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Using Structure of the Observed Learning Outcome (SOLO) model to study the developmental path of fraction understanding in primary school students

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Abstract

This study applied the Structure of the Observed Learning Outcomes (SOLO) model to examine the developmental path of understanding of fraction concepts and operations in six upper primary school classes in Bhutan.The SOLO model is a "post-Piagetian analytical tool that has the potential to distinguish qualitatively different levels of response to a task along a developmental continuum" (McPhan, 2008, p.1). A mixed method approach was employed, as both qualitative and quantitative data were deemed beneficial in order to draw reliable inferences. The sample consisted of students *(N* = 131) from six different schools from various locations in Bhutan, including urban, semi urban and rural. All students were tested to gauge their understanding of fraction concepts and operations. Furthermore nine mathematics teachers and eight students from each class were purposively selected and interviewed. In addition document analysis of mathematics textbooks and mathematics teacher's guide was also conducted. An analysis of the results clearly indicated that the progression of understanding of fractions is found to be 'weak' in classes four through six. A significant number of students did not understand the basic fundamentals of fraction concepts and operations. The application of memorized rules, which are arbitrary, demonstrated a manifestation of learning fractions without understanding the concepts. The Ministry of Education and colleges of education may need to consider a revision of teaching practices in educating pre-service teachers to improve teaching and learning of fractions in schools.

Key words: Fraction, memorize rules, progression, understanding, mathematics, teachers

Introduction

Learning fractions is one of the most serious obstacles to the mathematical maturation of children (Behr, Harel, Post & Lesh, 1993). Numerous studies have

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concluded that fraction concepts are complex and cause many troubles for elementary children, maybe more than any other mathematics topics (Bezuk & Bieck, 1993). Hartung (1958, cited in Yusof & Malone, 2003, p.1) articulated, "fraction concept is complex and cannot be grasped all at once. It must be acquired through a long process of sequential development." Despite the fact that teaching and learning of fractions is complex and abstract, it is taught from pre-primary in the Bhutanese education system.

Anecdotally the author has noted that after seventeen years of experience in the teaching of mathematics that most of the students, even at tertiary level, have issues with fraction concepts. Students often use formulae to perform the operation of fractions without proper understanding of why and how the formulae work. This author is of the opinion that these problems may be the result of curriculum layout, teaching methods, competency of the teacher, language or materials and the mathematical examples used in the classroom. It could also be the result of teachers focusing too much on the computation where procedural knowledge dominates the conceptual knowledge in the classroom teaching (Gabriel et. al., 2013).

A new mathematics curriculum from pre-primary to class twelve was implemented in 2005 in Bhutan. Since then there was little research into the relevancy and progression of the concepts taught and documented. This research study aimed to examine the developmental path of understanding of fraction concepts and operations in the upper primary school children using the SOLO (Structure of the Observed Learning Outcome) model as a theoretical basis for the study.

Research Question

What is the progression of understanding of fraction concepts and operations in the primary school? To what extent do students in the six primary schools, (class 4 – 6), understand the concepts of fractions and operations?

Sub questions:

1. To what extent do students progress in their understanding of fraction concepts and operation within the class 4, 5 and 6?
2. What is the progression of understanding of fraction concepts and operation from class 4 to 5 and class 5 to 6?
3. How extensive is the provision of opportunities for primary school students to be exposed to incremental experiences in learning fraction by Bhutanese teachers?
4. How Bhutanese teachers identify developmental pointers in teaching and learning fraction?
5. How far Bhutanese students have developed understanding of fraction concepts and operations?

Literature review

Fraction is an important mathematics area that students must understand in order to be successful at the later stage of learning mathematics (Van De Walle et. al., 2015). However, the teaching and learning of fractions has been a problematic area in primary school mathematics because fractions is not a single construct, but consists of several sub-constructs which are interrelated (Kieren, 1976). Students need to understand each sub-construct and their confluence (Charalambos & Pitta-Pantazi, 2005) to master the fraction concepts and operations. Furthermore, complex procedure and challenging notation of fractions has escalated the difficulty of learning fractions (Bruce & Ross, 2009).

If schools are to achieve improved students' learning of fraction concepts and operations, the curriculum planners must align curriculum objectives of fractions with proper progression (Callingham & Pegg, 2010). Teachers, on the other hand, must provide opportunities for students to have incremental experience for learning and knowledge construction (Goswami & Bryant, 2007). This process requires teachers to "recognize the developmental pointers" (Callingham & Pegg, 2010, p.125), which may not be present in the curriculum documents. The SOLO model (Biggs & Collis, 1982, 1991) can provide such developmental pointers as this model is "characterized by identifiable levels of response that are categorized by the complexity of the language used" (Callingham & Pegg, 2010, p.126).

The SOLO is a hierarchical model, which is suitable to measure learning outcomes of any subject as well as for all length of assignments (Biggs & Collis, 1982). The SOLO model's concepts can be applied to the measurement of the quality of assimilation and accommodation of concepts and ideas in terms of progressive structural complexity. Accordingly measures are made of 'how well' (quality) something is learned rather than 'how much' (quantity) (Pegg, 2003, p.2). Further, the SOLO model is appropriate to measure the cognitive attainment of the students because of its objectivity and comprehensiveness in application (Chick, 1998; Lake, 1999; VanRossum & Schenk, 1984).

The SOLO model, in its earlier application, had five hierarchical levels where "each partial construction [level] becomes a foundation on which further learning is built" (Biggs 2003, p. 41). These five levels which are in increasing order of structural complexity were termed: Prestructural (P) – students do not provide information in relation to the question; Unistructural (U) – students may identify one piece of information on the question; Multistructural (M) – students may identify two or more information on the question but no connection is made amongst the information; Relational (R) – students may identify two or more information on the question and establish connection amongst the information; Extended Abstract (AB) – students may provide information on the question which is of increased abstraction or applied to a new context.

There have been numerous studies conducted internationally in using SOLO model to assess the performance of the learners in various subjects (Pegg, 2003; Pegg & Panizzon, 2004; Reading & Lawrie, 2004). However, this research is first of its kind to be applied to mathematics in the Bhutanese context. Hopefully others may use the SOLO model to both research and impart quality teaching and learning in the Bhutanese schools and at territory institutions of education.

Method

This study used sequential mixed method design. Cresswell (2009) reported that the overall strength of mixed methods is greater than either qualitative or quantitative. A test on fraction concepts and operations was piloted prior to actual administration in upper primary classes. The test responses were then coded according to the SOLO levels. After a detailed study of the test responses, semi structured interviews were conducted with the subset of the student participants completing the test and the selected mathematics teachers to substantiate the findings of the test. The upper primary mathematics curriculum document was also analyzed to study the progress of fraction concepts and operations.

Participants

Students from classes 4, 5 and 6 from six different schools (rural n = 43, urban n=44 and semi rural n= 44), were selected to undertake the fraction test. The average age for class 4 was 10 years, class 5: 10 years 9 months and class 6: 12 years and 5 months. The study comprised 131 participants (63 girls and 68 boys). Informed consent was obtained from school principals and nine mathematics teachers involved in this research. Assent from children was obtained at the onset of testing sessions.

Data Collection Procedures

The researcher used sequential data collection procedure where the test items were administered after completing the teaching of fractions in the schools and coded according to the five progressive levels of SOLO model. Numerous email correspondences were made about the SOLO with the SOLO expert at the University of New England, Australia. Semi structured interviews for students and teachers were conducted after a close study of the test responses.

Discussions and findings

Discussions and findings are presented in two parts. Part one deals with the developmental path of understanding of fraction concepts and operations in class 4, 5 and 6 and part two entails the developmental path of understanding of fraction concepts and operations across classes 4 to 6.

The responses of the test questions were coded as per the SOLO model

and used SPSS version 22 to analyze the quantitative data and qualitative data were analyzed using thematic approach.

Part one

This section describes the progression of understanding of fraction concepts and operations from class 4 to 6. The findings were presented in a table form with appropriate graphs.

1. *Progression of understanding of fraction concepts and operations in class 4*

Findings from this study show that a considerable number of respondents appeared not to have fully developed the concept of equivalent fractions. As shown in Figure 1, it is noted that 86.4% of respondents could not provide even single information on equivalent fractions when asked to describe them, and 84.1% could not draw the equivalent fraction of 2/7 (Figure 1). From analysis of the interview data, it was found that teachers teach equivalent fractions according to the textbook (national curriculum document), which covers only the part-whole model. This part-whole interpretation is important, but fails to convey the vital information that fractions are numbers with magnitudes (Fazio & Siegler, 2011).

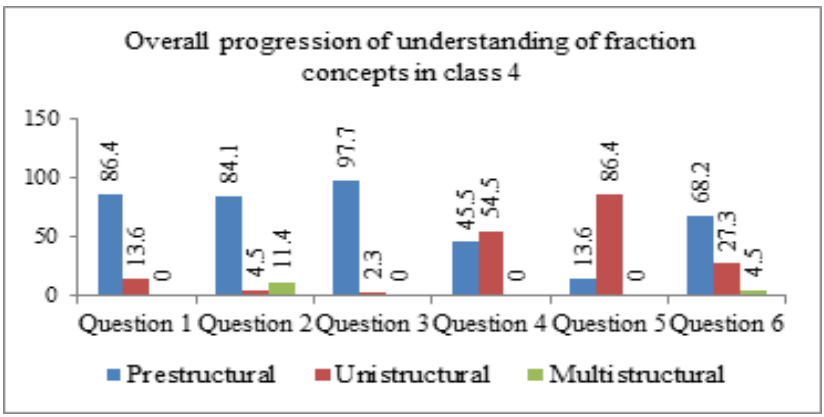


Figure 1: Levels of responses of class 4 (See questions in appendix 1)

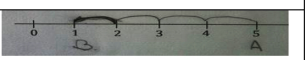
The document analysis of class 4 textbook revealed that there are 15 different activities on equivalent fractions and only one activity is related to real life experience (p.178). The activities are purely from the mathematical domain limiting the students' opportunities to connect mathematics to their real life experience. This situation may be one contributing factor for students not being able to explain equivalent fractions and compare fractions appropriately.

Furthermore, this study found that there are 22 different activities for students to compare fractions in relation to 0, 1/2 and 1 in the textbook. Surprisingly, 68.2% of the respondents could not indentify 3/4 is larger when compared to a whole and only 4.5% could give a partial reason on the question of comparing fractions. This problem may be the result of inadequate classroom instruction where students have constructed a scheme in a more limited way (Amato, 2005). In comparing fractions, 86.4% (unistructural level) of the respondents identified 2/5 as the larger fraction when compared to1/4. Students during the interview clearly said that"fraction with greater numerator and denominator is larger".This is an indication that students were using the properties of natural number while comparing fractions. Their whole number schemes have negative influence on the operation of fraction (Post et al, 1993) and moreover they were not aware that fractions are different from natural numbers in their density (Nunes & Bryant, 2009). The analysis of the textbook shows that students were shown only a part-whole model to compare fractions, followed by some numerical problems to solve. Thus, the experiences that teachers provide in the classroom do not provide enough opportunities for students to conceptualize fractions as numbers (Amato, 2005).

Summary

The Table 1 shows the overall progression of concepts and operations of class 4 respondents. As shown in Table 1, there is a greater percentage of prestructural and unistructural responses and only 15.5% of the responses were at multistructural level. One may conclude that a considerable number of respondents did not have basic fundamental concepts of fraction and overall progression of understanding of fraction concepts in class 4 maybe be considered unsatisfactory.

Table 1: Summary of class 4

Concepts and operations	SOLO level	Percentage (n=44)	Sample response (verbatim)
Explain equivalent fraction.	Prestructural	86.4%	"The meaning of the equivalent fraction is fraction that is equal are called equivalent fraction."
Draw diagram to show equivalent fraction of $\frac{2}{7}$.	Prestructural	84.1%	
Draw diagram to show $\frac{11}{3}$.	Prestructural	97.7%	
Plotting proper and mixed fractions on number line.	Unistructural	54.5%	
Comparing 2 fractions.	Unistructural	86.4%	"$\frac{2}{5}$ is bigger because $\frac{2}{5}$ is greater than $\frac{1}{4}$."
Taking bigger fraction when compared to whole.	Prestructural	68.2%	"Wangmo picked up $\frac{5}{11}$ of marbles when we see upper part."

2. *Progression of understanding of fraction concepts and operations in class 5*

Figure 2 shows that 72.1% (median=1) of the respondents were at prestructural level in equivalent fraction concepts. Although there are 10 different activities on equivalent fraction in the textbook, 69.8% of the respondents could not draw an equivalent fraction of 2/7.

Teachers reported, "Students can find equivalent fraction in the class" and further elaborated "to find the equivalent fraction, we multiply numerator and denominator with the same number". This response indicates that concepts were taught through rules. According to Mirirai and others (2012), "rules can facilitate conceptual understanding if they are used relationally, but experience has shown that most teachers use them instrumentally and as a result students fail to understand the concepts" (p. 91).

It would appear that the activities in the textbook do not demand students to use more than the procedural knowledge to get solutions. Thus, the concept of equivalent fraction was not adequately developed even in class 5.

The descriptive statistics showed that 65.1% (median=2) of the respondents were at a unistructural level in comparing two fractions (2/5 and 1/4). The quality of response to this question was not satisfactory as students simply compared numerator or denominator and did not consider the magnitude of fractions in performing this task.

This study revealed that 51.2% of the class 5 respondents were at the unistructural level in ordering 3/5, 3/8, 9/4 from greatest to least. Analysis of

interview data showed that students were with an opinion that 9/4 is greatest in the previous series of fractions because 9 is the greatest numerator of all the numbers. Existing literature shows that ordering fractions "needs to be based on an understanding of the ordering of unit fractions" (Behr & Post, 1992, p. 21). However, the textbooks from class 4 through 6 do not contain any activity about ordering unit fractions. This may be one drawback of the curriculum document that obstructs the proper development of ordering concepts in the Bhutanese students.

A vast majority of the respondents (90.7%) could not plot the fractions on number line as per the question. Thus, the lack of accuracy in Bhutanese students' mental representations of the magnitude of fraction is confirmed as found earlier in the international context by Gabriel et al (2013).

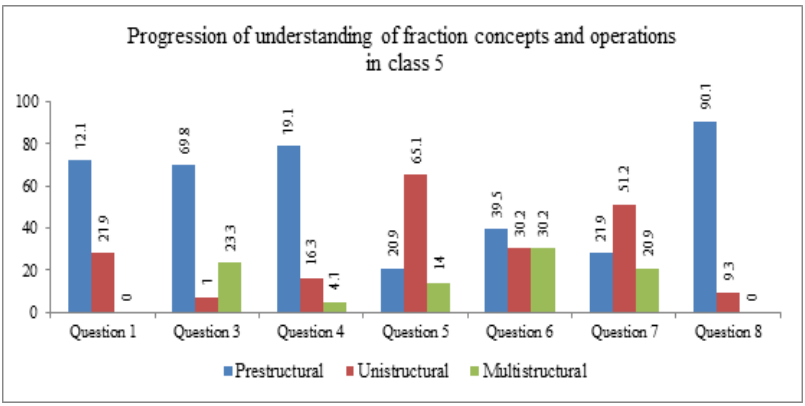
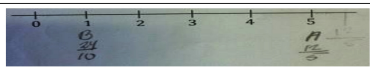


Figure 2: Levels of responses of class 5 (See details of questions in appendix 2)

Summary

Table 2 shows an overview of responses with the percentage for each area under study. It is clear that most of the class 5 respondents were at prestructural level on the concepts and operations of fraction.

Table 2: Summary of class 5

Concepts and operations	SOLO level	Percentage (n=43)	Sample response (verbatim)
Explain equivalent fraction.	Prestructural	72.1%	"Equivalent fraction is that we can change the upper number and we can change the down over."
Draw diagram to show $\frac{11}{3}$.	Prestructural	100%	
Draw diagram to show equivalent fraction of $\frac{2}{7}$.	Prestructural	69.8%	
Checking the equivalency of 2 fractions.	Prestructural	79.1%	"No, because the denominator is not same."
Comparing 2 fractions.	Unistructural	65.1%	"bigger is $\frac{2}{5}$ because it is more then $\frac{1}{4}$."
Selecting a denominator to make fraction statement true.	Prestructural	39.5%	"The $\frac{3}{9}$ is correct."
Ordering three fractions with different denominators	Unistructural	51.2%	"9/4, 3/8, 3/5"
Plotting improper and equivalent fractions on number line.	Prestructural	90.7%	

The developmental path of understanding of fraction concepts and operations in class 5 appears unsatisfactory as majority of the respondents have limited knowledge on quivalency (72.1%), comparing (65.1%), ordering (51.2%) and plotting (90.7%) of fractions. The rate of inconsistency in the response from one concept to another is high. Thus, the overall developmental path of understanding of fraction concepts and operations is not progressive in class 5.

3. Progression of understanding of fraction concepts and operations in class 6

The statistics shown in Figure 4 postulates that 61.4% (question 2) of the respondents could not draw equivalent fraction of 2/7 because 65.9% (question 1) of them have no proper concept of equivalent fraction. There are many activities in the textbook where the use of equivalent fraction is inevitable and students were using memorized rules to solve the problem. This notion is evident from the interview data where both teachers and students opined that students' understanding of equivalent fraction is reduced to application of memorized rule. This appears to be a drawback when a rule is introduced prematurely and the rule does not make any sense (Van De Walle et. al., 2015).

There is substantial evidence (Charalambous et.al., 2010 & Brous et.al., 2013) to suggest that students will have quality understanding of fraction if the fraction is shown through area, length, and set models and includes contexts that fit these models (Van De Walle et. al., 2015). The class 6 textbook covers more

of area model to teach fraction and there is no adequate experiences provided for students to examine fraction through other available models. This single mode of representation could be responsible for a limited understanding of fraction concepts amongst the students. Teachers, during the interview, expressed the idea that, they need more concrete materials to teach fractions.

Furthermore, 84.1% (see question 4) of respondents could not demonstrate how much a person will get if 9 cakes are shared equally among 16 of them. The impact of this poorly developed concept is also evident from question 6 where 63.6% (see question 6) could not plot mixed and improper fractions on the number line and 63.6% (see question 8) of the respondent could not explain the equivalency of 3/7 and 3/5 when asked.

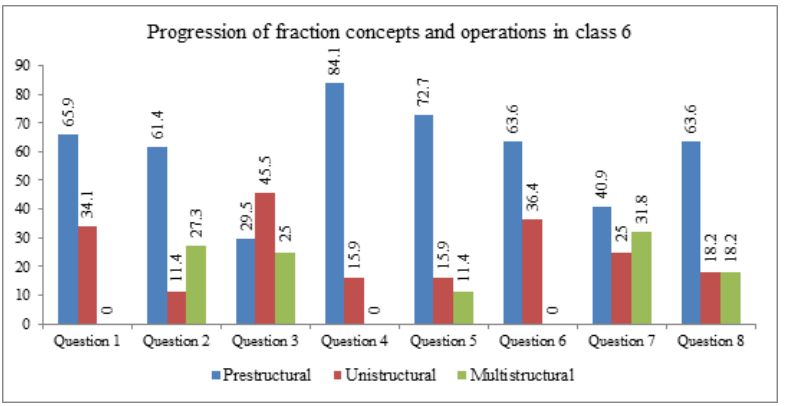
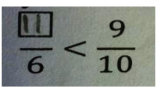
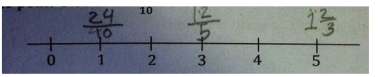


Figure 3: Levels of responses of class 6 (See details of questions in appendix 3)

Summary

Table 3 shows the higher percentage of SOLO level in class 6. It is apparent that more responses were at a prestructural level than unistructural and multistructural levels indicating poor progression of fraction concepts and operations in class 6.

Table 3: Summary of class 6

Concepts and operations	SOLO level	Percentage (n=44)	Sample response (verbatim)
Explain equivalent fraction.	Prestructural	65.9%	"Equivalent fraction means two equal fraction that means the diagram is equal size."
Draw diagram to show $\frac{2}{7}$.	Prestructural	61.4%	
Checking the equivalency of 2 fractions.	Unistructural	45.5%	"No, they are not equivalent fraction because we cannot simplify and the numbers are uneven."
Sharing 9 cakes equally among 16 students.	Prestructural	84.1%	"Each student will get 7 pieces."
Selecting a numerator to make fraction statement true.	Prestructural	72.7%	
Plotting mixed and improper fraction on number line.	Prestructural	63.6%	
Taking bigger fraction when compared to whole.	Prestructural	40.9%	"Wangmo picked up the most marbles. I know by subtracting the two fractions and I got the answer."
Checking the equivalency of 2 given fractions.	Prestructural	63.6%	"Yes, both are correct because the both used less numerator than denominator."

Part two

This section describes the progression of understanding of fraction concepts and operations from class 4 through 6 based on Table 4. The analysis of the data showed that 86.4% of class 4, 72.1% of class 5 and 65.9% of class 6 could not explain the concept of equivalent fraction. This situation is further compounded when 84.1% of class 4, 69.8% of class 5 and 61.4% of class 6 could not draw the equivalent fraction of 2/7. This result is a clear indication that the concept of equivalent fraction is not satisfactorily developed at the upper primary because students did not get adequate opportunities to "use their proportional and spatial reasoning skills to flexibly determine equivalent part-whole fractions by using models rather than being exposed to an algorithm" (Ontario Ministry of Education, 2014, p.14).

Although the concept of equivalent fraction has not been adequately developed, there is a subtle progression of understanding of this concept from class 4 to 6. The analysis of the statistics shows that there is an increase in

unistructural level from class 4 to 6 (class 4 - 4.5%, class 5 – 7.0% and class 6 – 11.4%). On the contrary, there is a decrease in percentage at unistructural level (class 4 – 86.4%, class 5 – 65.1% and class 6 – 45.5%) when the students were asked to compare fractions. There is adequate literature to show that comparing fractions requires a strong sense of equal partitions as well as equivalence (Bruce et al, 2013) and inadequate understanding of an equivalency of fraction may lead students to regard fractions as an arrangement rather than a quantity (Simon, 2002). There is evidence to suggest that without a strong understanding of fraction equivalence, students may not perform well in fraction computation (Van De Walle et. al., 2015).

Students of class 5 and 6 demonstrated that they were struggling with selecting a number in the box to make the fraction statement true (eg., □/6<9/10). The descriptive statistics showed that 39.5% of class 5 and 72.7% of class 6 students could not select the correct number in the box to make the fraction statement true. This concept of comparing fractions requires higher order thinking, which is not adequately covered in the textbooks of class 5 and 6. During the interview, no students could give proper explanation on this statement. They were rather trying to recollect the mathematical rule. This finding is similar to Kiernan's (as cited in Huinker, 2002), where "premature experiences with formal procedures (algorithms) may lead to symbolic knowledge that is not based on understanding, or connected to the real world" (p.148).

It is clear from the graphs shown in Figure 5 that respondents with prestructural responses are frequent and multistructural response is lowest in all the classes. Thus, the progression of understanding of fraction concepts and operations in class 4 through 6 is not very promising. Many students have demonstrated poor understanding in all the areas under study (Table 4).

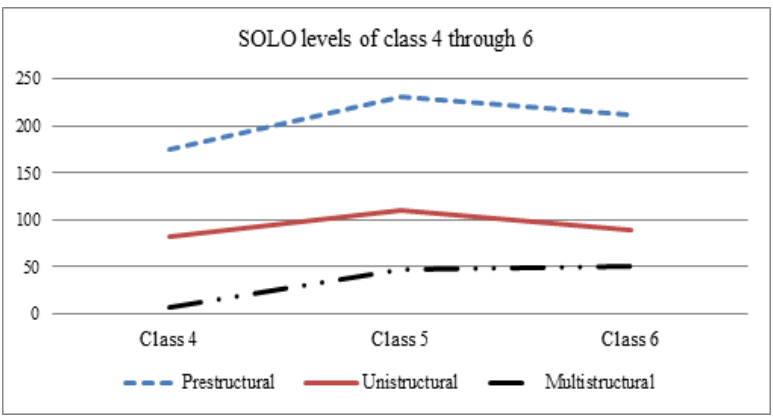


Figure 4: Levels of responses from class 4 through 6

Table 4: The overall progression of understanding of fraction concepts and operations from class 4 to 6 (n=131)

Concepts and operations	Class 4			Class 5			Class 6		
	Pre structural	Uni structural	Multi structural	Pre structural	Uni structural	Multi structural	Pre structural	Uni structural	Multi structural
Explain equivalent fraction.	38(86.4%)	6(13.6%)	0%	31(72.1%)	12(27.9%)	0%	29(65.9%)	15(34.1%)	0%
Draw diagram to show $\frac{2}{7}$.	37(84.1%)	2(4.5%)	5(11.4%)	30(69.8%)	3(7.0%)		27(61.4%)	5(11.4%)	12(27.3%)
Draw a diagram to show $\frac{3}{11}$.	43(97.7%)	1(2.3%)	0%	43(100%)	0%	0%	-	-	-
Comparing 2 fractions.	6(13.6%)	38(86.4%)	0%	9(20.9%)	28(65.1%)	6(14.0%)	13(29.5%)	20(45.5%)	11(25.0%)
Checking the equivalency of 2 fractions.	-	-	-	34(79.1%)	7(16.3%)	2(4.7%)	28(63.6%)	8(18.2%)	8(18.2%)
Sharing 9 cakes equally among 16 students.	-	-	-	-	-	-	37(84.1%)	7(15.9%)	0%
Selecting a number to make fraction statement true.	-	-	-	17(39.5%)	13(30.2%)	13(30.2%)	32(72.7%)	7(15.9%)	5(11.4%)
Plotting proper, improper and mixed fraction on number line.	20(45.5%)	24(54.5%)	0%	39(90.7%)	4(9.3%)	0%	28(63.6%)	16(36.4%)	0%
Identifying bigger fraction when compared to whole.	30(68.2%)	12(27.3%)	2(4.5%)	15(34.9%)	21(48.8%)	7(16.3%)	18(40.9%)	11(25.0%)	15(31.8%)

Conclusion

This research was conducted with the aim of determining the developmental path of understanding of fraction concepts and operations in classes 4 through 6. The overall development path of fraction from class 4 to 6 is far from satisfactory. The respondents across all three classes have demonstrated a weak understanding in most of the fraction concepts and operations under study. There could be many factors contributing to this poor understanding. Some plausible factors could be: teachers not aware of the developmental path of fraction concepts; focusing more on the instrumental understanding than relational understanding while teaching; or teacher education programmes not adequately preparing teachers to be effective classroom practitioners.

A reading of the textbooks of class 4 to 6 revealed that fraction concepts and operations were not shown through multiple representations; mostly area or region model is used. Students need to have many opportunities to experience different interpretations of fraction in order to develop a robust and mature understanding (Schwarz, 2016). It was also observed that rules were mentioned in the textbooks before the beginning of new concepts, and this factor may have promoted rule based teaching and learning. Mirirai and others (2012) pointed out that "teaching by rules makes the classroom learning of concepts irrelevant and abstract" (p.91) and this often limits the conceptual understanding because students rely on the taught rules (Carpenter et al., 1993). Teaching fraction should connect visuals with the procedure, and requires a more measured approach with the algorithm, which is an important aspect for students to have a sound understanding of and skill (Van De Walle et. al., 2015).

Recommendations

One suggestion to alleviate the poor results is for schools to organize PD (Professional Development programmes) to support teachers to give adequate focus on the proper development of fraction concepts and understanding. The schools may use expertise from the Colleges of Education to conduct PDs.

The Royal Education Council (REC) may reexamine the issue of progression of fraction concepts in upper primary classes. REC organizing nationwide PD on teaching fractions can definitely improve quality of understanding of fractions in the schools. The REC also may make a mention that rules of fractions mentioned in the textbook do not intend to promote rule based teaching. Improvising learning materials and adequately covering different modes of looking at fractions can be some of the PD topics.

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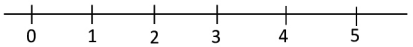
Appendix 1 (Questions of class 4)

1. Describe in as much detail as possible the meaning of equivalent fraction?
2. Draw a diagram to show an equivalent fraction of $\frac{2}{7}$.
3. Draw a diagram to show $\frac{11}{3}$.
4. Show point A = $\frac{2}{5}$ and B = $1\frac{1}{5}$ on the number line given below.



5. Which fraction is bigger $\frac{2}{5}$ or $\frac{1}{4}$? Give reasons for your answer.
6. Two bags of marbles with an equal number were kept on the table. Two students were asked to pick them up as quickly as they could in one minute. Dorji picked up $\frac{3}{4}$ of the marbles from one bag and Wangmo picked up $\frac{5}{11}$ of the marbles from another bag. Who picked up the most marbles? How do you know?

Appendix 2 (Questions of class 5)

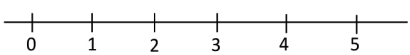
1. Describe in as much detail as possible the meaning of equivalent fraction?
2. Draw a diagram to show $\frac{11}{3}$.
3. Draw a diagram to show an equivalent fraction of $\frac{2}{7}$.
4. Sonam said $\frac{3}{7}$ of class 5A were wearing coats. Tashi said $\frac{3}{5}$ of class 5A were wearing coats. Are they both correct, yes or no? Explain your answer.
5. Which fraction is bigger $\frac{2}{5}$ or $\frac{1}{4}$. Give reasons for your answer.
6. Place a number in the box to make the statement true. Explain how you know the answer you have given is correct?

$$\frac{3}{\blacksquare} > \frac{3}{6}$$

7. Order the following fractions from greatest to least.

$$\frac{3}{5}, \frac{3}{8}, \frac{9}{4}$$

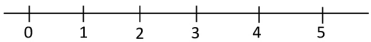
8. Show point A = $\frac{12}{5}$ on the number line given below. Where would point B be if B = $\frac{24}{10}$?



9. Two bags of marbles with an equal number were kept on the table. Two students were asked to pick them up as quickly as they could in one minute. Dorji picked up $\frac{3}{4}$ of the marbles from one bag and Wangmo picked up $\frac{5}{11}$ of the marbles from another bag. Who picked up the most marbles? How do you know?

Appendix 3 (Questions of class 6)

1. Describe in as much detail as possible the meaning of equivalent fraction?
2. Draw a diagram to show an equivalent fraction of $\frac{2}{7}$.
3. Are $\frac{3}{5}$ and $\frac{7}{9}$ equivalent fractions? How do you know?
4. A class of 16 students is having a party. There are 9 cakes to be shared equally among the students. How much will each student get?
5. What is the greatest number you can use to make the statement true? Explain your thinking.
   $\frac{\blacksquare}{6} < \frac{9}{10}$
6. Show point A = $1\frac{2}{3}$ and B = $\frac{12}{5}$ on the number line given below. Where would the point C be if C = $\frac{24}{10}$?



7. Two bags of marbles with an equal number were kept on the table. Two students were asked to pick them up as quickly as they could in one minute. Dorji picked up $\frac{3}{4}$ of the marbles from one bag and Wangmo picked up $\frac{5}{11}$ of the marbles from another bag. Who picked up the most marbles? How do you know?
8. Sonam said $\frac{3}{7}$ of class 6A were wearing coats. Tashi said $\frac{3}{5}$ of class 6A were wearing coats. Are they both correct, yes or no? Explain your answer.
9. Why is it useful to make same denominator to order fractions?
10. Will the product increases when we multiplying a fraction by a fraction? Explain your thinking giving one good example.

Becoming and being academic women in Lao PDR: Stoic but desiring change

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Abstract

This is the first study of the role of women teaching in a university in Lao PDR. The extensive literature on this subject in Western countries guided the sixteen interviews in Laotian that were translated and analysed with the assistance of NVIVO. Pipeline effects limited women's entrance to the academy. We found eight junior women were motivated extrinsically to become academics compared to the intrinsic motivation of most senior women. In becoming university teachers, the senior women had more to deal with. Most of the women interviewed were also required to do mundane service duties as well as teach while the male academics were involved in administration as well as teaching and were much more likely to be tenured and to do research. The women's explanations of these differences were largely given in terms of a competency discourse and the effects of stereotyping. Practices were different from national policy. Culture and tradition are important factors governing gender choices in Lao PDR including at the university. Frame factor theory was useful as a process explanation that limited women's choices. Yet, in terms of the future, the women identified a range of practical actions that they or others, such as the university leaders and the men in their lives could undertake to create a community with greater equity. Future areas for research are identified.

Key words: Higher education; gender; Lao PDR.

Introduction

There have been a multitude of studies of academic women in the West and some in other countries (see Maxwell, Afroze, Haque, Sultana, Zabin, & Sanam, 2015, 2014). In contrast, there have been very few studies in education in Lao PDR and none on the role of academic women. The present study builds upon the doctoral work of Bäcktorp's (2007) small interview study (n=11). In this current exploratory study, one in a series of six, we look into past and present

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influences upon the roles of academic women in South and South East Asia.

Lao PDR has borders with Myanmar, Cambodia, China, Thailand, and Vietnam. It is one of the world's most ethnically diverse countries. According to the 2005 census, 67% of the Lao people are Buddhist and 31% are Animist (UNESCO, 2012). About half of the population is under twenty (CEDAW Laos, 2008). Lao PDR is heavily dependent on subsistence agriculture which accounts for about half of its GDP. However, urbanization is occurring at a rate of 4.9% each year. The country is largely mountainous, with the most fertile land found along the Mekong plains. Access to facilities is limited especially in rural areas. Maternal mortality was eight times higher than comparison countries in 2010 (UNESCO, 2012). "More than one-half of Lao women are economically active, most often in agriculture or the informal sector" (SIGI, 2014). Comparative statistics (Table 1) indicate that Lao PDR is one of the poorest countries in a poor region and spending on education is low compared to Thailand and Vietnam. It also has a small population for its size.

Table 1

Territory, Population, Economy and Educational Expenditure (ASEAN, 2014)

	Country Total Land Area (Sq. km)	**Population (Million)**	**GDP per capita (US$)**	**GDP per capita (PPP$)**	**Population below National Poverty Line (%)**	**Govt. Spending on Education (% of Govt. expenditure) 2012**	**Public Spending on Education (% of GDP) 2012**
Cambodia	181,035	14.521	879	2,287	26.1	-	2.6
Lao PDR	236,800	6.385	1,279	2,824	24.0	13.2	3.3
Myanmar	676,577	60.384	875	1,393	25.6	6.1	0.8
Thailand	513,120	67.597	5,116	8,907	7.2	29.5	5.8
Viet Nam	331,051	87.840	1,403	3,440	13.1	19.8	6.6

Lao PDR is considered a least developed country, a status the government has pledged to change by 2020 heartened by recent good economic growth. The government of Laos, one of the few remaining one-party Communist states, began decentralizing control and encouraging private enterprise in 1988 following the Russian period of centralization in the 1970s and 1980s (Gainsborough, 2012; Ogawa, 2009; Bäcktorp, 2007). Tentative reforms and

an opening up of its economy since have led to some progress though it has a long way to go; the Laos GDP was 6.5 times less than comparison countries in 2010 (UNECSO, 2012). Laos has taken some positive steps towards meeting its Millennium Development Goals but there is still much to be done in these areas also. Laos' Human Development Index is 0.543 ranking it 130th out of 177 countries. It still ranks poorly on the Human Poverty Index– 70th among the 108 countries (CEDAW, 2014). With these kinds of statistics the position of many Laotian women and girls is problematic.

Status of women in Lao PDR

Lao PDR has ratified various international conventions including the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1981 and the Beijing Platform for Action (1995) (Bäcktorp, 2007). Article 35 of the amended 2003 Constitution of the Lao PDR guarantees the principle of gender equality. Articles 22 and 24 support gender equality, as does Article 8. Further support is provided by Article 13 of the Law on Development and Protection of Women and Article 177 of the Penal Law (2005) as well as the Prime Ministerial Decree, No. 26/PM, dated 6 February 2006. The National Commission for the Advancement of Women (NCAW) was created by the Prime Minister's Decree N. 37/PM of 1 April 2003. Its objectives are "to encourage, promote and protect the legitimate rights and interests of women in all fields" (CEDAW Laos, 2008, 16). There is a strong legal and rights framework upon which gender policies and practices can be built.

The Lao People's Revolutionary Party established the Lao Women's Union (LWU) in 1955. The LWU has ministry status. Membership reached almost half of all Laotian women in 2006. Its role is to protect the interests of women and children. In 2006, the Lao Women Union's 5th Congress reaffirmed the "Slogan of Three Goods" namely: "To be a good citizen, to have good development and to build a happy family" (CEDAW Laos, 2008, 21). However, the status of women in Lao PDR is undermined by high levels of illiteracy, gender-based violence and persistent traditional gender stereotyping. The generally low level of legal and rights *awareness* in relation to gender in society causes women's role(s) to be often undervalued (GOLPDR/UNDP, 2014).

Social Impact

Bäcktorp (2007) argued that Laotian socialism made women and girls "winners" in the sense that they were more able to access education. Bäcktorp also pointed out that socialism also brought women more into the productive sector of Laotian society. "Certain traditional customs do not allow women to work far from the village, limiting their mobility" (GOLPDR/UNDP, 2014) but, in modern times, this is likely to be only one daughter who stays home

as the others travel for work, often factory work, to send money home. Many women maintain a market stall. Yet cultural, ethnic and other differences lead to "different perceptions and different utilization of education, health and social services" (GOLPDR/UNDP, 2014) but also there is a new demand for benefits such as electricity and modern medicine (Robert Cooper, personal communication, 17/9/2014). UNESCO (2012) put it this way: "There are many … persistent norms, practices and traditions as well as patriarchal attitudes and deep rooted stereotypes regarding the roles, responsibilities and identities of women and men in all spheres of life." There are ethnic differences that complicate the picture. For example, the Hmong follow patriarchy/patriliny compared to matriarchy/matriliny of the ethnic Lao (Robert Cooper, personal communication, 17/9/2014). "Marriage customs and patterns … are very important for understanding the status of men and women in Lao society" (GRID/WB, 2005, in Bäcktorp, 2007). Furthermore

> Gender was also by and large made to be a women's issue… Parallel to the talk about 'urban equality' there were also discussions about how 'traditional' values put obstacles in the way of women; not only in the rural area but also in the urban setting and at *the university* (Bäcktorp, 2007, 125, our emphasis).

This latter point is important for the present study: gendered roles reached into the urban areas, presumably into elite situations such as those of university women in Laos. Bäcktorp (2007, 127) also pointed out that "On the one hand there was talk about the great awareness about gender issues. On the other hand, it was also stressed that this was a new idea that had not quite made the move from policy to practice."

What are some of the practical consequences? CEDAW Laos (2008, 10) stated that women "always work harder than men. … in 2002-2003, both men and women spent almost equal amount of time in agriculture. … In addition, women spent 2.6 hours [daily] for household chores while men spent only 0.6 hours." Furthermore, compared to men and boys, women and girls generally have less opportunities and access to resources (CEDAW, 2014). Additionally, "the proportion of women in … decision-making institutions is still low" (GOLPDR/UNDP, 2014). "The National Assembly and the Deputy Director-General positions have the highest proportion of women (25 per cent and 19 per cent respectively)" (GOLPDR/UNDP, 2014). This is despite the existence of the LWU for more than 60 years.

According to the United Nations Development Assistance Framework (UNDAF, 2012), there are four main obstacles for stronger empowerment of women:

a) The entrenched stereotypical attitudes;

b) A serious gender gap in lower secondary education;
c) A lack of spoken and written language proficiency; and
d) Weak information about the scale of gender disparity and the problems faced by women and girls.

The UNDAF, in collaboration with the Laotian Government, has set out ten concrete and measurable improvements. The tenth is specifically gender-related: "By 2015, people in the Lao PDR [will] benefit from policies and programmes which more effectively promote gender equality and increased participation and representation of women in formal and informal decision making" (UNDAF, 2012) although the budget for addressing this improvement is very low (0.4% of the available UN budget). The later tells its own story.

Theoretical Explanations

We agree with Poggio (2006, in van den Brink & Benschop, 2012, 72) that "gender is constantly redefined and negotiated in the everyday practices through which individuals interact". We know that "gender inequity is deeply embedded in social and workforce norms, traditional divisions of labour and breadwinner roles, established family and marriage dynamics, and a strong adherence to gender stereotypes" (Fox, 2013, 23). Explanations for gender inequity include social-cognitive theory one of which identifies cognitive schemas that overrate men and underrate women in barely visible ways that accumulate over time (Valian, 2005). For Whelan (2013) unconscious bias is the "key reason" that gender inequity remains. Unconscious bias, associated with unconscious thinking, "maps onto" associative not propositional thinking (57). Hence unconscious cognition develops by exposure/observation that accumulates over time and by intensity and context. Pattern recognition systems are generally an advantage but become a disadvantage when they are (1) not updated often, (2) not based on logic and so not fact checked, and (3) not readily recognised and hence not easily rectified (58). Gendered pattern recognition systems humans result in (a) stereotypical thinking ("think manager/think male"), (b) back-lash (in displaying behaviours that are considered masculine, women are likely to be penalised and/or evaluated more negatively) and/or (c) stereotype threat which occurs when women themselves "are more likely to conform … and behave in accordance with others' expectations" (59-62). Maatta and Lyckkage (2011) referred to a normalising process evident where differences are taken for granted or seen as natural.

Gender inequity results from human decisions. As we have just seen, decision-makers are not independent but linked to local and societal structures that limit decisions to a possible set. Kallos and Lundgren (1979, in Maxwell 2010) used the idea of a frame to encompass the limited number of decision

options available. This led to frame factor theory where decisions are framed by a variety of external influences (Kallos & Lundgren, 1979, in Maxwell, 2010). The notion of a frame is useful in considering humans' choices, or lack of them. As Lundgren (1999) summarized, "external frames limit and regulate changes in internal processes indirectly. Rather than in direct cause-effect relations, changes in frames enable or disable certain process possibilities."

Research studies have shown negative effects on Western female academics of gendered decision-making. Valian (2005) pointed out four partial explanations: (a) it was a pipeline problem[1] (see also Van den Brink & Benschop, 2012); (b) women's childcare responsibilities; (c) women and men have different values and preferences; and (d) women not being socialized to play by men's rules. Elg and Jonnergard (2003) added that women's biological clocks call for starting a family at about the same time as their professional career begins. Subsequently, the demands of management of the home and family lead to the lack of extra time for the workplace and access to work social networks and other opportunities.

Luke (2001) summarized: "there are indeed global patterns of women's exploitation and oppression, their marginal economic and social status". However it would be a mistake to conclude that the forces impacting upon women in Laos precisely mirror those of women in the West. It would also be a mistake to uncritically transfer Western theoretical explanations to Laos even taking globalisation into account. Before outlining our research into the many aspects of life for academic women in Lao PDR, and with these caveats in mind, we now look at the relations between gender and education there.

Gender and Universities in the Mekong Delta, Particularly Lao PDR

For Lao PDR to "catch up" education is seen as the key (Ogawa, 2009). Andaya (2008), in her historical study of SE Asian women, criticized the notion of egalitarianism and argued that early Modernism contributed greatly to gender inequity. Fernier and Mancini (1996) argued that the decline of the status of women in Vietnam was largely due to the introduction of Confucian patriarchy but Confucianism has less influence in Laos than in Vietnam. The PhD study by Nguyen (2000) in Vietnam found there was a serious gender policy practice gap. The Cambodian higher education (HE) system suffers from poor quality policies and a "shortage of regulatory regimes" (Sen & Ros with Thiraphumry, 2013). Kim and Ojendal (2014), again in Cambodia, found: "various studies on gender and democratic reforms… indicate that policy commitments remain unimplemented and/or nested in high politics involving vested interests counterproductive for gender equality". These studies echo the situation in Laos.

The Constitution of Lao PDR guarantees all citizens the right to education

1. The pipeline problem implies that fewer girls continue to senior high school and less still to higher studies.

and permits private sector participation in education provision (UNESCO, 2012). However, the reality is that:

> gender roles and biases make it more difficult for girls to be educated, … perpetuated when girls who drop out of school grow up into women who are illiterate … Early marriage or pregnancy may also cut short girls' education (GOLPDR/UNDP, 2014).

While improvements are evident over the last two decades (see Cooper, 2014), Laos is "off track" in meeting its net enrolment ratio and survival rate in primary school MDGs and in eliminating gender disparity in all levels of education (UNESCO, 2012) and "seriously off track" in meeting its gross enrolment ratio *and* education gender parity goals in secondary education (UNESCO, 2012). In upper secondary schools the gender parity has improved to 0.82 in 2010/11 (Noonan, Phommalangsy & Phetsiriseng, 2013). In 2012/13 the gross enrolment rate in upper secondary was 33.9% for girls and 40.7% for boys and almost half of those who completed the final year of lower secondary school did not go on (ASEAN, 2014).

Historically the effects of political changes in the 1970s were catastrophic as most educated and other Laotians fled the country (Stuart-Fox 2002, in Noonan 2011) but the education system was revived using monks and teachers with poor qualifications (84). Yet there were" graduates from the upper secondary schools (who) could pursue higher education in the USSR and Eastern European countries" via funding support through Vietnam (Noonan, 2011). Laos signed the Jomtien Declaration (1990). The government has since passed laws and facilitated funding to the primary then the secondary education sectors consistent with the view that education was necessary for economic development.

Noonan, Phommalangsy and Phetsiriseng (2013) described the development of higher education (HE) in Laos (see also Ogawa, 2009). Secular HE began in 1958. Separate tertiary departments linked to ministries were merged into the National University of Laos (NUOL) in 1996. Now there are five universities, three established in the last decade. The 1995 reformation in education promoted private investment and allowed staff in public universities to teach in the private sector (Ogawa, 2009). Demand strengthened and HE numbers increased dramatically in the period 2006/7 to 2010/11 (Noonan, Phommalangsy & Phetsiriseng, 2013) and demand far outstripped supply (Cooper, 2014). Fees were introduced in 2011 for all students at university together with some scholarships (Cooper, 2014). NUOL has devolved budgets to faculties where "special programs", with relatively high tuition fees, are run in the evening which provide 75% of recurrent costs for the faculties (Ogawa, 2009).Gender parity of tertiary students has steadily increased to 0.77 in 2012 (Table 2) but Ogawa

(2009) showed that the 2006 percentage of females at two smaller regional universities, Souphanouvong University (SU) in the north and at Champasak University (CU) in the south, were 35.5% and a lowly 6.6% respectively. Worse still, of students studying abroad in 2006, of the 33 PhD students, 27% were women, 27% of 255 MA students were women, and of 67 BA students, only 34% were women (CEDAW Laos2008). This is ample evidence of the pipeline effect.

Table 2

*Proportion of female to male tertiary students (*UNDP, 2013, in GOLPDR/ UNDP, 2014)

1990	1995	2000	2005	2012
0.42	0.52	0.70	0.71	0.77

Moreover, the proportion of women at NUOL remains low: they are also in less senior positions (Table 3).

Table 3

Academic staff at NUOL, 2014 by qualifications and position, male and female (NUOL, 2014, www.nuol.edu.la)

	Male, n (%)	**Female n (%)**	**Total**
Position			
Professor	7 (100)	0 (0)	7
Associate professor	134 (81.2)	31 (18.8)	165
Lecturers	40 (70.2)	17 (29.8)	57
Assistant lecturer	5 (50)	5 (5)	10
Non-academic Lecturers**	875 (58.7)	615 (41.3)	1490
Total*	**1061 (61.4)**	**668 (38.6)**	**1,729**
Highest Qualifications			
Doctorate	85 (75.2)	28 (25.8)	113
Master	512 (68.8)	232 (31.2)	744
Bachelor	389 (43.6)	504 (56.4)	893
Other	113 (69.8)	49 (30.2)	162
Total*	**1099 (57.5)**	**813 (42.5)**	**1912**

* These totals are different because data sources vary and figures are confused amongst academic and non-academic positions.

** These positions are not formalized.

In NUOL, 86% of teaching staff were non-academic and so can only teach at the Bachelor level. This high incidence points to the low pay and thus the need for a second job. Both low pay and taking a second job impact on teaching quality. All staff at the smaller SU and CU are non-academic lecturers. Table 4 shows the highly gendered work-forces there, more so than at NUOL. Tables 3 and 4 show that males dominate the two highest qualifications at all three universities. PhD numbers are low in each case.

Table 4

Academic staff at Suphanouvong and Champasak Universities, 2014, by qualifications, male and female (NUOL, 2014, www.nuol.edu.la)

	Champasak University			**Suphanouvong University**		
	Male, n (%)	Female, n (%)		Male, n (%)	Female, n (%)	
Doctorate	5 (71.4)	2 (28.6)	7	4 (100.0)	0 (0)	4
Master	53 (76.8)	16 (23.2)	69	76 (80.0)	19 (20.0)	95
Bachelor	169 (62.4)	102 (37.6)	271	182 (69.7)	79 (30.3)	261
Other	8 (53.3)	7 (46.7)	15	7 (50.0)	7 (50.0)	14
Total	**235 (64.9)**	**127 (35.1)**	**362**	**269 (71.9)**	**105 (28.1)**	**374**

"Most higher education institutions … do not meet the same quality standards as those of other countries in the region" (UNESCO, 2012). Reasons are readily evident. Bourdet (2001, in Bäcktorp, 2007) noted this was due to "the departure of many educated from Laos following the change of political regime in 1975. Another reason is the low priority given to higher education by the Lao government after 1975."According to Ogawa (2009), the priority for more resources for HE in Laos has changed recently "influenced by globalization and the knowledge economy." However, while (university) teacher status is high, the pay is low.

The pressure on women and girls to get married meant that only a few gained access to HE. This mirrors the situation in much of SE Asia. Luke's book (2001), based upon interviews of academic women in Thailand, Malaysia, Singapore and Hong Kong (relatively low gender inequality index countries), found the triple burden of work, child care and home, faced by most women everywhere, contributed to gender inequity in HE alongside "enduring resilience of locally

embedded cultural values and structures and, importantly, the capacity of the state to enshrine them in legal-juridical systems". She indicated gender inequity persists alongside the notions that women should not receive special treatment and that merit would prevail.

HE in Laos has had a complex history but not as complex as the histories of Laotian women as they negotiated the troubled decades of wars, class, ethnicity, rurality, culture and tradition. From this history, arguably, for older women the obstacles and difficulties they faced were materially more intense than those of younger Laotian women. How did junior and senior women become academics? How did/do these women negotiate roles in their academic world?

Methodology

This research is constructivist and exploratory. Due to resource restraints and the exploratory nature of this study only one university in Vientiane was selected. A semi-structured interview schedule was used and interviews were undertaken in the Lao language, taking between 30 and 60 minutes each, then transcribed and translated by the research assistants into English for analysis using NVIVO (2012). Translation meant extra care was needed in analysis and interpretation. Procedurally, a four hour research meeting was held in Vientiane with two female research assistants. Key issues were discussed including the University of New England ethics approval. Minor culture-related word changes were made. Subsequent to this meeting the research assistants identified eight senior and eight junior female academics in their university. They selected women who varied across home situations, were single and married, had varied qualification levels and were women from lower and higher positions. The two research assistants worked as a team; one led the interview and the other took notes. The note recorder also added probes as required. An honorarium was paid to each of the research assistants.

Results

Our interest lies in the influences in becoming and in being academics. Some comparison is made between how junior (n=8) and senior academics (n=8) signify their roles. Fifteen of the women were ethnic Lao Loum, one was Hmong. Twelve were married with children (five junior, seven senior). The junior academics' average university teaching experience was 9.5 years whereas senior academics' experience averaged 24.5 years (range: 10 to 30 years). Most of the senior women lived through the 1970s and 1980s. Most were from departments dominated by men but one participant was from a department that had a greater number of females. The university had no formal gender policy. Consequently women's references to policy probably refer to a gender equity stance taken from national level policies such as those of the LWU.

Influences on becoming an academic – shaping their role line spacing is not consistent

Four of the junior women commented on what not who inspired them: to study hard for a "high education" leading to a "good life". Similarly, but stated differently, the remaining young women wanted prestige: a "high position" or a "good job". In contrast half the senior women mentioned that they "loved to study". Two others mentioned family expectations while for one getting a high score precipitated her into higher education. For one senior woman it was a matter of survival. So, broadly speaking the younger women had extrinsic motivators while for most senior women motivation was largely intrinsic.

Turning to support mechanisms in shaping their lives, about half of each group indicated that they had financially supported their own study. All the Laotian women indicted that their parents were important influences in shaping their education. A typical comment was: "My parents supported my education not only by money (but) they also taught me, especially my father who taught me Mathematic and English Language" (junior academic, number 8, J8). However, as this quotation indicates, the older women's stories were more complicated:

> *As I studied at elementary until University, my parents supported me and I also helped myself. When I studied in University I got a government scholarship. At that time, I stayed in a dormitory. I usually went home on weekends to earn some money from weaving and helping my parents selling goods. These provided me some extra money (S1)*

The situation made one senior woman's early years more complex still:

> *My province was located in the war area at that time. ... My parents were afraid and only let me study when I was 10 years old. ... My father was strongly against me going to school because he liked me to do housework. ... However, I started studying at high school [but] my parents still ordered me to leave school. I got a high score and planned to study [further](S3).*

Postgraduate study was also complicated for many. Most obtained scholarships from donor countries. Most also mentioned the kinds of support they needed to take up the scholarship such as: "well, when I studied my master course, I got a scholarship from the Australian government. During that study, my husband took care of the family including the children and earned money for supporting the family" (S4).

In considerable contrast, of the seven seniors who gained scholarships, only three indicated they received partner support. Three of the senior women indicated they had to stage their academic development around child rearing. Four others implied the political move away from Russian influence in the

1980s impacted on their academic development. In summary, the senior Laotian academics had considerably more to contend with in becoming academics. Both groups indicated strong family support.

Factors influencing their daily academic life

In contrast to the support that was received early in life, in their current role the women indicated they received little support. The exception was that four women specifically mentioned support from their partners. This varied from "he helps me sometimes" (J3) to "he helps me a lot. He does everything such as cooking, washing, gardening, taking care of children also" (S8). There was on campus child care where eight of the women regularly left, or in some cases had left, their children. Out of hours, six (four juniors and two seniors) received help from their parent(s) regularly while two (one junior and one senior) received help sometimes. Only four of the 16 women indicated that child care/family responsibilities affected their academic work. It is not surprising that flexible hours of work were important to these women. Time for self did not appear to be an issue for any of these Laotian academics. Without exception the women indicated that they had been promoted "on their ability". This is the first mention of the women's competency discourse.

Yet, almost all mentioned that there was strong cultural pressure: "The family burden is still dominant for women in our country for example: to take care of children, cook for family, educate kids." A majority also noted that those from poor families found it hard to progress academically because of the financial strain it placed upon family resources. Both the traditional cultural and economic impacts were effects that the women themselves had to negotiate as they became academics and also in their present role. Yet the women were very accepting of the multiple demands in their lives. A minority indicated work/family conflicts.

Gender differences in academic role

Five women commented that there was no difference in academic work (teaching, research and service) between Laotian male and female academics. More specifically, no differences in teaching duties were evident, they said, due to "policy equality" wherein the "University has the principle of identifying teaching hours" that are not gender-based. Teaching "concerned women's capacity and their skills in the subject."

Despite the majority of women saying there was equality of access to research and research scholarships, practice was somewhat different according to some. For example,

> *In research, opportunities are given to both men and women, but women are burdened with their family so they are not active like men. For example, women have very limited chances to go into the field because they have to*

take care of their children. Particularly they cannot leave their baby. This is a reason women develop in research later than men (J2).

A major part of their role, for some women at least, was thus on hold to have or support a family. Reasons given by the women for men doing more research included "men have higher qualifications than women" (J8) and "men like to do research together" (J6). In contrast, in one department women did more research than men.

However, in relation to service and administration there were clear differences agreed almost unanimously. Here "service" means mundane work and "administration" means work with access to power. Generally women do service because men "think that it is not their function such as to serve water to a guest or wash dishes" (J4) or because "women are more sensitive than men in talking with guests. Women respect guests and are softer than men" (S5). Feminine qualities or men's learned helplessness are brought to the fore in explanation. On the other hand, men dominate administration according to these academic women who offered this range of explanations:

Women talk too much rather than working but men work seriously and are sharp in decision-making in their job (S5);
When we have an election men will usually be the winner (S7);
I think men have more power, ability and knowledge than women (J3); and
Women still have some weakness in decision-making (J7).

These are strongly gendered positions and the discourse of competence is again evident.

Discrimination

There was broad agreement that men not only are more likely to be tenured but that they hold more senior tenured positions, for example, a male dean as opposed to female division or department head. Typical reasons given for these differences included:

Because men have higher education than women (J6);
Women aren't as brave in decision-making as men (J8); and
Because some women aren't confident in themselves … and some women are not successful with the job that the organization allocates (S2).

The consequence of this gendered tenure is that the men had greater power and access to power. The junior women (n=5), in contrast to the senior women (n=5) who mentioned this, highlighted the influence of the informal men's network because the men "don't have as much commitment to the family" (J1), "are more

comfortable working together" (J2), "aren't confident of women's capacity" (J4) and "when they go to have lunch they like go together or when go somewhere they don't like women to go because they said women can't drink" (J6).

Generally there was perceived to be no difference in career aspirations between men and women though this was qualified by three of the junior women. For example,

> *Women have less chance than men because women have many obstacles such as the social environment and in their physical makeup. For example if women live far from family, their parents worry about them, so this leads to a limit point for women for study far away compared with men (J2).*

Additionally, women were seen by several of the junior women to be only recently involved in a career – a new concept - whereas for men it was usual. It is not surprising that no affirmative action was evident but one junior woman thought that networking would be useful and a senior academic said there are "some international funds to promote women, but there is still a limited number to access that because of women's ability" (S7). Surprisingly, only one women identified the "family burden" as an obstacle (S3).

There is a contradiction here: despite the differences noted, all of the junior women and five of the senior women thought that they were treated no differently than the men. Strikingly obvious in this section was the stereotyping and competency discourse. At the same time, there was no mention of the flexibility that many of the women were able to access when demands at home warranted it.

Possible future actions

The vast majority of the 16 women thought that the "university gender policy" was "good." This was also heavily qualified. Seven junior women identified that there was a difference between stated policy (presumably national policy) and actual practice because the women "cannot access the goal" (J1), "it needs time or budget" (J2), and "some women can't be successful because of their health or the family burden" (J7). Similarly the majority of the senior women said practice was different from policy. For example, "If I have a baby, I cannot go anywhere. It means I have been limited and lost an opportunity" (S1). Another said: "In real practice women can't equal men in any duty because women are limited in ability or men think their work together is better than when women join them" (S3). Finally, "Some of women cannot follow the policy well, according to women's habit they worry about family. Because of weakness of women ourselves which means we cannot access what should be, including power, academic status and position" (S8). Taken together these comments indicate policies and practices need to be developed to support women to undertake their full academic role and counter women's own prejudices.

What are the ways forward in the views of the women themselves? Firstly, at the university level, more strong support for women is needed (n=2), and specifically that the policy should provide more time for women who give birth - from three months to six months (n=2). Others thought that the organization should give duties to women in order to achieve a male/female balance (n=4), give them more power (n=1), more opportunities (n=1) and take the policy/practice gap "more seriously" (n=1). In fact the University and faculties already provided opportunities for women but taking these up seems to be very difficult. Secondly, in terms of university leadership some suggested a form of quota, for example, in elections the organization could give opportunities to women in equal number as men (n=5) so that there is a balance in the genders at the leadership level (n=2) and "Women who are the leaders (should) try to think about what the real women problems are and to discuss these with leaders" (S7) leading, potentially at least, to some form of affirmative action. Thirdly, the inclusion of men was considered by half of the group to be essential. One said: "Men should support the participation of women, and give opportunity to women because men are the main factor to change women's role" (J2). Another (S6): "we really need men to be concerned about women's participation in policy and in practice." Fourthly, the women themselves, or as a sisterhood, recognized they had a role to play:

> *The changes need to come from the women themselves; it is not policy, because policy is already good (J8);*
> *Women should remove the yoke by ourselves. So we have to change ourselves first (S2); and*
> *Women should motivate men to be concerned and let them know women's problems (S7).*

And finally, there are broader issues at stake as one junior academic pointed out:

> *We should hold a conference or activities that … attract concerned men to the activities. In addition, the activities should continue from the National University and spread to other organizations. I think the purpose would be to exchange knowledge for changes and/or find the method to improve gender equality (J2).*

This is clearly a call for leadership by academic women in Laos? Reflecting on (1) the range of practice changes suggested and (2) the potential ways forward indicate that these junior and senior female academics desire change despite their apparent acceptance of the current situation.

Discussion

This interview study of likely elite, urban(e) Lao Loum women university teachers was the first of its kind in Laos. It has the typical characteristics of an educational policy study identified by Jeong, Lee, Lee and Wi (2014) except that ours was a qualitative study. We found that the motivation for junior women becoming academics was largely extrinsic contrasting with senior women which was mostly intrinsic. The senior women had more to deal with in becoming university teachers, especially the older ones. Overcoming difficulties associated with war but also to overcome cultural stereotypes are evidence of considerable resilience. However, there were reported examples of counter stereotyping where a minority of men supported their partners. The majority had to negotiate their biological clocks (Elg & Jonnergard, 2003) as they developed their academic capacities. Interestingly, a majority has accepted and so normalised (Maatta & Lyckkage, 2011) the triple burden.

The women generally did not articulate differential treatment in or by the university. Yet they did see differences in service (women's role) and administration (men's) and especially in men's dominance in tenured positions. The latter point is confirmed in Table 3 and there too can be seen the dominance of men with higher qualifications. Their explanation of these differences was largely given in terms of a competency discourse (see Bäcktorp, 2007; Luke, 2001) and the unconscious bias of stereotyping.

Despite the differences identified, the importance of marriage and the consequent triple "family burden" was not questioned. Surprisingly, there was little mention of a lack of self-time, nor was there was mention or implication of guilt (LaFont, 2001). These suggest normalizing of the status quo (Maatta & Lyckkage, 2011). There was considerable support for child care by the university and by relatives and the flexibility that their work gave these women to attend to family obligations. Yet, the women came up with a range of practical measures to improve women's situation in the university and more generally. Action, they said, was needed in the university, by university leaders, by the men in their lives and, finally, themselves. No mention was made of a LWU role in improvement.

Many of these situations can be understood using frame factor theory. Lack of access to education constrained many women's entry to university and hence an academic career. Additionally, many were governed by traditional values of stereotyping both in becoming and being academics. Furthermore many women's acceptance of the demands of their triple burden and lack of time for self indicates their decision-making was framed more strongly by cultural influences than the regulatory frame of national policies. More research is needed on this explanation.

The strong governmental legal and rights platform was not translated into policy or practices in the university. This was similar to Bäcktorp's (2007)

conclusion that "in rhetoric, gender issues were promoted but in practice were resisted." The study also supported Ham, Paine and Cha's (2011) contention that education gender policy is vertically structured. Unlike in the Bäcktorp study (2007), however, we found that women did not directly indicate that gender was an issue until they were asked about the future. Some did note, however, that changes in university practices would wider the immediate decision-making set, for example, in the introduction of a quota system for women. In fact all the suggested ways forward can be viewed as widening decision-making choices for women, that is, relaxing constraining frames. It would perhaps be better for academic women not to wait for their male counterparts to take action on implementing policy but rather adopt a leadership role. Awareness needs to be raised, actions taken.

The effect of poor enrolments and poor gender parity, especially in upper secondary schools (UNESCO, 2012) makes it clear that the pool of females going on the university will remain small for some time. Thus the present disparities of numbers in academic positions are created by a compounding gender effect which starts right back in the primary education sector. However, this does not explain the upper secondary female/male ratio of 0.8, decreasing to 0.77 at the undergraduate level (Table 2) and again to 0.66 (from Table 3) for university teaching staff but this trend may be due to marriage and security pressures. Further research is needed here.

Conclusion

We found eight junior women were motivated extrinsically to become academics compared to the intrinsic motivation of most senior women. Gender differences in academic life were largely put down to a competency discourse and the effects of stereotyping. Almost all academic women with family responsibilities stoically went about their lives. Cooper (2014) pointed out that women in Laos have the power to make changes. He noted that women were free to vote at all levels but women voted men in as village head in all cases. Frame factor theory appeared to be a useful process explanation of limited women's choices. Culture and tradition are important factors governing gender choices in Lao PDR including at the university. However, culture and tradition are only a partial explanation especially in the rapid changing society of Laos. This is complicated by ethnic and other differences that have not been explored in this pioneering study. Research into such differences, e.g., Hmong university women, would make a contribution to the Laotian gender literature.

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Perceptions of faculty and student-teachers of Samtse College of Education on menstrual cycle and their practices: A Case Study

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Abstract

This qualitative study was undertaken at Samtse College of Education, Royal University of Bhutan. This paper explored the cultural aspects about the menstrual cycle globally and locally. In addition, it further explored some common practices engaged by women students of Samtse College during their menstrual cycle. Another issue this paper explored is some of the problems encountered by women students of Samtse College during their menstrual cycle. The data were collected using focus group interviews and one-on-one interviews. The purposive sampling was used to select the participants. The study revealed that the learning of female student participants was hampered as they were not able to concentrate in the class due to physical discomfort during their menstrual cycle. They even had to skip classes; however, their overall academic performance was not affected. It also revealed that majority of the female student-teachers took pain killers to relieve menstrual pain. However, it was found that the women maintained good personal hygiene and healthy diets during the menstrual cycle. The male participants were found to be understanding as they offered advice and support to female students during that particular time of the month. The perceptions of some participants revealed a strong stigma against menstrual cycle although many were not in favor of these perceptions. In addition, the study observed behavioral changes in male student-teachers towards menstrual cycle after the implementation of life skills based comprehensive sexuality education in the college. The findings from this study will enable life skills classes to address key issues concerning menstrual cycle such as providing appropriate information and correct health practices.

Keywords: menstrual cycle, comprehensive sexuality education, student-teachers perception, practices

Introduction

Menstruation is an important process for a woman's overall reproductive health. Women/girls can begin puberty as early as age 7 or as late as age 15. A

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girl child having their first period anytime within or around this age range is considered normal. After puberty is complete, having a period every month is considered most healthy. Generally, bleeding will occur every 28 days. Occasionally, menses will come in less than or more than a month from the first day of last period. According to Chawla (1992), menstruation is the monthly bleeding of non-pregnant women of child bearing age. Cultural connotations on menstrual cycle exist across all countries globally. There is a strong history of cultural determents regarding menstrual cycle in India. The cultural myths of menstrual cycle have been explored in-depth (Chawla, 1992). She revealed two significant conceptual areas on ritual and belief systems. For example, many women spoke of their bodies being unclean or impure during menstruation or post-partum and barring them from entering temples; while others having to worship well wherein expressed it was more of guarding well than purification ritual. These cultural beliefs that existed globally provoked me to venture into this study. Therefore, this study was particularly undertaken amongst faculty and student-teachers of Samtse College of Education, Royal University of Bhutan particularly to understand the nuances of Bhutanese cultural history regarding menstrual cycle. Besides, the paper explores the problems associated with menstruation. In addition, it articulates on some of the key practices followed during menstruation by the women students of Samtse College of Education.

A United Nations Educational, Scientific and Cultural Organization (UNESCO) study found that out of 28 countries of Asia-Pacific region, the Education Sector Strategies or plans of 10 countries did not include specific reference to sexuality education, and Bhutan was one of them. The reason cited was not getting adequate support from the government in implementing sexuality education, and the countries identified Life Skills Education as the common means used in addressing these issues (UNESCO, 2012). Although Bhutan has national youth policies and laws and national education policies and laws to address human immune virus (HIV), the body's natural defense system and reproductive health issues in their national HIV strategy or plan, there is no systematic implementation of life skills education. Therefore, UNESCO decided to collaborate with Ministry of Education (MoE) of Bhutan to integrate life skills education in the curriculum and teacher training.

The outcome of the collaboration was the development of a core curriculum on life skills-based-comprehensive sexuality education in the two colleges of education with initiation and support from United Nations Fund for Population Activities (UNFPA). This programme is being implemented in colleges and schools in the form of non-credited modules, workshops, and seminars. Life Skills Based: Comprehensive Sexuality Education is a module that promotes abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life (RUB, 2014).

In addition, according to World Health Organization, (WHO, 1994) life skills are abilities that facilitate the physical, mental, and emotional well-being of an individual. In addition, life skills are essentially those abilities that help promote mental well-being and competence in young people as they face the realities of life (RUB, 2014).

In line to this, the study was conducted to find out the perceptions of each of the three sub-groups (faculty, female students and male students) on woman's menstrual cycle. The study analyzed the effect of menstrual cycle on learning of women student-teachers and provided an important avenue for throwing light on gender issues such as male students' approach towards menstrual cycle. The study also observed the pattern of change in male students towards menstrual cycle through the implementation of Life skills based: Comprehensive sexuality education in the college. The study was conducted at Samtse College of Education.

Literature Review

According to Nordqvist (2013), a period or menstruation is the shedding of the endometrium: the uterine lining also referred as menses. A period is a bleed from womb (uterus) that is released through vagina. A menstrual cycle repeats itself approximately every 28 days for some woman while some can have shorter or longer cycle. The word menses comes from Latin word meaning 'months' and the word menstruation comes from Latin 'menstrualis' meaning monthly, especially of happening on a monthly basis (Nordqvist, 2013).

This menstrual cycle is linked to reproductive event. Reproduction is a biological process by which new individual organisms are produced and pregnancy can happen when a girl has an intercourse with a male after the girl has attend her menarche. According to Hillard (as cited in Nordqvist, 2013, p. 1), "the menstrual cycle is a window into the general health and well-being of women, and not just a reproductive event." Menstruation occurs when all parts that make up girl's reproductive system are matured and working together. A girl's period can begin from 8 to 16 years of age.

Although menstruation is normal and natural process for women, there are different perceptions of it in different parts of the world. For example in India, where female child is discriminated in the society, they are the most vulnerable group and menstruation is still regarded as something unclean or dirty (Shanb hag et al., 2012). They explained that the reaction to menstruation is closely connected with amount of awareness and knowledge one has on the subject, and the manner in which a girl learns about menstruation and its associated changes may have an impact on her response to the event of menarche. Menstruation is linked with several misconceptions and practices such as considering it unclean and dirty, and the girl is asked to hide, which overall may result into adverse

health outcomes (Shanb hag et al., 2012).

True to this statement, even in some parts of the Bhutan, "women's bodies have been exclusively associated with procreation and impurity commonly referred to as *drib. Drib* is originally associated with women's menstrual and reproductive cycle, but to the layman it has become synonymous with being inferior" (National Commission for Women and Children, 2008, p. 7). Women are discouraged and feel guilty to enter lhakhangs (temples) and offer holy water in the Altar room during their menstruation as these perceptions are widely accepted in the culture.

According to Robledo and Chrisler (2011), in the Western culture when girls attend menarche, parents and others treat them differently from what they did before. Post-menarcheal girls are cautioned about sexuality, told they are 'grown up,' and must act 'ladylike' in ways that restrict the kind of freedom they enjoyed earlier on. Consequently, menstruation marks girls and women as different from the normative and privileged male body. Furthermore, if people hold cultural beliefs that menstrual cycle cause women to be mentally and physically disordered, then the stigma of menstruation also marks women as ill, disabled, out-of-control, unfeminine, and even crazy (Chrisler, Rose, Dutch, Sklarsky, & Grant, 2006).

Opponents of menstruation suppression have also critiqued the social meaning attached to menstruation which is often constructed as dirty or experienced as a shameful or embarrassing aspect of womanhood in the western society. Women are said to use pads and tampons to manage and hide menstruation (Repta & Clarke, 2011).

Hoskins (2002) observed that in some parts of Indonesia, women are generally kept in "menstrual huts" but not secluded. They can wander about in the forest as long as they avoid male contact and cooking for their husbands, carrying heavy loads of firewood, and water to the houses. In another part of Indonesia, Hoskins (2002) describe that the women are asked to keep their menstrual cycle as secret; and in Kodi village of Indonesia, women who are menstruating are not allowed to come near indigo dye because it is believed that their menstrual blood is "aggressive" and could destroy the dyes in the pot. It was also treated as venereal disease, herbalism, and witchcraft (Hoskins, 2002). In Sri Lanka, when women attend their menarche they celebrate to mark that they are now ready to reproduce lives (personal communication, Dr. Choni, 9 August, 2014).

Purpose of the Study

Thus, it is apparent that there are different perceptions and a variety of stigmas attached to menstruation in different cultures and countries. There is very little literature on this subject in the Bhutanese context. Therefore, this study is timely and pertinent to understand and explore the different perceptions and stigmas

regarding menstrual cycle in Bhutan.

Hence the research question for this study is: How do faculty and student teachers of Samtse College of Education perceive menstrual cycle? This question will provide room to explore on key problems and misconceptions associated with, the practice gaps, and types of knowledge that are prevalent amongst the three sub-groups pertaining to menstruation. Additional questions include

What, if any, are the stigmas associated with menstrual cycle by the faculty and student participants?

What socio-cultural factors influence the female students in handling their menstrual cycles?

What are some of the emotional reactions of the male student teachers towards menstruation?

What are some hygiene and sanitation practices associated with menstrual cycle by the women participants?

Methodology

This is a qualitative study based on interpretivism using a case study design. According to Cresswell (2013), intrepretivism uses inductive method to collect data by exploring issues/questions, which develop and change as the research proceeds. They characteristically use interviews and observations, and review documents to gather data. Thus as stated by Smith and Heshusius (1986), interpretive research pursues the understanding of values, beliefs and meaning of social phenomena, thereby obtaining a deep and sympathetic understanding of human cultural activities and experiences. Also in this study, semi structured individual interviews and focus group interviews were used to gather the data.

Participants

The purposive sample selected represents the two sub-groups of participants: faculty and students. The study participants of 64 student-teachers were randomly selected from the sub-groups. Four males and four females were selected from the faculty; four male and four female students from 2nd; 3rd and 4th year of the B.Ed programme, and similar sample sizes from the four sections of the post graduate diploma programmes were respectively selected.

Table 1: Interview Schedule

Class	Participants No.		Total
	Male	Female	
Faculty	4	4	8
B.Ed 2nd year	4	4	8
B.Ed 3rd Year	4	4	8
B.Ed 4th Year	4	4	8
PgDE A	4	4	8
PgDE B	4	4	8
PgDE C	4	4	8
PgDGC	4	4	8
Total	**32**	**32**	**64**

Data Collection

To gather relevant information pertinent to the menstrual cycle, semi-structured interview questions were designed. These semi-structured questions included two versions, the first part for male members, while second part involved female members. The interview for the faculty were conducted individually, while focus group interviews were scheduled for the student participants. In general, there were a total of eight interviews for faculty members, and 14 focus group interviews for the student teachers. The faculty interviews lasted anywhere between 30 to 45 minutes, while the student focus groups were about 1 hour to 1 hour and 15 minutes. The interviews for female and male members were conducted separately. The issues covered in the focus group discussions were intended to learn about stigmas, physical and psychological implications, and if there are any learning baggage attached to menstrual cycle.

Research Ethics

Individual informed consent was solicited at the time of data collection. All documents were kept private and confidential. The consent from the participants was sought before the focus group discussion. During the focus group discussion, the participants were informed to skip questions that made them uneasy or refuse to participate totally if they felt uncomfortable prior to the interview.

Result/Findings of the Survey

The study findings will be dealt in four sub-sections: perceptions, psychological and physical baggage during menstruation, common practices during menstruation, and life skills.

Perceptions

The study indicated that different stigmas associated with menstrual cycle existed in the country. The study participants were aware of existence of different stigmas within the country. The majority of the participants said they were aware of such stigmas being prevalent in the Bhutanese culture. For instance one of the male participants said that in Southern part of the country especially among Hindus, women during their menarche have to sleep separately, cannot enter kitchen, and take part in the ritual. However, such practices and beliefs are disappearing with the advent of modern science. Through this study, some participants revealed that some higher caste people still adhere to these practices.

Majority of the participants (95%) said in eastern, central, and western parts of Bhutan, menstruation is considered to be *drib*. Therefore, a woman experiencing her menstruation is not allowed to enter altar rooms, religious sites, and must keep themselves away from gatherings or serving meals to elders.

One male student respondent from B.Ed final year opined, "from religious point, menstrual cycle is considered bad as it is believed that a tobacco plant grew from a drop of blood of a female demon during menstruation." The respondent also added that this belief is believed to be there in Buddhism. Thus alleging menstruation is evil and is capable of spreading undesirable habits

Some women have even been influenced by the cultural practices to believe they are unsanctified beings. For example one of the faculty female participants said, "yes, women are considered dirty (unsanctified). Thus, women should not enter altar rooms and temples during our menarche." About 95% of the female participants know that the associated stigmas are baseless myths, but a few still observe these traditional practices out of guilt as the larger society considers them to be an integral part of Bhutanese culture. For example, some of the participants about 30% revealed that just to impress their elders, they avoid offering holy water in the altar room and entering temples during their menarche while about 70% shared that they do these as respect to their culture and religion.

Psychological and Physical Baggage during Menstruation

Majority of the male respondents said personally they would not like to impose any restriction on women during menstruation, yet a few said they avoid sitting next to female students as they felt sleepy and drowsy (Drib) when some were menstruating. They learnt about this from their culture that menstrual cycle is linked with drib and could tell when a woman was having her period from her behavior and physical appearance.

Four female student respondents also added that they experience low self-esteem and become physically inactive during this period. Majority of female student respondents also confirmed that menstruation did affect their concentration in the class but not their overall academic performance. Sommer,

(1992) asserted that there is no effect of menstrual cycle fluctuations on the cognitive performance nor on achieving excellent college entrance examinations, or on any situations that require cognitive competence except for those individuals who experience severe dysmenorrheal or other disabling symptoms.

For instance, one female student respondent explained, "I cannot concentrate in the class because my attention is always on the pain." Another said, "I had to skip classes sometime as I cannot bear the pain and at times it's too severe that I had to resort to pain killers such as paracetomol and Brufin." Majority of the female faculty respondents stated that their menstrual cycle did not impact teaching.

All the participants (100%) shared that they heard about menstruation between the ages of 13 to 16. Of the 32 female respondents, majority learned about menstrual cycle from science textbooks in school; a few got the information from their sisters and some from their friends.

None of their mothers had been the source of information as exemplified by one respondent, "My parents were illiterate and it was taboo to talk about menstruation in our culture." Another explained, "I was brought up by my uncle as my parents passed away when I was young."

Although majority of the participants knew that menstruation was a natural process, it was interesting to note one female respondent say in her younger years she thought menstruation was the consequence of sexual intercourse and thought only prostitutes would experience menstruation.

Common Practices during Menstruation

The study also assessed care taken during menstruation by the female students. There was not much variance in the practices. The study revealed that all 32 female participants (100%) used disposable pad on a regular basis, but one women student felt comfortable using cloth during heavy bleeding. They bathed regularly and drank water excessively during menstrual process. The study also revealed that a few women (n=8) chose to wear dark clothes during menstruation to conceal blood stains and spray perfume to remove menstrual smell. For example one female student participant said, "I always make a point to wear dark clothes so blood stains will be less visible." Another female student participant said, "I wear perfume to remove menstrual smell and at times avoid sitting next to male friends as I am worried my period may smell."

Impact of Life Skills Education

The two colleges of education initiated life skills based: Comprehensive Sexuality Education with the support from UNFPA. The Ministry of Education was also very supportive to have life skills based: CSE classes introduced in the schools. The two colleges of education started it, so that when teachers graduate,

they can create awareness amongst the school goers and in the community. The core purposes of such an initiative were that without access to sexuality education and sexual and reproductive health (SRH) services, adolescents and youth face daunting reproductive and sexual health problems such as unintended pregnancy, unsafe abortion, maternal mortality and morbidity, sexually transmitted infections (STIs), violence, exploitation (such as exchanging sex for food and money), and discrimination on the basis of gender or sexual orientations. Evidence shows that sexuality education programmes have a positive effect on initiation of sex, frequency of sex, number of sexual partners, condom use, and other sexual behaviors that can prevent negative sexual and reproductive health outcomes. For example in the US, a majority of parents believed CSE classes were "somewhat effective" in getting students to use contraception if they did have sex (72.1%), preventing HIV/AIDS (69.8%), preventing pregnancy (73.1%), and getting students to wait until they were older to have sex (57.7%) (Eisenberg, Bernat, Bearinger, & Resnick, 2008). Besides, another study by Kirby (2008), also supported that about two thirds of comprehensive programs showed strong evidence that they positively affected young people's sexual behavior, including both delaying initiation of sex and increasing condom and contraceptive use among important groups of youth. Sexuality education also provides an important platform to discuss gender issues in order to promote mutually respectful and nonviolent relationships. Sexuality education can make a positive impact on the lives of adolescents beyond these important sexual and reproductive health outcomes. It can also play a role in shaping their life prospects and their social, health and economic potential (UNESCO, 2012).

It was evidenced from this study that Life skills based: CSE classes had positive impact on the student teachers because in the past, a majority of male student respondents stated to having mocked, made fun, or joked about menstruation during their school days as they lacked information. One male participant said he scolded a girl for leaving bloodstains on the chair and not taking care. However, with awareness from text, teachers, and comprehensive sexuality education, the students have realized that menstruation is normal and a natural phenomenon. All of the male respondents agreed advising female students to take care of their health and personal hygiene during menstruation was a good option. The majority of female student participants (n=28) also reported to having received support and advice from their male friends. For example one female participant said:

> *It was during our class picnic that one of my class boy knew that I was having period, he was so considerate and concern that he did not let me do my share of work rather he advice me to take rest and offered juice and water regularly.*

Another male participants said, "I offer to help them with their study and share my class notes when some of my female friends miss classes because of menstruation."

Discussion

The noble vision of the Ministry of Education to foster student centered learning needs to be translated into implementable plans. While concerted efforts to provide modern infrastructure and resources, like access to libraries and internet are being pursued, we must not lose focus of our subject i.e., the student. For children to be able to participate and imbibe knowledge in the classrooms, the psychological and physical barriers must be removed. It is only when the emotional wellbeing of children is assured, they are able to rise to challenge of learning. It is evident through this study that there are varying degrees to which students exhibit faulty perceptions to menstruation and menstrual cycle. For instance, some male participants thought menstruation as unclean and dirty, while some female participants felt they are unsanctified and thus should avoid entering altar rooms and temples. The study revealed that some of the participants still adhere to these practices. Other international studies also indicate that misconceptions on the menstrual cycle cut across culture and countries (Adinma & Adinma, 2008; Chawla, 1994). For example in India, where female child is discriminated in the society still regards menstruation as something unclear or dirty (Shanb hag et al., 2012).

The study findings are purely based from a small sampling; however, this study submission must be viewed in a broader perspective to provide a holistic and conducive learning environment. The study on menstruation revealed that the cultural understanding of it is detrimental to the educational process of our female students in Bhutan. The natural phenomenon of menstruation cannot be altered but how we perceive needs to be changed so that the girl child is able to shed all fears and anxieties related to menstruation and be able to focus on acquiring knowledge.

The recommendations must be viewed in the light that this is an institution that nurtures teachers who will be deployed to educate the school children. As they venture into this noble profession of building the capabilities of our future citizens, they must approach their work knowing the emotional baggage these learners carry to school despite their sincere effort to learn.

From this study it is evident that during menstruation girls are faced with two issues: one being physical and the other psychological pain. Both can be dealt with, although they may require different approaches and time horizons. The efficacy of pharmacologic agents in the relief of menstrual pain was highlighted in a study which reported the effectiveness of low-dose oral contraceptives in the relief of dysmenorrhoea amongst adolescent girls (Davis, Westoff, O'Connell, &

Gallagher, 2005). It was also found in this study that female student participants took pain killers such as paracetomol and brufin to relieve pain.

The teachers must at all times be mindful of the generation gap that exists between the student and their parents. This gap must be viewed firstly in terms of knowledge and secondly the cultural difference. Preserving our culture is important but busting some myths that impede progress is essential. This study pertains to busting those myths that hampers female students' learning which thus, needs to be shunned for the betterment of the society. The belief that menstruation is bad and evil as highlighted earlier through this study needs to be reviewed. How can a natural phenomenon that is intrinsic to procreation be viewed negatively and thereby disadvantage the girl child from learning. When the subject of menstruation remains a taboo, the girl child thinks she is unsanctified and approaches life with a belief she is unequal. This lowers her self-esteem, and learning is impeded as she constantly carries some doubts about her capability.

The other aspect is the physical pain the girl as to endure while finding means to appear normal in front of people. All, including family and friends, must understand the hygiene and sanitation standards the girl child needs to maintain. Consideration needs to be shown in use of natural resources, such as water, which is sometimes scarce and if schools could create a separate room whereby changes such as pads and dresses are stored and provided during emergency.

The study concluded by reporting that the study findings are based entirely on a small study. More input in terms of how to formulate new methods and processes to create awareness is required. This study does not claim that the effort is being totally neglected but suggests that there is a need to compliment and support the efforts of the Life Skill Based: Comprehensive Sexuality Education classes, which will help our teachers create the right condition for learning in our schools in the future. Majority of the student teachers expressed that Life Skill Based: Comprehensive Sexuality Education classes have created the right avenue in the lives of many of our student teachers and has made a significant impact on them. Because of Life Skills Based: Comprehensive Sexuality Education classes, the majority of the male respondents felt that their views and roles towards women students have changed. For example, the male student-teachers have learned to respect the types of emotions female students experience during their menarche, and their attitudes towards the menstrual cycle have changed totally. They render support and advice instead of mockery. They also help the women in academic learning especially offering to take notes for them and guiding the female student-teachers on the learning that they have missed out during their menarche. The female student-teachers also admitted observing such behavioral changes in their male counter parts having attended the Life Skill Based: Comprehensive Sexuality Education classes. They also admitted

receiving support and help during such circumstances. Thus, many felt Life Skill Based: Comprehensive Sexuality Education have attributed towards bringing positive change in their behaviour physically and psychologically which is also evident in a UNESCO report (UNESCO, 2012). It was also indicated in the student feedback collected in the end of year that Life Skill Based Comprehensive Sexuality Education classes should be continued as it teaches them the life's most essential knowledge, skills, and values.

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Setting Performance Standard by using the Bookmark Method

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Abstract

Assessment and examination centers often do not describe students' marks. However, marks should communicate what students know and can do. This paper will demonstrate how marks can be used for describing what students know and can do by using data from a study carried out at the Dutch Institute of Measurement. The result from the study shows that marks can be meaningfully described by using the Bookmark method, and that the method is cost-effective, parsimonious, and easy to replicate in different settings.

Key words: Standard setting; performance level; cut score; Bookmark method

Introduction

Some common terms used in describing examinees' marks are performance standard, performance level, and cut score. Performance level is a classification of examinees into levels based on their marks, performance standard is a qualitative description of the performance level, and cut score is a numerical value assigned to the performance standard (Kane, 2001). The process of describing examinees' marks in terms of these terms is known as standard setting (Reckase, 2001; Cizek, 2004). While there are other standard setting methods, such as Body of Work Method (Kingston, Kabl, Sweeney, & Bay, 2001), Analytic Judgment Method (Plake&Hambleton, 2001), Integrated Judgment Method (Jaeger & Mills, 2001), Cluster Analysis Method (Sireci & Clause, 2001), Yes/No Angoff method (Angoff, 1971), and New Test-Centred Standard Setting Method (Chang, Van der Linden, & Hos, 2004). This paper will use the Bookmark Method (Mitzel, Lewis, Patz, & Green, 2001; Cizek, Bunch, &Koons, 2004).

The Bookmark Method

The Bookmark method uses rank-ordered item booklets, probability judgment, item parameters, and person parameter. It has been convincingly claimed that the Bookmark method has a range of desirable features as compared to some

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shortcomings in the Angoff method (Davis-Becker, Buckendahl, &Gerrow, 2011; Mitzel, Lewis, Patz, & Green, 2001; Shepard, Glaser, Linn, &Bohrnstedt, 1993).

Its applicability to tests comprising both selected response (SR) and constructed response (CR) items, its capability to simplify the judgmental tasks required of the judges, its capability to connect the judgmental tasks to the measurement model, and its capability to link test content with performance level descriptors make the bookmark method preferable to the Angoff method. Further, the Bookmark method meets the needs of educational settings where multiple levels of mastery need to be established to measure educational progress (Wang, 2003; Lypson, Downing, Gruppen, & Yudkowsky, 2013).

Ordered Item Booklet (OIB)

An OIB is a booklet consisting of test items that are rank-ordered in terms of their difficulties; with the easiest item first and the hardest item last. When a test contains both SR and CR items, each CR item appears several times in the OIB—once for each of its score points. The OIB is formatted in such a way that a page contains only an SR item or a CR score point.

Probability Judgments in the Bookmark Method

In the Bookmark method, the expert judges make a probability judgment. The judges consider whether an examinee on the borderline between categories X and Y is likely to answer an SR item correctly or earn a CR item point (Cizek, 2004; Mitzel, Lewis, Patz, & Green, 2001). The Bookmark method typically uses 67% or 50% likelihood of the correct response. The 67% or 50% likelihood is usually referred to as the response probability (RP). The judges will place bookmarks in their OIBs on the page immediately after the page at which, in their opinion, the likelihood criterion applies or immediately before the page at which, in their opinion, the likelihood criterion drops.

Psychometric Foundations of the Bookmark Method

The Bookmark method uses Item Response Theory (IRT) to generate item and person parameters. The item and the person parameters for this study were generated by using one parameter logistic model software(Verhelst, Glas, & Verstralen, 1995). According to the one parameter logistic model, the probability of a correct response ($\psi_j(\theta)$) as a function of examinee ability (θ), item difficulty (a), and item discrimination (a) is as stated below:

$$\psi_{ij}(\theta) = \Pr(X_i = j \mid \theta) = \frac{\exp\left[a_i \left[j\theta - \sum_{g=1}^{j} \beta_g \right] \right]}{1 + \sum_{h=1}^{m_j} \exp\left[a_i \left[h\theta - \sum_{g=1}^{h} \beta_g \right] \right]}, (j=0,...,m_i), \quad (1)$$

where $\beta_g, g = 1,...,m_i$ are the parameters of item *i*. The value of a_i is imputed and is taken as a known discrimination index. Equation (1) is the version of the Generalized Partial Credit Model (Muraki, 1997), except for the definition of a_i. In case of the Generalized Partial Credit Model, a_i is not considered as known. Therefore it has to be estimated.

When $m_i = 1$, Equation (1) becomes Two-Parameter Logistic Model (Hambleton, 1991).

$$\psi_i(\theta) = \frac{\exp Da_i(\theta - b_i)}{1 + \exp Da_i(\theta - b_i)} \quad (2)$$

where D is a scaling factor introduced to make the logistic function as close as possible to the normal Ogive function.

The item response probability ($\psi_j(\theta)$) obtained by Equation (1) can be transformed into expected raw item score ($E(X)$) for examinees at a particular trait level ((θ)) as stated by Embretson and Reise (2000) by using Equation (3).

$$E(X) = \sum_{x=0}^{m} x\psi_{ij}(\theta) \quad (3)$$

Since the expected raw score is additive across items, the total raw score can be obtained by adding the values of Equation (3) that are calculated in accordance with the number of items (items with partial credits) used in the test. Further, the item response probability obtained by using Equation (2) can be transformed into expected item raw score for examinees at a particular trait level by using Equation (4).

$$E(X) = \sum_{j=1}^{m} \psi_j(\theta) \quad (4)$$

Where *m* is the number of items with 1 or 0 responses and *j* is one such item. *E(X),*often known as true score, is called the test characteristic curve (Hambleton,1991).

Determining Cut Score

A series of steps will have to be performed to determine a cut score. First, the judges will place their bookmarks in the OIB for an examinee at a defined performance level. Second, the latent traits or person parameters required for the items to have RP equal to 0 .67 or 0.50 are marked. Third, the average of these latent traits is calculated to obtain the cut score for the performance level. Fourth, the average latent trait is then transformed into a raw score by using Equation (3) for polytomous items and Equation (4) for dichotomous items.

Once the raw score has been obtained, the judges should be informed about the scores, and sufficient opportunity should be provided to the judges to either confirm or reconsider the positions of the bookmarks in the OIB. The judges may even be encouraged to discuss the bookmark positions in the OIBwith their colleagues. If a judge has changed the bookmark position, then a new average latent trait value should be calculated to get the raw score. When the judges decide not to make any further change in the bookmark positions, the last average latent trait value obtained becomes the final latent trait value for calculating the cut score.

Method

The study was carried out at CITO with the following objectives: (a) compare cut scores obtained by using RPs of 0.67 and 0.50; (b) compare the cut scores obtained from the study with the actual cut score set by CITO for the test; (c) find out the difficulties that the standard setting judges experience while setting standards by the Bookmark method; and (d) record a procedure to ease the use of the Bookmark method by emerging assessment and examination centers.

Data

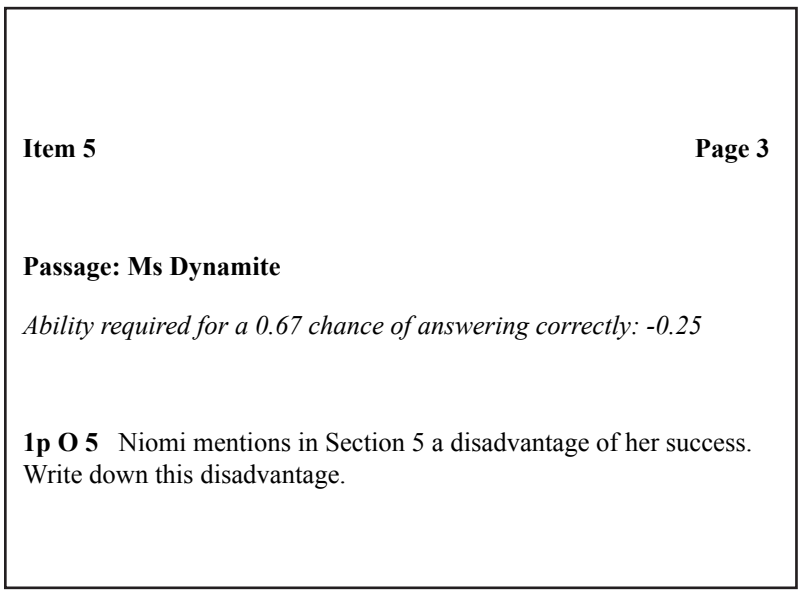
Data for the study was derived from a VMBO ((Dutch acronym for preparatory middle level applied education) English test. The test had 28 dichotomous items and one polytomous items. Of the 28 dichotomous items, 20

were multiple-choice items and eight were short answer items with maximum score of 1 each. The polytomous item had a maximum score of two. The maximum score of the test was 30.

The item and personparameters of the test were calibrated by using the OPLM, One Parameter Logistic Model (Verhelst et al., 1995).

Making the Ordered Item Booklets

Two sets of OIBs (sample page from the OIB is shown in Figure 1) were made. One set of OIB was made for the RP of 0.50 and the other set of OIB was made for the RP of 0.67.


Item 5 **Page 3**

Passage: Ms Dynamite

Ability required for a 0.67 chance of answering correctly: -0.25

1p O 5 Niomi mentions in Section 5 a disadvantage of her success. Write down this disadvantage.

Figure 1: Sample Page from the OIB.

In Figure 1, *Item 5* refers to item number, *Page 3* refers to the page number of this page in the OIB, *1p* is the score point awarded for the question, the symbol *O* is a bullet type used in the test as part of the test format components and Number *5* is the question number. This item is based on a passage called *Ms Dynamite*.

Training the Judges

The judges for the study were recruited among teachers who have been teaching the subject for over three years to ascertain their professional

competency in the subject. Also, the judges were selected for the study because of their continuous involvement in standard setting tasks at CITO.

The judges were familiarized with OIB, performance level, performance standard, and cut score through lecture and group discussion, with the aim of preparing them for standard setting. Next, the judges were introduced to the concepts of standard setting, purpose of standard setting, probability judgment, and response probabilities through lecture, demonstration, and group discussion. Only after sufficient information was obtained from the judges about their understanding of Bookmark method and its elements, the judges were invited to categorize performance leve land define performance standard. After the judges categorized performance level and corresponding performance standard, they were invited to place bookmarks in the OIBs. Following the placements of the bookmarks in the OIB, the cut scores were calculated. The judges were then invited to confirm or reconsider their bookmarks in the OIBs in relation to the cut scores. After the judges reaffirmed the positions of their bookmarks in the OIBs, the final cut scores were calculated.

Comparing the Cut Scores

The cut score at PR of 0.50 was compared with the cut score at RP of 0.67. The cut scores were also compared with a cut score calculated for the test by CITO.

Evaluating the standard Setting Process

To ascertain that the judges knew what they were doing, a questionnaire has been developed to evaluate the standard setting process (Hambleton, 2001). The questionnaire was administered to the judges who were asked to fill out anonymously.

Results

Performance Level Descriptor

The judges defined a performance level descriptor for an examinee performing at the minimally competent level as someone who was able to demonstrate an overall understanding of the text by providing inferential and literal information and extend the ideas in the text by making inferences, drawing conclusions, and making connections with personal experiences.

Ordered Item Booklets

The item and person parameters were calculated by using OPLM software, and the goodness of fit between the data and the model was examined by using R_{1C} test. The goodness of fit statistics was recorded at R_{1C} =142.763; df=117 and

p=0.0513, indicating that the data matched with the model (Verhelst et al., 1995). Table 1 and Table 2 contain the ordered item booklet with item parameters and associated person parameter (theta) values for theta @ RP=0.67 and theta @ RP=0.50 respectively.

Table 1: Ordered booklet item parameters and associated theta values for theta @ RP=0.67.

OIB Page	Item Number	Item Difficulty (b)	Item Discrimination (a)	Theta @ RP=0.67
1	1	-0.86	1	-0.15
2	2(1)	-0.77	3	-0.56
3	5	-0.42	5	-0.25
4	4	-0.31	4	-0.13
5	3	-0.24	4	-0.06
6	28	-0.20	7	-0.10
7	19	-0.15	4	0.02
8	10	-0.15	2	0.20
9	12	-0.14	3	0.10
10	14	-0.12	3	0.12
11	23	-0.08	5	0.06
12	22	-0.02	5	0.13
13	29	0.04	3	0.27
14	24	0.05	4	0.21
15	16	0.07	2	0.42
16	8	0.08	3	0.32
17	7	0.09	5	0.23
18	9	0.01	3	0.34
19	15	0.12	5	0.26
20	17	0.25	4	0.49
21	25	0.15	6	0.27
22	21	0.21	6	0.32
23	20	0.25	4	0.42
24	6	0.25	2	0.60
25	2(2)	0.26	3	0.51
26	18	0.30	3	0.54
27	26	0.31	3	0.55
28	11	0.36	2	0.72
29	27	0.40	2	0.75
30	13	0.46	1	1.17

Table 2: Ordered booklet item parameters and associated theta values for theta @RP=0.50.

OIB Page	Item Number	Item Difficulty (b)	Item Discrimination (a)	Theta @ RP=0.50
1	1	-0.86	1	-0.86
2	2(1)	-0.77	3	-0.79
3	5	-0.42	5	-0.42
4	4	-0.31	4	-0.31
5	3	-0.24	4	-0.24
6	28	-0.20	7	-0.20
7	19	-0.15	4	-0.15
8	10	-0.15	2	-0.15
9	12	-0.14	3	-0.14
10	14	-0.12	3	-0.12
11	23	-0.08	5	-0.08
12	22	-0.02	5	-0.02
13	29	0.04	3	0.04
14	24	0.05	4	0.05
15	16	0.07	2	0.07
16	8	0.08	3	0.08
17	7	0.09	5	0.09
18	9	0.01	3	0.10
19	15	0.12	5	0.12
20	17	0.25	4	0.14
21	25	0.15	6	0.15
22	21	0.21	6	0.21
23	20	0.25	4	0.25
24	6	0.25	2	0.25
25	2(2)	0.26	3	0.28
26	18	0.30	3	0.30
27	26	0.31	3	0.31
28	11	0.36	2	0.36
29	27	0.40	2	0.40
30	13	0.46	1	0.46

Bookmarks in the OIB for RP of 0.50

Table 3 shows the positions of the bookmarks in the OIB. As shown in Table 3, the mean of the theta values is -0.022 with standard error of 0.06 and standard deviation of 0.128. The standard deviation is high, indicating low inter-rater consistency. As it is clear from the table, judge A had given very high rating compared to other judges, resulting in low inter-rater consistency. In such context, it may be advisable to use median as the measure of central tendency because median is insensitive to the influence of a few extreme observations. For instance, observation like the rating score of judge A will not affect the value of the central tendency inherent in the distribution of rating scores when median is used as the measure of centre.

Table 3: Summary of judges' bookmark placements in first round

Judge	Item Number	Page number in OIB	Theta @ RP=0.50
A	25	21	0.15
B	24	14	0.05
C	12	9	-0.14
D	10	8	-0.15
E	22	12	-0.02
	Mean		-0.022

Based on the mean theta, the raw score was calculated for the cut score at a value of 13.15 +/- 3.60 at 98% confidence interval with standard error of 1.20 and standard deviation of 2.67. The raw score was presented to the judges and they were asked to either reconsider the position of their bookmarks or just stick with the previous positions. As a result, some judges reviewed the positions of the bookmarks in the OIB. The new result is presented in Table 4.

Table 4: Summary of judges' bookmark placements in second round

Judge	Item Number	Page number in OIB	Theta @ RP=0.50
A	25	21	0.15
B	22	12	-0.02
C	24	14	0.05
D	22	12	-0.02
E	22	12	-0.02
	Mean		0.028

As shown in Table 4, the mean of the theta values is 0.028 with standard error of 0.03 and standard deviation of 0.08. The standard deviation has improved. Based on the mean theta obtained from the second round, the raw score was calculated for the cut score at a value of 14.19 +/- 2.13 at 98% confidence interval with standard error of 0.71 and standard deviation of 1.58. The new raw score was presented to the judges and they were given the option of either changing their bookmark positions or keeping them as before. The judges did not venture any further into the OIB. The standard set for the VMBO English test with 28 dichotomous response items and one polytomous response item was 14.19 +/- 2.13 at 98% confidence interval for RP of 0.50.

Bookmarks in the OIB for RP of 0.67

Table 5 shows the positions of the bookmarks in the OIB. As shown in Table 5, the mean of the theta values is 0.578 with standard error of 0.014 and standard deviation of 0.03. Based on the mean theta, the raw score was calculated for the cut score at a value of 23.39 +/- 0.42 at 98% confidence interval with standard error of 0.14 and standard deviation of 0.31. The raw score was presented to the judges and they were asked to either reconsider the position of their bookmarks or just stick with the previous positions.

Table 5: Summary of judges' bookmark placements in the first round

Judge	Item Number	Page Number in OIB	Theta @ RP=0.67
A	6	24	0.60
B	26	27	0.55
C	18	26	0.54
D	6	24	0.60
E	6	24	0.60
	Mean		0.578

As a result, some judges reconsidered the positions of the bookmarks in OIB. The new result is presented in Table 6.

Table 6: Summary of judges' bookmark placements in the second round

Judge	Item Number	Page Number in OIB	Theta @ RP=0.67
A	6	24	0.60
B	18	26	0.54
C	6	24	0.60
D	6	24	0.60
E	20	23	0.42
	Mean		0.552

As shown in Table 6, the mean of the theta values is 0.552 with standard error of 0.04 and standard deviation of 0.08. Based on the mean theta obtained from the second round, the raw score was calculated for the cut score at a value of 23.10 +/- 1.23 at 98% confidence interval with standard error of 0.41 and standard deviation of 0.91. The new raw score was presented to the judges and they were given the option of either changing their bookmark positions or keeping them as before. The judges did not venture any further into the OIB. The standard set for the VMBO English test with 28 dichotomous response items and one polytomous response item was 23.10 +/- 1.23 for RP of 0.67.

Comparison of Cut Scores

Table 7 shows the cut scores at RP of 0.50 and at RP of 0.67 for the test. The table also shows a cut score available at CITO, shown in the third row, for

the same test.

Table 7: Cut Scores at RP of 0.50 and at RP of 0.67

RP	Cut Score	Cut Score in %
0.50	14.19	43.30
0.67	23.10	77.00
	19.87	66.22*

*Corresponding RP value is not available.

Evaluation of the Standard Setting Process

Table 8 shows the summary result of the evaluation of the standard setting process. In the comment column, some judges expressed the need for prior information about standard setting procedures and methods, some judges expressed the need for more time for discussion, some judges expressed the difficulty of conceptualizing the minimally competent examinee for both 0.50 and 0.67 RPs, and some judges expressed the need for more training on standard setting. On the whole, the judges were unanimous in expressing that they understood the purpose of standard setting and the meaning of OIB. Most of the judges also expressed a need for further training on standard setting by the Bookmark method.

Table 8: *Summary of the Evaluation Form*

Sl. NO.	Statement	A		B		C		D		E		Total	
		Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
1	The orientation provided me with a clear understanding of the purpose of the standard setting.	√		√		√		√		√		5	0
2	The training and practice exercises helped me understand how to perform standard setting.	√		√		√			√	√		4	1
3	The performance level descriptors were clear and useful.		√	√		√		√		√		4	1
4	The group discussions aided my understanding of the process.	√		√		√		√		√		5	0
5	The time provided for discussion was adequate.	√		√			√	√		√		4	1
6	There was an equal opportunity for everyone to contribute his/her ideas and opinions.	√		√		√		√		√		5	0
7	I was able to follow the instructions and complete the rating sheets accurately.	√		√		√		√		√		5	0
8	The discussions after the first round of ratings were helpful to me.	√		√		√		√		√		5	0
9	The discussions after the second round of ratings were helpful to me.	√		√		√		√		√		5	0

Discussion

The judges experienced some difficulties in conceptualizing the minimally competent examinee for both 0.50 and 0.67 RPs. However, with elaborate drill exercises through discussions and presentation of predefined performance level descriptors as examples, the performance level descriptor for the minimally competent examinee was conceptualized and approved by consensus among the judges.

Some judges raised concern about the positions of some of the items in the OIB as they felt that some items were easier than the items before them. This case was more prominent with the RP of 0.67. For the RP of 0.67, the judges took notice of the nominal nature of the ability values (theta). Some items that required less ability were placed after the items that required more ability. The role of the item discrimination parameter had to be explained to the judges to make them understand the seemingly confusing positions of the items with respect to the ability values. For instance, the judges were told and explained how item difficulty and item discrimination parameters determine the values of ability parameter. Again, the judges were told that the items were ordered based on the item difficulty parameters and not on the ability values.

The judges did not have problem with RP of 0.50. When RP of 0.50 was used, the ability values of the items were equal to the item difficulty parameters and thus ability values also increased with the increase in the values of the item difficulty parameters, meaning that both followed the ordering rule of the easiest item first and the hardest item last. However, even for the RP of 0.50, ability and item difficulty do not always increase proportionally when polytomous items are involved.

There is a substantial difference (8.91) in the values of the cut scores calculated by using RP of 0.50 and 0.67 respectively. The cut score is higher for the RP of 0.67 than for the RP of 0.50. From Tables 3 through 6, it is clear that the judges have selected difficult items for RP of 0.67 compared to the items selected for RP of 0.50. In principle, the cut score should remain same for the same performance level irrespective of the values of RPs (Wang, 2003). Further study may be made to find the factors which contribute to the difference in cut scores for different RP values for the same performance level.

A few research papers on standard setting by Bookmark method have presented some reasons for choosing the RP of 0.50 and RP of 0.67. Beretvas (2004) noted that the RP of two-thirds is founded on the likelihood that it is easier for the judges to understand. Also, Wang (2003) stated that the choice of RP of 0.50 is preferable on the Rasch measurement scale becauseperson parameter equals item difficulty parameter at RP of 0.50, making it less difficult to understand the minimal competency point.

The cut scores (14.19 & 23.10) obtained from the study were compared with the official cut score (28.00) that was set by CITO for the test. The cut scores obtained from the study for RPs of 0.50 and 0.67 were 47.3 % and 77.00 % respectively. The official cut score that was set by CITO for the test was 62.22%. The discrepancies among the cut scores indicate that the cut scores obtained from the study do not reflect the borderline examinee (known as a 5.5 candidate, meaning a candidate who has 50% success probability and 50% fail probability in line with the Rasch system) in the context of the standard setting methods used by CITO. However, at this point, it may be worth noting that the discrepancies between the cut scores obtained from the study and the cut score that was set by CITO sufficiently warrant further research in standard setting by using the Bookmark method. The actual cut score may be located somewhere between 14.19 and 23.10 according to CITO's cut score.

In the study the minimally competent examinee was conceptualized first for RP of 50% and then for RP of 67%. This had risked the threat of ordering effect. Judges might have conceptualized the minimally competent examinee for RP of 67% to be more proficient than the minimally competent examinee conceptualized for RP of 50%, thereby prompting them to bookmark more difficult items for RP of 67%. Such variations in the OIB because of the ways in which the test items are ordered have been commonly attributed to a perceived partial understanding of the Bookmark method by the judges (Davis-Becker et al, 2011), although the ways in which the items are ordered differed in studies. For instance, Davis-Becker et al. (2011) reported the ordering effect because of random and correct ordering of the items in OIB based on item p-values. It will be interesting to know if similar effects can be observed by ordering items within an IRT framework using person parameters. Therefore, a further study may be conducted to understand what leads to the ordering effect.

Conclusion

It is often the raw scores that students get at the end of tests, and the parents have to decode the scores to understand what their students have learnt from the courses and what they can do with what they have learnt. Often the parents will have no clue about making meaning out of the raw scores. As shown in this study, the Bookmark method has the potential to help schools describe test scores and design students' progress report cards with which parents can define their children's learning on what they can do with what they have learnt.

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A STUDY OF CLASS SIZE AND DIFFICULTIES FACED BY MIDDLE SECONDARY ESL TEACHERS IN BHUTAN

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Abstract

This paper presents a research study aimed to investigate the Bhutanese English as second language (ESL) teachers' opinions on class size and teaching difficulties associated with a large class. The data were collected by means of reflection writing and face to face structured interviews with six middle secondary school ESL teachers. The findings concerning ESL teachers' opinions on class size revealed that all six participants currently teach English to classes with over 30 students, which they considered as a large class. The findings on difficulties associated with large classes indicated that the difficulties related to evaluation, paying attention to individuals, and physical constraints were three daily encountered problems in teaching English to large classes. Furthermore, difficulties related to provision for materials, interaction, effective learning and teaching, and teacher discomfort were reported as frequently encountered problems. Although conducted on small scale, this study is expected to raise awareness on class size and the teaching difficulties currently faced by Bhutanese ESL teachers among stakeholders concerned.

Keywords: large class, ESL teachers, teaching difficulties, middle secondary school

Introduction

Large classes have been a pervasive challenge for English teachers in many parts of the world, particularly in developing countries (Benbow, Mizrachi, Oliver, & Moshiro, 2007). For instance, teachers in Pakistan, India, Sri Lanka, Indonesia, and Nigeria faced severe problems associated with large English classes (Shamim, 1991).

Needless to say, teachers all over the world are facing the problems of large English classes. Similarly, classroom size poses a problem among secondary schools in Bhutan as well. For example, the study conducted by School Education and Research Unit (SERU) (2012) has concisely summarized the current situation as, "The increased enrollment at the primary education level exerted enormous

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pressure on secondary schools thereby severely challenging the school system to fulfill Bhutan's commitment to provide quality education for all" (p. 40). Moreover, with the basic education policy in place, it is plausible that the problem of large classes will continue to exist among secondary schools in Bhutan.

General Perceptions on Class Size

Class size cannot be defined exactly as large, small, or ideal in terms of the number of students owing to the varying context of countries, schools, institutions, and individual teachers' perceptions (Coleman, 1989a). To make a judgment concerning class size, teachers depend on the largest class that they have experienced teaching. Hayes (1997) remarked that with the variation in people's perception of class size from one context to another, there is no quantitative definition of what makes up a large class. For example, a class considered large in the United States or the United Kingdom may be considered small in an African teaching-learning context (British Council, 2010).

English Teachers' Opinions on Class Size

Studies conducted in different contexts found diverse English teachers' opinions on class size. For example, a class of 19 students was perceived as an ideal size, while a class of 39 students was deemed as a large class in Japan (Locastro, 1989). In South Africa, a class of 34 students was considered as an ideal class size, and a class of 44 as a large class for teaching English (Peachey, 1989). Coleman (1989b) found that Nigerian English teachers considered a class of 52 students as large class, and 30 students as an ideal class size for teaching English. Furthermore, a class between 41 to 50 students were considered as large, and 21 to 30 students as an ideal class for teaching English in Thailand (Klinkhachorn, 1993).

Teaching Difficulties Associated with Large Class Size

The presence of a large class as a context for teaching English has been a problem for many teachers (Hayes, 1997). It may be argued that large classes do not act as a major impediment for teaching of content subjects. However, in the field of English language teaching (integrative skills) through communicative approach, a large class has been a common issue that posed multiple difficulties (Klinkhachorn, 1993).

The difficulties related to paying attention to individuals, controlling the class, evaluation, teacher discomfort, provision for materials, physical constraints, effectiveness of learning and teaching, and interaction were some of the problems faced by English teachers in Nigeria (Coleman, 1989b). Similarly, the problem of teaching and learning, evaluation of students' works, limited teaching materials, and classroom management were found prevalent in large

English classes (Peachey, 1989; Sabandar, 1989).

Jimakorn and Singhasiri (2006) found ineffective teaching, extra work for teachers, monitoring, providing timely feedback, and assessment as major teaching difficulties associated with large English classes. Furthermore, the difficulty to assess students' learning, providing feedback, and teacher's inability to evaluate students' work on time, identifying individual students' problems, and providing remedial help were identified as major problems in teaching English to large classes (British Council, 2010).

In addition, English teachers in large classes were found to have negative attitudes towards teaching and learning as it requires additional energy to manage classes effectively (Al-Jarf, 2006). In a similar vein, Bahanshal's (2013) study in Jeddah reported evaluating and assessing students' works as taxing jobs in teaching English to large classes. The teacher participants also complained of being exhausted both physically and mentally in teaching large classes. Furthermore, Azizinezhad, Hashemi and Darvishi (2013) found English teachers teaching large classes not able to practice different teaching techniques as per the students' needs.

Similarly, the problem of inadequate resources and limited classroom space due to increased class size were prevalent among secondary schools in Bhutan (Planning Commission, 2007; SERU, 2012). Although this situation can prevent Bhutanese ESL teachers from providing effective instruction, there is a dearth of research systematically conducted to examine ESL teachers' opinions on class size and teaching difficulties associated with large English classes. This study therefore proposes to elicit (a) Bhutanese middle secondary school ESL teachers' opinions on class size, and (b) difficulties associated with large English classes. The findings of the study can better inform teachers, school administrators, teacher training colleges, and policy makers of the consequences of problems associated with large classes.

Teaching Techniques and Strategies for Large English Classes

Scholars and researchers have suggested many teaching techniques, and strategies suitable for large English classes. For example, Coleman (1989a) proposed three approaches for teaching large English classes. First, the plenary approach in which teacher plays a dominant role in lecturing and controlling the class. Second, the interactive approach in which teacher provides more opportunities for learners to interact. Third, the compromised approach in which teacher assigns students to work outside the classroom to promote individual learning.

Similarly, Herbert and Hannam (2002) recommended seven successful teaching strategies for large English classes: (a) the use of small or focus group discussions in lectures and tutorials, (b) the use of web-based course materials,

course web sites, discussion boards, and online resources, (c) the use of mixed media including videos and slides, (d) the use of lecture exercises, individually or in pairs to discuss or write, (e) tutorial or lecture tests and quizzes, (f) peer assisted learning, or collaborative learning, and (g) problem based learning. In addition, to promote independent learning, Harmer (2004) suggests that autonomous learning is an effective technique to promote student's learning in large classes. He suggests that teachers should prepare students to work autonomously, and after which tasks should be assigned to make students work individually.

Furthermore, Jianling (2006) suggests eight teaching strategies for large English classes. First, the use of multimedia that would keep students attention focused on learning. Second, the use of a variety of lesson plans that would help teachers attend to the language proficiency levels of individual students. Third, assigning open ended tasks would provide opportunities for all learners to share their views and ideas. Fourth, personalized tasks would help teachers to create a positive classroom environment. Fifth, using games, competitions, and role plays would help students improve their language skills and encourage them to learn English. Sixth, encouraging team work would provide opportunities for students to cooperate and promote collaborative learning among students. Seventh, maintaining portfolios would help teachers know their students' individual needs. Eighth, keeping class diaries would help students realize their problems and encourage them to work on the problem.

Purpose and Method

The main purpose of this study is to investigate the Bhutanese ESL teachers' opinions on class size and teaching difficulties associated with a large English class. Therefore, a qualitative approach was deemed appropriate to elicit ESL teachers' opinions on class size and the problems associated with a large English class.

Participants

A total of six middle secondary school ESL teachers comprising of 3 males and 3 females under Thimphu, Punakha, and Tsirang districts were recruited based on purposive sampling technique suggested by Fraenkel, Wallen, and Hyun (2012). In purposive sampling, the researcher selects the participants based on previous knowledge of population and the specific research purpose using personal judgment in selecting the sample (Fraenkel et al., 2012).These three districts were selected on account of time constraints, and logistical convenience.

Data Collection and Analysis

The data for the study were collected employing reflection writing and

structured interviews with six recruited teacher participants. Merriam (2009) stressed that interviews will help researcher to collect in-depth and meaningful information. A set of ten interview questions were framed based on the study of large classes in Nigeria by Coleman (1989b). Similarly, the content of the reflection writing were also determined from the Coleman's (1989a) study of large classes. Richards and Lockhart (1994) suggested that self-reflection process involves collecting data about teaching, examining attitudes, beliefs, assumptions, and teaching practices. In general, both interview questions and reflection content aimed to elicit the ESL teachers' opinions on class size and the difficulties associated with large English classes.

The content validity of interview questions and reflection content were reviewed by consulting three experts, and computing Item Object Congruence (IOC) in accordance with the item acceptability criteria developed by Lynn (1986). The data collected from the interviews and written reflections were analyzed employing the concept of content analysis as suggested by Kaid (1989). Kaid suggests that content analysis should require seven classic steps: (a) formulating the research questions to be answered, (b) selecting the sample to be analyzed, (c) defining the categories to be applied, (d) outlining the coding process, (e) implementing the coding process, (f) determining the trustworthiness, and (g) analyzing the results of the coding process.

Results

The data collected from structured interviews and reflections were merged together to supplement and validate each other. In doing so, certain parts of the interview transcriptions and reflections are directly quoted using codes such as I1, I2, I3, I4, I5, and I6 to refer to each of the teacher-interviewees, and R1, R2, R3, R4, R5, and R6 to refer to each of the teachers' reflections.

Research question 1: What are the ESL teachers' opinions on class size in Bhutan?

The ESL teachers' opinions on class size based on interviews and reflections are grouped into three themes: (a) typical current class size ESL teachers teach, (b) large class size posing teaching difficulties, and (c) an ideal class size to teach English as perceived by ESL teacher participants.

Typical Current Class Size

All six participants for the structured interview and reflection writing expressed that the typical class size they taught was between 31-40 students. They taught English to these many students for more than three years. For instance, R5 reflected, "Till date, I have been teaching English to classes over 35 students." In addition, I2 expressed:

> I have been teaching English to the classes of more than 35 students for last four years. As of now I have 37 students, and it is quite uncomfortable and difficult for me to teach English to these many students in a class.

In summary, according to the participants, the typical current class size consists of over 30 students in their class. The participants deemed such number of students as a major impediment for effective teaching.

Large Class Size

Regarding the large class size, the participants unanimously admitted that a class with more than 30 students starts to pose multiple teaching difficulties related to evaluation, paying attention, physical constraints, interactions, provisions for materials, teacher discomfort, effectiveness of learning and teaching, and class control. For instance, I3 disclosed, "Teaching English to more than 30 students make me tired…. I cannot handle these many students in my class." Similarly, R1 maintained:

> Teaching English to more than 30 students is very congested, and I face various teaching difficulties due to these many students in my English class. Having more than 30 students in a class itself is a major impediment and causes various challenges such as conducting effective lesson, classroom management difficulty, ineffective and inadequate interaction, insensitive towards communication, poor assessment and evaluation, and thus failing to provide timely corrective feedbacks.

In general, the ESL teachers confronted various teaching difficulties in teaching the class with over 30 students. Thus, the teacher participants considered a class with over 30 students as a large class for teaching English.

An Ideal Class Size

All six participants regarded a class with less than 30 students as an ideal class size for teaching English. Given the privilege to teach an ideal class size, the participants expressed their wishes to do lot more in order to foster and advance the students' learning. I5 said, "If I am privileged to teach an ideal class, I would be able to pay attention to each individual student, evaluate their works on time, employ different teaching methods according to the students' learning needs, and provide timely feedback." Further, R3 maintained similar assertions:

> I would prefer to teach English to an ideal class of between 20 to 30 students. If I am privileged to teach English to an ideal classroom, I can actually be of more help to each individual student. I can understand the students' difficulty

> levels and teach according to it. I can understand where they are poor at, and I can give extra attention to those students who are weak. I can also help them whenever required. Above all, with an ideal number of students in my class, I will be able to evaluate and assess their work thoroughly.

In summary, the participants considered a class with less than 30 students as an ideal class size for teaching English. Given the choice, these ESL teachers yearn to teach English to classes with less than 30 students.

Research question 2: What difficulties do ESL teachers encounter in teaching large classes?

The difficulties encountered by ESL teachers in teaching English to large classes are grouped into three themes: (a) regularly encountered difficulties; (b) frequently encountered difficulties; and (c) occasionally encountered difficulties. These themes are derived based on the frequency of problem occurrence as reported by the participants in teaching English to large classes.

Regularly Encountered Teaching Difficulties

Teaching difficulties related to evaluation, paying attention to individuals, and physical constraints were reported as three regularly encountered difficulties in teaching English to large classes. First, the difficulties related to evaluation comprise of poor assessment, difficulties in evaluating students' work, and providing immediate corrective feedback. Second, the difficulties related to paying attention to individuals were difficulty in knowing the students' needs, and identifying weaker students at the earliest hour. Third, the difficulties related to physical constraints include the classroom congestion restricting the students from getting into groups for effective work and limiting space for the teacher to move around to check students' work. R2 reflected, "Every time I teach English to the large classes, I fail to monitor students' work owing to limited classroom space. It is even more difficult for me to understand students' difficulty level and check their work." Further, I1 said,

> Teaching English to large classes has always been a problem for me. Every time I teach English to large classes, I am not able to cater the needs of individual students. I fail to reach to every individual student because of limited classroom space. Above all, the time I get is not sufficient for me to evaluate and assess students' work.

Frequently Encountered Teaching Difficulties

In addition to the three regularly encountered teaching difficulties, the participants also reported other teaching difficulties which they encountered

frequently in teaching English to large classes. These difficulties were related to teacher discomfort, effectiveness of learning and teaching, interaction, and provision of materials. First, the difficulties related to teacher discomfort include the negative effects of class size on teachers' physical, mental, emotional, and social wellbeing. Second, the difficulties related to effectiveness of learning and teaching pertain to the use of limited teaching methods in accordance with the students' learning needs. Third, the difficulties related to interaction refer to the limited amount of productive interaction between teacher and students, and also among students. Finally, the difficulties related to the provision for materials include the paucity of teaching and learning materials. These four teaching difficulties associated with large class were often confronted by the participants in teaching English. For example, R5 argued, "Often I need to be emotionally strong when teaching English to large classes. I just ignore everything such as scarcity of teaching aids and many other difficulties…." In addition to R5, I1 complained:

> It is very difficult to engage all the students in productive interaction because of the large number. Actually, adequate teaching learning materials is crucial to make the students realize abstract phenomenon, but I do not have any choice rather than to use textbook. Moreover, quite often I am confronted with lots of challenges in making the class conducive. At times, I feel mentally disturbed in teaching English to large classes.

Occasionally Encountered Teaching Difficulties

Among various teaching difficulties associated with large class size, the participants expressed the difficulties related to control as occasionally troublesome in teaching English to large classes. The difficulties related to control include students' behavior related problems and classroom management related problems. The participants complained about the occasional occurrence of difficulties related to classroom management in teaching English to large classes. I5 said, "Sometimes it is very frustrating to control the commotion in the classroom. Moreover, I have to waste my time in controlling the noises." In addition, R3 remarked:

> Sometimes I come across situations where children do not live in harmony. I have to deal with mischievous behaviors such as bullies, harassments and fights among students. These kinds of behavioral problems at one or other time during the class hours affect my teaching thereby wasting time.

In general, the class size associated teaching difficulties expressed by teacher participants both in interviews and reflections divulge the arduous reality of

teaching English to large classes. The ESL teachers teaching English to large classes are confronted with multiple teaching difficulties of varying frequency of occurrences. These teaching difficulties were the major impediments hindering ESL teachers' effectiveness in teaching and learning process.

Discussion

1. What are the Bhutanese ESL teachers' opinions on class size?

The results of this study revealed a class with between 31 to 40 students as a large class, which they teach currently, and a class of 20 to 30 students as an ideal class size for teaching English in Bhutan. This indicates that a large class is a major impediment hindering the participants in teaching of English as a second language in Bhutan. Factors related to physical conditions in the classroom such as the available space, teaching methodology, and the availability of resources as postulated by Shamim (1991), and Teaching and Educational Development Institute (2003) could be the possible explanations for the participants' judgment of above 30 students as large class in Bhutan. In contrast to the findings of the present study**,** Coleman's (1989b) study in Nigeria, Peachey's (1989) study in South Africa, Klinkhachorn's (1993) study in Thailand, Holliday's (1996) study in Egypt, and George's (1991) study in Australia found varying ESL teachers' opinions on class size. These diverse ESL teachers' opinions suggests that the class size cannot be defined uniformly as large, small, or ideal universally in terms of the number of students owing to the varying context of countries, schools, institutions, and individual teachers' perceptions as posited by Coleman (1989a).

Given the privilege to teach an ideal class size, the participants could teach English more effectively as evidenced in the interviews and written reflections. Therefore, downsizing the classes as suggested by the participants would make ESL classrooms more conducive and inviting to teach effectively. In case downsizing is not possible due to financial constraints, the ESL teachers should then be equipped with skills to handle the situation. This could be done through providing workshops, seminars, and trainings related to teaching large English classes at the national, district, cluster, and school level.

2. What difficulties do ESL teachers encounter in teaching large classes?

Difficulties related to evaluation of students' works, paying attention to individual students, classroom physical constraints, provision for materials, interaction, teacher discomfort, and effectiveness of learning and teaching were seven serious problems out of eight problems. These findings concur with Al-Jarf's (2006), Atkins's (2002), Azizinezhad, et al. (2013), Bahanshal's (2013), British Council's (2010), Coleman's (1989a), Coleman's (1989b), Jimakorn

and Singhasiri's (2006), Klinkhachorn's (1993), Locastro's (1989), Peachey's (1989), and Sabandar's (1989) studies. The prevalence of such uncongenial learning and teaching situations if left unaddressed could dismantle ESL teachers' ardor to teach, thereby adversely affecting the quality of instructional delivery in large English classes.

Several studies have suggested alternative means to minimize or solve problems related to these seven class size associated difficulties both at the school and the practical classroom level. For example, the practice of peer assessment in large English classes as suggested by Dixon (1986), and the use of student leaders as recommended by Finocchiaro (1989) would help minimize the problems related to evaluation at the practical classroom level. In addition, using the assistant teachers in large classes as suggested by Safnil (1991) would further teachers' knowledge of their students' needs and interests in learning. This would require the support from the school administrators and the cooperation among ESL teachers to teach as a team. Furthermore, eliciting choral responses in large classes would help reduce the interaction related problems in large English classes (Harmer, 1998). The use of pair and group work as recommended by Harmer (1998) and Woodward (2001) would help reduce the problems related to effectiveness of learning and teaching in large English classes. The implementation of these commendable alternative solutions proven successful in large English classes by various studies would require both financial and professional assistance from policy-makers, teacher training colleges, school administrators, and ESL teachers.

Al-Jarf's (2006), Banshal's (2013), British Council's (2010), and Klinkhachorn's (1993) studies revealed class control as serious problem in large English classes. However, the participants reported control related difficulties as a minor problem in teaching large English classes in Bhutan. These conflicting findings could be possibly owing to teaching methods used, number of students, and contextual differences.

Implications and Recommendations

The results on ESL teachers' opinions on class size indicated that the ESL teachers were currently teaching English to classes which they considered large. This situation could possibly hinder the ESL teachers from delivering effective instructions due to multiple difficulties associated with large classes. Therefore, the stakeholders concerned should look into the matter of reducing the class size and making the classroom more inviting for ESL teachers to teach effectively. If class size reduction remains unrealizable owing to cost constraint, the school administrators and ESL teachers could plan for weekly or monthly teacher collaboration meetings to create a platform for exchanging information, knowledge and skills, teaching methods and approaches among the ESL teachers

within the school. This initiative could possibly help to reduce the problems in teaching English to large classes.

The results concerning difficulties associated with large English classes revealed that evaluation, paying attention to individuals, physical constraints, provision for materials, interaction, effectiveness of learning and teaching, and teacher discomfort were serious problems encountered in teaching English to the large classes. This situation calls for the attention of teacher training institutions and education personnel for the need to provide trainings and other professional development workshops related to teaching of English to large classes. In particular, to ensure effective English teaching in large classes, the teachers should be trained and coached to handle problems associated with large classes.

Based on the findings of the current study, the author recommends two possible directions for future studies. First, large classes could be studied from both ESL students' and teachers' perspectives investigating how large classes could be taught successfully. This new study could possibly provide alternative solutions to make learning and teaching in large English classes more productive, conducive, and inviting for both ESL teachers and students. Second, only six middle secondary schools ESL teachers under three chosen districts in Bhutan participated in this study, and the results must be generalized with caution. Therefore, future studies may include more middle secondary school ESL teachers.

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Early Childhood Development and Educational Practices in Samtse Dzongkhag

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Abstract

The emphasis on Early Childhood Education in Bhutan is a recent movement, which was introduced only in 2002, aiming to create the best possible child-rearing and education experiences for infants and young children. To achieve the same, a workforce that is knowledgeable and skilled plays an immense role. This study explores the knowledge and skills of ECCD Facilitators in Samtse Dzongkhag, both in private and public ECCD centres. To a large extent, many educated parents of urban areas hesitate to send their children to ECCD centres for they feel that the facilitators are inexperienced, possessing little knowledge and skills to deal with young children. A total of fourteen ECCD facilitators and three teachers teaching in pre-primary (PP) classes and one proprietor took part in the study as respondents to a survey questionnaire and an interview. The study unfolds the answers to the following questions: What do ECCD facilitators mean by 'early childhood education'? What are some of the developmental domains for young children? How do the facilitators enhance children's development in various domains? What are some of the problems/challenges faced by ECCD facilitators? How do they cope with these problems? The significant findings of this study comprise: Early childhood care and development programme offers all-round development for children; ECCD facilitators know the importance of the early years of life and provide variety of experiences to children; ECCD facilitators lack confidence in creating activities for specific domains of development. The key recommendations therefore are: Establish and expand early childhood care and development training for facilitators, both in the public and private operated ECCD centres; Involve parents in ECCD activities and establish congenial relationships between ECCD facilitators and parents; The colleges of Education should start a formal ECCD training programmes such as a diploma, B. Ed (Early Childhood Studies) and even masters.

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Background

"If children grew up according to early indications, we should have nothing but geniuses."JOHANN WOLFGANG VON GOETHE

As morning shows the day, a good beginning to life isrecognised as the foundation for future success. This foundation is grounded in the quality services and programmes offered to young children. The eighteenth century quote above is still relevant and has huge implications and meaning for young children's growth and development. Early childhood care and development (ECCD) in Bhutanis a recent movement, which was introduced only in 2002 and is at the moment making steady progress and gaining its momentum. The importance of ECCD is clearly mentioned in the 'Education Sector Strategy: Realising the Vision 2020 (P. 10) of the Department of Education, Ministry of Health and Education:

All children aged 0-5 years will be supported to enhance their intellectual, emotional and physical development through a programme that enables them to grow in their familiar and natural environment. Priority will be given to home- and family-based approaches, with additional inputs from institutional structures and options, which recognise the increasing diversity of life-styles and settings in which children are now being raised.

In Samtse Dzongkhag, child care and early learning services are a recent development in the field of ECCD. Over two hundred children below the age of five years attend day-long ECCD programme, and the number of children who would attend will increase year by year. There are three distinct types of ECCD service providers in Bhutan: Community-based ECCD centres, NGO-supported ECCD centres, and private ECCD centres. The five community-based ECCD centres cater to about one hundred and ten children and are funded and supported by the Royal Government of Bhutan in collaboration with UNICEF, Bhutan. Three ECCD centres are private-operated small businesses located in Samtse, Gomtu and Sibsoo; and are licensed by the Ministry of Education and serves about seventy children. One ECCD centre is supported by Loden Foundation, an NGO (Non-governmental organization) and provides services to twenty children in Changmari.The intent of this study was to explore 'knowledge and skills of ECCD Facilitators' in Samtse Dzongkhag, both in private and public ECCD centers as many educated parents of urban area hesitate to send their children to ECCD centres for they feel that the facilitators are inexperienced, possessing little knowledge and skills to deal with young children.

Literature Review

The field of ECCD describes the programmes and services offered to young

children from conception to the age eight (National Policy on Early Childhood Care and development, 2011). These early years are the most critical years of a person's life as they lay foundation for future success (Puckett &Diffily, 2004). Parents, caregivers, ECCD facilitators and casual observers can see vast changes taking place during the early years of children's life in the following areas: physical health and motor development; cognitive development; language, literacy and communication skills, social and emotional development; approaches towards learning; and spiritual, moral and cultural development as enshrined in Early Learning and Development Standards of Bhutan (ELDS,2011). Several decades of research in this area exhibit that environments and experiences created for young children are critically important in children's physical, cognitive, language, social, and spiritual, moral and cultural development (Puckett &Diffily, 2004).

An ECCD facilitator, therefore,is required to shoulder many important roles in supporting children in all areas of development and above all one must be there to help children to start on their educational path. National Association for the Education of Young Children (NAEYC) describes how an adult who works with young children should:

- Respect, value, and accept children and treat them with dignity at all times.
- Make it a priority to know each child well.
- Create an intellectually engaging, responsive environment to promote each child's learning and development.
- Make plans to enable children to attain key curriculum goals across various disciplines.
- Foster children's collaboration with peers on interesting, important enterprises.
- Develop, refine, and use a wide repertoire of teaching strategies to enhance children's learning and development.
- Facilitate the development of responsibility and self-regulation in children (cited in Puckett & Diffily, 2004).

The main role of the early childhood educator is to nurture all-round development in children, thus nurturing a child encompasses all aspects of development: physical, cognitive, language, social, emotional, spiritual, moral and cultural. The children also develop their approaches towards learning.Thus, the knowledge of child growth, development and learning heavily influences the educators' decision about their practices.

Besides the roles mentioned above, it is extremely important for professionals working with young children to know on how child develops which allows us to fully appreciate the cognitive, emotional, physical, social and educational growth

that children go through from birth and into early adulthood. The knowledge on developmental milestone would also add to professionals' way of dealing with children in the early learning centres. It is also important to know every child in an early childhood programme. This will help ECCD facilitators to plan and execute activities that would meet each child's developmental needs. If ECCD facilitators expect the same behaviours and abilities from children who are of same age, this will cause more harm for children in their development (Mallory, 1992 cited in Puckett & Diffily, 2004).

The knowledge and skill on setting physical and psychological environment on the part of ECCD facilitators would immensely add value and quality to the services and programme offered to young children. The ways, how rooms and materials are arranged would determine the learning that would happen in that classroom. In a high-quality ECCD centre, the room is classically arranged in learning corners and those corners are filled with materials that capture children's interest. Furthermore, the mental and emotional state (psychological tone) ECCD facilitators create in the classroom determine the success and failure of the programme. The positive or negative interactions between the ECCD facilitator and children have profound effects on children. The healthy personality, social and moral competency of children heavily depend on the way adults treat them. The idea on the same can be traced back as far as Plato:

'And the first step… is always what matters most, particularly when we are dealing with the young and tender. This is the time when they are taking shape and when any impression we choose to make leaves a permanent mark' (cited in Clarke and Clarke, 2000, p 11).

Over the last decade, the NAEYC, the Asia-Pacific Regional Network for Early Childhood (ARNEC) and other relevant organizations have brought us into the new era of working with young children. The encouragement to implement developmentally appropriate practices (DAP) was the main driving force behind to establish child-centredprogrammes.Thus this new era unfolds, to prepare ourselves to shoulder new roles and responsibilities. DAP comprises of all aspect of the ECCD programme, right from the physical environment to daily schedule, and the learning experiences adults create for children.

Recently, few Community-based, NGO-supported, and private ECCD centres were established but the number of children who were attending the ECCD programme was far less than what it should be. There is a need to look at reasons underlying for low rate of children attending ECCD programmes in Samtse, Dzongkhag; the knowledge and skills of ECCD programme facilitators have to be examined. This study had attempted to identify and highlight the knowledge and skills of ECCD facilitators, which need immediate attention from all stakeholders, such as policy makers, educational institutions, private individuals who run ECCD programmes

Methodology

The aim of this study was to explore 'knowledge and skills of ECCD Facilitators' in Samtse Dzongkhag, both in private and public ECCD centres. The data werecollected using a combination of quantitative and qualitative techniques. Quantitative research focused on collecting facts and the relationship of one set of facts to another (Bell, 2005). For the purpose of this study, quantitative data weregenerated through a survey questionnaire and qualitative data weregathered through unstructured interviews with ECCD facilitators. According to Bell, (2005, p. 7) qualitative approach will help the researchers in understanding the individuals' perception of the topic under examination. A total of fourteen ECCD facilitators, one proprietor of early learning centre and three teachers teaching in Class PP took part in the study as respondents to the questionnaire and the interviews.

Questionnaires

The ECCD facilitators responded to the questionnaire by indicating with tick marks against the options for every question. These were intended to gauge their knowledge of early childhood care and development. Every question offered five responses (Strongly Agree, Agree, Uncertain, Disagree and Strongly Disagree) about Early Childhood Development and Educational Practices. A trial was also conducted on fourparticipants to test the reliability and validity of the instrument and suitable adjustments were made. Final versions with thirty items were used to gather data for analysis.

Classroom observation

A centre each from three different types of ECCD service providers was chosen for two hours classroom observation, which was videotaped. The classroom observation checklist was developed to findout the facilitators' knowledge of organising activities to enhance children's development.

Interview

Four facilitators were chosen for in-depth interviews designed to find out their knowledge and skills in organising various activities for young children; problem faced during the development and implementation of activities; and how it is addressed. The interview structure was developed to provide a framework that would enable the results to be analysed but which would not hinder more extended discussions. It was particularly important that the facilitators being interviewed did not feel that they were put under test. Finding time to talk to the individual facilitator was not an easy task in the midst of busy schedule thus interview was designed to accomplish within thirty to forty five minutes. The discussion was recorded in the form of summary notes, audio tapedand later

transcribed. The items were selected on the basis of an earlier trial conducted with four participants.

The survey data were entered into SPSS for the analysis of the variables providing agreement choice numeric codes from 1 to 5. For every item, 1=strongly disagree, 2= disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree. For analysis of qualitative data received from interviews, different colour coding was used to highlight key points so as to produce dynamic result.

Findings and Discussion

This section presents results of this research on exploring the facilitators' knowledge of ECCD and classroom practices.

ECCD facilitators' Qualification:

The environments and experiences provided by caregivers for young children are critically important in their physical, cognitive, language, social, and spiritual, moral and cultural development (Puckett & Diffily, 2004).These clearly indicates the teachers of young children and caregivers need sound knowledge and training on ECCD. Irrespective of where the ECCD facilitators work (Community-based ECCD centre, ECCD centre supported by NGO, and private ECCD centre),none of them wereprofessionally trained, nor had sound experience in early childhood development and educational practices. About 60% of the ECCD facilitators in SamtseDzongkhag had less than a year experience,whowere struggling to learn and enhance their knowledge and skills in this area on the job. It is not only important to have pre-service training for educational qualification, but need to be supported through ongoing trainings and workshops.

Twenty nine percent of ECCD facilitators in Samtse Dzongkhag had completed class ten and the rest seventy one percent had class twelve certificate. Seven of the ECCD facilitators had attended a workshop organised by the MoE and other relevant organizations.

Facilitators' knowledge on ECCD

The knowledge and skill on setting physical and psychological environment on the part of ECCD facilitators would immensely add value and quality to the services and programme offered to young children. The ways, how rooms and materials are arranged would determine the learning that would happen in that classroom. Almost all facilitators recognised the importance of ECCD, the environment and experiences adults provide for young childrenand play during early childhood and its influence on the child's smooth transition to formal schooling. The facilitators were also very clear about children's later academic and social competence as a result of experiences they receive from quality ECCD programmes. The results are shown in table1.

Table 1. Facilitators' knowledge on ECCD

Variables and category	Frequency (n=???)	Percentage
Importance of ECCD:		
• The early childhood years (0 – 8 years) are important in terms of future success	**15**	**83.3%**
• The early years of life are critical for building foundations for:	**17**	**94.4%**
□ Academic competence	**17**	**94.4%**
□ Social competence		
• Importance of ELDS (Early Learning and Development Standards)	**17**	**94.4%**
Importance of environment and experiences adults provide for young children:		
• Families are the primary influence on children's learning and development	**18**	**100%**
• Families need to support children in their journey of learning and development.	**18**	**100%**
• Early childhood professionals play a great role in advancing children's learning and development	**18**	**100%**
• Parents and family members play an enormous role in shaping a child's social and emotional development	**18**	**100%**
• Environments and experiences for children are critically important as they shape them as to who he or she will become	**17**	**94.4%**
• Children's learning and development are advanced when they are provided with appropriate support and engagement within their families and with ECCD facilitators.	**18**	**100%**
• Parents and educators can build children's confidence, sense of wellbeing, safety and willingness to engage in learning	**17**	**94.4%**

Importance of play for young children:		
• Play is essential for stimulating a wide range of children's intellectual, physical, social and creative abilities	**18**	**100%**
Physical Development:		
• Most children develop motor control and coordination from head to toe	**14**	**77.7%**
• Physical well-being, health and motor development are central to children's learning experiences for lifelong active and healthy lifestyle	**16**	**88.8%**
• Children's physical development is influenced by nutrition and access to health care	**18**	**100%**
Language development:		
• From early infancy, language is learned through social interactions through many opportunities to hear and experiment with sounds and words	**16**	**88.8%**
• Young children form their own grammar based on the sense they are able to derive from the spoken words	**16**	**88.8%**
• Young children are incapable of acquiring language during their first year of life	**17**	**94.4%**
• Adults can encourage language development in children by modeling and interacting with them in positive ways	**18**	**100%**
• Young children respond differently to different sounds and from an early age are able to distinguish sound patterns	**17**	**94.4%**

The table above clearly shows that all facilitators surveyed knew about the impact of their roles on early childhood development. Almost all reported the knowledge on the importance of stimulation in facilitating the development of cognition, besides the development of social, physical, emotional, language skills and the children's approach towards learning. However, their classroom practices indicated confusion in implementing that knowledge.

Though many facilitators had some knowledge on ECCD, many of them faltered in providing their clear stance of it and they knew less on different domains of development for young children as enshrined in ELDS (Early Learning and Development Standards).

Classroom practices

The study shows that most facilitators lack knowledge and skills in creating and developing activities to enhance children's development in various domains and attimes, they were found shouldering the traditional role of a "teacher" as dispensers of knowledge. Though, some facilitators were deeply interested in the classroom environment – how it is set up and how it affects individual children, yet knowledge, skills and resources were found to be major constraints in providing quality services to young children.

(ECCD facilitator helping toddlers gain control over their big muscles. Photo by Karma Jurme)

Besides, many facilitators failed to cite some examples of the activities they design to enhance the development of children without consciously being aware the development of various domains.Though facilitators knew that early children

childhood care and development programme offers all-round development for children, yet many of them lacked confidence in classroom management skills. They also reported difficulties in managing classes especially in the beginning of the year as they lacked any prior training and knowledge in this area. Table 2 below indicates facilitators' knowledge and abilities in supporting young children in their journey of learning and development.

Table 2: Facilitators responses to survey questions on some of the activities used in the learning centre

Variables and category	Facilitators' responses
a. Physical Health, Well-being, and Motor development:	- Outdoor play like swing, skipping, bowling, football, sand play, water play, running around, slide, & indoor games - Writing and scribbling
b. Social and Emotional Development:	- Storytelling, greetings, & role play - Letting children play with blocks, singing rhymes and songs - Learning new things
c. Language, Literacy, and Communication:	- Focus on national language and English - Writing, storytelling, drawing, colouring and painting. - Outdoor games - Communicating different language - Singing songs, talk to children, &ask simple questions
d. Approaches towards learning:	- Writing, free play, magic bag game - Teach them creative arts, things and show different pictures - Make children happy

a. Cognition and General Knowledge:	- Counting numbers, - Make them play with different things - Take children out and teach them about plants and animals - Ask questions and let them play with blocks - Thinking games, sand and water play
b. Spiritual, Moral, and cultural development:	- National dress, mask dance, and ritual performance - Prayers during lunch time and meditation - Letting children listen to Bhutanese songs - Construction of chortens, temples and building

Recommendations

Finding from this study showed that ECCD facilitators in Samtse Dzongkhag faced many challenges in providing quality early childhood education. Many facilitators aspired to have access to knowledge and information on ECCD and on children's behaviour management. For some public owned ECCD centres, safety and strong roof over the centre is an urgent need to be addressed. Facilitators also wished to have good facilities and knowledge on child-centered teaching methods for enhancing and optimizing children's development and education.The government, Community, Non-Governmental Organisations and the Proprietors must join hands and take initiatives to establish child friendly ECCD centres and provide training opportunities for ECCD facilitators. Based on the findings of this study, the following recommendations are made:

- *Establish and expand early childhood care and development training for facilitators. It can be organised through on-the-job training, creating learning communities within ECCD stake holders, and scholarships for training.*
- *Involve parents in ECCD activities and establish congenial relationships between ECCD facilitators and parents. ECCD centres can invite parents to take part in day-to-day functioning, create parents' day which provides opportunity for parents to be inthe learningcentre, and invite community members in developing resources for their ECCD centre.*
- *Develop an activity guide based on the six domains for ECCD*

- *facilitators. Dzongkhag Education Office, NGOs and Proprietors of private ECCD centres to join handsto develop activity guide through workshops and seminars.*
- *The colleges of Education should start a formal ECCD training programmes such as a diploma, B. Ed (Early Childhood Studies) and even masters.*

Conclusion

The ECCD facilitators said that timely training on early childhood care and development provided by relevant stake holders would immensely benefit them in educating young children. They also appeared to realise that they had to think about their own knowledge and skills both before and during activities so that they could respond effectively to children's needs. The ECCD facilitators also felt that the children's development would also depend on the individual care they provide to children. It is also recognised that the formal training they receive from educational institutions will greatly benefit them and children under their care. Indeed most of the ECCD facilitators involved in the study wished to pursue formal training from relevant institutions.

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ནུབ་ཕྱོགས་རྩོང་ཁག་བཞི་ནང་གི་ རྩོངས་སློབ་ཚུ་གི་ རྩོང་ཁའི་རྩོད་སྐྱ་གི་གནས་ཚད་ཀྱི་ བརྟག་ཞིབ།

སྐལ་བཟང་རྡོ་རྗེ་[1] དང་ བདེ་ཆེན་དབང་དྲག[2]

བཅུད་དོན། Abstract

ཟ ཞིབ་འཚོལ་འདི་ རྩོངས་སློབ་ཚུ་གིས་ རྩོད་སྐྱ་སྤྱོས་ཚད་དང་ དེ་དང་འབྲེལ་བའི་དཀའ་དཔལ་ཚུ་ཡོད་མེད་བཤུ་ནི་དང་ གཏོང་ཡུན་ཚུ་ ག་ཅི་ཙམ་ཡོད་གཏ་ རོས་འཛིན་འབདཝ་དེ་ ཁ་སྐད་ཡར་རྒྱས་དང་ གཅིག་མཚུངས་བཟོ་ནིའི་ དོན་ལུ་འབདཝ་འབདཔ་ཞིན། ངའཅས་ཀྱི་ཞིབ་འཚོལ་འདི་གཙོ་བོ་ར་ ནུབ་ཕྱོགས་རྩོང་ཁག་ཞི། (སྤུ་རོ་ ཏུ་ ཐིམ་ཐུ་ སྤུ་ན་ཁ) ནང་ཕྱག་ལྟ་གནང་བཞིན་ཡོད་པའི་རྩོང་ཁ་སློབ་དཔོན་བསྟོམས་ ༡༩ གིས་ རྩོངས་ཁའི་རྩོད་སྐྱ་གི་གནས་ཚད་ གཅེས་སྤོ་ཡོད་གཏ་བཟུ་སྟེ་ དེས་ཤོག་ལག་ལེན་འཐབ་ཡོདཔ་དང་ རྩོངས་སློབ་༢༨ དང་དྲི་བ་དྲིས་ལན་འབདཝ་དེ་ ཐབས་ཤེས་ སྤེལ་མའི་སློབ་ལས་གནས་སྟུད་ བསྟུ་ལེན་འབདཝ་དེ་ཡོད། གྲུབ་འཐས་དང་ བསྟུན་ད་ རྩོངས་ཁའི་རྩོད་སྐྱའི་གནས་ཚད་འདི་ སྤུས་ཚད་དང་ལྡན་སྤེ། མེད་པ་སྤེ། ཐོན་ཡོད་པ་ལས་ འབྲེལ་ཡོད་དབང་འཛིན་དང་ སྤྱོང་བརྟེན་སྤེལ་ཐང་ཚུ་གིས་ རྩོངས་སློབ་ཚུ་ལུ་ རྩོད་སྐྱའི་སྤྱོང་བརྟེན་དགོཔ་འདི་ དེས་བདེན་ཞིན་འབདཝ་ ཞིབ་འཚོལ་འདི་ལས་ ཤེས་རྟོགས་བྱུངཡོད།

ཁག་ཆེའི་མིང་ཚིག (Key words)

རྩོད་སྐྱ་ སློབ་གྲྭ་ རྩོངས་སློབ་ ཡིག་སྟེབ་དང་འབྲེལ་བའི་རྩོད་སྐྱ། ནུབ་ཕྱོགས་རྩོང་ཁག་བཞི།

དོས་སྤྱོད།

ང་ཅས་ར་འབྲུག་རྒྱལ་ཁབ་ནང་ ལྷག་ཤ་གཉིས་འཁོར་ལོ་བསྒྲུངས་ནིའི་ཁ་སྐད་གཅོ་བོ་ རྩོང་ཁ་སྦེ་ལག་ལེན་འཐབ་གནང་མི་འདི་ བྱང་ཀུན་སེམས་པའི་རྣམ་འཕྲུལ་ མི་དབང་རིམ་བྱོན་ཚུ་གིས་ཡང་ཆ་འཛོག་གནང་སྟེ་ བདག་འཛིན་དང་གོང་འཕེལ་གཏན་ཁེ་བ་གཅིག་རྒྱ་ཚུ་ཡང་གནང་དང་གནང་བཞིན་དུ་ཡོད།

དེ་འབདཝ་ནི་འདི་གིས་ སྤྱི་བཏང་གི་གནས་ཚད་ལེགས་ཤོམ་འབདཝ་འགྱོ་དོ་ཡོདཔ་ཨིན་མ་ཐོག་ར་གིས་ མཁྱེན་ས་ཨིན། ཨིན་རུང་ ངའཅས་ར་ལྷུངཔའི་ངག་གཤིས་མ་འདྲཝ་དང་ ཡིག་སྟེབ་ལྷག་ཤེས་མ་ཤེས་ སློབ་དཔོན་བསྟེན་ཏེ་ལྷབ་མ་ལྷབ་ གཞན་ཤེས་མི་གི་རྗེས་སུ་འདྲུག་མ་འདྲུག་གི་ཁྱད་པར་ལས་ རྩོངས་ཁའི་རྩོད་སྐྱ་གི་ཐད་ལུ་ མ་གཅིགཔ་ལེ་ཤ་སྟེབ་སྤོལ་འཐོན་དོ་ཡོདཔ་ལས་ཞིབ་འཚོལ་འབད་འབདཝ་ཤེད་རུང་ འབྲུག་

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[1]. ཡེགས་བཤད་པ་ལས་རོགས། སྤུ་རོ་ཤེས་རིག་མཐོ་རིམ་སློབ་གྲྭ། Email: kezangdorji.pce@rub.edu.bt

[2]. ཡེགས་བཤད་པ། སྤུ་རོ་ཤེས་རིག་མཐོ་རིམ་སློབ་གྲྭ། Email: dechenwangda.pce@rub.edu.bt

རྒྱང་བསྒྲགས་ནང་ རྩོད་ཁའི་རྩོད་སྤྱི་སྐོར་ལས་ གོས་བསྡུར་རེ་འཐོན་ནི་ ཡོད་པ་མ་ཚད་ ང་བཅས་ཀྱིས་ སྤྲོས་སྟོན་འབད་དེ་ ཤེས་རྟོགས་བྱུང་ཡི། དུ་སྟེ་ དུས་ཚོད་མ་ཕྱེད་པ་ཅིག་ལས་ རྩོད་ཁའི་ངག་གཤེས་ངོམ་ འདི་ངང་སྤྲལ་ནི་རེ་དོན་ལུ་ བརྩོན་ཤུགས་བསྐྱེད་དགོཔ་འདུག་ཟེར་ཞུ་ནི་ཨིན།

དེ་འབདཝ་ལས་ སྤྲོལ་གྲྭ་ཁག་ལས་ཨང་ རྩོད་ཁ་སྤྲོས་སྟོན་འབད་བའི་སྐབས་ལུ་ རྩོད་སྤྱི་དགོཔ་མ་དགོཔ་ག་དེ་སྤེ་ཡོད་ཨིན་ན་ ཏ་གོ་ནི་དང་ དེ་མ་ཚད་ རྩོད་ཁའི་སྤྲོས་དཔོན་ཚུ་ རྩོད་ཁའི་རྩོད་སྤྱི་དག་པའི་ ཐོག་ལས་ སྤྲོས་སྟོན་འབད་ཚུགས་ནིའི་དོན་ལུ་ དཔེཁས་བསལ་སྤྲོས་སྤྱོད་འབད་དགོཔ་ཡོད་མེད་ ཏ་གོ་ནིའི་དོན་ལུ་དང་ ལྷག་པར་དུ་ ཞེབ་འཚོལ་པ་རང་གིས་མཐོ་རིམ་སྤྲོས་སྤྱ་འདི་ནང་ སྤྲོས་སྟོན་འབད་ནི་ལུ་ ཡར་རྒྱས་གཏང་ཚུགས་ནིའི་དོན་ལུ་ཨིན།

དྲི་བ་གཅོ་བོ།

ནུབ་ཕྱོགས་རྩོད་ཁག་ནང་ རྩོད་སྤྲོལ་ཚུ་གི་ རྩོད་སྤྱི་ གནས་ཚད་ ག་དེ་སྤེ་ཡོད་གཏ?

ཡན་ལག་གི་དྲི་བ།

ཀ རྩོད་ཁ་སྤྲོལ་དཔོན་གྱིས་ རྩོད་སྤྱ་སྤྲོལ་སྟོན་གྱི་དོན་ལུ་ ཆུ་སྟོངས་གཏ་དེ་སྤེ་ཡོད་གཏ?
ཁ རྩོད་སྤྱའི་སྐོར་ལས་སྤྱོང་བརྡར་དང་ གོས་འཛོམས་རེ་འགོ་འདྲེན་འཐབ་ནི་ཡོད་གཏ?
ག སྤྲོལ་སྟོན་གྱི་དོན་ལུ་ སྤྲོལ་དཔོན་ནང་འགོད་དོགས་མེལ་ འབད་དོ་ཡོད་མེད?
ང རྩོད་ཁ་སྤྲོལ་སྟོན་གྱི་དོན་ལས་ རྩོད་སྤྱའི་སྤྱོང་བརྡར་ཐོག་མ་འཐོག?
ཅ སྤྲོལ་དཔོན་ཚུ་གིས་ རང་སོའི་གཡུས་སྐད་ཡྱད་ཞུགས་ཏེ་སྤྲལ་ནི་ཡོད་མེད?

སྡེམ་ཐིས་བསྒྲུར་ཞིབ།

རྩོད་ཁ་འདི་ ང་བཅས་འབྲུག་རྒྱལ་ཁབ་འདི་ནང་གི་འབྲུག་མི་ཡོངས་ཀྱི་ཁ་སྐད་འབད་ ལོགས་སུ་འབད་མ་བཏུགས་རྟུང་ སྤྱི་ལོ་ ༡༩༩ ལུ་ཚོས་ཀྱི་རྒྱལ་པོ་ཞབས་དྲུང་དགུ་དབང་རྒྱལ་རྒྱལ་མཆོག་གིས་ ཆོས་སྲིད་ཀྱི་གཞུང་འགོ་ཐོག་བཙུགས་གནང་པའི་སྐབས་ རྩོད་གཞིས་ཁག་ལུ་རང་བཞིན་ཀྱིས་འབད་ དར་ཁྱབ་སོང་ཡོད་པའི་ ཁ་སྐད་ཅིག་ཨིན། (རྩོད་ཁའི་བརྟ་གཞུང་༡༩༥༠) འབྲུག་རྒྱལ་གསུམ་པ་ཞིང་གཤེགས་དམ་པ་དཔལ་འཇིགས་མེད་རྡོ་རྗེ་དབང་ཕྱུག་མཆོག་གིས་ འབྲུག་རྒྱལ་ཁབ་འདི་ འཛམ་གླིང་ཕྱི་ཆོགས་ཀྱི་འཐུས་མིའི་གྲངས་སུ་འཛུལ་ཞིནམ་ལས་ རྩོད་ཁ་འདི་རྒྱལ་ཡོངས་ཀྱི་སྐད་ཡིག་འབད་ ཆ་འཛོག་གནང་སྟེ་ ལྷགས་ཁྱི་ལྷ་ ༥པའི་ཚེས་ ༤ ལུ་ བཀའ་ཤོག་གནང་སྟེ་ སྤྲོལ་གྲྭ་ཁག་ལུ་ རྩོད་ཁའི་ཚོས་ཚན་འབད་བཙུགས་ནུག (༡༩ཅ0)

རྩོད་ཁ་ཡར་རྒྱས་ཡིག་ཚང་ཟེར་ལོགས་སུ་འབད་བཙུགས་ཏེ་ རྩོད་ཁ་ཡར་རྒྱས་ཀྱི་ཕྱག་ལྟ་ཚུ་གནང་མ་ཚད་ སྤྱི་ལོ་ ༡༩༥༤ ཚུན་ སྤྲོལ་གྲྭ་ཁག་གི་ རྩོད་ཁའི་སྤྲོལ་དཔོན་ཚུ་ཡང་ ཡིག་ཚང་དེ་གིས་འབད་བསྐོ་བཞག་ཨང་དེ་ སྤྲོལ་སྟོན་འབད་དེ་རང་སྟོད་ནུག (༡༩ཅ0)། ཀུན་ལེགས་རྒྱལ་མཚན་ ༢००༤ རྩོད་ཁའི་རྩོད་སྤྲ་ནང་ བཀོད་དོ་བཟུམ་ ཡི་གུའི་བརྩོད་པ་ཚུལ་མཐུན་སྦེ་ ལྷག་སྤྲལ་འབད་ཚུགས་ནི་འདི་ ཆོག་

ཚུལ་མཐུན་འབད་ལྷག་སླབ་འབད་ནི་ལུ་རག་ལས་ ཚིག་ཚུལ་མཐུན་གྱི་ཐོག་ལས་ ལྷག་སླབ་འབད་ཚུགས་ནི་འདི་ཡང་ མིང་ཚུལ་མཐུན་འབད་ལྷག་སླབ་འབད་ཚུགས་ནི་འདི་ཡང་ ཡི་གེ་ཚུལ་མཐུན་འབད་ལྷག་སླབ་འབད་ནི་ལུ་རག་ལསཔ་ཨིན་ཟེར་བཀོད་དེ་འདུག ཇོང་ཁའི་ཇོད་སྒྲ་ ངག་རྒྱན་དག་པའི་ཁྲུས་ཆུའི་དཔེ་དེབ་(རྟ་ལོག་ཀུན་བཟང་རྡོ། ༢༠༡༢) ནང་བཀོད་དེ་ཡོད་རུང་ ལག་ལེན་འདི་དང་འཁྲིལ་ཏེ་ མ་འཐབ་ལས་བརྟེན་ཇོད་སྒྲའི་དཀའ་ངལ་ག་དེ་སྦེ་འབྱུང་སྲེ་ཡོད་ག་ འདི་གི་སྐོར་ལས་ཏ་གོ་ནིའི་དོན་ལུ་ དཔེ་ཅིག་བཀོད་པ་ཅིན་ག་ཡིག་རྐྱངཔའི་ཇོད་སྒྲ་ངོས་བཟུང་བ། གསལ་བྱེད་ག་རྐྱངཔའི་ཇོད་སྒྲ་འདི་ གཙོ་བོ་ ག་ཡིག་རང་གི་སྐྱེ་གནས་དང་ བྱེད་རྩོལ་ཚུ་ག་ཨིནམ་སྦེ་ ངག་དག་པའི་སློ་ལས་གཡོག་བཀོལ་ཏེ་སླབ་ཚུགས་པ་ཅིན་ དེ་གིས་རང་ཏ་གོ་ཚུགས། ཨིན་རུང་ ཞི་བ་ལྷས་ གང་ལ་གོམས་པ་དེ་ལ་མཁས། །ཟེར་གསུངས་ཡོད་དོ་བཟུམ་སྦེ་ཧེ་མ་ལས་ག་གོམས་གཤིས་ཚུད་ཡོད་མི་འདི་ར་ བདེ་དོ་བཟུམ་དང་ཨིན་དོ་བཟུམ་སྦེ་ཚོར་ནི་འདི་ མ་དག་པའི་སེམས་ཀྱི་རྣམ་རྟོག་ཅིག་ཨིན།(རྟ་ལོག་ཀུན་བཟང་རྡོ།༢༠༡༢)

དེ་འབད་ནི་འདི་གིས་ ཇོང་ཁའི་ངག་གཤིས་ངོ་མ་གི་འབྱུང་ཁུངས་འདི་ཡང་ སྔོན་དང་ཕུ་ངབཅས་རའི་བླམ་བཟངཔོ་དངཕམ་བཟངཔོ་ཚུ་གིས་དབུས་གཙུང་སྤུངས་ཐིམ་གྲྭ་ཚང་གཉིས་ཀྱིས་གཙོས་པའི་ ཇོང་གཞི་ཁག་ཚུ་ནང་ལུ་ཆོས་སྲིད་ལུགས་གཉིས་ཀྱི་ཕྱག་ལྷ་གནང་ནིའི་སྐད་ཡིག་སྦེ་ལག་ལེན་འཐབ་ཞིནམ་ལས་ཚུར་དར་ཁྱབ་བྱུང་ཡོད་པའི་སྐད་ཡིག་ཅིག་འབདཔ་ད་ སྐད་ཡིག་འདི་གི་ཇོད་སྒྲ་དངདག་ཆ་གི་གཞི་རྩ་བཟུམ་ཅིག་སྦེ་ ཀ་ཀུ་བལྟ་ནི་ཅིག་ལས་འགོ་བཟུང་ སྦྱོར་ཀློག་ཚིག་སྦྱད་ཀྱི་རིམ་པ་ཚུ་ཁྱད་ཆོས་གཞན་དངམ་འདྲཔ་ཅིག་སྦེ་བརྩམས་གནང་སྟེ་ཡོད་མི་ཚུ་ དལྟོ་བར་ན་ཡངགྲྭ་ཚངདངདགེ་འདུན་སློབ་གྲྭ་ཚུ་ནངཁྱུན་མ་ཉམས་པར་འདུག དེ་བཟུམ་གྱི་ཁྱད་ཆོས་དེ་ཚུ་གི་ཐོག་ལུ་གཞི་བཞག་ཚུགས་པ་ཅིན་ ཇོང་ཁའི་ངག་གཤིས་ནངཡོད་པའི་མིང་ཚིག་ཚུ་གི་ཇོད་སྒྲ་ སླབ་ཐངས་དང་། མིང་ཚིག་གི་ཡིག་སྦྱེབ་ཚུ་གི་སྒྲ་གདངས་གཉིས་ དབྱེ་བ་མེད་པར་མཐུན་ཏོག་ཏོ་སྦེ་འགྱོ་བཏུབ་པའི་ཁར་ ཇོང་ཁའི་མིང་ཚིག་ཚུ་འབྲིཔ་དཔ་ཡང་ ཡི་གུའི་སྒྲ་གདངས་དང་ ངག་གཤིས་མཐུན་པའི་སྟབས་ཀྱིས་ཡིག་སྦྱེབ་ཀྱི་ནོར་འཁྲུལ་སྤྱང་ཚུགས་ནི་ལ་སོགས་པའི་ཁྱད་ཆོས་ཚུ་ཡངཡོད། ཨིངསྐད་ནངལུ་ ཇོད་སྒྲ་ ཡར་རྒྱས་ཀྱི་དོན་ལུ་ ཇོད་གདངས་ཀྱི་བརྡ་ཡིག་དང་ སྒྲ་འཁོར་ཚུ་ཡོད་དོ་བཟུམ་འབད་ ངབཅས་ར་ཇོངཁ་ནངལུ་ཡང་ བཟོ་ཚུགས་པའི་འོས་འབབ་འོངསྲིད་ནི་མས་ དེ་འབད་བཟོ་མ་ཚུགས་འདི་སྦེ་རུང་ ཇོང་ཁའི་ཇོད་སྒྲ་དག་ཏོག་ཏོ་སྦེ་ སླབ་ནིའི་དོན་ལུ་ རྩ་གཞུང་དང་སྦྱོང་བརྡར་རེ་ཐོབ་མ་འཐོབ་ཀྱི་དོན་ལུ་ཞིབ་འཚོལ་འབད་འབདཔ་ཨིན།

མ་གཞི་ གོང་གསལ་ མཁས་མཆོག་ཚུ་གིས་ཀྱི་དེབ་ཚུ་ནངཁ་གསལ་འབད་བཀོད་དེ་ཡོད་རུང་ ལག་ལེན་འཐབ་མི་ཉུངམ་ལས་ དཀའ་ངལ་གཙོ་བོ་རང་འདི་ལས་རྟེན་ཏེ་ཨིན་མས།

ཞིབ་འཚོལ་ཐབས་ལམ།

ཁྱངས་བཙན་ཐབས་ཤེས་ (qualitative research) དང་ གྲངས་འབྲེལ་ཐབས་ཤེས་ (quantitative research) གྱི་ཐབས་ཤེས་གཉིས་ཟུངའབྲེལ་ (Mixed method) གྱི་ཐོག་ལས་འབད་ཡི། དེ་སྦེ་ འབད་དགོ་པའི་རྒྱུ་མཚན་འདི་ཡང་ ཁྱངས་བཙན་ཐབས་ཤེས་འདི་ ལག་ལེན་འཐབ་པ་ཅིན་ རང་གིས་ཞིབ་འཚོལ་འབད་དགོ་མནོ་བའི་དོན་ཚན་འདི་གི་སྐོར་ལས་ འབྲེལ་བ་ཡོད་པའི་མི་ཚུ་དང་ཅིག་ཁར་ གྲོས་བསྟུན་དང་ དྲིས་ལན་ཚུ་ ལེགས་ཤོམ་འབད་ འབད་ནིའི་གོ་སྐབས་ཐོབ་དོ་ཡོདཔ་ལས་བརྟེན་

སྐྱོན་ཡོན་གྱི་གནད་དོན་ གཅིན་མི་འདི་ ཐད་ཀར་དུ་ཤ་ཚོ་ཚུགས་པའི་ཁན་ཐོག་ཡོད་པའི་གུ་ དེ་ཁར་ གྲངས་འབྲེལ་ཞིབ་འཚོལ་གྱི་ཐབས་ཤེས་འདི་ཡང་ ལག་ལེན་འཐབ་ཚུགས་པ་ཅིན་ ཞིབ་འཚོལ་ནང་བཅུད་མར་གཏོགས་མིའི་མི་གྲངས་འདི་ མང་སུ་འབད་ལག་ལེན་འཐབ་སྟེ་ གྲུབ་འབྲས་ལེགས་ཤོམ་ཐོབ་ཚུགསཔ་ལས་ ཞིབ་འཚོལ་འདི་ནང་ ཁྱངས་བཅོན་ཞིབ་འཚོལ་དང་ གྲངས་འབྲེལ་ཞིབ་འཚོལ་གཉིས་ ཟུང་འབྲེལ་འབད་བཞགཔ་དགོ་པའི་ དམིགས་ཡུལ་འདི་ གནད་དོན་འདི་ལས་བརྟེན་ཞིན། (Creswell,2003)

གནད་སྡུད་བསྡུ་ལེན་གྱི་མཁོ་ཆས། (Data Collection Tools)

ཞིབ་འཚོལ་འདི་ནང་ལུ་ གྲངས་འབྲེལ་ཐབས་ཤེས་དང་ ཁྱངས་བཅོན་ཐབས་ཤེས་གཉིས་ཆ་ར་ ལག་ལེན་འཐབ་ཅི། གྲངས་འབྲེལ་ཐབས་ཤེས་ནང་ལུ་ དྲི་བ་ཚུ་སྤྲ་གོང་ལས་བཅའ་སྤྲིག་རྐྱབ་སྟེ་ ཞིབ་འཚོལ་ནང་བཅའ་མར་གཏོགས་མི་ཚུ་ལས་ གནས་སྡུད་བསྡུ་ལེན་འབད་ཡི། དྲི་ཞོག་འདི་ འོག་ལུ་ཨེགས་གྲངས་ ༡༥ ནང་ལུ་རྩིས་སྤྲགས་འབད་བཏོད་དེ་ཡོད། དེ་ལས་ ཁྱངས་བཅོན་ཐབས་ཤེས་ཀྱི་ངོན་ལུ་ ང་བཅས་ཀྱིས་ དྲི་བ་ཁག་གསུམ་གྱི་ལན་ཚུ་ཡང་ ཅམས་མྱོངཡོད་མི་དང་མེད་མི་(གཡོག་ནང་གི་ལོ་) ༡༠ ཡན་ཆད་དང་མན་ཆད་འབད་སྟེ་ཚན་ ཁག་གཉིས་ལུ་གཞི་བཞག་སྟེ་སྤྱི་བཟུང་འབད་དེ་ ཡིག་ཐོག་ལུ་ཞབས་སྟེ་ རྒྱས་བཀལ་ཏེ་ དབྱེ་དཔྱད་འབད་ཡི།

ཞིབ་འཚོལ་ནང་བཅའ་མར་གཏོགས་མི།

ཐིམ་ཁུ་དང་ སྤུ་རོ་ ཏུ་ སྤྱིངས་ན་ཁ་ རྩོད་ཐག་བཞི་ནང་ཡོད་པའི་སློབ་དཔོན་ཡོངས་བསྡོམས་ ༡༡༤ དེ་ཡང་ སློབ་གྲྭ་ཁག་ལས་ ལུང་ཤུགས་སོ་སོ་ལས་ཚིན་མིའི་སློབ་དཔོན་གྱི་དཔེ་ཚད་ (Sample) ལེན་ཡི(ཐིག་ཁྲམ་དང་པ་) ནང་ལུ་གཟིགས་གནད། ཁོང་སྤྲོབ་དཔོན་ ༡༨ ལུ་ རྩོད་སྤྲ་གཅིག་མཚུངས་ཀྱི་ བརྩོད་ཚོགས་དང་ མིངཚིག་ཚུ་ ཤུགས་བཏུག་སྟེ་ སྤྲ་བཟུངཡི། རྩོད་ཁག་བཞི་དང་ རྩོད་སྤྲོབ་ ༡༡༤ལས་ ཤུགས་མ་ཚུགས་མི་འདི་ཡང་ མ་དཔྱལ་དང་ སྤྲོབ་སྟོན་དང་ ཞིབ་འཚོལ་འབད་ནི་ དུས་ཚོད་སྐབས་ཅིག་ཁར་ སྐབས་མ་བདེཁྱ་ལས་བརྟེན་ཏེ་ཡིན།

ཐིག་ཁྲམ་དང་པ། རྩོད་ཁག་སོ་སོའི་ནང་གི་ གནད་སྡུད་བསྡུ་ལེན་འབད་མིའི་ ཚ་མོའི་དབྱེ་བའི་ཐོ།

		རྩོད་ཁག				ཡོངས་བསྡོམས།
		སྤུ་རོ།	ཐིམ་ཁུ།	ཏུ།	སྤྱི་ན་ཁ།	
ཚ་མོའི་དབྱེ་བ།	ཚ	༣༣	༡༣	༡༥	༡༨	༤༨
	མོ	༡༠	༡༣	༤	༩	༣༥
ཡོངས་བསྡོམས།		༤༣	༣༨	༡༣	༡༣	༡༡༩

གནད་སྡུད་དབྱེ་དཔྱད་འབད་ཐངས།

གྲངས་འབྲེལ་ཐབས་ཤེས་ཀྱི་"གནད་སྡུད་ཚུ་ལུ་ ཞིང་རྒྱས་རེ་བཀོད་ཞིན་ལས་ SPSS དབྱེ་དཔྱད་ཀྱི་ཐབས་ལམ་ཚུ་ ལག་ལེན་འཐབ་སྟེ་འབད་ཡོདཔ་དང་ ཁྱངས་བཅན་ཐབས་ཤེས་ཀྱི་དོན་ལུ་ descriptive statistics ནང་ལས་ ཆ་ཤས་ frequencies, descriptives, crosstabs ཚུ་ལག་ལེན་འཐབ་སྟེ་ གནད་སྡུད་དབྱེ་དཔྱད་ མཐིལ་ཕྱིན་སྟེ་ འབད་ཡི།

གྲངས་འབྲེལ་ཐབས་ཤེས་དང་ ཁྱངས་བཅན་ཀྱི་གནད་སྡུད་ཚུ་ ཆ་མཉམ་ཡིག་ཐོག་ལུ་ཡབ་སྟེ་ གསལ་འབད་དེ་ དབྱེ་དཔྱད་འབད་ཞིནམ་དུ་ དོན་ཚན་ཆ་འཛིན་མི་ཚུ་ལུ་ རྒྱས་ཤེ་བཀལ་ཏེ་ དཔྱེ་དཔྱད་འབད་ཞིན་ལས་ གོང་ལུ་བཀོད་མི་ descriptive statistics ནང་གི་གནད་སྡུད་ དབྱེ་དཔྱད་ཀྱི་ཐབས་ཤེས་ཚུ་ ལག་ལེན་འཐབ་སྟེ་ སྤྱད་འཐུས་བཏོན་ཡོདཔ་ཨིན།

བློ་གཏད་དང་ཡིད་ཆས། (Research reliability and validity)

གནས་སྡུད་བསྡུ་ལེན་གྱི་དོན་ལུ་ བཟོ་སྟེ་ཡོད་མི་དྲི་ཞིག་འདི་ མ་བཏབ་མ་འབད་བའི་ཉེ་མ་ ལེགས་ཤཱཙ་པ་མཉམ་རོགས་ཚུ་ལུ་ལྟག་བཅུག་སྟེ་ དཔག་བཟོས་འབད་ཡི། དེ་ལས་མ་བཏབ་ཀྱི་དོན་ལུ་ ང་བཅས་རའི་མཐོ་རིམ་སློབ་གྲྭའི་ལེགས་ཤཱཙ་པ་དག་པ་ཅིག་དང་ ཉེས་འདབས་ཀྱི་རྩོད་སློབ་དག་པ་ཅིག་ལུ་ བཀང་བཅུག་ཅི། དེ་ལས་རྩོད་གཞི་གཞན་ཚུ་ནང་བཏབ་ནས་ བོད་ཡོད་པའི་གནས་བསྡུ་ཚུ་ ཞེས་པི་ ཞེས་ཞེས་ (spss) ལག་ལེན་འཐབ་སྟེ་ འདི་ནང་ལས་ཐོབ་ཡོད་པའི་ གནད་དོན་ཚུ་ བཟོ་བཅོས་ཀྱི་ སྤྱད་མ་ཞུགས་པར་གཱ་ཞིན་མི་འདི་གྱུབ་འཐུས་སྟན་ཞུ་ནང་བཀོད་དེ་ཡོད་ཟེར་ཞུ་ནི་ཞིན།

ཞིབ་འཚོལ་གྱི་ཀུན་སྤྱོད་རྣམ་གཞག

ཞིབ་འཚོལ་གྱི་གནས་སྡུད་ བསྡུ་ལེན་འབད་བར་འགྱོ་ནིའི་དོན་ལུ་ དང་པ་ར་སྤུ་རོ་ཤེས་རིག་ མཐོ་རིམ་སློབ་གྲྭའི་ ཡོངས་ཁྱབ་མདོ་ཆེན་ལས་ གནད་བ་ཡིག་ཐོག་ལུ་ཞུ་ཡོད་པའི་ཁར་ ནུབ་ཐྱོགས་རྫོང་གག་བཞི་ནང་གི་སློབ་གྲྭ་ཁག་ཚུ་ནང་ འགྱོ་ནིའི་དོན་ལས་ ཤེས་རིག་སྤྱི་ཚོགས་ཀྱི་ཤེས་ཡོན་ལས་ཁྱངས་ཀྱི་མཛོ་ཆེན་མཆོག་གིས་ཡིག་ཐོག་ལས་གནང་བ་ལེན་ཏེ་ རྫོང་ཁག་ཤེས་རིག་དགོ་དཔོན་ཚུ་ལས གནང་བ་ཚུ་ཞུ་ཡོད་པའི་ཁར་ ཞིབ་འཚོལ་ནང་ལུ་བཅའ་མར་གཏོང་གས་མི་ཚུ་ལུ་ སྤ་གོང་ལས་ ཞིབ་འཚོལ་གྱི་སྒྲིག་གཞི་དང་གསང་བ་བཞག་ཐབས་ཚུ་ ཁ་གསལ་འབད་ཁཱཙ་དེ་ཁྱིན་མ་ཡོདཔ་མ་ཚད་ ཞིབ་འཚོལ་ནང་བཅའ་མར་གཏོགས་མི་སློབ་དཔོན་ཚུ་གི་དོན་ལུ་ སློབ་གྲྭའི་སློབ་དབུ་འཛིན་ཚུ་དང་ མི་ངོམ་རང་རང་སོ་ལས་གནང་བ་ཐོབ་ཞིན་ལས་རྒྱུབམ་ཅིག་ གནས་སྡུད་བསྡུ་ལེན་འབད་ཡི།

ཞིབ་འཚོལ་གྱི་ཚད་འཛིན། (Limitations)

གནད་དོན་འདི་གི་ཐོག་ལུ་ མ་འོངས་པ་ལུ་ ཞིབ་འཚོལ་རྒྱུ་སྐྱོམ་སྟེ་འབད་ནིའི་དོན་ལུ་ མོ་བཏབ་ཀྱི་ཞིབ་འཚོལ་བརྒྱམ་ཅིག་འབད་ཁ་ལས་ ཞིབ་འཚོལ་གནས་སྡུད་ཀྱི་ སས་ཁོངས་ཡང་ ནུབ་ཐྱོགས་རྫོང་ཁག་བཞི་ལུ་རྒྱབ་ཅིག་ལུ་ གཞི་བཞག་སྟེ་འབད་ཡི། འདི་འབད་ཁ་ལས་ སྤྱད་འཐུས་འདི་གིས་ རྒྱལ་

ཡོངས་ལུ་འགབ་མི་ཚུགས་ནི་དང་མ་འོངས་པ་ལུ་ གནད་དོན་འདི་གི་ཐོག་ཁར་ ཞིབ་འཚོལ་འབད་བ་ཅིན་ གནས་སྡུད་བསྡུ་ལེན་གྱི་དམིགས་གཏད་དེ་ རྫོང་ཁག་གི་ར་ནང་བསྐྱེད་ཚུགས་པ་ཅིན་ རྒྱལ་ཡོངས་ཀྱི་དོན་ལུ་ཕྱབ་ཚུགས་ནི་མས།

གནས་སྡུད་དབྱེ་དཔྱད།

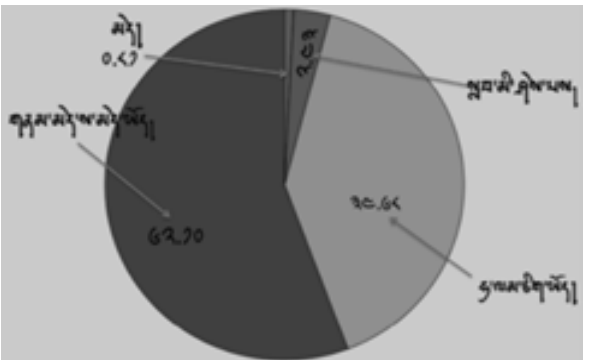
གྲངས་འབྲེལ་ཐབས་ཤེས་ཀྱི་"གནས་སྡུད་ཚུ་ལུ་ ཨང་རྟགས་རེ་བཀོད་ཞིནམ་ལས་ SPSS དབྱེ་དཔྱད་ཀྱི་ཐབས་ལམ་ descriptive statistics ནང་ལས་ ཆ་ཤས་ frequencies, descriptives, crosstabs ཚུ་ལག་ལེན་འཐབ་སྟེ་ གནད་སྡུད་དབྱེ་དཔྱད་ མཐིལ་ཕྱིན་སྦེ་ འབད་ཡི།

ཁུངས་བཙན་ཐབས་ཤེས་ཀྱི་དོན་ལུ་ ངབཅས་ཀྱིས་ སྒྲ་བཟུང་འབད་དེ་ དྲི་བ་ཁག་གསུམ་གྱི་ལན་ཚུ་ཡང་ ཉམས་མྱོང་ཡོད་མི་དང་མེད་མི་(གཡོག་ནང་གི་ལོ་) ༡༠ ཡན་ཆད་དང་མན་ཆད་འབད་སྦེ་ཚན་ཁག་གཉིས་ལུ་གཞི་བཞག་སྟེ་ ཡིག་ཐོག་ལུ་ཕབ་སྟེ་ རྟགས་བཀལ་ཏེ་ དབྱེ་དཔྱད་འབད་ཡི། མི་ངོམ་ ༡༢༩ཡོད་ས་ལས་ ལན་བྲིས་མི་ ༧༨ རང་ཨིནམ་ལས་ འདི་ཚུ་གིས་ བྲིས་ཏེ་ཡོད་མིའི་ལན་ཚུ་ ངབཅས་ཀྱིས་ འདྲ་ཕབ་སྟེ་ ལན་ཅིག་འཐདཔ་ཚུ་ ཚིག་རྟགས་བཀལ་ཏེ་ དབྱེ་དཔྱད་འབད་ཡི།

གྲུབ་འབྲས་སྙན་ཞུ།

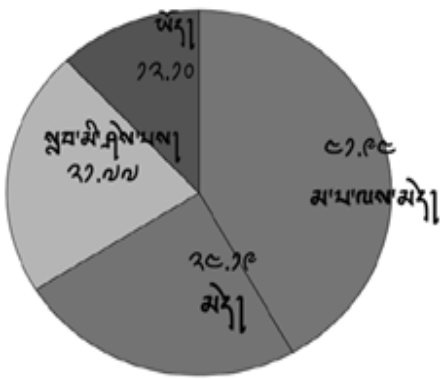
རྫོང་ཁག་བཞི་གི་གནས་སྡུད་བསྡུ་ལེན་འབད་ཡོད་མི་དང་ འབྲེལ་བ་ཅིན་ སློབ་སྟོན་པ་ཚུ་གིས་ རྫོད་སྒྲ་དག་ཏོག་ཏོ་སྦྲི་སླབ་ནིའི་བློ་སྤོབས་ཡོད་མེད་དང་དེ་ལས་ རྫོང་ཁའི་རྫོད་སྒྲ་སློབ་སྟོན་གྱི་དོན་ལུ་ སྦྱོང་བརྡར་ཐོབ་ཡོདཔ་དང་མེད་པའི་སྐོར་ལས་ དེ་ལས་ ཁོང་སློབ་དཔོན་ནང་འཁོད་དོགས་སེལ་འབད་ནི་ ཡོད་ག་མེད་ག་ སློབ་དཔོན་ཚུ་གིས་ རང་སོའི་གཡུས་སྐད་ལྟད་ཞུགས་ཏེ་སླབ་ནི་ཡོདཔ་དང་ མེདཔའི་སྐོར་ལས ཁ་གསལ་སྦྲེ་ མཇུག་ནིའི་དོན་ལས་ འོག་ལས་མར་ སྐོར་ཁྲམ་ཚུ་ནང་ བཀོད་དེ་ཡོདཔ་ཨིན།

རྫོང་ཁག་བཞི་གི་གནས་སྡུད་བསྡུ་ལེན་འབད་ཡོད་མི་དང་ འབྲེལ་བ་ཅིན་ སྐོར་ཁྲམ་ དངཔ་ནང་བཀོད་དོ་བཟུམ་ སློབ་སྟོན་པ་ཚུ་གིས་ རྫོད་སྒྲ་དག་ཏོག་ཏོ་འབད་སློབ་སྟོན་འབད་ནིའི་དོན་ལས་ བློ་སྤོབས་གནམ་མེད་ས་མེད་ཡོད་མི་དང་ ཏ་ལམ་ཅིག་ཡོད་མི་བསྡོམས་ད་ བརྒྱ་ཆ་ལས་ ༨༥.༧༨ ཨིན་པས། རྫོང་ཁའི་རྫོད་སྒྲ་དག་ཏོག་ཏོ་འབད་ སློབ་སྟོན་གྱི་དོན་ལུ་ བློ་སྟོབས་མེད་མི་འདི་ བརྒྱ་ཆ་ལས་ ༠.༤༡ རང་ཨིན་པས། འདི་ལུ་བལྟཔ་ད་ སློབ་དཔོན་ཚུ་གིས་རྫོད་སྒྲ་དག་ཏོག་ཏོ་འབད་སྟོན་ཏེ་ ཨ་ལོ་ཚུ་གི་རྒྱུད་ལུ་ རྫོད་སྒྲ་ཡར་རྒྱས་གཏང་ནི་ལུ་ ཕན་སྒྲིམ་རང་ཐོགས་ནི་མས།



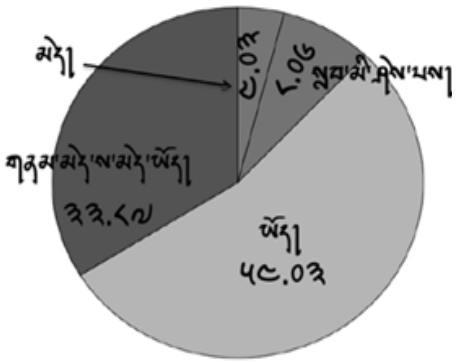
སྒོར་ཁྲམ་དང་པ། རྩོང་ཁའི་རྩོད་སྒྲུབ་དགེ་ཏོག་ཏོ་འབད་སློབ་སྟོན་གྱི་དོན་ལུ་ ཏུང་སྦྱོབས་ཡོདཔ་དང་ མེད་པ་གི་སྐོར།

སྒོར་ཁྲམ་གཉིས་པ་ནང་ བཀོད་དོ་བཟུམ་ ཤེས་རིག་ལྟན་ཁག་དང་ རྩོང་ཁ་གོང་འཕེལ་ལྟན་ཚོགས་ གཉིས་ཀྱི་ཁ་ཐུག་ལས་ རྩོང་ཁའི་རྩོད་སྒྲུའི་སྐོར་ལས་ སྤྱོད་བརྟར་དང་ གྲོས་བསྟུར་ཞལ་འཛོམས་ཀྱི་རིགས་ ཚུ་ འགོ་འདྲེན་འཐབ་མ་འཐབ་ཀྱི་སྐོར་ལས་ཚིན་པ་ཅིན་ མ་པ་ལས་འགོ་འདྲེན་འཐབ་ནི་ མེད་པས་སྤྲེ་ སྐབས་མི་དང་ འགོ་འདྲེན་འཐབ་ནི་མེད་ཟེར་སྐབས་མི་ བསྟོམས་ཏེ་ བརྒྱ་ཆ་ལས་ ༤༦.༢༩ ཀྱིས་བཀོད་དེ་འདུག །ྩོང་ཁའི་རྩོད་སྒྲུའི་སྐོར་ལས་ སྤྱོད་བརྟར་དང་ གྲོས་འཛོམས་འགོ་འདྲེན་འཐབ་ནི་ཡོད་ཟེར་མི་ བརྒྱ་ཆ་ལས་ ༢༢.༧༠ ཀྱིས་སྐབས་མི་ཡང་ སྟོན་མ་ སྐོབ་དཔོན་སྐོབ་སྤྱོད་འབདཝཡ་དུ་ ལྷག་མི་འདི་ལུ་སྐབས་ཙམ་ཞིན་པས། འདི་འབད་ནི་འདི་གིས་ ྩོང་སྐྲོབ་ཚུ་ལུ་ རྩོད་སྒྲུའི་སྐོར་ལས་ ཁ་གསོ་སྐྲོབ་སྤྱོད་དང་ གྲོས་བསྟུར་ཞལ་འཛོམས་ཀྱི་རིགས་ཚུ་ འགོ་འདྲེན་འཐབ་དགོཔ་འདུག།



སྒོར་ཁྲམ་གཉིས་པ། རྩོང་ཁའི་རྩོད་སྒྲུའི་སྐོར་ལས་སྤྱོད་བརྟར་དང་ གྲོས་འཛོམས་རེ་འགོ་འདྲེན་འཐབ་ནི་ ཡོདཔ་དང་མེདཔ་གི་སྐོར་ལས།

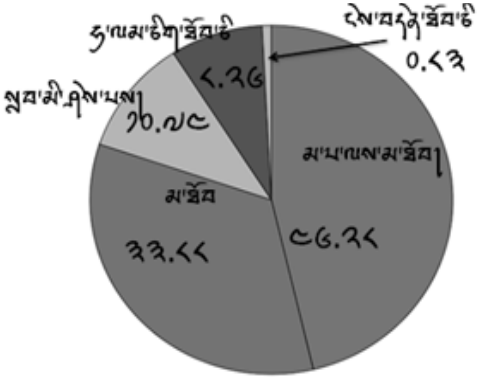
སྒོར་ཁྲམ་གསུམ་པ། རྩོད་སྤྱིའི་སྐོར་ལས་ དོགས་སེལ་འབད་ནི་ཡོད་པ་དང་ མེད་པའི་སྐོར།



འོག་ལུ་ སྒོར་ཁྲམ་བཞི་པ་ནང་ བཀོད་དོ་བཟུམ་སྟེ་ རྩོང་ཁ་སློབ་སྟོན་གྱི་དོན་ལུ་ རྩོད་སྤྱིའི་སྤྱོང་བརྡར་ཐོག་ཡོད་དང་མེད་པའི་སྐོར་ལས་བཤད་པ་ཅིན་ རལ་པའི་སྤྱོང་བརྡར་མ་ཐོག་ཟེར་བཀོད་མི་གཅིག་བཏོན་མས་དང་ བརྒྱ་ཆ་ལས་ ༥༠.༦ གི་བཀོད་དེ་འདུག། འདི་ལུ་ལྟ་བ་ཅིན་ རྩོང་ཁའི་རྩོད་སྤྱ་འདི་ ཁོང་སྤྱོབ་དཔོན་ནང་འཁོད་དོགས་མེལ་འབད་དེ་ སློབ་སྟོན་འབདཔ་ཁེལ་ཡོན་པས། དེ་ལས་ བརྒྱ་ཆ་ལས་ ༩.༥ གྱིས་དོགས་མེལ་མ་འབད་བར་ཡོད་མི་འདི་ སློབ་དཔོན་ནང་འཁོད་དོགས་མེལ་ མ་འབད་དེ་འབད་རྩད་ སློབ་དེབ་དང་ཡོངས་འབྲེལ་ཚུ་ནང་ལས་ཤར་རྒྱབ་སྐྱོར་ལེན་དོ་ཡོད་པ་ཁེལ་པས།

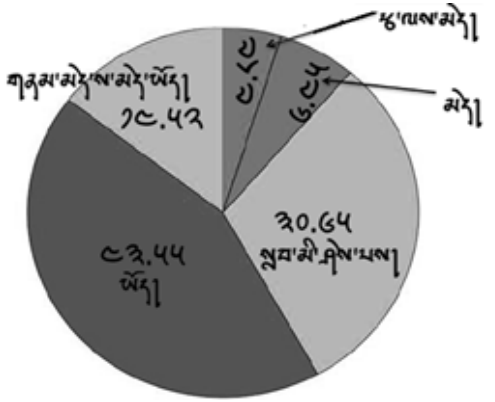
སྒོར་ཁྲམ་གསུམ་པ། རྩོད་སྤྱིའི་སྐོར་ལས་ དོགས་སེལ་འབད་ནི་ཡོད་པ་དང་ མེད་པའི་སྐོར།

འོག་ལུ་ སྒོར་ཁྲམ་བཞི་པ་ནང་ བཀོད་དོ་བཟུམ་སྟེ་ རྩོང་ཁ་སློབ་སྟོན་གྱི་དོན་ལུ་ རྩོད་སྤྱིའི་སྤྱོང་བརྡར་ཐོག་ཡོད་དང་མེད་པའི་སྐོར་ལས་བཤད་པ་ཅིན་ མ་པ་ལས་སྤྱོང་བརྡར་མ་ཐོག་ཟེར་བཀོད་མི་དང་ མ་ཐོག་ཟེར་བཀོད་མི་གཅིག་བཏོན་མས་དང་ བརྒྱ་ཆ་ལས་ ༥༠.༧༤ གི་བཀོད་ ནུག དེ་ལས་ རྩོད་སྤྱིའི་སྤྱོང་བརྡར་ རེས་བདེན་ཐོག་ཅི་ཟེར་མི་འདི་ བརྒྱ་ཆ་ལས་ ༠.༢༣ ལས་འགལ་མིན་འདུག འདི་འབད་ལ་ལས་བཏེན་ཏེ་ སློབ་གྲ་ཁག་ལས་ཤར་ ཚ་ལོ་ཚུ་གི་རྒྱུད་ལུ་ རྩོད་སྤྱ་ཡར་རྒྱས་གཏང་དགོ་པ་ཅིན་ རྩོང་སློབ་ཚུ་ལུ་ སྤྱོང་བརྡར་ཐྱེན་དགོ་པ་རེས་བདེན་འདུག། ཁོང་ཚུ་ ཅི་མ་ སློབ་དཔོན་སྤྱོང་བརྡར་འབད་བའི་སྐབས་སུ་ རྩོད་སྤྱིའི་སྐོར་ལས་ དུམ་གྲ་ཅིག་ སྤྱོང་བརྡར་ཐོག་ཐོག་མ་གཏོགས་ ལོགས་སུ་འབད་སྤྱོང་བརྡར་ཐོག་མི་མིན་འདུག།



སྐོར་ཁམ་བཞི་པ། རྩོད་ཁ་སློབ་སྦྱོན་གྱི་དོན་ལས་ རྩོད་སྤྲའི་སྒྲོང་བརྡར་ཐོབ་ཡོད་པ་དང་མེད་པའི་སྐོར་ལས།

དེ་ལས་ མཇུག་རང་ སྐོར་ཁམ་ལྟ་བ་ནང་ བཀོད་དོ་བཟུམ་སྟེ་ སློབ་དཔོན་ཚུ་གིས་ རང་སོའི་གཡུས་སྐད་ལྷན་ཞུགས་ཏེ་སློབ་ནི་ཡོད་མེད་གི་སྐོར་ལས་ བཤད་པ་ཅིན་ གཡུས་སྐད་ལྷད་ཞུགས་ཏེ་སློབ་མི་གནམ་མེད་ས་མེད་ཡོད་ཟེར་མི་དང་ སློབ་ནི་ཡོད་ཟེར་མི་བསྟོམས་ད་ བརྒྱ་ཆ་ལས་ ५५.०7 འདུག དེ་ལས་ གཡུས་སྐད་ལྷད་ཞུགས་ཏེ་སློབ་ནི་རྩ་ལས་མེད་ཟེར་མི་དང་ སློབ་ནི་མེད་ཟེར་མི་འདི་ བརྒྱ་ཆ་ལས་ ११.३८ འདུཀ། འདི་འབདཔ་ལས་ རྩོད་ཁའི་རྩོད་སྤྲ་ལུ་ ཐོ་ཡོག་མི་ཅིག་འདི་ རང་སོའི་གཡུས་སྐད་ལྷན་ཞུགས་ཏེ་ སློབ་མི་ལུ་བརྟེན་ཏེ་ཞིནམ་ཡང་ ཞིབ་འཚོལ་འདི་ལས་ ཏ་གོ་ཡི།



སྐོར་ཁམ་"ལྟ་བ། སློབ་དཔོན་ཚུ་གིས་ རང་སོའི་གཡུས་སྐད་ལྷད་ཞུགས་ཏེ་སློབ་ནི་ཡོད་པ་དང་ མེད་པ་གི་སྐོར་ལས།

ཁྲིམས་བཅད་ཞིབ་འཚོལ་ནང་བཅའ་མར་གཏོགས་མི་ མི་ངོམ་༡༩༥ཡོད་ས་ལས་ ལན་བྱིས་མི་ ༣༡ རང་ཕིན་ལས་ འདི་ཚུ་གིས་ བྱིས་ཏེ་ཡོད་མིའི་ལན་ཚུ་ ང་བཅས་ཀྱིས་ འདྲ་ཞབས་སྟེ་ ལན་ཅོག་འཐདཔ་ཚུ་ ཆོག་རྟགས་བཀལ་ཏེ་ དབྱེ་བ་དཔྱད་པའི་ཞུལ་ལུ་ དོན་ཚན་བགོ་བཀའ་རྒྱབ་དང་ བརྒྱ་ཆ་ལས་འབད་བ་ཅིན་ བརྒྱ་ཆ་༡༠ དེ་ཅིག་གིས་ སྤྱོངས་བརྟད་ དགོ་མི་ དང་ གཞན་མི་བརྒྱ་ཆ ༡༠ གིས་ རྩོད་སྤྱ་ ཡར་རྒྱས་ཀྱི་དོན་ལུ་ མཁོ་ཆས་ དཔེར་ན་ དཔེ་དེབ་དང་ སྤྱ་འཛིན་འཁོར་ལོ་ ཡོངས་འབྲེལ་ནང་ བཙུགས་དགོ་པ་སྟེ་བཀོད་དེ་འདུག

བཅའ་མར་གཏོགས་མི་ ལ་ལེ་ཅིག་གིས་ ལུང་ཚིགས་སོ་སོ་ལུ་ རྩོད་སྤྱ་མ་འདྲཔ་ལེ་ཤ་སྤྱབ་ནི་ཡོད་མི་ དང་ འཁྲིལཔ་དང་ རྩོད་སྤྱ་དགེ་ཏོག་ཏོ་ གཅིག་མཚུངས་བཟོ་ཚུགས་པ་ལུ་ཁག་འབོད་ཅར་ཡང་བཤད་མི་ འདུག། ལ་ལེ་ཅིག་གིས་ རྩོངཁ་ལུ་གོམས་ཆ་མེད་མི་ཚུ་རྩོངཁ་ སྟེ་ནམ་ལས་རྩོད་སྤྱ་ལུ་ཐོ་ཝེགས་མས་ ཟེར་སྤྱབ་མི་ཡང་འདུག།

གྲུབ་འབྲས།

རྒྱལ་ཁབ་ཡར་རྒྱས་ཀྱི་འགྲུར་བ་དང་བསྟུན་ད་ རྩོངཁའི་རྩོད་སྤྱ་དག་ཏོག་ཏོ་སྤྱབ་ནི་ལུ་ བྱོ་སྒོབས་ཡོད་མི་བརྒྱ་ཆ་ལས་ ༡༨ ཡོད་དེ་འབད་རུང་ སྤྱོབ་སྟོན་པ་ཚུ་ལུ་ རྩོད་སྤྱའི་སྤྱོང་བརྟད་དང་ གོས་བསྟུངཔ་ཞལ་འཛོམས་ཚུ་ འགོ་འདེན་འབཐབ་ནི་མེད་མི་ བརྒྱ་ཆ་ལས་ ༤༣.༨༠ བཏོད་དེ་ཡོདཔ་ལས་ གནད་དོན་འདི་ལུ་ འཛེལ་ཡོད་ཡོངས་ཀྱི་ཚ་གྲངས་དགོ་པའི་གཞི་ཅིག་ཨིན་མས། ཨིན་རུང་ སྤྱོབ་དཔོན་ནང་འཁོད་ དོགས་སེལ་ འབད་དེ་སྤྱོབ་སྟོན་ འབད་དོ་ཡོད་མི་ བརྒྱ་ཆ་ལས་ ༤༣.༨༠ འདི་གི་དཀའ་དལ་ཁ་ལམ་ཅིག་སེལ་ཏེ་འདུག། རྩོངཁའི་རྩོད་སྤྱ་གི་སྤྱོངས་བརྟད་ཐོབ་མི་ ཁྱངམ་ལས་བརྟེན་ སྤྱོབ་དཔོན་ཚུ་གིས་རང་སོའི་ གཡུས་སྐད་ལྷད་ཁུགས་ཏེ་ སྤྱབ་མི་ འདི་ལས་བརྟེན་ཏེ་ཨིན་མས། བཙུད་བསྡུ་བ་ཅིན་ གྲངས་འབྲེལ་ཐབས་ཤེས་དང་ ཁུངས་བཅོན་ཐབས་ཤེས་གཉིས་གཱ་བསྡུར་འབད་དེ་བལྟཔ་དུ་ གྲངས་འབྲེལ་ཐབས་ཤེས་ནང་ལུ་ སྤྱོངས་བརྟད་མེད་མི་ བརྒྱ་ཆ ༨༠.༡༨ དང་ཁུངས་བཅོན་ཐབས་ཤེས་ནང་ལུ་ འབད་བ་ཅིན་ སྤྱོངས་བརྟད་དགོཔ་སྟེ་ བྱིས་མི་བརྒྱ་ཆ་ལས་ ༨༠.༣ མི་གྲངས་ ༣༡ལས་ ༤༣ ཐྱི་དགོཔ་ འབད་བཀོད་དེ་འདུག། དེ་འབད་ཁ་ལས་ གྲངས་ཚད་ལྡན་པའི་ཐབས་ཤེས་དང་ ཁུད་ཚད་ལྡན་པའི་ཐབས་ཤེས་གཉིས་ཆ་ར་ནང་ སྤྱོངས་བརྟད་དགོཔ་འབད་བྱིས་ཏེ་ ཡོད་མི་གཉིས་ རྐུགས་མཐུན་ལས་ རྩོང་ཁའི་རྩོད་སྤྱའི་གནས་ཚད་འདི་ སྤུས་ཚད་དང་ལྡན་སྟེ་ མེད་པ་ལས་ འཛེལ་ཡོད་དཔང་འཛིན་དང་ སྤྱོངས་བརྟད་སྟེལ་ཁང་ཚུ་གིས་ རྩ་གཞུང་ནང་གོང་གསལ་ཐྱི་ རྩོད་སྤྱའི་ཀི་དེབ་ཚུ་ལུ་གཞི་བཞག་སྟེ་ སློབ་སྟོན་གནང་པ་ཅིན་(རྩ་ཡོག་ཀུན་བཟང་རྡོ། ༢༠༢༢)ལེགས་ཤོམ་ཡོད་པ་སྟེ་ཚོར་ཡི། འདི་བཟུམ་སྟེ་ རྩོངཁའི་རྩོད་སྤྱ་ཚུ་ རྩོད་སྤྱའི་སྤྱོངས་བརྟད་གནང་གོང་འདི་ དེས་བདེན་ཞིན་ཨིན་འབདཝ་ཤེས་རྟོགས་འབྱུངཡོད་ཟེར་ཞུ་ནི་ཨིན།

རྒྱབ་སྐྱོན་དང་ གྲོས་འཆར།

གནས་སྟུད་ཚུ་ནང་ དབྱེ་ཞིབ་འབད་དེ་ལྟཔ་ད་ རྫོང་ཁའི་རྗོད་སྒྲའི་གནས་ཚད་འདི་ མར་ཉམས་འགྱོ་ཡོདཔ་ལས་ དུས་ཚོད་མ་ཕྱིདཔ་ཅིག་ལས་ འབྲུག་མི་སྤྱི་དང་ འབྲེལ་ཡོད་འགན་ཁྲི་ཅན་ཚུ་གིས་ འབྲུག་རྒྱལ་ཡོངས་ཀྱི་ཁ་སྐད་ དག་ཏོག་ཏོ་སློབ་ནི་ལུ་ རྒྱབ་སྐྱོར་མཛད་དགོཔ་འདུག མ་གཞི་ རྩོམ་རིག་ཚུ་ནང་བཀོད་དེ་ཡོད་རུང་ ལག་ལེན་འཐབ་མི་ཨུང་མི་ལས་བརྟེན་ རྗོད་སྒྲ་དག་ཏོག་ཏོ་སྦྲེ་སླབ་མ་ཚུགས་མི་འདི་ གནད་དོན་འདི་ལས་བརྟེན་ཏེ་ཨིན་མས། རྗོད་སྒྲ་ཡར་རྒྱས་འགྱོ་མ་ཚུགས་མི་འདི་ གནད་དོན་ག་ཅི་ལས་བརྟེན་ཏེ་ཨིན་ན་ ཤེས་ནི་གི་དོན་ལུ་ གཤམ་གསལ་གྱི་དྲི་བ་ཚུ་གཞི་བཞག་སྟེ་ འཚོལ་ཞིའི་དུས་ཚོད་རེན་ནུག།

- ནུབ་ཕྱོགས་རྫོང་ཁག་ བཞི་ནང་ལུ་ རྫོང་སློབ་ཚུ་གིས་རྗོད་སྒྲ་ གཅིག་མཚུངས་སྦྲེ་ལག་ལེན་འཐབ་མ་ཚུགས་པའི་ རྒྱུ་རྐྱེན་གཙོ་བོ་ག་ཅི་ཨིན་ན?
- རྫོང་ཁའི་རྗོད་སྒྲ་གནས་ཚད་ཀྱི་ལྷོད་ནིའི་དོན་ལུ་ སློབ་གྲྭ་ནང་རྫོང་ཁ་ རྗོད་སྒྲའི་རྩ་གཞུང་ལོགས་སུ་སྦྲེ་ བཙུགས་དགོཔ་ཁ་ཆེཔ་འབད་རང་འདུག་ག?
- རྒྱལ་ཁབ་ཀྱི་གནས་སྟངས་དང་ བསྟུནམ་ད་ རྫོང་ཁ་ རྗོད་སྒྲ་གཅིག་མཚུངས་སྦྲེ་བཟོ་ནིའི་དུས་ཚོད་ན་འཐད་མ་རེན་པས་ག?
- རྫོང་ཁའི་ངག་གཤིས་ཡལ་ནིའི་ཉེན་ཁག་མིན་འདུག་ག?

གདོང་ལེན། (Challenges)

- ཞིབ་འཚོལ་ནང་ལུ་བཅའ་མར་གཏོགས་མི་ ལྷུང་ཕྱོགས་བཞི་ཆ་ར་ནང་ལས་ འདྲན་འདྲ་བཅའ་མར་གཏོགས་བཙུག་ནིའི་དམིགས་ཡུལ་བསྐྲུད་རུང་ ནུབ་ཕྱོགས་རྫོང་ཁག་བཞི་ནང་ལུ་ རྫོང་ཁ་སློབ་དཔོན་ཚུ་ མང་ཤོས་རང་ ཁ་སྐད་རྫོང་ཁ་སླབ་མི་མངམ་ལས་བརྟེན་ གྲུབ་འབྲས་ནང་ལུ་ བརྒྱ་ཆ་ལས་མཐོ་ཤོས་འཐོན་མི་འདི་ལས་བརྟེན་ཨིན།
- དུས་ཚོད་མེདཔ་ལས་བརྟེན་ཏེ་ གནད་སྟུད་བསྡུ་ལེན་འབད་བར་རྫོང་ཁ་གཞན་ཁར་ལྷོད་མ་ཚུགས།
- ཞིབ་འཚོལ་ནང་ བཅའ་མར་གཏོགས་མི་ཚུ་གིས་ ངེས་བདེན་ ག་ཨིན་མི་འདི་ སྦྲ་གསང་མེད་པར་བཀོད་དགོཔ་འདུག

མཇུག་བསྡུ། (Conclusion)

ངབཅས་ཀྱིས་ཞིབ་འཚོལ་འབད་མི་གི་ གྲུབ་འབྲས་དང་འཁྲིལཝ་ད་ གྲངས་ཚད་ལྡན་པའི་ཐབས་ཤེས་ནང་ལུ་ མ་པ་ལས་སློང་བརྡར་མ་ཐོབ་ཟེར་བཀོད་མི་དང་ མ་ཐོབ་ཟེར་བཀོད་མི་གཉིས་བསྡོམས་ད་ བརྒྱ་ཆ་ལས་ ༥༠.༧༨ གི་བཀོད་ནུག། དེ་ལས་ ཁྱད་ཚད་ལྡན་པའི་ཐབས་ཤེས་ནང་ བརྒྱ་ཆ་ལས་འབད་བ་ཅིན་ བརྒྱ་ཆ་༥༠ དེ་ཅིག་གིས་ སློང་བརྡར་ དགོ་མི་ དང་ གཞན་མི་བརྒྱ་ཆ ༣༠ གིས་ རྗོད་སྒྲ་ཡར་རྒྱས་ཀྱི་དོན་ལུ་ མཁོ་ཆས་ དཔེར་ན་ དཔེ་དེབ་དང་ སྒྲ་འཛིན་འཁོར་ལོ་ ཡོངས་འབྲེལ་ནང་ བཙུགས་

དགོས་པ་འབད་བཀོད་དེ་འདུག། འདི་འབདཔ་ལས་ གྲངས་འབྲེལ་དང་ ཁྱུངས་བཙན་ཐབས་ཤེས་གཉིས་ཆ་ར་ནང་ སྦྱོང་བརྡར་དགོས་འབད་བཀོད་དེ་ཡོད་མི་འདི་ མངསྨ་འབད་ཐོན་ཏེ་ཡོདཔ་ལས་ རྫོང་ཁའི་རྗོད་སྒྲའི་གནས་ཚད་འདི་ སྤུས་ཚད་དང་ལྡནམ་སྦེ་ ཡར་རྒྱས་གཏང་ནིའི་དོན་ལུ་ འབྲེལ་ཡོད་དབང་འཛིན་དང་སྦྱོང་བརྡར་སྤེལ་ཁང་ཚུ་གིས་ རྫོང་སློབ་ཚུ་ལུ་ རྗོད་སྒྲའི་སྦྱོང་བརྡར་གནང་དགོས་འདི་ དུས་ཆོད་ཀྱི་ལྟོད་ནུག་ཟེར་ཞུ་ནི་ཨིན། མ་གཞི་ ཞིབ་འཚོལ་འདི་ ཞིབ་འཚོལ་པ་ངབཅས་གཉིས་ཀྱི་ ཞིབ་འཚོལ་གྱི་ལཱ་འགོ་དངཔ་ཨིནམ་ལས་ འདི་ནང་ ཉེས་སྐྱོན་གྱི་དྲི་མ་ ལེ་ཤ་རངའོངསྲིདཔ་ལས་ མཁྱེན་ལྡན་ཡོངས་ཀྱིས་བཟོད་གསོལ་ བཞེས་བཀའ་དྲིན་བསྐྱངགནང་ཟེར་ཞུ་ནི་ཨིན།

བཀའ་དྲིན་དགའ་ཚོར། (Acknowledgement)

ཞིབ་འཚོལ་ མཐར་འཁྱོལ་ཅན་འབད་འགྱོ་ཚུགས་མི་འདི་ཡང་ སྤྲ་རོ་མཐོ་རིམ་སློབ་གྲྭའི་ ཤེས་རིག་ཞིབ་འཚོལ་དང་ གོང་འཕེལ་ལྟེ་བ་གིས་མ་དངུལ་གྲོགས་རམ་དང་ མཐོ་རིམ་སློབ་གྲྭའི་བདག་སྐྱོང་གིས་གནས་སྣང་བསྡུ་ལེན་ འབད་བར་འགྱོ་ནིའི་གནངབ་ གནང་ཡོདཔ་མ་ཚད་ ལྷག་པར་དུ་ ངབཅས་ཀྱིས་ཞིབ་འཚོལ་གྱི་ལཱ་ འགོ་བཙུགས་ཏེ་ མཇུག་མ་བསྡུ་ཚུན་ མཁས་དབང་ ཀུན་ལེགས་རྡོ་རྗེ་དང་ མཁས་དབང་ མགོན་པོ་ཚེ་རིངདང་ ལྷག་པར་དུ་ མཁས་དབང་ སྐལ་བཟངཤེས་རབ་ཀྱི་བསམ་ལེན་ ལམ་སྟོན་དང་ གྲོས་འཆར་ཚུ་ ལེགས་ཤོམ་འབད་གནངམ་མ་ཚད་ དེ་བཟུམ་སྦེ་ རྩིས་ཐིག་བཟོ་ནིའི་དོན་ལུ་ཨང་རྩིས་ཀྱི་ལེགས་བཤདཔ་ ཚེ་དབང་སྟོབས་རྒྱས་ཀྱིས་གྲོགས་རམ་ལས་བརྟེན་ཏེ་ཨིན། ངབཅས་གཉིས་ཀྱི་ཞིབ་འཚོལ་གྱི་དོན་ལུ་ ལམ་སྟོན་དངགྲོགས་རམ་གནངམི་ ག་ར་ལུ་བཀྲིན་དགའ་ཚོར་ཧིང་ལས་རང་ཡོད་ཟེར་ཞུ་ནི་ཨིན།།

རྒྱབ་རྟེན།

ཀུན་ལེགས་རྒྱལ་མཚན་ (༢༠༠༦) རྫོང་ཁའི་རྗོད་སྒྲ། (མེད)

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ཤེས་ཡོན་རྩ་གཞུང་དང་ཁྱད་རིག་རྒྱབ་སྐྱོར་སྡེ་ཚན། (༢༠༠༩) སློབ་རིམ་བློ་གསར་ལས་ སློབ་རིམ་དྲུག་པ་ཚུན་གྱི་རྫོང་ཁ་སློབ་དེབ། སློབ་གྲྭའི་ཤེས་ཡོན་ལས་ཁུངས། འབྲུག་གཞུང་ཤེས་རིག་ལྷན་ཁག།

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RABSEL – the CERD Educational Journal
Guidelines for Manuscript

RABSEL – the CERD educational journal

The CERD *Educational Journal* is published twice a year in spring and autumn by the Centre for Educational Research and Development, Paro College of Education, Royal University of Bhutan. The Journal welcomes contributors which promote the exchange of ideas and rational discourse between practicing educators, researchers, planners, administrators, educational thinkers and practitioners, learners and policy makers from Bhutan and abroad. To this end the Journal publishes articles on empirical and theoretical studies, research reports, commentaries and scholarly reviews that attempt a systematic analysis or synthesis of educational processes and systems from different viewpoints and approaches.

Notes for Contributors

Manuscripts are considered for publication with the understanding that they are original material and have not been submitted elsewhere for publication. Submission of a paper to a professional journal is considered to be a definite indication of the author's commitment to publish in that journal. A paper submitted to this journal while it is under review by another journal is regarded as unacceptable. Submitting an already published manuscript is considered to be unethical. The author should consult the Editor if he or she has any questions to whether or not the paper is suitable for publication.

Editorial Procedures

The CERD Educational Journal is a peer reviewed research journal. All papers considered appropriate for this journal are reviewed anonymously by at least two outside reviewers. The review process usually takes one to two months. Papers are accepted for publication subject to nonsubstantive, stylistic editing. The Editor reserves the right to make any necessary minor changes in the papers, or request the author to do so, or reject the paper submitted. A copy of the edited paper along with the first proofs will be sent to the author for proofreading. They should be corrected and returned to the Editor within *10* days. Once the final version of the paper has been accepted, authors are requested not to make further changes to the text.

MANUSCRIPT SUBMISSION GUIDELINES:

The CERD *Educational Journal* is a multidisciplinary publication presenting research and scholarly reviews related to education. Guidelines specified herein were prepared for the convenience of authors, reviewers and publishers.

Types of articles

Three types of manuscripts are appropriate for submission to CERD journal (a) Reports of empirical research, (b) Scholarly reviews (c) Project reports

Reports of empirical research

Reports of empirical research are descriptions of research studies. These studies must have clear and important implications for education and/or research. CERD considers research representing diverse methodologies, including group design, single-subject research, case study etc. The major criteria for publication are quality of design, imple-

mentation, and writing, as well as importance to the field.

Scholarly Review

Scholarly papers take the form of essays that represent well-developed arguments on philosophical, theoretical, or practical problems in the field of education. They are not required to adhere to an empirical research design (i.e., methods, data collection, and data analysis). Instead scholarly papers pose analytical or conceptual frameworks.

Scholarly papers should contain as many of the following as are applicable, preferably in this order: (1) objectives or purposes of the inquiry; (2) the philosophical, theoretical, or practical argument; (3) literature, sources, or evidence to support the argument/analysis; (4) conclusions and implications of the argument; and (5) significance of the argument

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These articles will be shorter and more preliminary reports about interesting educational projects (innovative courses, learning communities, etc.). Several of these reports could be published in each issue. The focus of a project report is on the progress or outcomes of an academic innovation that addresses issues in education.

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Manuscript preparation guidelines

1. Manuscripts are accepted both in English and Dzongkha (National Language).
2. Authors should follow the guidelines in the Publication Manual of the American Psychological Association (APA, 6th Edition) as a primary reference.
3. The length of the manuscript should not exceed 5000 words excluding the title page, abstracts, tables and figures, references, and biographical information.
4. Manuscripts should be prepared in the following order: title page (including Acknowledgements as well as Funding and grant-awarding agencies); abstract; keywords; main text; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figure caption(s) (as a list).
5. The abstract of 150-250 words are required for the manuscripts submitted. The manuscript should also have about 3 to 6 keywords.
6. The manuscript should include the author's names, institutional affiliations, mailing addresses, email addresses, telephone and fax numbers on the cover/title page (page separate from the body).
7. The manuscripts should be submitted along with a short biographical note. The biographical note should not exceed 150 words.
8. All pages should be numbered appropriately in the bottom right corner.
9. The use of Endnote and footnote is not encouraged. However, where the use of endnotes is necessary for the manuscript, the effort should be to minimize their number. Endnotes should be placed at the end of the paper immediately before the list of references.

10. The Editorial Board reserves the right to reject a manuscript without substantive reasons, if it does not fulfill the manuscript guidelines as specified.

Tables and Figures

11. All tables and figures must be numbered in the order by Arabic numerals in which they appear in the manuscript (e.g. Table 1, Table 2). In multi-part tables, each part should be labeled (e.g. Table 1 (a), Table 1 (b)).
12. The caption should be provided for each table, figure or symbols. All the figures and tables must be included in the text. The photographs or graphics are also considered as figures.
13. A reference to each table or figure should be made in the text. All the measurement units and abbreviation must also be defined appropriately.
14. Author must provide the highest quality figure format possible. A highest quality imported or scanned material must be used in the manuscript.
15. The Times New Roman Font on all graphics must be used.
16. The use of electronic or graphic files must be window-compatible (e.g., BIP, GIF, JPG).
17. The author should also on a separate document page submit all the tables, figures or images that are used in the manuscript.
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1. The manuscript should be sent as an e-mail attachment to the Editor in Chief or the Production Editor of the journal at cerd.pce@rub.edu.bt / rameshthapa.pce@rub.edu.bt

2. All manuscript submissions should be in a Word "doc" file or in a Word-compatible file with top, bottom, left and right margins set to one inch, and Times New Roman 12 point font.

Editorial correspondence

Any inquiries related to RABSEL-the CERC Educational Journal, including manuscripts for submission, should be addressed to: the Dean Research and Industrial Linkages (Dr. Kezang Sherab), Editor in Chief at kezangsherab.pce@rub.edu.bt or Ramesh Thapa, Production Editor at rameshthapa.pce@rub.edu.bt