PBL Language Case-Crafting Model (PBL-LcCRAFT): A Guide to Craft PBL Language Cases

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April 1, 2018

Abstract

In Problem-Based Learning (PBL), case/problem is the central to learning. Being an approach, which is very popular in medical and content-related fields, PBL is not widely used in languages. Scarcity of ready-to-use PBL cases for Languages, absence of language case-design model and limited knowledge among practitioners on the feasibility of PBL approach in languages are some of the reasons for the unpopularity of PBL in language learning context. Thus, the purpose of this study was to create a specific PBL case-design model to craft PBL Cases for Languages (i.e. General English Proficiency Course) using 3C3R case-design Model (Hung, 2006) as the basis. An action research methodology was adopted in this study in which the four steps (planning, action, observation and reflect) were closely followed within two cycles of the action research procedure. A group of English language practitioners from a public university were the participants in this study. The teacher-participants experiences and challenges in crafting cases using the 3C3R.
model were gathered through observation checklist, focus group interviews, artefacts and professional discussion with PBL expert. Data collected were then analyzed using content analysis for emerging themes. Findings revealed that modification to the model used is needed to suit the needs of language practitioners in crafting cases for language classroom use. The new model incorporated all the key components needed to craft language cases for the aim of language practice and soft skills enhancement namely affective angle, language skills, ill-structuredness, context, researching, reasoning, reflecting, connection and language in-use. A new PBL case-design model for languages known as PBL-Language Case Crafting (PBL-LcCRAFT) Model was the outcome of the study. This model is a significant contribution in the field of non-content subjects like languages specifically in encouraging the use of PBL in languages and meeting the need of the 21st century language classroom. Hence, PBL-LcCRAFT is not only expected to guide English Language practitioners who have limited case-design knowledge but also practitioners teaching other languages, to craft PBL cases to meet their language learning objectives.

Key Words: Problem-Based Learning (PBL); PBL Case-Design Model, PBL-Language Case Crafting (PBL-LcCRAFT) Model; Action Research

1 Introduction

The essence of PBL is learning around problems / cases rather than discrete subjects (1). Students work in groups/teams to solve an ill-structured problem / case and not required to acquire a predetermined series of right answers. The ill-structured problem presented in PBL requires learners to engage with a complex situation presented to them and decide what information they need to learn and what skills they need to gain to manage the situation effectively. Thus, PBL reflects the real-world scenario because the ill-structured problems encountered by learners are the potential type of problems learners might encounter in the real world where there will not be any predetermined solution or right answer. All that matters in this kind of learning is the ability to produce the most
viable/possible solutions or options for the presented problem.

2 Literature Review

In examining the research on PBL, a majority of studies have focused on various implementation and learning outcome issues, such as the roles of tutors (2), students perceptions (3), group size (4), group processing skills (5) and the rate of board exam passage (6, 7). Somehow, the concerns surrounding the design of cases seem to have received little attention. A few researchers (8) have discussed the design of PBL cases. Yet, the discussions are rather general and, therefore, inadequate in providing educators and practitioners with the conceptual framework needed to design effective PBL cases. (9) contended that the case itself is the key to the success of PBL (9). To investigate the effectiveness of PBL problems/cases, (10) analyzed the correspondence between the instructors intended objectives and the student-generated learning issues based on their interpretations of the PBL cases. They found that only 64% of intended content was identified in the student-generated learning issues. Hence, without assurance of the quality of problem or intended aims being met, the effects of PBL are unpredictable and questionable. Drummond-Young and Mohide (11) proposed an eight-step PBL problem development process specifically designed for nursing education, which unfortunately rendered the process too domain specific to be used in a wider range of contexts.

Within the area of second language learning and teaching, problem-based learning aligns with approaches in which students learn the target language by using it, rather than being presented with and then practicing predetermined language structures (12). To maximize language learning outcomes, ESL practitioners need to prepare students for the language demands of the problem-solving activity. Activities to prepare students vary depending on their proficiency levels. These may include pre-reading or prewriting exercises, discussions to link the problem with the students knowledge and experiences, or pre-teaching vocabulary and structures that will be useful in finding solutions to the problem. However, not many language practitioners have the knowledge on crafting activities (cases / problems). To craft PBL cases, one needs training or guide to be-
come case crafters. Lack of available resources on PBL cases for language and trainings compounded by the issue of using suitable PBL case-design models for language courses, have driven researchers to embark on the current study with this research question:

1. How does the 3C3R PBL Case-Design Model (13) assist the English Language practitioners to craft PBL cases for General English Proficiency (GEP) Course?

(13) has developed a 3C3R PBL case design model [Fig. 1] which is expected to be a framework to design effective, precise and reliable PBL cases and this model is used as the theoretical framework for the current study. The 3C3R model consists of two classes of components: core components and processing components. Core components include content, context, and connection, and are used to support content/concept learning; processing components, composed of researching, reasoning, and reflecting, concern the learners cognitive processes of learning and problem-solving skills. The core components of the 3C3R model content, context, and connection are primarily concerned with the issues of appropriateness and sufficiency of content knowledge, knowledge contextualization, and knowledge integration. Thus, this case design is used as the basis for training the research participants on the PBL case design to discover their experiences in the training and the feasibility of the model for crafting PBL cases for language courses as shown in Figure 1.

![Figure 1. The 3C3R case design model](image)

3 Methodology/Materials

This study was carried out using the Action Research approach in which the four steps (plan, act, observe and reflect) were closely
followed within two cycles of the action research procedure. The research participants in this study were eight, experienced English language practitioners with little or no PBL knowledge and a PBL expert. The language practitioners have been in the ESL teaching field at tertiary level between 10 to 15 years and have taught the university's English Language course, i.e., General English Course (GEP). GEP course is a foundation course that equips students with basic language skills and geared towards developing students to achieve a satisfactory level in the language. The PBL expert has been involved in the field for more than six years and actively engaged in PBL trainings within and outside the university as well as researches and publications in PBL.

Figure 2. Action Research procedure

3.1 Research Tools

Observation checklist, focus group interviews and professional discussion were the research tools. Observation checklist consists of the items to be observed: the challenges experienced by the participants to craft the PBL cases and the feasibility of the components in the 3C3R case-design Model in assisting the practitioners to craft PBL cases. Data from the observation checklist provided useful prompts for the focus group interviews. The interviews were meant to explore the participants experiences in the training sessions and the feasibility of the 3C3R case-design model in helping the novice PBL practitioners to craft cases for a language course i.e., GEP course. Open-ended questions were used in the interviews because this type of interviews provides parameters within which interviewees can formulate answers in their own words (14-16).
professional discussion was done with a PBL expert to validate the new PBL case-design model. The validation from the PBL expert was to review the new case-design model and get feedback on the feasibility of the model from the PBL expert perspectives.

3.2 Data Collection and Data Analysis Procedures

The participants underwent two trainings (two cycles in the action research procedure) on PBL Case-design model using the 3C3R case-design model (13). Following the action research procedure, two trainings were conducted to train the research participants on PBL case design and crafting cases.

In training 1, participants were exposed to PBL approach, the 3C3R PBL Case-Design Model (13), case crafting for GEP and reflecting session. The case crafting was done in small groups using the 3C3R case-design model. The participants were given access to computers and internet to assist with materials search for crafting cases and they were also encouraged to refer to their Course Textbook or Course Outline/Information to align the PBL cases with the intended GEP syllabus. The researchers were present in the crafting teams as participant observers with the observation checklist to tick the checklist accordingly and document the challenges and chasms experienced by the participants to craft the PBL cases and the use of the 3C3R case-design model.

After Training 1 (the end of cycle 1), the observation checklists were gathered from researchers and analyzed to be used as prompts for focus group interviews. Then, Cycle 2 resume (Training 2). The same procedures took place and ended with focus group interviews with the language practitioners. The interviews were recorded and transcribed. Content analysis was done on the transcripts to arrive at themes. The data from the observation checklist and interviews were used to interpret the experiences of the language practitioners in crafting PBL cases for GEP. Based on the themes emerged from the analysis, the existing 3C3R case-design model was adapted. Then, a professional discussion was done with a PBL expert to get feedback on the adapted case-design model. The final modifications were done to the model based on the PBL experts feedbacks and suggestions to ensure the emerging model fits PBL case design
framework.

4 Results and Findings

The researchers documented their observations during the PBL case-crafting and interviewed the participants by using the data from observation as prompts. During the focus group interviews, the language practitioners were asked to reflect on their experiences and the feasibility of the 3C3R case-design model when they crafted PBL cases for General English Proficiency Course. Then, a new language PBL case design model was developed and validated by a PBL expert. Several themes emerged from the data which are suggestive of an emerging PBL Language Case-design Model (specifically for Languages). Thus, the findings were categorized into: added components, replaced components and retained components from the 3C3R case-design model. In the findings below, P refers to research participants and the number is to differentiate all the eight participants involved in the research. For example, P2 refers to the second participant in the study.

4.1 The Added Components

Affective Angle and Language in-use are the two components added to the 3C3R case-design model.

4.1.1 Affective Angle

Based on the observation checklist and notes from the researchers, there were discussions, during the case crafting among P6, P7 and P8 about the possible ways to arouse learners motivation. However, they did not find context component to boost the motivational aspect because there is no context for a General English Course. This issue was further explored during the interviews to gain more in-depth insights. These are the excerpts:

For example, cases on biology, the context of a hospital can be of use with some motivational elements included what context to include for teaching language skills? We might need to think about motivation as a component?

(P6)
We need to motivate students; maybe we can include their home town or topic of their interest
(P7)

It is important to have something close to their emotion; could be a different component coz there is no specific context for general English
(P8)

In the 3C3R model, the context component calls for an inclusion of the motivational element through context of the case. However, based on responses from P6, the context component can relate to any motivational aspect since biology subject is content-based i.e. hospital context, which is not the context specific to language subjects. It is evidenced from the extracts above, language practitioners proposed for an inclusion of a separate motivational component. Despite the fact motivational aspect or affective angle is not a component by itself in the 3C3R Model, the importance of Affective Angle (17) has been highlighted as a new component in the PBL case-design model. Real life problems alone do not promote sense of belonging and engagement rather the cases that promote the psychological needs: subject presence, location proximity, personal interest, etc., can increase connection and ownership to involve in the case (13). In other words, if affective angle is crucial in content subjects where the content and context can be linked to create the motivational aspect what more in non-content subjects i.e. English Language. P1 and P2 talked about placing the affective angle by itself and in the center of the model which signaled that this component is the most crucial for them in case-crafting for language courses. These are the excerpts:

I think affective or emotional aspect is the most important component in the model maybe should be placed in the center  (P1)

Motivational aspect important and I think it is the most important to attract student attention for general English subject (P2)

4.1.2 Language In-Use

Language In-Use is another added component to the 3C3R model. In the existing 3C3R Model, emphasis was given to the content, context and connection of the crafted cases (3Cs) to encourage learn-
ers to engage effectively (i.e. reflect, reason and conduct research (3Rs) in meaningful learning whilst at the same time acquire the target knowledge). However, as language learning requires learners to learn and acquire the target language, there is then a need for considerations to be taken to address the language needs required by learners in learning the target language when crafting PBL cases as mentioned by the participants during the focus group interview sessions. As shown in the following excerpt, P5 highlighted the importance of language use in crafting a language PBL case:

and I believe that is the main focus that we have to think about when we design the PBL case because we have to think about the learning outcomes. We have to think about what language item that we want them to use ad how the case will stimulate language use. So, I think language use is one the most essential part in language case-design model.

(P5)

Similar view was also voiced by other research participants, regarding the importance of language use in comparison to the content element outlined in the PBL 3C3R model, when crafting cases for language classroom use. This issue was notably expressed by P1 and P2 as shown in the following excerpts.

in order to solve the case/s we need to use language, so it (chuckle) it must be somewhere in the model to emphasize.

(P1)

because we are not content based. Like FEM. So the aim of the language classroom need to be spelled out. It is to maximize language use.

(P2)

In the following excerpts, the participants pointed out the significance of language use to help solve and complete the task.

during the process, they need to use the language (P4)

If there is a reminder from teacher and supportive members they will try to solve, complete the task using the target language.

(P6)

at least we can be sure that students use some amount of the target language because they will have to produce or present using target language at the end.

(P3)

Importantly, participants believe that language use is an essen-
4.1.3 Language-in-Use and Crafting Ill-Structured Cases

More importantly, in setting up a context that allows learners to link the knowledge that they have constructed with the relevant knowledge of the language needed, considerations of language-use are at the centre when crafting the ill-structured problems. The participants shared similar view on the need to consider the language use when crafting ill-structured problems. This is exhibited in the following excerpts.

*I think the kind of case should be very well thought. We also should think of what the students might present the kind of grammar structure that they have to use.*

(P2)

*It is important to structure the cases and highlight the language focus so that students will be aware of the language items to practice like maybe to use future tense in the presentations.*

(P4)

*I think the PBL case itself can be the prompt because I was thinking about one of the PBL cases that we worked on...Islamophobia. In the case we crafted, students are required to give their reflection of the materials that they have read so here they will have to use both present and past tense. Also, we need to remind students on that.*

(P7)

In other words, the contextual information found in the problem crafted, will subsequently provide the learners the link of required knowledge of the language use needed with the related situations in real life. Within this view, learners may not only become more aware of the language items needed to address the problem identified, but they can observe and use the target language in a real-life context.

4.1.4 Definition of Language-in-Use

Language-in-use within this view, is identified as not only the target language that learners used to access and present the relevant
information gained but also that of what they have acquired along the process. As shown in P6 responses, language-in-use includes the language aim of the lesson as well as other language items the learners might have to use. You know when we are talking about language-in-use refers to students using at least certain amount of target language to apply and communicate the knowledge they have gathered in completing the PBL case. (P6) This also includes the relevant set of vocabulary items needed in effectively solving the problem in question as pointed out in the following excerpts. But lets say they want to say something, they discover they didnt have the vocabulary or the knowledge for that. So, in a way language-in-use refers to also to what words they need to learn to solve the case. (P8) Also, what the words and phrases they discover along the way (P1) Apart from the relevant vocabulary items needed, language-in-use also encompasses the grammatical knowledge that learners have about the target language, which in turn manifested in learners production of the language: Yup, lets say in order for them to solve the PBL case, students have to use present tense and correct parts of speech. Let say they are presenting their ideas, they can also use other than present tenses if they have the knowledgeand if it is correct to be used in the context. (P3) In other words, language in-use is the ultimate aim of any language classroom because the entire teaching and learning should actually centre on meaningful language practice/usage. In that sense, this component is crucial to be added in the new model. 4.2 The Replaced Components Language Skills, Ill-structuredness and Connections are the three replaced components from the 3C3R case-design model. From the 3C3R model, content component is replaced with language skills; the connection component is replaced with ill-structuredness and relocated to the outside of the 3C3R triangle to show the interconnectedness among all the components in the new model.

4.1.5 Language Skills

In terms of the content component in the 3C3R case design model, the language practitioners expressed their confusion in the term content in relation to language teaching. During the team PBL case crafting, the researchers documented in the observation that P3, P6 and P7 discussed on the confusion they had on the issue
which brings about argument that the word content should not be in the model, if it is to be used for language case crafting. This point was further explored during the interviews. Below are the excerpts from P3, P5, P6 and P7: We are teaching general language, what is our content?; do we have any? I mean our focus should not be on content (P3) What is the content that we want to achieve in English Language...we are not teaching content subjects (P5) The word content should be changed to something related to language subject (P6) Content should be replaced; perhaps language skills would better suit (P7) The excerpts above represented a paradigm from language practitioners on the use of the term content which they believe as irrelevant in language teaching context because the emphasis should be on the language skills.

4.1.6 Ill-Structuredness

Most of the authentic problems in our lives are ill-structured (18). In other words, if language practitioners stimulate their students with PBL language case that contains ill-structured problems, the students will be able to see the meaningfulness and relevancy of what they are learning as they are exposed to authentic situations (18). By engaging themselves in cognitive processes, they are able to be creative and critical thinkers by formulating research problem, posing questions, designing and conducting investigations, making comparisons, proposing explanations and others (18). Relatively, in the interview, several practitioners have highlighted on this:

Though its a bit challenging but eventually we have to trust that students will learn a lot along the process. They might surprise us too

(P5)

I noticed is that when we crafted the problems affective elements must be included then the students will be willing to work on it. Despite the language barrier they will do it. They will find a way.

(P3)

Reflecting back on my classroom situation, when given a topic that is close to students we can see their engagement. (P4)

Ill-structuredness is perceived as the underlying principles that is taken into considerations seriously by the practitioners in this research, in crafting language PBL cases, along with other elements
outlined in the 3C3R Model (13) and the emerging PBL Language Model from this research. This provides an important indicator that the practitioners have acquired an understanding of the important PBL principle. While crafting the cases, ill-structuredness is being considered together with the elements of affective and context (from the 3C3R Model and emerging PBL language model) and learning outcome (language skills).

 Started with context and affective element. Thot about how important the topic to the students then tried to make the case ill-structured.

(P4)

while we were crafting were thinking it is too specific to the point that the solution is fixed and at the same time we dont want it to be too open that anything goes and there is no learning outcome at all.

(P1)

Go back and forth between the language skills & ill-structuredness
Check rechecked whether the topic interesting, ill-structuredness enough? Whether can fit in the language focus? If too ill-structured, learning objectives might not be achieved.

(P5)

As ill-structured problems are claimed to work best with PBL and in the typology of problems there are eight problem types, ranging from the well-structured to the ill-structured(19). Out of the eight, dilemmas is acclaimed to be having the criteria of the most ill-structured problems where it will neither provide a definite answer or decision nor will it be agreed by everyone. Hence, this quality of problem type (ill-structuredness) as utilized in PBL works best for students in encountering their everyday situations (19). Thus, making it be more contextualized and meaningful to students (20) Interestingly, two of the participants (P1 and P5) highlight the need of having the PBL language cases to be very ill-structured as to ensure its effectiveness in meeting the learning objectives and also minimizing the possibilities of crafting well-structured cases.

Yes, we had to always keep ill-structuredness in our mind when crafting. When we crafted, we were willing to let go, we were willing to make sure that it was really ill-structured so that students start thinking. Somehow being a teacher, I wished I could make it well-structured if it is not PBL.

(P1)
Ohas a teacher especially with low proficiency students, I always think whether the case Im crafting is manageable for them so there is a possibility I tend to put in enough information in the case to help my students.

(P5)

Im aware PBL cases are supposed to be ill-structured but I forget in the process of crafting because the 3C3R model doesnt have that as a component.

(P4)

I think I remember better if it is clearly there in the model...although I know.

(P8)

The participants felt that without being reminded, there is a tendency to craft well-structured cases because another major concern is whether the crafted cases can be managed by the low proficiency students. The participants responses evidenced the need to include ill-structuredness as a component in the new model for these reasons: when visibly placed in the model, the crafters will re-evaluate the ill-structuredness in the crafted cases; serves as a guide to not provide all the necessary information to develop a solution, which usually is the case among teachers, for helping the students to solve the case easily.

4.1.7 Connection

Based on the data from this study, the connection component which was placed inside the triangle in the 3C3R model, is re-positioned to the outside of the 3C3R triangle to show the inter-connectedness among all the components in crafting language cases. The core components emerged from the study are affective angles, language skills, ill-structuredness and context, which are placed within the triangle. The participants found that all the core components are interconnected and dynamic when crafting PBL cases:

when crafting, I cant run away from going back and forth between one component to the other they work together. (P2)

to craft ill-structured PBL cases, we will have to look at the language skills intended, the context to bring in and also the affective element to be used all interconnected. (P4)
Since the interconnectedness of the core components are essential in crafting language PBL cases, the connection component is placed outside of the triangle in the new case-design model.

4.2 The Retained Components

There are four components retained from the 3C3R model: Context, Researching, Reasoning and Reflecting.

4.2.1 Context

In ensuring that learners not only become proficient language users and effective problem solvers in specific situational knowledge, the element of Context plays a significant role for learners to practice their language use. The Context needs to be carefully determined to ensure language use is meaningful and authentic when learners attempt solving the PBL cases given to them. This was highlighted by P5 who stressed on the importance of emphasising the language-in-use element when identifying the context to be used by the L2 learners in their PBL language lesson.

and I believe that is the main focus that we have to think about when we design the PBL case because we have to think about the learning outcomes. So we need to think of a suitable context to craft a good PBL case to achieve language learning aims. (P5)

4.2.2 Researching, Reasoning and Reflecting

The 3Rs (Researching, Reasoning and Reflecting) are the retained components from the 3C3R model. The 3Rs have strong links with Language-in-Use (the ultimate aim of language learning). When crafting a PBL language case using the new model, Language-in-Use is the focus as the main objective is on how language is used in the lesson so that language can be practiced meaningfully. Thus, in designing a PBL case, the language practitioners need to ensure that the crafted cases require the use of researching, reasoning and reflecting skills.

The researching component is crucial in the model because in the process, the students need to find necessary information within the domain as they need to prepare for the next stage of the problem-solving process. During this process, students are open to ill-
structured cases, which opens for interpretations. The researching component should also be supported by the context component and reflected in the language skills component of the PBL case. There is also a need to specify the goals of the lesson as it would help to direct the language learning. The goal state of PBL problems should be explicitly stipulated to direct the learners toward language in use. Without a clear and specific goal stated for the problem, learners may not be able to engage in systematic researching processes. Thus, defining specific goals in the PBL cases can focus the students' efforts within the domain knowledge, and therefore greatly alleviate the concerns regarding language use in PBL.

At the reasoning stage, learners apply the knowledge acquired from the researching stage that is related to the information required (context). This will then be developed into problem-solving as learners analyze information and generate, test and hypothesize solutions to the problems. This means that learners put their knowledge into practice rather than just memorizing it. In this process, problem solvers can deepen and expand their conceptual understanding of the case, and put language into use during the problem-solving stage. According to (13), researching and reasoning processes occur simultaneously and reiteratively, and they complement each other in enabling an effective and efficient problem-solving process. Thus, these two processing components should be considered simultaneously.

Reflecting includes evaluating information, practices or experiences for future use. This is the stage where the PBL process is optimized by ensuring the maximum effects of other components in the PBL problems. In this component, learners can integrate what they have learned and go beyond the intended scope of the PBL problem and develop self-directed learning skills, which can include their reflection on the language use. The reflection component also allows learners to be independent and reflect on their knowledge of their language use. With that, the 3Rs general purpose would be to facilitate meaningful engagement in scientific inquiry and problem-solving processes and to cultivate effective and efficient learners and problem solvers.

The research participants, in their responses clearly stated the importance of retaining the 3Rs from the 3C3R case design model and the strong influence they have to achieve meaningful language
practice:

I say that the moment I start thinking about the theme; researching comes to my mind. (P4)

We didn't think so much about the 3R we knew if it is ill-structured, the 3Rs are taken care of. (P6)

Yes-yes from the workshop, we were aware the 3Rs are important the soft skills (P7)

Once the 3Rs are incorporated in the caselanguage learning will be meaningful. (P2)

In the new model, the 3Rs (Researching, Reasoning and Reflecting) do not function exclusively on their own. Instead, when attempting to solve the given problem, they are all connected to one another. Researching refers to finding and locating relevant information, reasoning involves processes in problem solving, while reflecting includes evaluating information, practices or experiences for future use. So, learners embark on research activities, using the information they have gathered, they engage in problem solving process which requires them to provide reasoning, and they reflect on the information they have as well as the actions taken in solving the problem. Connection exhibits the interconnectedness of the 3Rs. When doing all the 3R activities, learners read the materials they believe related to the problem, engage in discussion sessions and communicate their ideas. Thus, language is used meaningfully.

4.3 Professional Discussion (PBL Expert)

After revising the PBL Language case-design model, a professional discussion was done with a PBL expert to get feedback on the emerging model. The feedback from the expert was positive in a sense that the emerging model is a promising one, to assist language practitioners to craft cases specifically for language classroom needs:

I think the components are really crucial to craft Language PBL cases specifically the Language Skills component. With this component visibly placed in the new model it opens for more language practitioners to craft PBL cases to teach English; more rooms for
PBL approach to be used in language teaching.

(EV1, L12-14) The underlying principle in PBL case, ill-structuredness, is added this can assist novice PBL practitioners to produce quality PBL cases. Also, this component will act as a reminder for language practitioners with low proficiency learners, to still retain ill-structuredness when crafting cases to make students think in the process of completing the case.

(EV1, L35-38) With the expert validation feedback, a new model emerged: Problem-Based Learning (PBL) Language Case-Crafting Model (PBL-LcCRAFT). Fig. 3 below illustrates the new model and the definition of the components:

Figure 3. PBL-LcCRAFT (PBL- Language Case Crafting) Model
5 Conclusion

The findings revealed that crafting cases for language courses were slightly different compared to crafting cases for content subjects (21). The data from the professional discussion with the PBL expert showed the feasibility of the new model for languages and at the same time within the characteristics of a PBL case-design model. The data from both the language practitioners and the PBL expert clearly suggests adaptation to the 3C3R Model. While maintaining some components from the original 3C3R case-design model, the PBL-LcCRAFT further extends the original by including components which are found to be very much relevant to language practitioners to craft PBL cases to be used in language classrooms. It is expected that all the components in the PBL-LcCRAFT model, will be able to serve as a guide for language practitioners in crafting PBL cases to meet their learners language learning aims and encourage more language practitioners to use PBL in language teaching and learning, in line with the demand of cultivating the 21st century learning skills.

Acknowledgement: This research work is funded by Universiti Sains Islam Malaysia for an Action Research Grant project (PPP/ARG/FPBU/30/19715).

References


[16] Stephygraph LR, Arunkumar Na, Venkatraman V, editors. Wireless mobile robot control through human machine interface using brain signals2015/05//: IEEE.


[18] Chin C, Chia LG. Problem-based learning: Using illstructured problems in biology project work. Science Education. 2006:64-.

