Exploring the Growth of Reflective Practice in Higher Education

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Abstract--Reflective practice is a process to explore the mental states of oneself, and others which allow students to experience deep learning. This practice increases the active engagement of students and personal ownership of self-development. Active thinking is also required which involves attentional control and meta-cognition. This study aims to explore the growth of reflective practice among psychology undergraduate students. A total of twenty-five (25) first-year psychology students from a university in Malaysia participated in this study. Participants have to write reflective journals related to specific learning topics for 10 weeks. Each reflective writing received personalised feedback from the researcher based on the five levels of the reflective practice coding scheme. A total of 138 reflective practice documents were analysed and categorised from Category 0 (non-reflective) to Category 4 (Critical reflective practice). The frequency of the five levels, reflective practice responses, and measures of academic performance was collected. Findings from this study support previous research on the positive contribution of reflective practice. It addresses the efficacy of response frequency to scaffold academic performance. The improvement of reflective practice styles requires a high level of effort, active thinking, and working memory activation.

Key words--Reflective practice; Personalised feedback; Learning; Higher Education.

I. INTRODUCTION

Reflective practice has become an essential component of teaching and learning in higher education. It explores "mental states of oneself, and others in explaining one's own and others' actions" (Bruno, Galuppo, & Gilardi, 2011). This approach allows students to experience deep learning (Parry, Walsh, Larsen, & Hogan, 2012), increase student active engagement and personal ownership of own self-development (Threlfall, 2014). Reflective practice is an evidence-based approach and prominent in education science. Students can view what they already know and what they are learning in terms of theories and applications. On top of that, they become highly conscious of what they are doing, how they do it and why they do it. The demonstration of reflective practice is not centered on the reflection in action, but also a reflection on action. This practice tends to involve individuals in self-awareness and critical evaluation of their responses to the scope of situation and content learned (Finlay, 2008). Therefore, it is considered as part of the life long learning where it assists students in developing and mapping their learning journey of the courses.

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ISSN: 1475-7192

Activation of reflective practice requires a high level of attention, consciousness, and ability to switch cognitive processing from one part to another and link them as meaningful episodes. This processing is essential to boost the level of active thinking and subsequently develop a high level of self engagement. As reflection task is considered as a conscious activity, it requires active thinking (Gelter, 2003) to process the elements of reflective practice (description, feeling, evaluation, analysis, conclusion and action plan). Students are responsible to grow their learning by involving in deep learning and self-directed learning. Hence, they will be able to apply the contents of knowledge into different spaces, environments, and conditions which allow them to see how the knowledge and information that they acquired are benefited in real life. Throughout this reflective practice method, they can further analyse the layers of information, come out with possible judgments, evaluations, and create new insights. All these processing require higher-order thinking. Therefore, reflective practice is considered as deep learning when students are able to apply higher-order thinking, which is beyond the level of knowledge and understanding.

The development of higher-order thinking imposes self-awareness and metacognition. Students have to put intention into what they are going to learn and give a high level of attention to allow the activation of working memory storage. Reflective practice can be effectively performed when students are ready to chunk the information that they gained in class through elaborative rehearsal outside the classroom condition. The ability to practice this procedure gives higher chances for students to enhance learning zone, memory, and applications. The effectiveness of reflective practice involves active self-regulation in making the selected information to be grounded into active thinking (Louis & Sutton, 1991). Therefore, the brain as central to information processing has to be stimulated with active thinking to avoid the low level of cognition activation. Active thinking involves active working memory and consciousness scanning of perceptive information in the learning process. Thus, it is suggested that reflection needs active effort and energy because it is not a spontaneous activity (Louis, & Sutton, 1991). The reflective and active thinking capacity is a symbiotic relationship that has to be learned and practiced.

Application of reflective practice in teaching and learning helps students to understand how they learn and be accountable for their progress (Knowles, Gilbourne, Borrie, & Nevill, 2001). They will able to develop the ability to identify barriers in learning, create planning to seek improvement (Han, Li, Sin, & Sin, 2014); able to respond to experiences, opinions, and events, by combining thoughts and feelings into the process. Consequently, the process of learning will be meaningful and interactive. These assemble as a mechanism to facilitate and monitor deep learning (Parry, Walsh, Larsen, & Hogan, 2012).

Most of the time, reflective practice has been conducted in the form of summative assessment with less focus on continuous assessment. Thus, the practice becomes a one-off assessment that cannot be seen as a growth process in learning. This requires shifting from the traditional approach in learning to formative assessment with the active engagement of students in reflective writing, while teachers engage to provide personalised feedback for each student based on the written reflection. The implementation of formative and continuous assessment allows students to receive progressive feedback (Threlfall, 2014) and facilitate the improvement of quality reflective writing among them (Kim, 2013).

DOI: 10.37200/IJPR/V24I8/PR280227

ISSN: 1475-7192

Moreover, the application of reflective practice elevates high self-regulated learning which in line with the educational principles stated in the American Psychological Association which is to empower undergraduate psychology students. The program learning outcomes for undergraduate psychology at Universiti Malaysia Sarawak also emphasis students' development to possess knowledge in the field of psychology, competent in applying psychological principles into practices, and apply the scientific approach, critical and creative thinkings skills in solving problems related to psychological issues. Hence, the application and practice of reflective practice are considered as one of the learning methods to enable students' development in learning (Morrison, 1996). Based on the benefits of reflective practice, we as researchers took the initiative to explore the effectiveness of this method among psychology students. The main intention is to promote the beauty of reflective exercise as a scholarship of teaching and learning. On top of that, the students involved in this study were the 1st year psychology students (academic session 2018/2019) at the Faculty of Cognitive Sciences and Human Development, Universiti Malaysia Sarawak. It is important to embed this approach to their learning because the foundation of psychology courses also links to the properties of reflective practice.

This research proposed reflective writing to assess the student's personal experiences, opinions, accommodation of new information, thoughts, feelings, and further exploration of learning skills. This approach is considered as a metacognitive strategy to transform traditional learning approaches (Bruno & Dell'Aversana, 2017). The reason behind this research is to explore the growth of reflective practice among undergraduate psychology students in higher education, which rooted based on the need to explore an effective mean in monitoring psychology students' development in acquiring knowledge of psychology. The specific objectives of this study are (1) to evaluate the levels of reflective practice by referring to the five levels of reflective practice coding scheme; the number of reflective responses for each week, and academic performance; and (2) to assess the effect of personalised feedback on the reflective practice quality.

II. LITERATURE REVIEW

In general, reflection has various meanings and based on Dewey (1933), it was defined as continuous and active considerations of any form of knowledge which is grounded on critical thinking. It is a complex process of thinking and considered as unstructured ideas (Moon, 1999). According to Boud et al, (1985), reflection also can be defined as the cognitive and affective engagement activities which centered on the exploration of experiences and the constructions of a new framework of understanding. In addition to the available meanings of reflection, Schön (1983) introduced reflection in the form of the reflective practitioner which highlights the application of reflection as a method in reevaluating experience in different forms which comprises individual comprehension of own self and others. Based on Kolb's (1984) experiential learning, reflection requires individuals to perform deep processing by analysing and evaluating the things they observed and learned into a new form of framework. The development of new ideas and frameworks allows them to involve in active experimentation, experience them and continue the cycle of reflection. The growth of reflective practice needs active engagement and thinking to arouse individual performance in reflection (Boud, Keogh, & Walker, 1996).

DOI: 10.37200/IJPR/V24I8/PR280227

ISSN: 1475-7192

The reflective practice approach has received positive feedback as continuous professional development in higher academic institutions (Bleakley, 1999). The application of reflective writing in teaching and learning can enhance students' ability in critical thinking (Craft, 2005). Schön (1987) emphasized that reflective practice as a process to revisit and analyse individual experiences that enhance individual knowledge and information processing. There are different methods in practicing reflective practice, such as journal writing, note-taking, storytelling(Choo, Abdullah, & Mohd Nawi,2018), discussion, role-play session, and an online forum (Bean & Stevens, 2002). One of the popular methods in reflective practice is reflective writing. This approach helps learners to bridge the gap between theory and practice by engaging one's personal experience(Choo, Abdullah, & Mohd Nawi, 2019).

Reflective practice requires an individual's ability to engage with his own beliefs, values, emotions, feelings, predictions, perspectives, wishes, and behaviors (Mezirow, 1991). Those elements in reflective practice have to be connected with contexts, and settings that can be used in analysing, evaluating and solving a problem. The application of reflection in learning helps individual to boost professional dialogues and discussions to understand one's mind and others (Schön, 1983; Fisher, Chew, & Leow, 2015). The positive impact of reflective practice is grounded on the movement of theoretical conceptualization of knowledge into action to represent what has been learned in the classroom (Yee, Mohd Nawi, &Abdullah, 2016). Growing findings and consensus on the impact of reflective practice in various professional fields, ie medical, teacher education, higher learning, nursing dentistry, show huge contributions of professional values, skills, attitudes, and knowledge efficacy (Neville, 2018).

The ability to construct, deconstruct and reconstruct (Savickas, 2012) cognitive, emotion and behavioral structure has a link with internal ability to examine, and explore the basics of an issue through clarification, and giving meaning which signifies personal story (Boyd, & Fales, 1983). Application of critical style of reflective practice in higher education has shown significant outcomes in preparing students in professional development, research competencies, and deep learning (Glass, 2015). Through personalised feedback, they learn how to grow themselves to different styles of reflective practice. Engagement in reflective practice also needs the external feedback to boost student motivation and to inform students their performance of reflective practice (Power, 2012). The involvement of the students in reflective practice activities such as reflective writing must come in the form of willingness and commitment (Bruno & Gilardi, 2014). If students have been forced, the probability of response is high but it will give a negative impact on personal self-regulation in learning. However, the student motivation to join in reflective writing can be aroused with personalised feedback (Bruno & Dell'Aversana, 2017). The construction of meaning based on the evaluation of the experience has to get supported in the professional discussion to allow intensive control over the contents of the reflection (Mann, Gordon, & MacLeod, 2009). Therefore, the implementation of feedback is essential to ensure the contents of the reflective practice performed by learners have impacts and values. The growth of reflective practice requires a long term process, with continuous attempts, feedbacks, and supports (Hoover-Dempsey et al., 2001). Individual differences in processing information and learning also influence the ability to perform reflective practice (Asadoorian et al., 2011). On top of that, this approach still can be learned with practices and efforts.

The quality of reflective practice can be monitored with professional supervision by the instructors of the course which can be done in the form of written formative feedback. The contents of feedbacks may include personal

DOI: 10.37200/IJPR/V24I8/PR280227

opinions based on professional justifications, as well as constructive comments for reflective writing (Wald, & Weiss, 2018). The students also learn from the feedback, and take also full of consideration by putting deep thought processing, and always applying the filtration process. The provided feedbacks able to brighten students' professional growth (Shapiro, Kasman, & Shafter, 2006)

Concerning the quality of reflective practice, the instructors must prepare themselves with a clear rubric or format of evaluation which can be in the form of categories of writing style. Reflective practice concerns on connecting the individual's capacity to mentalize (Shapiro, Kasman, & Shafter, 2006) as the ability to use mental states (cognitive, emotion, volition) to explain one's behavior and others (Bruno, & Gilardi, 2014). The ability to mentalize (Fonagy & Target, 1996) indicates as personal self-attribution, which combines mentalizing and language, leads to the terms of mental language. The role of mental language is as a tool to evaluate individual personal reflective writing. Mental language in this context refers to the composition of terms (nouns, verbs, adjectives, adverbs), to represent mental states in the form of emotive (fear, sadness, happiness), volitive (wishes), and cognitive (thoughts, beliefs, reasoning) (Bruno, & Gilardi, 2014). By having a rubric for student-teacher reference in reflective practice writing assessment, it enables students to learn and achieve the goal for the quality of reflective practice writing (Smith & Trede, 2013).

In general, Bruno and Gilardi (2014) made a huge contribution in the stages of analysing the contents of reflective practice from the detections of mental language to the categorization of the reflective practice based on the five levels:

Category 0: is a non-reflective practice, when the writer reported an event or personal experience without referring to him and others. It is considered as not having any mental state.

Category 1: is declarative reflective practice. This category shows an individual's abilities to state the awareness of a mind to the situation in the form of emotion and thoughts. However, it is in the form of descriptive. Example: I am happy when they are working with me"

Category 2: is relational reflective practice. This category refers to an individual's ability in relating an event/context with their or other's mental stated, and also make comparisons with different types of mental states. Example: 1- based on evolution over time (previously, I used to believe that..., and now...), 2- over space (in that situation, I thought that way, and now I changed to think this way), and 3-subjectivities (I always think in this way, however, my friends take it in a different way).

Category 3: is interpretative reflective practice: when a writer uses the mental states (thoughts, emotions, desires) to represent and evaluate his own/others' behaviors and decisions, in the form of interpretations. Example: "I demonstrated that because I felt appreciated"

Category 4: critical reflective practice: the writer demonstrates an ability to come out with new perspectives or insights, which derived from the inadequacy and limitations of the available findings. Example: "Overall, I already find my new way in solving the issues"

In our study, we used the five categories of reflective practice style (Bruno, & Gilardi, 2014) as a structured format to detect the mental words and classify the quality of reflective writing.

ISSN: 1475-7192

III. METHODOLOGY/MATERIALS

Participants and Context

The context of this study involved one semester of a course of Personality and Individual Differences within

a bachelor's degree program of psychology which was offered to Year 1 Student(session 2018/2019). Twenty-five

students involved in this study and 96% of them are females. The course lasted for 14 weeks, and it only involved 10

weeks for this research purpose.

Research design

The mixed-method design was employed in this study, 1- content analysis: to identify the mental languages

of students' reflective practice documents; 2- quantitative analysis: to classify the levels of reflective practice style;

and the impacts of continuous personalised feedbacks and students' quality of reflective practices.

Research Material

The materials in this study involved largely on 138 reflective practice documents, submitted in the whole 10

weeks. All participants sent their reflective writings on an e-learning platform, and the researchers have to print them

out each week to provide personalised feedback. Final grade for each student in the course is considered as academic

performance measure.

Research Procedure

During the first week of the course, students were invited to participate in this research by writing a reflective

practice. One of the researchers was the instructor in the class, and he gave the briefing of the project including the

schemes in performing different reflective practice styles (Category 0-Category 4). No compulsory rule to respond to

each week topic, but students were alaways show encouragement to respond weekly. The researcher also explained

the benefits of reflective practice to grow students' responses.

Therefore, some students responded for a few attempts and some students attempted for the whole ten weeks.

The submission of each reflective practice must be done via Eleap within one week. The researchers have to print

each reflective practice document and checked it by providing personalised feedback. Example: "this week you have

shown your ability in achieving the interpretative style of reflective practice"/ " this week you have applied a more

descriptive style of reflective practice". Along the process, the instructor also continually asked the students if they

have issues in performing their reflective practices. In this study, students have the freedom to write down the

reflection based on their levels of knowledge for the week. They were not forced to achieve certain levels but always

received constructive suggestions, i.e, this week you have achieved the descriptive style of reflective practice, and my

suggestion, you can give an attempt to achieve the other levels such as declarative style". This showed that the

researchers want to promote positive personalised feedback which has less harm for emotion and motivation.

The personalised feedback was given for each document because it is considered an important process to

further analyse the quality of reflective practice. All students involved in this study have given their consent that all

data of their reflective practice will use for research purposes.

Data Analyses

All entries from participants were considered for the analysis, including student who provided one reflective practice only. This study did not use the rule set by Bruno and Dell'Aversana (2017) to have restrictions on the numbers of entries and responses to be analysed. Therefore, there were variations of students' responses in the whole ten weeks, including the frequency of feedback provided as shown in Table 1.

Table 1: No. of Personalised Feedback Received by Each Student During the 10 Weeks

Frequency of	N	
Feedback	Students	%Students
10	2	8%
9	1	4%
8	2	8%
7	4	16%
6	1	4%
5	5	20%
4	4	16%
3	4	16%
2	1	4%
1	1	4%

Content Analysis

This analysis was used to analyse all reflective practice entries, according to the week. The procedures in analysing the contents of the scripts were based on the detection of mental language (comprised of cognitive, emotion, behavior, volition), categorization of the mental language detected based on the five levels of reflective practice styles, and the validation of the categorization by implementation of member checking (cross-validation) to reach a conclusion of the selected coded.

Quantitative Analysis

This analysis was employed to analyse the descriptive and inferential data of five levels of reflective practice styles, the number of responses and academic performance, and to evaluate the contribution of the feedback on the performance (quality) of reflective practice. There were three types of analyses used in this study, which include:

- 1. Descriptive statistics: to present the overall percentage for each style of reflective practice, the performance of each style in every week, the number of response and academic performance (final grade);
- 2. Friedman Test: to analyse the differences between weeks; which the dependent variable that is used to measure is ordinal (reflective practice categories)

DOI: 10.37200/IJPR/V24I8/PR280227

3. Spearman Rho Test: to determine the correlation between two ranked variables (no.of personalised feedback given and performance at week 10)

IV. RESULTS AND FINDINGS

The result presented in Table 2, shows the overall distribution for each type of reflective style. About 50% of the performance contributed to Category 3 and 4.

	Total No. of Entries	
Category	in 10Weeks	Percentage
Category 0	4	2.9
Category 1	40	29
Category 2	23	16.6
Category 3	44	31.9
Category 4	27	19.6

Table 2: Overall classification of students' reflective practice styles.

Figure 1 presented the weekly categorization of reflective practice styles performed by the students. The data indicate variations of reflective practice categories. Overall, the students' performance cannot be generalized as the whole contribution of the total participants due to the variation of the number of submitted reflective writing each week. Some weeks have a low number of attempts, as compared to the earliest 4 weeks. However, based on the graph, it does show that the frequency of levels 0 and 1 decreased, while the frequency of levels 3 and 4 showed increment in the final week.

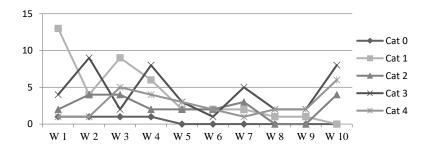


Figure 1: Frequency of reflective practice for each week according to five levels

Table 3 presented the achievement of students based on their final grades (academic performance) and the average numbers of their responses in the whole 10 weeks. Based on the findings, it suggested that the number of responses has positively contributed to a positive grade.

DOI: 10.37200/IJPR/V24I8/PR280227

Table 3: Average number of response and academic performance

Average no	Grade	N
of response		students
7	A	4
6	A-	5
5	B+	6
5	В	4
4	Below B	6

Furthermore, the researchers decided to perform the Friedman Test analysis to measure the differences between the mean rank of the categories applied for the 10 weeks. Based on the Friedman Test analysis, the finding showed that there is a significant difference: $\chi^2(9, n=25) = 50.59$, p=.000. The following post hoc test was performed with the Bonferroni correction of the significance level, which illustrated the significant difference between entry week 1 and entry week 9(z=-3.16, p<.002), between entry week 2 and entry week 9(z=-3.11, p<.002), between entry week 3 and entry week 9(z=-3.30, p<.001), between entry week 4 and entry week 9(z=-3.48, p<.001), between entry week 5 and entry week 10(z=-2.76, p<.006), between entry week 8 and entry week 10(z=-3.23, p<.001), between entry week 9 and entry week 10(z=-3.43, p<.001).

The Spearman Rho Test was sed to analyse the number of feedbacks given to each student and their levels of reflective practice in the final entry (week 10). The purpose of the analysis is to investigate the relationship between the impact of personalised feedback and the quality of reflective writing. Entry 10 was chosen as the indicator of growth and outcome measure (Bruno, &Dell'Aversana, 2017). The finding shows that there is a positive relationship between the personalised feedback received by each student and the quality of reflective practice (rho=.532, n=25, p=.01)

V. DISCUSSION

This study contributes to continuous support to the previous research in addressing the relevancy of reflective practice and as an evidence-based approach in education science (Dunn, Saville, Baker, & Marek, 2013). The findings in this study contribute to the additional understanding that reflective practice becomes a professional approach when there is an interaction between the student and the instructor. Students will engage in constructive and supportive conversations on the contents of reflective practice by having personalised feedback. The application of personalised feedback allows students to see their levels and quality of reflective practice. We also clearly see that the implementation of the coding scheme based on mental language which combines mentalization and language domains gives a more comprehensive guide to the instructor and students to achieve the quality of reflective practice. Students become aware of their achievement of the week based on the personalised feedback given to them. The feedback itself can turn into a reward for them with the selection of the words used in the comments (Bruno & Dell'Aversana, 2017). On top of that, the used of five levels of reflective practice allows the researchers to rank the reflective practice contents

DOI: 10.37200/IJPR/V24I8/PR280227

ISSN: 1475-7192

into categories with valid justifications. Students also able to learn from the categories and they can improve to achieve to the upper levels.

The progresses of students in this study are various in terms of frequency of participation, and the levels of reflective practice writing. Their involvement is based on their willingness and readiness. Therefore, the researchers decided to table the frequency of reflective practice and academic performance. It does indicate that the frequent attempt has a positive contribution to the academic performance embedded with the quality of reflective practice. In particular, the growth of reflective practice can be monitored by looking to the significant difference, which was found in the types of category used for the weeks and the final week (Bruno, & Dell'Aversana, 2017). It indicates that the reflective practice in the form of continuous practice is a need (Clegg, 2000). Student's involvement in preparing reflective writing has a combination of internal and external factor of motivation. Therefore, there are students who achieved higher levels of reflective practice after five weeks of attempts. They put effort to perform better after receiving the personalised feedbacks from the instructor.

The use of content analysis in this study as a method to detect mental words is the right approach to understand the context of students' reflective writing. Throughout the process, the researchers learned that the process in quantifying the quality of reflective practice requires a high contribution from the qualitative approach. The researchers have to be grounded with a large pool of information to detect the styles of reflective practice. The students also are more aware of what they learn in class when they have to provide a reflective practice. Therefore, in this study, there are different lengths of reflective writing and it becomes an eye-opener to what students learned in every three hours lesson. Reflective writing provides students with huge chances to demonstrate the growth of their knowledge acquisition, which is not centered to the bridging of the theory and application, but also the integration of professional self-development, information processing, emotional awareness, behavioral manifestation and social interactions (Bruno Dell'Aversana, 2017).

Students that showed frequent response in sending reflective feedback can be considered as a committed person. Therefore, providing personalised feedback to each of their entry contributes as acknowledgment and recognition for them (Power, 2012; Clegg, 2000) regardless of the levels of their reflective practice. The implementation of personalised feedback for each of student entry also allows the students to continually involve in the intellectual commitment (Higgins, Hartley, Skelton, 2002), and motivate them to act differently in the future learning experience (Mann, Gordon, & MacLeod, 2009). Align with the principle of undergraduate education under the American Psychological Associations (2011) and the Programme Standard: Psychology under Malaysian Qualifications Agency (2013) indicates that the students have to be active and take personal ownership over their learning by becoming a producer and not only consumer of learning (Bruno & Dell'Aversana, 2018).

VI. CONCLUSION

This article has answered our goal to explore the growth of the reflective practice in higher education. The findings expressed here have shown that the reflective practice needs to be continually practiced and promoted to enhance the value of knowledge which is not in the classroom context only but to the applied world. This kind of

DOI: 10.37200/IJPR/V24I8/PR280227

empirical analysis of the reflective practice has to proceed to boost the quality of knowledge application which is not for the sake of oneself but to the others' benefits as well. The growth of reflective practice is not a short term process, but require a continuous effort and intention in learning. The outcome and effectiveness of the reflective practice cannot be observed in a one-off assessment, but with frequent attempts. However, the contents of the reflective practice are not valid if the students do not get personalised feedback to benchmark their achievement and quality of their writing. With the application of reflective practice, students and instructors can work closely to monitor the progress of the lesson plan and how impactful the overall contents of the course.

One limitation of this study is, it is time-consuming as mentioned in previous studies (Bruno, & Dell'Aversana, 2017) due to the number of weeks and the personalised feedback for each entry. Therefore, one option to minimize the limitation is to choose the week that has been selected by the students to receive personalised feedback. However, the researchers stand that the professional approach in learning requires deep processing, and one to one approach is suitable to empower student growth and development.

Another limitation of this study is the voluntary nature of participation in reflective practice has resulted decrease number of responses as presented in Figure 1. Therefore, for future study, the creation of the learning environment that empowers student sharing sessions in class about their reflective practice style will allow more positive outcomes. The students will be more aware of how their peers achieve different levels of reflective practice especially the highest level of reflective practice style. They will also be able to promote professional practice in terms of their contents of reflection (mental language) in a small social context (Bruno & Dell'Aversana, 2018). Students with a low level of reflective style will feel that they have additional support other than their instructors to scaffold them in learning.

Acknowledgment

This research work is supported by the Universiti Malaysia Sarawak (UNIMAS) under the SoTL grant project (SoTL/FSKPM/2018(1)/010).

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International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 08, 2020 ISSN: 1475-7192

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DOI: 10.37200/IJPR/V24I8/PR280227