2.4 Challenges in Implementing Project-Based Learning

The integration of PBL does not come without challenges. Ampler tasks also may require more time and resources to assign, evaluate, or develop into national tests that can help inform instruction (Bell, 2010). Large classes present challenges to faculty who may appear to lack the time or means needed to plan or assess complex projects. In addition, students might have difficulty in dealing with the learner-centeredness of PBL; in handling the teamwork or collaborative activities with the personal work (Blumenfeld et al., 1991). In addition, students in conventional classroom instruction might not be adequately equipped to handle the independence and responsibility that PBL requires (Hmelo-Silver, 2004). In Pakistan, the difficulties of introducing PBL can be compounded by lack of resources, overcrowding and conventional teacher-centric practices in the education sector (Ali, 2014). The main objective of this study is to investigate the above issues particularly with respect to the University of Narowal and consequently to generate some insights of how both the teachers and the students were able to manage the PBL complexities.

2.5 Gaps in Existing Literature and New Contributions

There is a vast body of literature on the effectiveness of PBL in Western context, although not much attention has been given towards its implementation and outcomes in Pakistan particularly in the context of teacher education. The published research has primarily dealt with the results of PBL, rather than providing guidance in its implementation and examining the problems experienced by teachers and students. Additionally, the majority of the literature has been concentrated to PBL 's effects on content knowledge, rather than skill acquisition and student motivation.

This research will fill this gap by exploring the strategies, outcomes and challenges in the successful implementation of PBL at the University of Narowal. It will be beneficial for the adaptation of PBL in the Pakistani higher education system and determining the impact on academic achievement and development of critical teaching skills of BS Education students. This review of the literature points that insight has been gained about Project-Based Learning with a focus on implementation strategies, outcomes and challenges and especially within the field of teacher training. Although PBL has been thoroughly investigated in Western world, very little research is yet to be conducted on the implementation of PBL at Pakistani universities, including the University of Narowal. This study will contribute to the wider discussion about PBL and its potential to enhance teaching and learning in higher education in Pakistan by exploring these variables.

3.Research Methodology

This study was conducted to analyze the strategies of PBL and its Outcomes and Challenges while practicing it in BS Education program will be held under Project-Based Learning (PBL) in the University of Narowal. A qualitative research design was used in this study to achieve a rich and detailed description of the phenomenon. We chose this approach since it enables us to capture participants' experiences, views, and feedback, and to get a rich and detailed picture of the implementation of PBL in a particular educational context.

3.1Research Design

This study used a qualitative research design because it allows for an in-depth exploration of the complex, contextualized nature of the implementation of Project-Based Learning. The "how" and "why" questions are the ones that could tackled really well with qualitative research, and these were the ones that the current research was concerned with, because it wanted to look into the strategy of implementing PBL, the perception of the students and teachers about it, the challenges encountered in that exercise. This approach would enable depth to be achieved in the data, thus allowing rich understanding to occur in relation to the participants' experiences.

3.2 Data Collection Methods

The research drew upon different sources of data to triangulate data and provide for the validity of the results. These were: semi-structured interviews, focus group discussions and documentation review. The use of different data sources increases the trustworthiness and the validity of the results as different views of implementation of PBL practice were covered.

3.2.1 Semi-Structured Interviews

University of Narowal faculty and BS Education students were interviewed using semi-structured interviews. The semi-structured approach gave room to the interviews

offers a more flexible handling of the interview situation letting the respondents tell more about their experiences and opinions and yet still ensures that aspects in relation to the research questions are covered. Faculty were also interviewed to explore their plans for PBL activities, and the students were interviewed to elicit their accounts regarding the effects and problems they encountered as they learned.

3.2.2 Focus Group Discussions

Small-group focus groups were conducted with BS Education students. These conversations allowed learners to come together and reflect as a group on their experiences with PBL, while also providing them an avenue to address challenges and to talk about approaches that worked for them. The collective setting also prompted discourse between peer educators thereby establishing a richer appreciation of the common experiences and the variability of views with respect to the practice of PBL.

3.2.3 Document Analysis

Content analysis of course guides, syllabus and project reports of BS Education Program from Narowal University was carried out as well. This analysis assisted in investigating the formal structure of PBL and the extent to which the project-based learning approach was embedded in the curriculum.

3.3 Sampling Strategy and Sample Size

The purposive sampling was applied to the choice of the respondents to see who had valuable inputs in the development of PBL and its implementation in the BS Education program. Twenty teachers of Department of Education and 40 BS Education students were recruited for the study. The sample size was based on having a range of experiences represented in PBL implementation.

1. **Faculty Sample:** A purposive sample of 20 faculty members (who had taught subjects with PBL components in the BS Education program) was chosen. These teachers had experience with PBL as well as its problems and difficulties.
2. **Student Sample:** Forty BS Education program students who have taken PBL-based courses were selected for interviews and focus group discussion.

The informants were chosen because they all had immediate experience with PBL and therefore could be thought to have been able to make "informed contributions to how PBL can be understood".

3.4 Data Analysis

The interviews, focus group and document data were analyzed thematically. Such an approach enabled themes and patterns across the data sets to be identified and interpreted. The analysis was conducted in a logical flow, as follows:

1. **Familiarization with the Data:** all interview and focus group transcriptions were read several times to familiarize with the data and get a good understanding.

2. **Coding:** Data were coded or labeled for analysis, organized thematically according to the research questions and themes that emerged.
3. **Theme development**: Data were then clustered into broader themes that contributed to the addressing of the research questions exploring implementation strategies, outcomes and challenges for PBL.
4. **Interpretation:** The last phase of the analysis was interpreting the themes in the light of the theoretical underpinnings of constructivism and experiential learning to provide a way for the findings to be situated in the wider educational literature.

3.5 Advantages of the Chosen Methodology

The inductive tactic offered several key benefits when addressing the research questions:

1. **Rich Description:** Using qualitative methods has provided a rich description of participants' experiences with PBL; giving us an in-depth understanding of how PBL is implemented, the outcomes that are seen in PBL, and the challenges that students and faculty face.
2. **Flexibility:** The semi structured interviews and focus groups were designed to be flexible, with participants given the freedom to answer questions from their perspective and to explore issues that were significant for them.
3. **Contextualization:** The approach allowed understanding PBL with the specific context of the University of Narowal, which is necessary to know how local factors including resources, institutional backing, student's expectations play predispose to the adoption of PBL.

3.6 Limitations

Despite the strengths of this study there were some limitations:

1. **Generalizability:** Because the study was conducted in a single university, it is unknown whether these findings are transferable to other universities in Pakistan or other countries. Nonetheless, the findings have a significance in understanding PBL at University of Narowal.
2. **Subjective:** This is a concern within qualitative research as it can be subjective to the experiences and interpretation of participants. The triangulation of data collection and material reduced this limitation; however, the high proportion of student nurses from one University could have had a constraining impact on generalizability.
3. **Resource limitations:** The number of faculty and students and sample size limitation related with time and resources.

The research method employed in this study: semi-structured interviews, focus group discussion and documents analysis, was appropriate to investigating the strategies,

outcomes and challenges of Project-Based Learning in the institution of University of Narowal. Using a qualitative methodology allowed the research to describe rich, contextual depth about students' and faculty's experiences, which will add knowledge to the larger educational discussion of PBL. However, despite these limitations, the approach successfully shaped the study framework to address the research questions and enhanced our knowledge of PBL within a local context.

4.Data Analysis

Data collected from semi-structured interviews, focus group discussions and documents was thematically analyzed. This approach was selected as it is a process for discerning and observing patterns in qualitative data for the purpose of answering the research investigation regarding the Implementation Strategies, Outcomes and Challenges of Project-Based Learning (PBL) at the University of Narowal. The analysis comprised several phases: familiarization with the data, coding, identification of themes and the subsequent interpretation. This section presents the findings in detail, according to the main themes and sub-themes that were constructed during the analysis of data by using participants' own words for support.

Theme 1: PBL implementation strategies

The first major theme of the study, on the different approaches instructors adopt to implement Project-Based Learning into the BS Education program. This theme was split down into three sub-themes- preparation and planning, student engagement and the use of technology.

Sub-theme 1.1: Preparation and Planning

One key approach reported by faculty participants was the necessity of careful planning as a precursor to using PBL. It was observed that the alignment of projects with course objectives and clear communication of student expectations were essential for the successful implementation of PBL. Teachers stressed the need for clear project goals and instructions to reduce vagueness. As Participant 3 explained:

"Proper planning is the secret weapon behind a successful PBL project. You need to match the project learning objectives to the course learning outcomes, and clear expectations from the students should be set early on."

This was shared by another faculty member also, who commented that, if students are not properly prepared to start with, they get mixed up concerning the project intentions and the results expected

Sub-theme 1.2: Student Involvement

The engagement of students as one of primary strategies for PBL was re-iterated by much of the interview data. Respondents accentuated that PBL requires moving from passive to active learning where student take authority over their learning, partake in

collaborative assignments, and link theoretical concepts to practical life. Participant 7, a faculty member, said: And so spell out.

"In PBL, students are active as the victims of that knowledge. They are actively working on collaboratively learning with peers, investigating and then solving issues based on real-life."

Results showed that active involvement does not only lead to learning at a deeper level but also to higher engagement and motivation among students.

Sub-theme 1.3: Integration of Technology

Technology integration was also cited as a critical approach for enabling PBL on numerous occasions. Both the faculty and students agreed that technology is important in supporting collaboration, facilitating research and as an infrastructural resource for sharing outcomes of projects. Participant Faculty 12 commented:

"We use technology tools such as Google Drive and presentation technology in our projects to be sure students are able to effectively work together and present their findings in a professional way."

This employ of technology was also reported as promoting communication and collaboration; even when the students were working on projects from a distance or not in the same physical space.

Theme 2: Outcomes of Project-Based Learning

The second major theme that can be drawn from the data relates to Project-Based Learning outcomes. Three sub-themes were used to organize these findings: academic growth, growth in skills, and engagement and motivation.

Sub-theme 2.1: Academic Achievement

Participants (both faculty and students) noticed marked academic progress when involved in PBL. Students were then observed to think more deeply about content and apply their understanding in different contexts. "The students are so incredibly thoughtful in their responses" Faculty participant Participant 5 described:

"I find that students who engage in project-based learning do better because they are able to put into practice what they've learned in a real-world situation, thus helping to solidify theoretical learning.

The results were supported by students who reported that PBL had given them a more in depth and applied knowledge of the subject.

Sub-theme 2.2: Skill Development

The study also found that PBL supported the development of a number of key skills aside from academic success, such as critical thinking, problem solving, teamwork and communication in practice. There was also a perception among faculty that through working on projects students built skills that were relevant in both a school context

and in future work. When I´ve been to Spain, and there´s a flood of stuff that takes forever to clean. Participant 18: student.

"I have been able to learn skills that have gone beyond academics in these projects. I have learned how to work in a team, to manage my time, and to solve problems on a deeper level. Those are skills I know I'll use in my future work."

Improvement of these skills was reported to be one of the main advantages in PBL and increased students' capacity to work autonomously and in teams.

Sub-theme 2.3: Motivation and Engagement

Higher motivation and engagement of students was recognized by teachers and students as a main effect of PBL. The more active hands-on extracurricular format of PBL projects were recognized as better connected to students because it made the learning more interesting, which in turn encouraged higher participation and interest. Student Participant 11 wrote: Ameliorating the Affective Nature of Text While I was reading, I printed of a number of pictures that I thought would help me when I studied that concept later on.

When we do a project it's like we are actually solving a real problem, so I'm more interested in what I'm learning from that. I'm not just memorizing stuff; I'm doing something with the knowledge."

Such high engagement was regarded as indicative of a key factor in at-risk students' academic success and positive attitudes towards their learning.

Theme 3: Challenges of Implementing Project-Based Learning

The third theme deals with the difficulties faced in Project-Based Learning. Three sub-themes were generated in this category including limited resources, assessment challenges, and student readiness.

Sub-theme 3.1: Resource Constraints

One major problematic issue which was signaled both by faculty and students was that insufficient resources were devoted to properly support PBL. This was due to having minimal access to physical resources, technology resources (hardware/software), and funding that were regarded as necessary in supporting successful project-based learning practices. As one faculty member (Participant 2) mentioned:

"Our funding is very limited; we don't have supporters willing to provide us with the support we would need in order to carry out PBL to the degree we would like. Occasionally, we use free online tools, but not every student has the same access to technology, which can lead to uneven project results."

This lack of equal access to resources was recognized as a problem to be solved in order to make PBL accessible to all students.

Sub-theme 3.2: Assessment Difficulties

Another major issue that was considered to be a challenge was the problem of evaluating PBL projects. Faculty reported that PBL assessment was more subjective than traditional testing. Assessing the process or product involves a more subtle judgment about the quality of student contributions. Participant 8 explained:

"Evaluating projects is challenging for us because we have to evaluate not only the end product but also the process. It is subject to far more subjectivity than the most traditional kind of testing, and that can yield wide disparities in grading."

This difficulty in rating was characterized as a significant disadvantage for teachers especially for ensuring equitable and comparable grading.

Sub-theme 3.3: Student Preparedness

Some faculty participants were concerned about the preparedness of students for the self-paced nature of PBL. Independents were a challenge for many students as they were not used to more teacher-centered learning. Participant 4, a faculty member, said:

"PBL demands a lot of autonomy from some students. They're used to being told what to do, but in PBL they are working independently and having to manage their time. This lack of preparation is a detriment to victory."

This shortfall indicates the necessity for more scaffolding to support learners in developing the competences necessary for self-regulatory and project-based learning.

Theme 4: Recommendations for Improving Project-Based Learning

The final category which emerged out of the themes was the suggestion regarding the better facilitation of the implementation of PBL at University of Narowal. This theme comprised three subthemes: improved faculty training, more effective resource utilization, and increased support for students.

Sub-theme 4.1: Enhanced Training for Faculty

The most common suggestion was the request of more professional development for teachers. It was highlighted that best practices on PBL skills training would make projects more effective in schools. Participant 10 suggested:

"I think more training on PBL would be useful. PBL best practices are not known to all teachers, therefore workshops or training sessions would better foster overall implementation."

Sub-theme 4.2: Better Resource Allocation

It was suggested by both the teachers and students that resources need to be more effectively directed in order to support successful PBL. This would have involved additional funding for technology and project materials, that would have made for more effective project-based learning opportunities. Participant 3, a faculty member, described: It was one day when the first year students had to do an anatomy class.

"Improving access to technology and materials would go a long way in determining how well PBL projects can do. It's difficult to ask students to collaborate on real-world problems without the right instruments."

Sub-theme 4.3: Improved Student Support

Finally, students recommended better support for students in PBL. Mentoring, project-orientation, and other academic assistance were considered crucial to achieve better student success. 15 Student Participant stated:

"It would be nice to have a mentor or advisor throughout the project. Other times we feel lost or overwhelmed by the demands of our work. More infrastructure would make it better."

The findings of the data analysis provided key insights on the facilitators, outcomes and difficulties about the implementation of Project-Based Learning at Narowal University. Key strategies for successful integration of PBL included preparation and planning, student engagement and technology use, as identified by faculty and students. PBL results were mostly positive in terms of academic learning, development of skills, and motivation. However, challenges like shortage of resources, assessment problems and student's preparation were also recognized. Suggestions offered by participants recommend that increased training of staff, allocation of resources and more support for students may help more effectively implement PBL at the university.

5.Discussion

The purpose of the study was to investigate the resources that are required for the development of implementation strategies and outcomes and challenges of Project-Based Learning (PBL) in teaching practices: A case study of BS Education students of the University of Narowal. The research took a qualitative approach using semi-structured interviews conducted with faculty and students, focus group interviews and document analysis. The themes that have emerged from the data analysis are now discussed in relation to extant literature, SCT and the aims of the research.

5.1 Implementation Strategies of Project-Based Learning

The findings demonstrated that the faculty of Narowal University is using various strategies for the implementation of Project-Based Learning which confirmed the best practices narrated in literature. One central strategy that emerged was preparation and planning. Faculty stressed that projects need to match course goals and expectations must be clearly communicated. This accords with work by Bell (2010), who suggested that PBL must be underpinned by definite project goals and instructions. Participants also highlighted the significance of planning as without effective preparation students can be left bewildered as to the objectives of the project and this has the potential to disrupt their acquisition of learning outcomes.

Another tactic that came up were students. Active student involvement is a key characteristic of PBL, which the University of Narowal faculty members realized that PBL would make students responsible for their learning, work collectively with their classmates, transfer the learned concept into the practical life through real-life experiences. This result is congruent with the observation of Blumenfeld et al. (1991) who suggested that active engagement in projects results in better learning. Students' reflections further indicated the hands-on, group nature of PBL helped their knowledge-building and involvement, a finding consistent with Piaget's (1976) theory of constructivism that students' own experiences promote internalisation of information and skills.

Finally, the embedding of ICT was found to be a key approach to promote PBL. Faculty pointed to the influence of digital resources such as Google Drive and presentation software in facilitating teamwork and facilitating project work. The use of technology in PBL is also supported by the study of Kolb (1984), who believed that technology is a means of remedying learning deficiencies and provides opportunities for the grassroots level students to present their projects in a more professional way. That shows how technology in schools is gradually being seen as a more viable way to help get more engagement from students, and promote student collaboration in a digital world.

5.2 Outcomes of Project-Based Learning

The results of PBL found in this research were similar to the general literature of PBL and its effect. The most important result we found was increased academic development. Both faculty and students mentioned how they noticed that students who had been through PBL process I had gained better insight into material that was then harnessed to solve real world problems. This result is in consonance with Bell's (2010) study in which he notes that PBL assists to strengthen theoretical content as students are compelled to apply these in practical contexts. Also, linking theoretical knowledge to practical use was found to play an important role in students' better performance.

PBL was shown not only to promote academic gains, but also to help to develop critical skills. These are skills like critical thinking, problem-solving, collaboration and communication. Faculty and students both perceived PBL to be helping the students develop their core competencies, a great deal of which could be further used in professional environments, as well as educational ones. This result is in keeping with Kolb's (1984) experiential-learning theory, which emphasizes that active, reflective learning experiences foster life skills that are fundamental to personal and professional development. In addition, the acquisition of these skills is consistent with

the mission of higher education to equip students with the competencies that they need to take on real-life challenges.

The research also pointed to a marked improvement in motivation and engagement of students who were engaged in PBL. Students commented that they felt they were doing more of something meaningful and interesting when working on projects vs. traditional instructions. This potential boost in motivation is consistent with Bandura's SCT (1986) that contends that motivation is a result of how tasks are valued and when opportunities for self-regulation and mastery is present. The more students believe they are addressing meaningful real-life problems with their classmates, the more engaged and motivated they tend to stay.

5.3 Challenges of Implementing Project-Based Learning

Despite the great success of PBL, there were a few problems faced in implementing the PBL at University of Narowal. Lack of resources Obviously, resources also emerged as a big problem where faculty and students said lack of physical resources, technology and financial resources were hindrances in the full- blooming of PBL. This result is consistent with the difficulties reported by Bell (2010) and supported that resources are important factors to implement PBL. The university also lacked the adequate facilities to execute projects, which involved sophisticated equipment and access high-standard research materials. As participants expressed, wider accessing inequality of technology amongst students made the issue further complicated and led to inequality in learning.

Difficulty of assessment was also a top challenge identified. The subjective nature of PBL project evaluation regarding process and product was a difficult aspect for faculty to grade fairly and consistently. This issue is in accordance with what is presented in the literature, where researchers have drawn attention over the difficulty in developing reliable and valid instruments for project-based learning (Blumenfeld et al., 1991). Faculty members identified a desire for greater standardization and frameworks for assessing student contributions to PBL, insisting such assessment should both distinguish between, and include, individual and group work.

Another barrier was student readiness for self-regulation of learning in PBL. Faculty members reported that some students had difficulty with time management, working with peers, and being accountable for their learning. This corresponds with earlier warnings by Kolb (1984) that: despite its potency disabled students have to be very actively self-reliant to benefit from experiential learning. Student readiness challenges indicate that more scaffolding and support is required to better prepare students with the requisite skills to be successful in PBL.

5.4 Recommendations for Improvement

On the basis of the results, a number of recommendations were recommended by faculty and students to improve the practical implementation of PBL at University of Narowal. Additional faculty training also was one of the primary recommendations. A need was expressed by the faculty for the provision of additional professional development opportunities on PBL strategies to effectively employ PBL. This is consistent with Blumenfeld et al. (1991) who highlighted the need for successful PBL not only depend on student's learning, but also teacher preparation. Another piece of advice was more efficient use of resources. Both faculty and students emphasized the importance of access to the technology, research materials, and resources for projects. The need to possess sufficient resources for successful PBL has been well documented, an issue that this study reinforces and suggests that universities continue to invest in resources that enable collaborative learning and hands-on problem-based educational activities. Finally, enhanced student support was also suggested, especially the provision of advice in project management and additional mentoring during PBL. This suggestion is consistent with SCT as SCT proposes that social support contributes to motivation and self regulation. Giving more explicit support, universities can assist students in funding (completing the task with the skills and understandings it was designed to require) for PBL and ensuring that students can ciphering the work that is expected of them during their learning.

5.5 Conclusion

The research revealed that PBL has many benefits for students of BS Education at the University of Narowal in terms of academic achievement, skill development, motivation and engagement. However, various obstacles were revealed; such as material limitation, evaluation complication, and student unpreparedness. Their overall implications indicate that despite the potential of PBL to improve teaching and learning practices, careful planning, enough resources, and effective support systems for staff and students are required for a successful implementation. The suggestions provided in this paper will be helpful to tackle these problems and to make PBL more effective at University of Narowal. By combining the findings of the data analysis and by grounding them in Social Cognitive Theory, this study adds to the literature on Project-Based Learning at higher education level, offering recommendations for further implementation of PBL in this kind of educational context.

5.6 **Recommendations**

In light of the present study, the six suggestions are recommended to enhance the practice of PBL at University of Narowal:

1. In order to optimize the effective implementation of PBL, it is suggested that faculty be trained on PBL methodology, student-centered teaching and

assessment. Such training would require training faculty on how to promote and manage projects and guide students through challenging tasks, as well as assess projects using explicit rubrics that incorporate both process and product evaluations, much like that which routinely occurs in innovation, playwriting, engineering, and theater.

2. The study showed that scarce resources severely impeded PBL adoption. Thus, it is advised that the university provide adequate resources such as modern technology (e.g project management software, multi-media tools etc.) and physical facilities fop project implementation. This will allow students and faculty to effectively participate in collaborative learning experiences and produce high caliber project work.
3. To deal with subjectivity in PBL assessment, standardized rubrics specifying explicit standards for individual and group performance need to be devised. The assessment rubrics should include the final product as well as the processes—teamwork, problem-solving, time management, and so on. Distributing these rubrics ahead of time will guarantee fair, and equitable grading.
4. Because of the difficult process in self-directed learning for students with regard to PBL, the university should provide organized supports in mentoring and continuous guide in the development of the project. Faculty should keep checking in with students to assess their progress, provide input and troubleshoot barriers. Moreover, establishing peer mentorship initiatives will help students through shared learning opportunities.
5. The university should perhaps conduct workshops on project management, time management, and working in groups. These workshops will provide students with the necessary tools to efficiently run their project, work as part of a team and to rectify any conflicts that occur in the project process. This will lead to higher level of student participation and success in PBL.
6. To cultivate a collaborative environment of study, the university also needs to develop and design collaborative spaces, the likes of group study rooms, project-based workspaces and flexible classrooms. These spaces will be designed to promote the students to group chat, to have brainstorm with one another, to do projects together and easy them to interact more and work in teams. Creating physical environment for cooperation will make students' lives easier. By constructing the space that encourages teamwork the university will be more facilitative for PBL.

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