

Problem-Based Learning—An Exploration of Teachers' Concerns in Hong Kong SAR Secondary Schools

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Abstract

Problem Based Learning (PBL) has been implemented as a student-centred approach in various educational environments. This research study examined the implementation of PBL in Citizenship, Economics and Society (CES) curriculum in a secondary school in Hong Kong SAR (HK SAR) focusing on the concern of the teachers when teaching under the PBL approach. The study employed a mixed-methods approach; the study incorporates interviews, field notes and questionnaires. The findings of this study indicate that students were engaged in learning under the PBL approach. However, concerns were raised regarding the time-intensive nature of PBL and its appropriateness within the curriculum, particularly in relation to the DSE curriculum and low-achieving students. Additionally, the findings revealed that the implementation of PBL increases the workload for teachers, necessitates additional time to encourage student participation, and may not be well-received if employed too frequently. Therefore, departmental support in the preparation of materials and the development of suitable teaching methodologies is crucial. Despite the expressed concerns from teachers, the results of this study provide substantial evidence to advocate for the integration of the PBL approach in lessons.

Keywords

Problem Based Learning, Traditional Teaching Method, Student Engagement, Self-Directed Learning, Chinese Learners, Hong Kong SAR Diploma in Secondary Education

1. Introduction

In 2000, the Education Commission presented a reform proposal for the education system in Hong Kong SAR to the government, advocating for the promotion

of lifelong learning. This initiative arose from concerns that students in Hong Kong SAR (HK SAR) were not afforded comprehensive learning experiences and had limited opportunities for critical thinking, exploration, and creativity. To address these deficiencies, the government recognised the necessity of dismantling outdated traditional pedagogical approaches and establishing a new, student-centred education system. The purpose of this study was to examine the effectiveness of PBL as a pedagogical approach from teachers' perspectives and to identify teachers' concerns when adopting it.

The Citizenship, Economics and Society (CES) Curriculum is one of the curriculum guides developed by the Curriculum Development Council (CDC) for junior secondary education. It supersedes the Life and Society Curriculum Guide (Secondary 1 - 3), which was first promulgated in 2010. This revision was necessitated by the rapid development of various aspects of the world, as well as changes occurring in the nation and wider society¹. The aims of the curriculum are to facilitate students' personal growth and help them cultivate positive character, enable them to understand their roles and responsibilities as members of society and the country, and nurture them to become informed and responsible citizens.

The setting of this study was in a HK SAR secondary school, where the participants were native Cantonese speaking Chinese students. Cantonese is a dialect, which is commonly used in Guangdong province, China as their mother tongue. Many authors believe that majority of the Chinese students are introvert learners, and have pointed out that this is due to the Asian culture, as well as contextual and systemic perspectives (Wong, 2004; Lee & Mok, 2008). Most of the students preferred to only listen to the teacher's explanation. When the teacher ask questions, they would not have an initiative to answer the questions. They will only answer the questions when their names are called. Confucianism a dominant force in traditional Chinese. They are often brought up to respect knowledge and wisdom; as part of their cultural upbringing; they have been socialised to respect teachers or anyone at high authority, those who provide them with knowledge (Chan, 1999; Meng et al., 2024). Chinese students are then often considered as overly reliant on their teachers and hesitant to ask or answer questions or voluntarily participate in discussion (Blidi, 2016). Therefore, teachers have to devote substantial time to encourage students to participate in discussions or to think of questions to ask.

An important aspect of engaging students is their ability to practice self-regulated or lifelong learning behaviours to define what to learn and to effectively use the time and resource management needed to learn it (Smith et al., 2005). Wisdom in the process of PBL is that no one has special authority over the use of knowledge (Wang et al., 2001). Therefore, the students can take turns to play different roles as a group member, teacher, critical thinker, or learner. Wang (2018) claimed that intrinsic motivation occurs when students work on a task.

¹Curriculum Development Council (2024) EDB, HK SAR.

This study aimed to explore whether, by introducing PBL could reduce the teachers' workload in encouraging student participation.

2. Literature Review

Learning in the 21st century has increasingly become student-centred, aiming to develop cognitive and socio-emotional skills that are relevant for a constantly evolving world. In this context, Problem-Based Learning (PBL) emerges as a prominent pedagogical approach (Dias & Sasaki, 2025). The approach to learning requires students to take an active role in the learning process, starting with a carefully designed problem statement that challenges students to use problem solving techniques. Students are asked to identify what they already know, what they need to know, and how and where to access new information that may lead them to solve the problem. It is claimed by Han et al. (2015) and Kokotsaki et al. (2016) that during the process, students develop flexible knowledge, effective problem-solving skills, intrinsic motivation and ultimately self-directed learning (SDL) skills. PBL, then, is a form of education characterised by a student-centred, small group setting in which learning is driven by realistic but ill-defined problem statements (De Graaf & Kolmos, 2003). Teachers using the PBL approach will adopt different roles compared to a more Traditional Teaching Method (TTM) approach; they are less concerned with what and how they are teaching; rather, they are observing, listening, stimulating, and facilitating student learning. Under the PBL approach, teachers need to be supportive and directive. Schneider (2017) supports students by influencing them through scaffolding techniques to ensure they are engaged and contributing to the group.

In exploring the adoption of PBL approaches amongst HK SAR Chinese students, Hung (2006) argued that there is a limited appreciation of PBL to date in HK SAR schools as teachers are adamant that PBL is expensive, inefficient and time consuming; arguing that it takes more time for students to achieve the desired learning outcomes. Additionally, they argue that PBL is less effective compared to TTM because it provides limited guidelines to students, who often lose motivation as learning outcomes are not clear. While Zeng et al. (2015) argued that studies have shown that the academic achievements obtained using PBL are higher than those obtained using TTM, it is important to acknowledge that PBL puts greater demand on teachers, teaching time, learning space, further increasing burdens placed on teachers. Therefore, PBL may seem less desirable than TTM to teachers in HK SAR.

This research study aims to investigate the impact of the PBL approach on teachers in a junior secondary curriculum in Hong Kong SAR. The research questions are:

- 1) What effects does a PBL approach have on the teaching style of CES teachers in Hong Kong SAR?
- 2) What impact does the PBL approach have on the students' engagement in learning CES in Hong Kong SAR?

3. Research Methods

The research design for this study was an interpretive, single case study, adopted a mixed methods approach. The rationale for combining qualitative and quantitative approaches was to enhance the overall validity of the study, as it allowed the emergence of confirmatory and exploratory questions and provided inferences that could confirm or complement each other (Denzin & Lincoln, 2011; Miles et al., 2018). In this research study, the qualitative methods used included semi-structured interviews and field notes to help answer “how” questions and a quantitative questionnaire, which focused on gathering numerical data to offer further information to explore the phenomenon (Earle, 2010).

In this case study, the school is a Direct Subsidised Scheme (DSS) secondary school in HK SAR that had a great flexibility in deploying resources. However, it has limited flexibility in designing its own curriculum, as CES teachers are required to adhere strictly to the national curriculum. Consequently, teachers have very limited scope to adjust their curriculum design. The teachers usually undertake 13 to 16 teaching hours per week and every Friday they undertake staff development sessions, involving co-planning for lesson preparation, sharing sessions, team building activities and workshops.

The target population for this study was Year 9 (secondary 3) students as students at this age (14 - 15 years old) are more willing to experience different approaches to senior secondary students, who are more focused on grades due to public examination pressures. HK SAR has an examination-oriented culture (Coniam & Falvey, 2016). Students in this school were considered passive in the classroom but displayed good subject knowledge and demonstrated strong academic performance.

There are 5 classes in Year 9 grouped with students of mixed ability in each class. Out of the 5 classes, 3 were selected for PBL teaching, 1 class for TTM as a control for comparison and 1 for a pilot study. Table 1 below shows the allocation of students for this research study. In each PBL class, which consisted of 38 - 40 students, students were split into 5 smaller groups, each group consisting of 5 - 6 students of mixed ability in CES. Students' abilities were labelled based on their scores in previous CES examinations as shown in Table 2 below. Those scoring 0 - 49 marks were labelled low achievers, 50 - 69 were labelled middle achievers, and those scoring 70 - 100 were labelled high achievers. Class A, B and C were taught using the PBL approach as both teachers Simone and Prabs (names of the teachers are pseudonymised), who had attended PBL workshops; Class D was taught using the TTM approach and Class E participated in the pilot study. After the delivery of the PBL programme, both teachers were invited to participate in a semi-structured interview. Additionally, 8 CES teachers from the same school were invited to complete a teacher's questionnaire.

Total 10 CES teachers from the same school were selected to complete the teacher questionnaire. These teachers have participated in the PBL course and apply the PBL approach in their lesson, both continuously and as required.

A well-documented stage in a problem-based learning (PBL) approach is provided by Brown (2004). Hung (2006) proposed a modified PBL design process grounded in the 3C3R problem design model, comprising core components and processing components. Table 3 presents Hung's 3C3R design model as applied to the development of the problem statements used in this study.

Table 1. Research sample.

Classes	No. of Students	No. of Groups per Class	No. of Students in each Group	Teachers
Class A-PBL A	38	5	7 to 8	Prabs
Class B-PBL B	40	5	8	Simone
Class C-PBL C	38	5	7 to 8	Researcher
Class D-TTM D	38	Nil	Nil	Researcher
Class E-Pilot Study	40	Nil	Nil	Amy

Table 2. Students abilities in CES.

Marks	Students Abilities	No. of Students
0 - 49	Low Achievers (L)	14
50 - 69	Middle Achievers (M)	85
70 - 100	High Achievers (H)	17

Table 3. Design model [adopted from the 3C3R model: a conceptual framework for designing problems in PBL (Hung, 2006)].

Components	Functions
Content	Covering curriculum contents
Context	Appropriateness of problem context
Connection	Forming a conceptual framework about the topic
Researching	Guiding the research process to acquire intended content
Reasoning	Adjusting the level and information appropriate to the students
Reflecting	Cultivating the students' mindset of self-directed and life-long learning

This study was conducted in two Phases: Phase I gathered qualitative data with 2 teachers and Phase II gathered quantitative data from 116 students and 10 teachers. Table 4 provides information about the interview participants. To respect the participant's privacy, pseudonyms were used instead of real names.

Table 4. Interview participants.

Data Collection Method	Pseudonyms	Gender	Class
Teacher Interview	Prabs	F	PBL Class-A
	Simone	F	PBL Class-B
			PBL Class-D

Interviews with 2 teachers was held separately upon completion of all PBL sessions. The time slot for each interview was selected carefully to ensure the teacher

did not have a lesson for 2 hours as that allowed enough time for the interview. During the interview, I encouraged the teachers to talk or even ask and give suggestions such that they have ownership of the discussion and it also helped me to have a better understanding of what was said.

For the teachers' questionnaire 5 questions were designed. I personally distributed printed questionnaires to all 10 teachers upon the completion of this research study. Teachers were not required to provide any information about their identity in their response to ensure confidentiality. **Table 5** shows the questions in the teachers' questionnaire.

Table 5. Teachers' questionnaire.

1.	PBL is time consuming in terms of lesson preparation.
2.	PBL is time consuming in terms of lesson delivery.
3.	PBL lead to classroom management issues.
4.	Students are reluctant to speak up.
5.	I prefer PBL approach as a teaching pedagogy.

A thematic analysis was undertaken of the qualitative data and descriptive statistics was used to present the quantitative data.

4. Findings

This section presents the research findings and discussion of this small-scale study on difficulties encountered by the teachers when implementing the PBL approach in CES lessons.

Theme: Teachers' Concerns under PBL Approach

During the discussion and interview, participating PBL teachers indicated that they perceived several disadvantages when adopting the PBL approach. They found the PBL approach time consuming and not suitable for the exam-oriented and over-packed local Diploma for Secondary School Education (DSE) curriculum.

Below is an extract from a teacher interview:

Simone: The focus of CES is mainly on content delivery, with limited flexibility to make any adjustments. As a result, time is a major constraint. There is not enough time to use the PBL approach frequently. It also requires a significant amount of extra work, which makes it difficult to apply regularly, especially when we are rushing to complete the curriculum and teach the required exam skills. Furthermore, most students have weak English proficiency, and vocabulary is already challenging for them.

- Recorded in Field Note, 3rd May 2026.

Below is an extract from a teacher interview:

Researcher: What are the factors affecting you to implement the PBL approach?

Prabs: The curriculum content is too broad. If I use PBL frequently I am con-

cerned that I will not be able to complete the syllabus before the examination. Furthermore, since most of the classes have more introvert than extrovert students. It takes extra effort and time to ensure they understand as when I asked questions to students in an attempt to test their understanding toward the materials they take time to respond.

As shown in **Table 6**, this study indicates that 9 teachers strongly agreed and only 1 teacher disagreed that PBL is time consuming in relation to lesson preparation. When asked if PBL is time consuming in terms of delivering the lesson, all respondents selected either strongly agreed or agreed. Overall, these findings support the conclusion that PBL is time consuming. The result suggests that teachers view PBL as increasing their workload.

Table 6. Is PBL time consuming.

	PBL is time consuming in terms of lesson preparation	PBL is time consuming in terms of lesson delivery
Strongly Agree	9	9
Agree	0	1
Disagree	1	0
Strongly Disagree	0	0

In the interview, teacher Simone was asked to share the behaviour of the students in her lesson. As my TTM class was noticeably quieter compared to my PBL class. Simone commented that Student-centred teaching approaches are not easy to implement in the classroom if teachers do not have enough guidance or support, they can easily fall into the trap of thinking that just because these approaches are interesting and engaging, students are learning the things they need to learn. Students could be discussing other things irrelevant to the problem statement and not be focused at all on the task. Simone's comment points out that under PBL approach, teachers must keep monitoring to ensure students are working on the problem statements and are going in the right direction.

Under the PBL approach, students are allowed to discuss and work in groups, therefore, classroom management can become a challenging for some teachers especially new teachers. This could explain why this approach is widely implemented. When students are allowed to sit in groups they may interpret the activity as an opportunity for socialising rather than learning. Teacher Prabs expressed the following concern in the interview.

Prabs: Once students are allowed to sit in groups, they take the lesson less seriously, start socialising, and I have to keep reminding them to focus on their work.

Teacher Prabs and Simone both agreed that to implement the PBL approach effectively, the main focus should be on a developing a well-constructed problem statement. Hence, the subject and pedagogical knowledge of the teacher is very important as it enables them to design problems related to the students' prior knowledge. This aligns with Prosser et al. (2005), who found that educators who

had a more holistic understanding of their subject matter tended to emphasize their role in supporting students' acquisition of conceptual knowledge, rather than just having students be recipients of content delivered in a didactic format. Both teachers also reported that they found it difficult to strike a balance when constructing problem statements suitable for independent learning. The following is an extract from teacher interviews illustrating difficulties teachers face in implementing problem statements.

Prabs: Generating problem statements was time consuming and I feel creating a meaningful and authentic problems was exceedingly difficult. Teachers were not confident about making changes to the worksheets but used the worksheets provided by the publisher. This approach was also influenced by government instructions to limit changes to worksheets. In addition, publisher materials are reviewed and proofread by the EDB (Education Department).

Simone: Yes, regarding the problem statement. Firstly, I was not sure how ill-structured the problem statement should be or how much information should be given to the students as the students are diversified in abilities. As more ill-structured the problem statement is less appealing it is to the students.

Additionally, teachers raised concerns regarding the amount of time required for teachers to equip themselves with good content knowledge of the curriculum.

Prabs: CES consists of various topics. Hence, having a Geography background, I am not very confident in teaching contents related to Economics. Surprisingly, both teachers reported that students did not find learning under the PBL approach exceedingly difficult. It could be because follow up worksheets were provided specifically to cater to the needs of low achievers and working in small groups allows peer support.

Researcher: Did you achieve the learning objectives under PBL?

Simone: Most of the time, yes. Even though low achievers could benefit from project learning. This approach enables certain topics to be exempted from formal exam and instead be delivered through project learning activities. Time isn't enough because we only have lessons once a week. About 10 minutes are spent recalling what we learned in the previous session, which makes it feel like we're in a rush to finish the syllabus. On top of that, implementing PBL becomes challenging

Table 7 indicates that 4 teachers disagreed, and 6 teachers agreed that PBL leads to a noisy classroom and requires extra effort in managing. Nevertheless, the findings also demonstrate that there was a clear reduction in classroom management issues such as engaging in unrelated activities or exhibiting inattentive behaviour such as sleeping or day dreaming in the lessons.

Overall, the result collected suggests that because students are more actively engaged in the lesson activities, as noted previously, PBL may contribute to fewer classroom management problems, despite the potential for increase noise levels and need for more teacher intervention to discipline the class.

Teachers were asked whether Hong Kong SAR students are reluctant to partic-

ipate verbally in classrooms discussions as an indicator of student engagement. The data collected as shown in **Table 8** indicates that 5 teachers agreed, and 3 teachers strongly agreed that students hesitate to speak up in class. Furthermore, some teachers highlighted in the qualitative comments that students required more encouragement to develop the confidence for active participation in the classroom.

Collectively, these findings indicate that teachers should make further efforts to promote students' willingness to engage verbally, particularly by strengthening supportive classroom practices that foster confidence and participation. Hence, it could be concluded that extra effort is required by the teachers to encourage students to speak up and share their findings.

Table 7. Classroom management due to cooperative learning.

PBL lead to classroom management issues	
Strongly Agree	0
Agree	6
Disagree	4
Strongly Disagree	0

Table 8. Reluctancy of students to speak up.

Students are reluctant to speak up	
Strongly Agree	3
Agree	5
Disagree	1
Strongly Disagree	1

In **Table 9**, the result indicates most participating teachers support the use of PBL as a teaching pedagogy (2 teachers strongly agreed, and 7 teachers agreed). It could be argued that despite increasing the teachers' workload, most of the teachers still perceive PBL as preferable to TTM. As they find that students were generally more engaged however, comparatively few students were willing to volunteer responses without being prompted.

Table 9. PBL as a teaching pedagogy.

I prefer PBL approach as a teaching pedagogy	
Strongly Agree	2
Agree	7
Disagree	1
Strongly Disagree	0

Teachers generally expressed positive attitudes toward implementing PBL, despite the increase in workload. The findings from study also suggest that PBL may

not be suitable for frequent use in this context, given the densely packed and predominantly exam-oriented nature of the Hong Kong SAR curriculum. In addition, some students reportedly experienced difficulties in preparing and revising for quizzes and examinations, which may indicate limits to the feasibility of regular PBL implementation under current curricular and assessment demands.

5. Discussion

The findings of this study support the finding of Doppelt (2009), who identified potential concerns that teachers may encounter when implementing the PBL approach. Doppelt (2009) argued that the PBL approach can be time consuming and substantial support is needed to assist teachers with lesson preparation. Similarly, the evidence from this research suggests that most teachers in this research study reported that the preparation of teaching materials and the delivery of lessons require considerable time when applying the PBL approach. For instance, when students were asked questions they intended to speak in a soft voice and avoiding eye contact. In fact, it could be seen that students experienced feeling fear of teacher due to the fear of expressing ideas or delivering answers.

Moreover, the teachers in this research study, teachers indicated that setting project topics or problem statements were frustrating.

These results align with Hung, Mehl, & Holen (2013), who argues that if the problems are so vague or difficult that the students do not even know where to begin and therefore have to be laboriously guided by the facilitator. Under such circumstances, here could be a risk that the students might develop a dependency on the facilitator for guiding them through the PBL process. Murray-Harvey & Slee (2000) have emphasised on the importance of involving a greater number of teachers in lesson preparation. This does not only foster a greater sense of ownership but reduce challenges when transitioning to PBL based approach.

Furthermore, the data from this study indicate that most teachers regarded PBL approach not suitable for an overpacked core curriculum for non-native English speakers to learn in English, which influences the teacher's choice of pedagogy. To encourage students to speak up confidently and frequently, the teacher had to permit students to use more Chinese orally.

The evidence from this research study shows that teachers' choice of pedagogy will tend to be narrowed to address the perceived imperatives of the mandatory curriculum, which echoes the findings of Tan et al. (2000), who argued that formal curriculums could constrain the open-ended learning of the PBL approach.

The feedback from the teachers in this study also suggests that they identified several benefits of adopting a student-centred learning approach. This was consistent with their understanding of PBL as constructivist pedagogy (Brown & King, 2000).

6. Conclusion, Limitation and Future Research

The size of this research study is relatively small sample size. It was conducted in

one of the DSS schools in Hong Kong SAR serving English as the medium of instruction. Accordingly, further research needs to be conducted in wider range of school settings such as Chinese medium of instructions or Aided schools (government schools) or other subjects in order to develop a deeper understanding of secondary school students' achievement under PBL. Moreover, the results could vary developing under the influence of other cultures such as western culture.

In addition, more extensive and in-depth form of evidence such as examination results should be collected to understand whether PBL can effectively increase the knowledge of the students. To broaden and improve the comparisons future studies should be incorporate control conditions to examine potential differences across various groups.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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