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Grammar Instruction through a Blend of Processing Instruction Model and Creative Learning Approach

Pratima Rai, ²,

Abstract

One of the most prevalent practices in the Bhutanese classrooms on grammar instruction has been through explicit explanation of grammar rules followed by some practice questions. This approach, however, according to the second language researchers, has not helped much in the process of language acquisition. Therefore, this action research was conducted to find out if the blend of two approaches: the Processing Instruction Model and the Creative Learning Approach can impact grammar instruction in Bhutanese classroom by enhancing not only the understanding of grammar structure but also the communicative competence of the learners. At the end of the eight-week intervention strategy, students claimed that the Processing Instruction Model helped them to connect "form, meaning and function" of a grammar element which resulted into meaningful lessons. The lesson was further enhanced by the Creative Learning Approach as it provided students with a new avenue to articulate their knowledge and skills according to their choice which made them feel accomplished. Thus, the intervention strategy was effective as it helped students to gain a better understanding of the grammar elements both at structural and discourse levels.

Key words: Processing instruction, creative learning, "form, meaning and function", discourse

Introduction

The fundamental role of grammar in the study of language is undeniable. Alptekin (2002) posits that the competency in grammar "provides the linguistic basis for the rules of usage which normally result in accuracy in performance" (p. 57). It helps to communicate thoughts and ideas clearly and effectively. Besides this, it also relates to better academic scores. Although many Bhutanese students can communicate in English quite well it is dotted with grammatical errors that are avoidable. These errors are noticed both in the spoken and written discourse of the students. It is indicative of the students' lack of proper grammar knowledge and awareness on the discourse aspect of the language. This, in fact, is a very grave state on the ground that the English curriculum of Bhutan is documented based on the communicative approach to teaching English. CAPSD (2013), which is the curriculum and policy support division of Bhutan, states that the English curriculum of Bhutan is informed and guided by the language learning theories propounded by James Moffett. According to Moffett, it is very beneficial to teach language in the classroom integrating the four modes of discourse: listening, speaking, reading, and writing as they are the ways people learn to use language.

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Furthermore, the curriculum also mentions the importance of the study of grammar and usage for classes four to twelve. There is explicit instruction for the teachers not to teach grammar in isolation but to provide context and meaning.

However, very little evidence exists to indicate that the change in the curriculum document has translated into the desired result. One of the plausible reasons could be the continuation of the teacher-centric and rule focused approaches implemented to teach grammar lessons even after the revision of the curriculum. This approach not only contradicts the guidelines provided in the curriculum framework but also results in lessons that fail to fulfill their objectives.

Based on this observation, action research on how to help students learn and retain not just the structure but the meaning and function of grammar too was conducted. The intervention strategy used to remedy the current practice was geared toward enhancing a learner's understanding of grammar both at structural and communicative levels. Further, an opportunity to explore the creative skills of the learners was also provided through project work as the output task. Thus, the intention of this project was twofold. It intended to let the students learn and notice the "form, meaning and function" of the grammar, besides developing their communicative and creative skills.

Situational Analysis

From my teaching experience, I have observed that those grammar instructions limited to teaching rules at the sentence level in the classrooms are unfruitful practice. Research conducted to assess the effectiveness of the communicative approach to teaching grammar in Japanese classrooms indicated contradictions between the curriculum goal framed by the government, and the actual practice in the classrooms (Sakui, 2004). He claims that although the rationale of the documented English curriculum was to enhance the grammar knowledge and communication skills of the learners; in the real classroom scenario, Grammar Translation Method and Audio-lingual Method happened to be the key mode of teaching grammar lessons. This study revealed that the teachers did not follow the communicative approach as it contradicted the assessment system. Findings further revealed that while the communicative approach centered on developing the communication skills of the learners, the exam-oriented system assessed learner's proficiency in grammar rules rather than their communication skills.

Likewise, CAPSD (2013) has also stated clearly in English Curriculum Guide for Teachers for class ten the importance of teaching grammar based on the communicative approach. However, majority of the Bhutanese language teachers still use the conventional approach of teaching grammar in their classrooms. This is done mostly to cater their grammar lessons toward preparing students for the state and school-level exams which confine teaching grammar at sentence or clause level. Heaton (1990) states that standardized tests and state examinations determine how average teachers teach grammar lessons in their classrooms. If the tests are set to measure the student's grammar knowledge only then the classroom teaching will focus on grammar rules at the sentence level. On the contrary, when a language test is designed to find out what candidates can do with a language then the grammar lessons will target "providing a focus for purposeful, everyday communication" (p.5). Inspired by his idea on how designing assessment tasks skillfully can help to achieve the very goal of teaching grammar; I began to plan an assessment task on grammar that differed from the ones that I regularly used. My enthusiasm to vary my grammar teaching approach was motivated by the new insights I received when the education division of Paro dzongkhag spearheaded a professional development workshop titled 'Enhancing Creative Teaching' for the teachers of Paro. This workshop exposed me to the concept of seven pillars of creativity which provided me the confidence to design and implement an English project on grammar which attempted to assess not only the grammar knowledge and language competency but creative skills as well.

Theoretical Framework

There is ample empirical research evidence confirming the effectiveness of grammar teaching when its form, meaning, and function are addressed appropriately. According to Bardovi-Harlig and Dronyei (2012) research has proven that the "grammatical development does not guarantee a corresponding level of pragmatic development" (p.234). It is therefore essential to expose the learners to authentic and natural discourse to help them communicate spontaneously, comprehensibly and culture perceptively in both spoken and written discourse for both academic and personal enhancement. Further, Nassaji and Fotos (2011) posit that Second Language Acquisition (SLA) research now considers the teaching of grammar to second language learners as effective when it is presented in a meaningful communicative context.

In this study, the Processing Instruction model helps the learners to gain some level of mastery of the grammar at structural level, while the Creative Learning approach presents them with a forum to develop their communicative and creative skills.

Processing Instruction Model

Processing Instruction is conceptualized on VanPatten's input processing model. The underpinning idea of this approach is that grammar lessons become highly effective when learners are presented with an opportunity to process grammar both through noticing and understanding the connection between its form and meaning. VanPatten (1996), in his work, states that when learners are exposed to input, the language they either hear or see and rely on to obtain meaning or message is referred to as input, they don't attend to both the form and meaning of the input at the same time. They either "focus on meaning without paying adequate attention to form or may focus on form without adequately processing meaning" (VanPatten, 1996, in Nassaji & Fotos, 2011, p. 21). He also says that theoretically after receiving the input, processing of the language for meaning occurs. During that process of comprehension to make meaning of the input received following things happen: processing, perception, noticing and intake.

According to him 'processing' means making meaning from input, 'perception' means registration of audio signals present in the input, 'noticing' means conscious registration of those forms in memory and 'intake' means the part of the input that the

learner has noticed and stored in his or her working memory. He further says that "both perception and noticing can take place prior to or without assigning any meaning to a particular form. However, processing involves both perception and noticing and also assigning meaning to the form" so it is important to teach learners how to process input correctly for both grammar and meaning (Nassaji & Fotos, 2011, p. 21). For instance, this could answer why students use "have" and "has" inaccurately. To this end, he claims that incorporating Processing Instruction can help design lessons and tasks that help the students to notice grammar as they make meaning out of the input.

In this light, Processing Instruction model believes that firstly, the learners should be provided with input for language acquisition to occur. Secondly, understanding how learner- process input can cater to devising strategies that can enhance language acquisition (Nassaji & Fotos, 2011).

Finally, learners should be assigned with input-based tasks to help them understand and internalize the grammar as well as its meaning and function.

However, to further enhance the impact of this model this action research has embedded the features of creative learning in it.

Creativity in education

His Majesty, the fifth Druk Gyalpo, has mentioned many times in his royal speeches the need for Bhutan to enhance its creative and innovative skills so as to stand with confidence in this dynamic era of knowledge expansion and economic competition. The Bhutanese education system has integrated higher-ordered thinking skills in lessons and assessment systems to promote and enhance creativity. Further, the Royal Education Council of Bhutan and the Teacher Professional Support Division have also provided professional development workshops such as Place-based education and transformative pedagogy to expose the teachers to techniques and features of creative teaching and learning.

Read (2015) maintains that in the field of education there are two types of creativity. They have been termed as big 'C' and little 'c' by Anna Craft, and providing opportunities to develop these two types of creativity is essential for developing children's creativity (Craft, 2005, in Read, 2015, p. 30). Many researchers further state that children's creativity is different from adult's creativity. While adult's creativity is gauged by the society in terms of its novelty and usefulness, children's creativity is dependent on their previous knowledge so "subjectivity is the intrinsic characteristic of children's creativity" (Kudryavtsev, 2011, in Toivanen, Halkilahti & Rusimaki ,2013, p.1170).

This action research approaches the field of creativity from Craft's (2005) point of view on 'little c' to explain students' creative process and creative learning: she says that big 'C' in primary ELT classroom would refer to new and original outcomes such as a completely new story or poem written by the student, while little 'c' refers to the process of children using the available second language repertoire to creatively construct and communicate meaning in daily interactional context (Craft,2005, in Read,2015). She further claims that the seven pillars of creativity and the generic elements which help develop creativity in the classroom irrespective of the age and levels of a student are very significant. The seven pillars are: build up positive self-

esteem; model creativity yourself; offer children choice; use questions effectively; make connections; explore ideas and encourage critical reflections.

Read (2015) posits some of the benefits of fostering creativity are: it enhances the motivation and engagement level to study language, makes the learning fun and unforgettable, provides a sense of ownership, promotes divergent and flexible ways of responding and thinking, develops risk-taking skills, patience and tolerance, and promotes creative thinking.

School experiences and observations

While there is a dearth of research in the Bhutanese context to validate why classroom practices of teaching grammar digress from the national curriculum outcomes and what impedes enhancing communicative proficiency and creative skills of the students, findings from past research conducted in other Asian countries seem to relate to the Bhutanese anecdotal evidence. Some of the closely related issues and experiences are teacher's belief systems, pedagogic practices, resource constraints, exam-oriented education system, inadequate proficiency in language and communication skills; lack of adequate awareness on the roles and relevance of creativity in education.

This study aims to shift grammar instruction from rule centric teaching to an enriching experience by integrating communicative approach and creative learning aspects. It is also to implicate that numerous opportunities for teaching grammar effectively can be unfolded by drawing on our own experience as language teachers. Our goal should not be just to explore options for eclectic grammar teaching practices by referencing books and articles but to enrich our current practices by aligning them to our own context and resources.

Research question

Can integration of the processing instruction model and the creative learning approach lead to meaningful and purposeful grammar instruction?

Action plan

This action research was conducted in Khangkhu Middle Secondary School, Paro, with 128 class ten students. It was conducted in the month of September and October, 2019. A total of 40 periods of 50 minutes each was used for planning and teaching the lessons.

A total of eight weeks were devoted to teaching the following grammar elements: tenses and their aspects, direct and indirect speech, active and passive voice. These lessons were planned based on the Processing Instruction model given below (Figure

1). According to Nassaji and Fotos (2011), the substantial number of research conducted in the classroom has revealed the Processing Instruction model to be more effective than the traditional instruction approach to teach grammar. In addition to this, VanPatten and Oikkenon (1996) state that their research on object pronoun placement in Spanish found out focus on structured input to be the significant element in making Processing Instruction approach very efficient (VanPatten & Oikkenon, 1996, in Nassaji & Fotos, 2011). Structured input is classroom activity that facilitates the learners to notice the grammar structure and then process for its meaning.



Figure 1: Processing instruction

Out of the eight weeks, six weeks were allocated as instruction time for the above mentioned three grammar elements. The remaining two weeks of the total eight weeks were used as project preparation period by the students for planning, writing scripts, practicing and recording.

The first two weeks were devoted to tenses and their aspects. When the majority of the students informed me that they did not remember their previous lessons on grammar well, I had to prepare and execute detailed lessons on all the above mentioned grammar elements.

My lessons were based on the three key concepts of Input Processing developed by VanPatten on which the Processing Instruction model is envisaged. The three key concepts of Input Processing are input, intake, and output. As I planned the lessons, I started to collect and prepare input materials in the form of handouts, PowerPoint presentations, video lessons from YouTube and my own lesson recordings. These materials were used for varied purposes, such as to help the students understand the meaning and function of the grammar structure or to help notice how the native speakers or proficient speakers of English use them in their daily discourse.

According to experts, for language acquisition to occur and grammar to be learned accurately, it is very important to have well planned and developed input materials

(e.g. Gass (1997); Ellis (1999); VanPatten (1996) in Nassaji & Fotos, 2011). A rich input learning environment with various kinds of teaching-learning materials will not only cater to the individual learning needs of the students but will also help in providing repeated opportunities to notice and learn the form and meaning of the grammar element.

During the course of teaching and learning, I took notes and student feedback on the effectiveness of the materials and the activities implemented. I ensured that the materials and the activities helped the students to notice the form and connect it with meaning.

At the end of the instruction and practice period, students were assigned project work. It asked them to apply the grammar knowledge at the communicative level by integrating it in real life situations (Appendix A).

After the submission of the project work, a questionnaire was uploaded in Google

Classroom for the students to respond and submit (Appendix B). Two teams were also

identified for face to face interview.

Intervention Strategies: Processing Instruction

The Processing Instruction model aims to convert the input into intake by enhancing opportunities for the students to understand the connections between form and meaning. This is mainly achieved through implementing structured input. Structured input refers to those activities that are used during the input processing stage to help students understand "form-meaning connections" (Nassaji & Fotos, 2011, p. 28). The guidelines proposed by Lee and VanPatten (2003) and VanPatten (1993) while designing structured input activities are by designing activities that help the students to notice the form as they process for meaning which involves precise instruction on the grammar element. Presenting one grammatical element at a time to allow internalization of the concept and to avoid overwhelming them with too many information, for instance, teaching only one of the aspects of tenses so that learners get adequate opportunity to focus on grammar as they process for meaning. And, incorporating activities that allow the learners to experience the lesson at communicative level (Nassaji & Fotos, 2011, p. 30).

Three different grammar elements were chosen for the intervention strategy: Tenses and their aspects, Direct and Indirect Speech, and Active and Passive Voice. For each of the grammar elements, all the six steps to structured input activity were integrated. Following is an example of how the six steps to structured input activity were integrated to teach present tense and present continuous tense. The other two, Direct and Indirect speech and the Active and Passive Voice, followed the same structure. The structured activities: Present Tense and Present Continuous Tense

1. **Present One Item at a Time**: As per the steps to structured input activity, the

teacher should present one grammatical element at a time to avoid confusion and allow adequate time for practice. I asked the students to recall their previous lesson on types of verbs which helped me to present the four types of verbs as in the following chart. Next, I told the students that the focus of this lesson would be on Present tense and its aspects.

Ту	pe	of	verb	Present form	Present	Past	Past continuous	Examples
					continuous	form		
1.	Vei	rb to 'l	be'	am/is/are	am/is/are	was/we	was/were + being	I am a student. I was a student of KMSS last
					+being	re		year.
								She was being questioned by the police when
								you walked in.
2.	Ver	rb to 'o	io'	do/does	am/is/are	did	was/were + doing	Dorji does his duty on time. They do their work
					+do ing			on time.
								We were doing the work assigned by the
								Principal.
3.	Verb	to 'ha	ve'	have/has	am/is/are	had	was/were + having	We have books to carry home. Deki has done
					hav ing			her work.
								Students are having a great time.
4.	Bar	e		jump/jumps	is/are + jump ing	jumped	was/were+jump in	This dog jumps very high.
	infi	nitives	:	write/writes			g	Dogs jump very high.
a	. jun	ıp			is/are +writ ing	wrote		Those dogs were jumping very high.
b	. wri	te					was/were +	
							writ ing	

2. Use Oral and Written Input

Since in this approach the explanation on the "form" of the grammar element is followed by activities that help students to understand the connection between the form and its meaning the chart given below was used. This chart was used to teach the forms of the present tense and its aspects in addition to its meaning and usage.

Simple Present Tense Singular

<u>Plural</u>

1 st person: I write letters often.				We do our homework daily.
2 nd person: You write a letter.			You go for your karate class.	
3 rd person:				
He	writes/does/s	<u>peaks</u>		
She	speaks fou	r languages	3.	They go to the temple once every month.
It	writes	very	well.	
		-		

It is used to: To indicate the present period, which may continue indefinitely

 \checkmark My mother works in this shop.

Express regular or habitual/ routine work or actions and general truths:

 \checkmark I drink two cups of tea every morning.

Present <u>Continuous</u> Tense

<u>Singular/Plural</u>

It	1 st person: I	am writing a letter now.	We are doing our homework.		
is	2 nd person: Y	ou are cooking.	You are going to school these days.		
used	3 rd person:	is writing his homework.			
to:	He				
	She	is writing her homework.	They are going to school.		
	It	is playing with a ball.			

• Express action taking place at the time of speaking

- ✓ We are having a party, come and join us.
- ✓ I am feeling very happy.

3. Keep Meaning in Focus

In order to bring to the notice of students the connection between form and meaning of the above two aspects of present tense, the following activities were carried out in the class. Firstly, students were given eight minutes to read the above handouts and note down their doubts. Secondly, they were given five minutes to share their understanding of the form, meaning and function of the 'Present Tense' and its aspects with their team members, turn wise. They were also told to pose their question(s) to the team in the course of their sharing to clarify their doubts. Thirdly, at least a member from each team was asked to share their team's understanding with the whole class. As they shared their understanding, the rest of the class had an opportunity to do the following: reaffirm their own understanding, clarify their doubts or even relearn the lesson. An example of an explanation shared in the class is given below:

For, verb to "be" the present forms are am, is and are. If the subject is singular: He/She/It/Dechen/Dorji/School /etc. then singular verb "is" is used while for plural subject They/We/ Children/Schools/etc. plural verb "are" is used. However, for the subject "I" the verb is "am". The present form of the bare infinitive; "eat", are eat and eats. The verb "eat" is used with plural subject while "eats" is used with singular subject.....Present form of verbs are used to talk about habitual action, regular works, general truths and even the time period which may continue for indefinite period of time. I can use this tense to talk about my likes and dislikes, describe my country ... Present continuous tense can be used to talk about action that is taking place right now and even future....

4. Keep Learners' Processing Strategies in Mind

Some of the students portrayed their confusion in differentiating the present continuous tense from present tense. When they were asked to write some example sentences, they mixed up the two forms. Instead of writing an example sentence for the present continuous form, they wrote it for the present tense. This particular set of

students claimed to have immensely benefited from this activity especially because it entailed immediate feedback and explanation.

They were guided to notice the difference in form and meaning and then self-correct it. Further, in order to avoid such error in the future, VanPatten's significant finding that the second language learners usually "focus on meaning without paying adequate attention to form or may focus on form without adequately processing meaning" was also explained to the students based on the above error they made. (VanPatten, 1996, in Nassaji & Fotos, 2011, p. 21).

One of the observations from my notes reads as below:

It was surprising to find out that some of the students still could not differentiate present tense from present continuous even after years of grammar lessons. They had assumed present continuous and present tense to mean the same. This is a very good reminder to give equal importance to both grammar structure and its communicative value for accurate and appropriate use.

Additionally, many students claimed that they didn't give importance to the correct use of third person –s, have and has, etc. This affirms VanPatten's theory that second language learners usually focus on meaning without noticing its form.

This highlights the importance of and the idea that through meaningless focus on rules language learning is not possible.

8. Have Learners Do Something with the Input

The students were asked to either share their daily routine or describe somebody's daily routine. This activity was designed with an objective to help the students experience the usefulness of the lessons learned by putting them to use immediately. Additional activities to check their comprehension level were assigned followed by the peer and whole class approach correction. For example, the answer to each question was displayed and either the teacher or the students had to explain why the answer was correct or incorrect. This approach to correction was preferred by the students compared to the typical practice of teacher correcting the students' work. They acknowledged the power of immediate feedback and explanation in understanding the form and meaning of the lesson.

9. Move from Individual Sentences to Connected Discourse

After having discussed the form, meaning and function of the three grammar elements: Tenses and their aspects; Direct and Indirect Speech; and Active and Passive Voice, an English project work was assigned to students. The project basically asked the students to apply the grammar lesson in a real-life situation.

Discussion

As per the responses provided by the students through the questionnaire, the intervention strategy was a great success. It helped them to discover their skills and interest besides making them understand the lesson in greater depth. The following

are some of the highlights of my classroom observations and students' opinions expressed in the questionnaire and the interview.

Lesson input and activities

I noticed that only after extensive explanation, and deliberate attempt to help the students notice the grammatical features (and a good amount of practice), they could use the language with better accuracy. For instance, many students could use 'have' and 'has' accurately. They could differentiate the form, meaning and function of the present continuous tense from that of the present tense and use the third person –'s' appropriately.

Nassaji and Fotos (2011) state that careful presentation of input will lead to noticing of the form and meaning of the grammar element accurately. Therefore, lesson activities framed according to how students process language will prove more effective than those that are designed without any groundings.

For instance, the positive impact of quality inputs in lessons followed up by an adequate number of conscious practice, and effective immediate feedback is evident in the following excerpts taken from the responses to the questionnaire submitted by the students.

When I look back at what I understood in grammar classes few years ago and weigh it with what I learned this year, I think there's a considerable difference. It's not that the grammar classes I attended few years ago were fruitless, but the way it was taught was different. Previously, we were provided more of complicated and elaborate notes and less of examples, verbal explanation, questions to practice. I realized that I had learned so much regarding grammar this year. Few years back, I did not really enjoy grammar classes I. In really enjoyed the grammar classes I had this year because it was composed of explanations not only by the teacher but also through videos. One thing which was different was that of students being called in front of the board and to write examples, and it was especially apparent while we were learning tenses. I found it to be an effective method...

We learned most of the things in our academic years that were taught this year and the concepts were the same, however this year, the learning was deep and in detail. This year, I quiet implemented a lot of grammars that I have learned and I could correct a lot of grammatical mistakes on my own writings and speaking plus on other people as well. In other academic years, we didn't do like this, so the learning was very less. I hope everyone learned their mistakes this year and corrected them. We were told to implement tenses, direct and indirect speeches, passive and active voices. Through the project, we could almost master these topics.

creative tearning bit areas

Farley (2001) claims that when the output tasks are based on meaning-focused activity which integrates input, Processing Instruction can become very effective. In this stem, the output task designed for the students was to apply the grammar lesson or the input, at the communicative level. As mentioned earlier, in this paper, the project was based on the concept of "little c" and seven pillars of creativity.

The literature claims that one of the most effective ways of supporting communicative grammar instruction is to provide extensive platforms to use the language in authentic contexts, so I asked the students to create contexts in which they

would use the grammar lesson(s) appropriately and effectively. A total of 22 video clips were submitted based on varied themes such as interview, story, instruction, anecdote, presentation, song, artificial intelligence, etc. For instance, one of the teams chose to narrate a typical school day starting from the daily morning bus trip to the end of school day. The grammar element used for this narration was an active voice (Appendix C). Likewise, another team had implemented direct and indirect speech to record an interview on COVID- 19 protocols followed by the public and private schools of Bhutan.

The student participants expressed creating a hypothetical context acted as a great advantage to understand application of classroom knowledge. In an interview, one of the students said that she would have never realized that in daily discourse it was impossible to communicate using only one type of grammar element. She said, "I had to use tenses along with direct and indirect speech for my video project on "interview", before this I thought the interview was all about only direct and indirect speech." They considered the project work to be a huge eye-opener for them.

The other significant feature of the project was providing students with a healthy amount of flexibility, independence, challenges, choices and ownership. These are the core features of a classroom environment that support creativity. It helped them to find relevance in their work by putting it into practice and relating to it emotionally and personally. Some of the benefits that students claim to have received from this project are being able to discover hidden talent and creative skills; develop social skills; make learning fun and memorable; etc. The following excerpts from the questionnaires submitted by the students further explain their experiences.

We enjoyed the appreciation and compliments from our friends and most importantly we got to know how much potential we all have if we really put in our efforts and dedication in whatever we do.

We could really use our brains and come up with new ideas through our imaginations. We were able to develop original ideas and showcase our creativity. We discovered our potential and gained valuable experiences that can be helpful throughout our life. It was like a value lesson on our potential skills. The next project like this one in the future is going to be a whole next level of creativity if we get the opportunity to make so.

I realized, after completing the project, that I have a passion for photography. I am delighted that I discovered this passion early, through this work. I am also certain that many students must have realized that all of them possess potentials; photo/videography skills, acting, filming, editing and more. Many must have been able to implement their skills in the project. In my case, I have been able to bring out my skills as well as teach few to my friends as well. Besides, after going through this work, I gained ideas and knowledge for other projects too. For instance, I also learned to create motion doodle art while exploring for the English project, which really proved helpful for my Biology project.

The willingness of the students to carry out another such kind of project in future as mentioned in their response is a strong indicator of the success of this project work.

Their readiness to redo and resubmit their video project confirms the immensity of this approach in making grammar instruction appealing to the students. I personally have never witnessed such enthusiasm and passion to complete and even redo an assignment by the students.

Conclusion

According to Hinkel and Fotos (2002), a purely communicative approach does not help learners in gaining advanced proficiency and accuracy in the target language, therefore "Explicit instruction is necessary to promote high levels of accuracy ..." (p.137). However, VanPatten (1996) argues that compared to those activities which target grammar instruction at clause level, designing structured activities that compel the learners to understand the connection between the form and its meaning leads to mastery of both structure and communication competence (Nassaji & Fotos, 2011). This fetches discussion on how grammar instructions are planned and executed in the Bhutanese classrooms. For instance, what type(s) of input are implemented in grammar lessons; how they feature in the practice activities; when the practice activities are designed to occur; and if the communicative value is addressed in a context-appropriate manner.

This action research lacks in many ways and it is evident in the responses submitted by the students. They have mentioned that some of the team members were not cooperative while some wrote about the inconveniences caused due to proximity issues, unfavorable weather, lack of ideas, and many more. These lapses indicate the need for better planning and instructions to make it more effective. The other important aspect I would consider, in similar future projects, would be a critical review by the whole class because this could take the lesson to a whole new dimension of learning.

Although this intervention strategy cannot be used to teach grammar elements that do not have proper "form and meaning connections" such as "article: a, an, the", it has proven useful in helping the learners both at primary and secondary school levels to learn grammar with understanding. The findings of this study affirm in some manner that Bhutanese language teachers should seek ways to make grammar instruction Journal of Educational Action Research, Vol 1, No. 4 November 2020

effective by understanding how learners interpret and process grammar elements for meaning which will result in designing meaningful grammar lessons.

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Appendices

Appendix A: Questionnaire on Processing Instruction and Creative Learning approach to grammar instruction

Questionnaire on Processing Instruction and Creative Learning approach to Grammar Instruction

This questionnaire is private and confidential. The information gathered from each questionnaire will be analysed for action research purposes only. Please remember there are no correct or incorrect answers.

Direction: Please answer all the questions given below.

- 1. What did you enjoy about completing your project?
- 2. What did you not enjoy about completing your project?
- 3. Do you think this project helped you to identify as well as use your skills and abilities? Explain your answer in detail.
- 4. In the scale of 1 to 10 rate yourself on your understanding and confidence on grammar. Where did you think you were in the beginning of the year 2020 and where do you think you are now (after submission of the project work)? Explain your answer in detail.
- 5. Do you think the time given for preparation was enough? If your answer is "no" then suggest how long it should have been.
- 6. Will you be happy to work on similar type of project? Why?
- 7. List down the resources and references you used to complete this project. Mention your experience while using them.
- 8. Explain the similarities and differences you experienced learning grammar this year compared to other years. (Please do mention the impact of how the manner in which the grammar was taught in the class and then asked to apply in the context helped or did not help in the deeper understanding of the lesson.)

Appendix B: English Grammar Project Work English Grammar Project Work

Guidelines:

- 1. Form your own groups with maximum of 5 members
- 2. Choose the topic of your interest (grammar lessons covered so far)
- 3. Plan, design and produce a project in any form such as power point presentation, video clip, role play, drama, etc

Question

Design a project using ICT to indicate accurate and effective use of grammar in communication:

- a. Concept: proper understanding on (form, meaning and function) of one or more of the following grammar element and its aspects: Tenses, direct and indirect speech and active and passive voice.
- b. Time: 3 to 5 minutes
- c. Presentation: title, concept, theme or value/ conclusion
- d. Your project should include all the names of the team members, class and section

Preparation time: (a) Four periods for planning and writing scripts

(b) two periods for recording/ writing/ practicing role play/etc

Due date: 31 October 2020

Marking criteria

Concept	4
Time	2
Presentation	2
Value addition (theme/ big idea/moral)	2
Total	10

Appendix C: Sample of video transcript A Day in the Life of a Bhutanese Student

This is Paro valley situated in the western region of the beautiful Himalayan kingdom of Bhutan. Today, with the sky being so clear and stunning; let us take you all through the journey to Khangkhu Middle Secondary School. Here comes the school bus. Let us go inside. Most of the students have reached the school gate, and the teachers are taking their temperature. If they are fine, they enter the school gate and happily swing their lunch pack bag.

The water is quite cold but the students are following the school protocol and washing their hands properly.

The students must disinfect their shoes in this area.

So, this is our school ground decorated with colourful flags. There is a student hoisting our national flag.

This is how we the Bhutanese greet our teachers. This is our classroom with 21 students. The walls have been painted purple and there are drawings of stars and butterflies pasted on the ceiling. Though our class is not as attractive and decorated as other classes we enjoy learning here with our friends. That is the projector. The lesson has already been projected on the board and the teacher is teaching. The students also participate in the discussion.

Its lunch break now and students are praying to present their first offering of the lunch to the gods.

Now, let us go and see what students do outside. They are the students of 10 B, it is interval right now and they have come out in the sun as it is quite cold in the classroom. While some of the students are studying some are just standing in the sun; like him.

Hi, where are you going? I am going to submit the books. Ohhh. Lets go inside and submit the books. This is the staffroom.

The students are here in the library and they are flipping through the pages of the books they love.

That is the multi-purpose hall, this is the football field and that is the basket ball court. Some of the students are here at the canopy. Hi, what are you doing? Just thinking of a topic for my science project. What are you going to work on? Maybe, why the sky is blue? Why the sky is blue. Oh, wow.

The school is finally over and the students are leaving for home.

Finding Research Topic and Its Effect on Research Learners' Motivation: An Action Research

Jigme Dorji

Biographical note

Jigme Dorji works with College of Language and Culture Studies as an Associate Lecturer in English language and literature. He has a Master's Degree in Applied Linguistics from Mahidol University, Thailand. He taught English language at different level of schools for nine years prior to joining RUB. Currently, he teaches critical reading, academic skills, literary theories and basic research methods to undergraduate students. His research interest is in the field of second language acquisition, bilingualism, and teaching English as the second language.

³Abstract

This paper reports the effect of teaching how to find research topic to the undergraduate students. It also talks about students' interest and motivation in learning research. The action research employing mixed methods approach was conducted with 95 first year Bachelor of Bhutan and Himalayan Studies (BHS) students taking research method course. Baseline data were collected using selfdeveloped questionnaire (N=95), focus group interview (N=6) and four experts' rating on students' research topics. Based on the baseline findings, intervention strategies to find research topic were adapted from Bru (2009) and Lester and Lester Jr.'s (2010) framework and implemented to enable students to speculate, frame and evaluate their research topic. After three weeks of intervention, a post-intervention data were collected employing same techniques and tools as the pre-survey data were collected. Further, to validate the findings, researcher added field note from the observation during implementing the intervention. Finding showed that intervention strategies have made an impact on students ability to find research topic, which in turn, indicated that students interest and motivation towards research learning augmented. Recommendations to fortify students' research learning experience and need for future research are also provided.

Keywords: Undergraduate research, research education, research topic

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Introduction

Research is an essential discipline the undergraduate students get to experience early in life. Rowlett, Block and Susan (2012) rightly remarked that research is "…highimpact educational practice that has the ability to capture students' interest and create enthusiasm for and engagement in an area of study" (p.5). Indeed, research supports students' innovation, creativity, analytical and critical competence development (Harb, 2019), which is important for students to overcome real life issues in 21st century world. Accordingly, most of the universities in the world have incorporated research as a core element of the academic programs. However, undergraduate research in various parts of the world suffers from the plight of mediocrity (Mahannoda, 2016; Cheung, 2013).

Research by nature is a difficult discipline, especially for the undergraduate students who would have little or no research experience. For this, Nind, Homes, Insnga, Lewthwaite and Sutton (2019) contended that unlike the postgraduate students who learn research methods experientially, for undergraduate students, research method training is imperative. However, owing to the complexity of research teaching, where tutors need to pay attention and help at every process of research (Fillery-Travis and Robinson, 2018), the research teaching across the world currently lack vigor and pedagogical innovation to motivate the learners (Alsied & Ibrahim, 2017; Mahannoda, 2016). And students experience frustration and distress because of poor research instruction and their own inadequate competence to learn research, affecting their interest and motivation to learn research (Lesko, Simmons, Qurshei and Newton, 2008).

In this regard, research teaching needs to be redesigned and focused on developing and sustaining interest in students towards learning research. Most research method courses overlook the need of teaching the basic aspects of undertaking research. One of the key challenges students confront in learning research is to choose and narrow down a research topic (Todd, Smith and Bannister, 2006). And research tutors tend to take it for granted that finding topic is left untaught in research methods courses. However, studies have claimed that students who do not receive instruction on such fundamental elements and process of research fail to establish relevancy between the study and themselves, thus deterring their interest in learning research (Qasen & Zavid, 2019; Harb, 2019). To this, scholars like Bru (2009), Alter and Dennis (2002), and Lester and Lester Jr. (2010) offered frameworks for selecting research topic with emphasis on using personal experience to generate research idea. They suggest that finding research topic within personal experience will give a sense of personal significance to study the topic, thereby developing and sustaining interest in research. Teaching to find research topic, therefore, could not only help the students find research topic, but also develop interest and motivation in learning research (Nind et al. (2019).

Situational Analysis

The need for research education to develop students' understanding and problem solving ability is recognized in all universities today (Shcofield, 2016; CUR, 2010) including Royal University of Bhutan (RUB, 2015). Research is part of all the programs offered in the colleges under RUB today. In College of Language and Culture Studies (CLCS), research is taught in both the Bachelor's Degree programs the college offers: in first year to B.A. in Bhutanese and Himalayan Studies (BHS) and in third year to B.A. in Language and Literature Studies (BLL). The students have to undertake a research project as a part of the course where students are allowed to choose their own topics. In this case, the anecdotal experience depicts that students tend to study research merely to fulfill the course requirement and do not display learning spirit and motivation. Hence there is a need to explore for means to enhance students research skill and interest in learning research.

In fact, difficulty in finding research topics is a common feature the studies found in undergraduate research education. Studies from different countries (e.g. Mahannoda, 2016; Alsied & Ibrahim, 2017; Cheung, 2013) have corroborated that finding research idea or identifying a research topic is a major problem among the students. This has negative impact on students' esteem and confidence to take up research work. Students feel their failure from the start breaking their confidence. To this, Harb (2019) recommended the scholars or research tutors to redesign the teaching approach in a positive, active, social, and efficient learning environment. However, in Bhutan, while there are studies investigating the general state of research development in RUB (Phanchung & Choden, 2019; Sherub & Schuelka, 2019), there is lack of literature to show how research can be best taught to Bhutanese students. Therefore, this action research will explore ways to improve research learning experience for the students by focusing on enhancing their skill to find good research topic using personal experience as suggested by Bru (2009), Alter and Dennis (2002), and Lester and Lester Jr. (2010).

Literature Review

There is plethora of literature supporting undergraduate research education considering the significant contribution research has on innovation and economic development of a nation (CUR, 2010). The studies from across the world (e.g., Mahannoda (2016) [Ethiopia], Dwihandini, Marhaeni and Suarnajaua (2013) [Indonesia], Alsied and Ibrahim (2017) [Libya], and Cheung (2013) [Singapore]) however revealed that the undergraduate research students find research difficult and uninteresting to learn. For example, Harb (2019) and Lewthwaite and Sutton (2019) revealed that the students bear negative attitude towards learning research. Students perceived research as boring, difficult to understand and irrelevant to their daily life indicating the inadequate understanding about research. Likewise, Nind et al (2019) observed that students find research learning stressful and difficult, and many students

either choose not to study research where there is option, or they undertake it only to fulfill the course requirement when there is no choice. Literature therefore suggests the research tutors need to provide pedagogical intervention to enable the students undertake research with confidence and interest.

Students' interest and motivation is affected by their competency. Bocar (2003) and Qasen and Zayid (2019) maintained that students lose their interest and motivation when they lack knowledge and skill to perform required task. For example, their study found that students' poor language competence and inadequate knowledge and skill in conducting research affect students' motivation to learn research. Demonstrating this phenomenon, Howard and Brady's (2015) study noted that while the undergraduate research learners express disinterest in learning research, the postgraduate students who have better understanding about research crave to learn it. This suggests that proper research training could augment learners' motivation towards learning research. But, unfortunately, researchers like Fillery-Travis and Robinson (2018); Nind, et al. (2019), Mapolisa and Mafa (2012) and Mahannoda (2016) observed that many tutors teaching research overlook the undergraduates' unpreparedness to learn research methods as the research students at higher level of degree learns, thereby failing to offer sufficient attention to each process of research. Consequently, as Lesko, Simmons, Qurshei and Newton (2008) claimed, students seem to be battled emotionally when their knowledge and skill is inadequate to perform what they are assigned.

Among the difficulties that aggravate the students' predicament in learning research, the most common challenge studies from various context reported was students' inability to find and narrow down research topic (Alsied and Ibrahim, 2017; Mohammoda, 2016; Todd et al, 2006). It was found that while it is a key challenge students confront, tutors teaching research take it for granted that it is left untaught in research method courses. Suggesting the needs to address it, there are studies which supported group research to develop collaborative learning which might help solving the problem of finding topic through peer assistance. However, Mahammoda (2016) found that group or collaborative work for the students at early stage of learning affects the learning opportunities of those who have fallen behind in learning, because the member who have the competency to perform the task complete it, often in isolation. Likewise, there is also an opinion that providing a topic by tutors might relieve the students of the pressure in searching research topic (Lester & Lester Jr. 2010). However, the mismatch between the topic tutor provided and students' interest could render the study irrelevant to the students' life that it might fail to generate interest in student to undertake it. On the other hand, if tutor explores for ways to teach students find research topics on their own rather than providing the topic, it could motivate the students in taking up a project that give personal significance so that their interest in it sustains (Bru, 2009).

Generally, it is acknowledge that research demands high level analytical skill and linguistic competency (Cheung, 2013), which students in CLCS seem to lack.

Yangdon (2019) studied the level of critical thinking among the students of CLCS and found that the students' critical thinking ability is 46% against standard average 54% lower than the standard CT. Besides, the school education system in Bhutan also lack support in shaping knowledge and skill in research. Studies in the context of Bhutanese education (e.g., Schofield, 2016; Dorji, 2017) pointed against the prevalence of traditional mode of teaching and learning where memorizing information is considered intelligence and regurgitated information the knowledge. Even the teaching and learning at the colleges in Bhutan at present has not fully realized the potential of active, student-centered approach (Schofield, 2016). Likewise, students are also deprived of affluent research culture, since, according to Sherub and Schuelka (2019) ad Phanchung and Choden (2019), the research culture in RUB still remains underdeveloped. Further, students in CLCS learn research methods in the first year where they would lack numerous academic skills required at higher education. From these contextual limitations, it could be construed that undergraduate research tutors has vital role to play in success of research courses.

Finding Research Topic

Bru 2009, Lester and Lester Jr. (2010) and Alter and Dennis (2002) offered a framework for finding research topics from within so that it relates to personal significance. So, exploring for ways to teach students find research topics on their own rather than providing the topic could fulfill the purpose of developing and sustaining interest and motivation in research (Bru, 2009).

Alter and Dennis (2002) offer a framework for selecting research topic where they offer multiple of factors for research ideas and topic. They believe that research topics could be found by means of looking into the factors such as: selecting Ideas to pursue, study framework issue, simply complex theories, study anomalies and create new value. Further they added that the sources for research topics are: resources and current practice, personal experience, fundamental issue and previous research. Further, Lester and Lester Jr. (2010) emphasize on the significance of personal experience in finding research topic. They believe that finding research topic can be facilitated by relating personal experience to scholarly problems and academic disciplines; and speculating about a subject by listing issues, asking questions, engaging in free writing and using other idea-generating techniques. Similarly, Bru (2009) asserts that the "first place to find research topic is within" and that research topic should be something that has personal significance. Further, the authors suggested issue related to immediate surroundings and the previous studies as a good source of research topic.

While guideline on how to find research topics are available, there are common perspective among the researchers that students confront confusion and low confidence in choosing research topics (Chueng, 2013). This tends to hinder their progress in research learning. And, studies also recorded that most of the research tutors do not teach how to find research topic because it is not perceived as a part of research methods (Alsied & Ibrahim, 2017). Withstanding this view, there is need for the research tutors to work towards enhancing student's knowledge and skill in

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research so that they find better relation between their research, learning and their future. This suggests that research teaching needs to be contextually determined and pedagogical intervention could help students learn research better. This study will, therefore, examine the effect of using personal experience on students' ability to find research topic and its effect on students' interest and motivation to learn research.

Research Question

This action research aimed to answer following research questions

Overarching Research Question:

Does personal experience help students find the research topic?

Sub questions:

- What is the students' perception on the level of difficulty in finding a research topic?
- What ways do students employ in order to find a research topic?
- Were there significant differences in the students' ability to find a research topic between pre and post intervention data?
- Does enabling students identify a research topic enhance students' motivation to learn research?

Methodology

This action research employed concurrent mixed methods approach (Creswell, 2012). The study was framed within the quasi-experimental research design, where pre and post-intervention were collected to evaluate the effect of the intervention (Frankel, Wallen & Hyan, 2012). The study was conducted in CLCS with 95 BHS first year students to whom researcher was teaching *Basic Research Method* course.

Following the principle of census survey, baseline data were collected from 95 students. Self-designed questionnaire with 10 statements describing different research idea sources was used to collect quantitative data. In addition, participants submitted a topic each for the research project in research method course. The topics were then sent to four experts for evaluation. The baseline findings were used to formulate the intervention strategies to teach students how to find research topics. In addition, to get in-depth understanding on the participants' experience in finding the topics, a focus group interview was conducted with six participants (one male and one female each from three sections). The researcher also maintained a field note in the course of classroom intervention which helped to substantiate illustration and evidences to other data.

Based on the baseline data, intervention strategies were formulated and administered (see the section on intervention phase for details) to the students for three weeks starting March 1st. Baseline data were collected in the second month of the semester because the participants had learned basics about research by then. Post intervention data were collected in April employing the same data collection tools as for the

baseline data on same group of students (N=95) using the same survey questionnaire. A focus group interview (N=6) was conducted to understand their experience in how to find research topics. Further to assess if there was difference in their ability to find topics after the intervention, students were asked to submit their finalized topic for the project. They were asked to submit the same topic they had submitted for the baseline data. Alternatively, they were also free to submit a new one. The same experts were requested to assess and rate the topics like they had done with the pre-intervention topics.

Baseline Data Analysis and Finding

The students (N=95) submitted a research topic each after two days of assigning them to select a topic. The topics were sent to four experts (2 PhDs, and 2 Master's in Applied Linguistics who are active researcher in the field of education and social science) requesting them to rate the topics on the scale ranging 1= *Not-researchable*, 2=Too broad, 3=too specific, 4=appropriate and 5=good. The experts' ratings on each topic were compared to examine for consistency to confirm students' ability to choose a good research topic. Further, a self-designed questionnaire was administered based on a four-point Likert type scale ranging from 4=strongly agree, 3=agree, 2=disagree and 1=strongly disagree to 95 students present in the class on the day. There were total of 10 items that measured students perception on difficulty of finding research topic (3 items) and their existing practice in identifying the topics (7 items). A focus group interview was also conducted in order to get in-depth insight into the students experience in finding search topic. The six participants are named P1, P2, P3, P4, P5 and P6 in reporting them to assure identity confidentiality. The data from the questionnaire were analyzed using SPSS to calculate mean and standard deviation. The mean score were interpreted employing Best and Kahn's criteria (1998).

Further the data from interview and the researcher's observation were analyzed applying content analysis technique and triangulated with the findings from the quantitative data.

Students' General Practice in Selecting Research Topic

The baseline data showed that the students selected their topics mostly based on their personal experience (M=3.27; SD=0.68) and by asking their friends (M=3.22; SD=0.73) as shown by the high means. Students also searched for topics in previous and books (M=2.83; SD=0.61) and online materials (M=2.79; SD=0.93). Asking their tutor scored the lowest mean (M=2.37; SD=84). In selecting the topics, the survey shows that students also looked into the relevancy of the topic to their program (M=2.87; SD=0.78). The qualitative finding from the interview conformed that students did explore various sources for topics, largely depended on their personal experience. The interview extract below illustrates a participant's experience:

For me, I just tried thinking of some problems we have in college and then picked up one of the issues as my research topic. I think, that way, it is easier to search for research topic. I tried to look for a research topic which is related to BHS. But I could not think of any; I thought attendance issue in evening prayer needs to be researched, so picked it as my topic.

Likewise, students felt other sources ineffective for research topics. In deviation to survey finding, qualitative findings revealed that students felt reading previous studies too difficult. The interview revealed that some students adopted the research titles directly from the previous studies without actually reading or understanding the paper. P1 stated "I think some of the friends copied the topic directly the topics of some papers. They may not have read the article completely." P6 added, "To me reading research article is difficult to understand. It could be my poor reading habit." Other participants agreed that most of the students have "no reading habit" which makes reading ineffective to find topics. P2 lamented, "I read almost four papers without understanding much what it is about, so I could not really find a research idea from it. Aligned to the survey and interview, the researcher's observation on types of students' topics also suggested that students mostly selected their research topic based on the practical problem they observe in the college.

Students' Pre-perception on Finding Research Topic

Overall high mean (M=3.3; SD=0.75) showed that students generally perceived selecting research topic very difficult. Indeed, most of them agreed that finding research topic was difficult for them (M=3.09; SD=), and strongly agreed that they think most difficult part of research is to find a good research topic (M=3.52; SD= 0.67). This was confirmed by the focus group interview. All participants agreed that finding a research topic was difficult. This seems to be even instilling fear and anxiety in students. P4 wondered, "If I fail to find a research topic, how can I do a research. I think I cannot do research to be able to undertake it. The participant stated "learning how to do research for a semester does not prepare us enough; we need more training before we start doing projects."

The interview showed that the students have little or no idea about research. "Since it is first time, it is difficult for me to think of any topic that can be researched" a participant postulated. P4 echoed "Actually it is very difficult for me to find the topic and to decide which topic because, firstly, research is new module for us, and the knowledge I have on conducting research is limited." Further the participant added "Although I have interest in some topic, it difficult to say whether it can be research topic as a difficult task.

Students' Ability to Select Appropriate Research Topic

The inter-rater congruence on each topic students submitted showed that most of the students have difficulty in identifying research topics. Out of 95 topics, only six were rated *Good* against 20 *Not-researchable* by all the raters. There were 10 topics rated appropriate for researching, 19 as too broad and 17 as too specific by all the experts. In addition, three topics were rated *Good* and seven rated *Appropriate* by three experts each. In overall the students ability to select appropriate research topic as per the experts' rating was low as shown by the mean (M=2.23; SD=0.41)

Students admitted that they were unsure of whether the topic they chose could be actually studied. Although the criteria for good research topics were taught, students still seemed to have difficulty in determining the feasibility of the study they had chosen.

Intervention Phase

Intervention strategies were designed based on the baseline findings. Searching research topic was a challenge to the students. Their poor reading habit and linguistic deficiency limited their access to academic articles and previous studies. Therefore, students largely depended on their personal experience for the topic. Hence enabling them to generate topics by linking the personal experience to academic field be effective strategies.

The strategies were adapted from Lester and Lester Jr's (2010), Bru (2009) and Alter and Dennis's (2002) suggestions on selecting research topics. These scholars suggested that personal experience offers a good source research topic. And that, selecting a topic that bears significance to individual will augment interest and motivation in research learners. So, following Lester and Lester Jr's exercise where students need to draw link between personal interest and academic field was implemented for three weeks. Likewise, Bru's four important facts for selecting a research problem: personal significance, critical issues in the field, the existing research literature and ethical consideration, and topic evaluation criteria were used for assessing students' topics.

Stage 1. Identifying personal experience and connecting to scholarly topic

Bru (2009) stated that research topic can be found firstly from personal interest, and secondly from observing immediate surroundings. Following that, Lester and Lester Jr.'s (2010) exercise was adopted in order to facilitate the students how to develop link between personal interest and an academic area. Students were made to list down their interest in relation to academic studies, social issues and cultural background they belong to. With the help of friends and the tutor, students linked those areas of

personal interest to some areas of academic subject, or social issue which then were formulated into possible research topic.

For example, if a student chose *learning Dzongkha language* as personal interest, related academic subject associated was *language learning*. From this, students could formulate a possible topic as *Factors contributing to Dzongkha language development* or *Factors affecting Dzongkha learning*.

Following worksheet helped them undertake the exercise.

 Combine personal interests with an aspect of academic studies *Personal interest: Academic subject: Possible topics:*

2. Consider social issues that affect you and your family *Personal interest: Social issue: Possible topics*:

Let your cultural background prompt you towards detailed research into your heritage, your culture, or the mythology of your ethnic background *Ethnic Background: Personal interest: Possible topics*:

Students expressed that the exercise employing personal experience to find research idea made little sense initially. However, they affirmed that it came handy to them gradually. On the other hand, they shared their difficulty in narrowing down the idea to researchable topic. Also, it was observed that many students had the difficulty to actually relate their personal experience to an academic field. Thus, although baseline finding showed that students found reading previous studies difficult, it was assumed that it would be easier for the students to relate identified experience to some previous studies. This would be different from finding research idea from previous studies, which students might not find so useful. Hence, in next stage, students were let to relate their personal experience to academic discipline following some previous studies.

Stage 2 – Relating identified issue to previous studies

In this stage as an addition to finding their personal experience, students were also asked to use their imagination to contemplate the issues and problems worthy or investigation. Ideas could be generated by free writing, listing keywords, and narrowing by comparison. After they identified a general idea, they were asked to find previous studies on the ideas or topic they identified. They were then asked to read the abstract of the previous study and see whether the paper is related to their idea. In case of relevant papers, students were asked to read introduction, literature and conclusion parts of the paper, and see if they could now formulate their idea into a researchable topic. Also, they were asked to then fill out the same work sheet used in the stage I to locate the topic into an academic discipline.

This way, the students could find relevancy between their possible topic and the previous studies which provided them better insight to formulate a topic. Besides, it could also improve students' ability to read scholarly articles and use previous studies in finding topics. Students also shared that it was helpful for them to read the previous studies after they had a general idea to focus unlike reading the papers randomly in search of topics.

Stage 3 Evaluation

In this stage, students were made to evaluate their own topics. Students were asked to examine whether the topic is personally significant to them; whether the issue is important in the areas of study they identified; and whether it has any ethical issue when undertaking (Bru, 2009). They were also asked to assess their topics by Bru's criteria: *Feasibility* – realistic it will be to access data or participants and the time needed to complete the study; *Accessibility* – the ability to gain access or entry to the research site and participants; and *time* – researcher's time to complete the task and available time to devote to the task.

To assist researcher perform the intervention process effectively, the critical friend observed the lessons twice a week for the entire duration of the intervention. The observer took note under the three themes related to the researchers teaching: clarity of the strategy delivery, students' response and teaching approach. It helped the researcher restructure the lessons, provide feedback and relate the strategies to the students better.

Post Intervention Data Finding

The findings of the post intervention data are categorized under the three research questions. The data were gathered employing the same data collection methods and tools as the baseline data. Questionnaire (N=95) and experts' rating on students' topics (N=4) were used to gather quantitative data, and focus group interview and participatory observation during the course of intervention were employed to generate qualitative data. Data from all these sources are triangulated to provide answers to each research question.

Question1. What ways do students employ in order to find research topic?

Pre-and-post-survey findings and post-intervention focus group interviews answer the above research question. The means and standard deviation of the two surveys against the statements describing students' research topic finding practices are shown in Table 2.

	Pre-int	ervention	Post-intervention	
	Mean	SD	Mean	SD
Read academic articles	2.83	0.61	3.00	0.61
Reading articles and journals helped	2.99	0.83	3.00	0.83
Asked tutors for help	2.37	0.84	2.47	0.84
Asked friends	3.22	0.73	3.24	0.73
Based on my personal ideas	3.27	0.68	3.51	0.68
I looked for the research topic online	2.79	0.93	2.53	0.93
Relevant to my program (BHS)	2.87	0.78	3.34	0.78

Table2 Mean	and Standard Deviation	n of Pre and Pos	st intervention	Survey
ruoiez. mieun	and Dundard Deviation	i of i to und i oc		Survey

The post-survey means are higher than pre-survey on all the ways to find research topic except looking for the topic online. This depicts that students still seek the research topics in various sources. While the students still hold personal experience (M=3.51; SD=0.68) the most agreeable source, it is interesting to see the highest mean difference on students' agreement on finding a topic based on the relevance to their program (M=2.87 < M=3.34). Likewise, the students' agreement on searching topic from academic articles (M=3.00 > M=2.83) also increased. Substantiating to survey finding, the interview divulged that the intervention benefited the students in generating research topic from their personal experience. The researcher's field note also recorded that students were using the worksheet on linking personal idea with academic areas effectively. Further, qualitative findings also revealed that students read more previous studies when they have recognized a topic of their interest.

Question 2. Is there change in the students' perception on the level of difficulty in finding research topic?

	Pre-intervention		Post-intervention	
	Mean	S D	Mean	S D
It was difficult for me to find a research topic		0.83	3.00	0.83
I think most difficult part of research is to find a good research topic	3.51	0.67	2.91	0.84

Table3. Mean and Standard Deviation of Pre and Post intervention Survey

The table 3 shows students' perception on the level of difficulty in finding research has significantly (P<.05) dropped after intervention. The post survey means are below the average, which indicates improvement in students' perception on finding research; students seem to perceive finding research topic less difficult after intervention. Student participants (N=6) in the post intervention focus group discussion shared that, after knowing how to link their personal experience to academic subject, finding research topics became easier. The researcher observed that students could at least come up with acceptable topics much easily each time they carried out the exercises in the class.

Question3. Is there significant difference in experts' rating on pre-and postintervention topics students submitted?

Students (N=95) were asked to submit a research topic each again after intervention. The same baseline data experts (N=4) rated the topics on the scale ranging from *Good* to *Not-researchable*. The inter-rater congruence against each topic was analyzed, and accordingly topics were labeled on the scale as shown in the Table 4. Only the topics which received same rating from at least three experts were labeled under particular scale. Frequency, mean and standard deviation were calculated to analysis of the experts' rating on the pre-intervention and post-intervention topics as shown in the table below.

	Not Researchabl	Too Broad	Too Specifi	Appropriat e	Good	Overa ll	SD
	e		с			Mean	
Pre- intervention	22	19	20	17	9	2.23	0.41
Post Intervention	4	7	5	30	19	4.01	0.32

Table4. Experts'	Assessment of Students'	Pre and Post-	intervention	Research Topics
	Enganger			

The result shows there is significant improvement in experts' rating on postintervention topics from pre-intervention topics. The mean rating has increased to 4.01 from 2.23 indicating students' ability enhancement in finding research topic. Further the increase in *Good* and *Appropriate* topic (19, 30 respectively) against decrease in *Not researchable* topic (4) also suggest students' topic finding skills development. The post intervention focus group interview confirmed that the students felt more confident in finding their topics. Besides the exercise on generating topics from personal experience, participants seem to have benefited from learning to evaluate the topics. Interview participant, P5, shared that learning to evaluate research topic "gave confidence in selecting my topic."

The interview finding also suggested that students' ability to find research topic helps in generating their interest in learning research. The participants in the discussion shared their excitement when they could find a topic of their interest: "I think, it is topic which is very important in research. If I could find a good topic, I think we can somehow do a research" fathomed one of the participants. Another added "I thought I cannot do research when I could not find a research topic. Now I am more confident."

Discussion and Conclusion

Research by nature is perceived as a difficult task by the students of all level, especially the undergraduate students who have little exposure to the field (Harb, 2019). And one of the common challenges that have discouraged the research learners is their inability to find a research topic. Conforming to Nind et al., (2019), the findings of this study revealed that students perceived finding research topic very difficult. Likewise, this study also conformed to Lesko et al. (2008) that students experience anxiety and frustration when they fail to find a research topic. Further it was found that students lose their confidence in learning research when they could not find a topic. In return, finding topic rather becomes confusing and they become less confident to decide their topic.

Likewise, students could also lose confidence and develop disinterest in research when they have less access to academic materials (Alsied & Ibrahim, 2017). The interview findings suggested that students' poor reading habit and linguistic deficiency disable them from reading the previous researches and comprehending what they read. Familiarizing the students to various means of finding topic and redesigning the research teaching methods specific to the context and students' competence could ameliorate students' interest and enthusiasm in learning research (Bui, 2009). In general, this study showed that teaching how to use students' personal experience to formulate research topic enables them find research topic. The finding was compatible to Alter and Dennis (2002) and Lester and Lester Jr.'s (2010) who suggested that exploring research topic.

The findings also suggest that students' ability to find research topic has close association to their motivation to learn research since that gives a sense of connectivity to their learning. Lester and Lester Jr. (2010) further offered a frame to link personal idea to academic field, which was employed as an intervention in this study to augment students' knowledge and skills to search research topic. The findings showed that the method assisted the students significantly in finding their research topic. The post survey findings on students' choice of finding research topic showed that while students mostly agreed that personal experience provides them the research topic, there was a drastic increase in their agreement for reading previous studies and looking into the relevancy to their program. This suggests that with proper instruction and guidance, students could overcome some of the practical challenges such as their inability to comprehend academic material. Besides, the students also demonstrated their augmented ability to find research topic. The inter-raters' mean on students pre (M=2.23) and post intervention (M=4.1) topics showed there was a significant improvement in the research topics, indicating that the intervention strategies helped them formulate ideas, identify and evaluate topics effectively.

This study shows students can be taught how research topic can be searched. Further it was also discovered that students' confidence and interest in research could be augmented by providing instructional assistance in finding their topics. Several previous studies (e.g. Mahannoda, 2016; Cheung, 2013) from across the world have recorded that students experience anxiety, frustration and disinterest in research because of numerous factors, of which, confusion and low confidence in deciding research topic appears commonly. Also, the studies pointed that students experience such emotional displeasure because they lack knowledge and skill to perform the assigned task. For example, the participants of this study revealed that it was difficult for them to read and comprehend the academic works, suggesting that research tutors should be cognizant of their students' ability when assigning independent tasks such as finding research topic.

In conclusion, personal experience could be effective source of research topic for the students. However, it might require the tutor's input in order to link personal experience to academic fields. The study also suggests that teaching how to find research topic is an essential part of research course in order to boost and sustain students' interest and confidence in learning research. Finally, the study showed that the perception of the students on level of difficulty in finding research topic changes with their knowledge and skill to tackle challenges in undertaking research task. So, with pedagogical intervention in the process of students' research learning, the research learning experience for the students could be improved.

Limitation

This study was undertaken with the first year students of CLCS and the findings are context specific. So as is the case with all action research, the findings of this study may not be applicable to other contexts (Creswell, 2012). Moreover, this study does not establish any causal effect since it did not have any control group.

Recommendation

Findings of this study suggest that students' interest and motivation in learning research can be enhanced by providing assistance and guidance in the fundamental steps of research such as finding research topic. Teaching research, therefore, entails not only focusing on core research methods, but also must focus on augmenting and sustaining students' emotional state and attitude towards research learning. One way it can be done as per the findings of this study, is by providing assistance to the students in initial steps of research such as finding research topics. So, teaching how to find research topic should be part of research methods lesson since it sets the students goal of learning research course.

Personal experience could be an effective factor the students could use to find their topic. The study found that students enhanced their ability to use their personal experience to determine their research topic by linking to the academic field. This also enhanced the students' perception on reading academic works, which is an essential learning strategy. Therefore, students could be taught how to use their personal
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experience to find research topics. Tutors could also encourage them to read academic works.

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Improving Students' Performance in Class Nine Mathematics through Collaborative Learning

⁴Chakrapani Khanal and Ugyen Dorji

ABSTRACT

Mathematics curriculum is taking an overhaul globally due the challenges of delivering the curriculum to students through the traditional teacher-centred rote-drill learning strategy. Gelephu Higher Secondary School observed decline in performance in mathematics in BCSE examination for number of consecutive years. Though there are numerous strategies, which have been in use, to teach mathematics lessons for improving students' performance, there had never been any such comparative research done to find out their effectiveness in the classroom. This action research was undertaken to find out the effect of collaborative learning on students' academic performance through Multiple Intelligence based lessons with feedback for positive reinforcement. A section of class nine students were randomly divided into two mixed ability groups: a control group and an experimental group. A pre-test was conducted for knowing their existing level of competency. On a chosen topic, collaborative learning based on Multiple Intelligence based lessons with feedback for positive reinforcement was given to the experimental group while usual traditional teacher-centred lessons were delivered to the control group for a period of one month. Two post-tests: one half way through the topic and another after completion of the topic, were administered to check their level of improvement. Further, a survey was administered to experimental group to determine their level of satisfaction due to the intervention. Mean scores of pre-test and post-tests were compared. Response from the satisfaction survey was analysed using SPSS software. The results of the research revealed that the academic performance of participants improved. The participants were positive about the effect of collaborative learning conducted for them.

KEYWORDS

Collaborative learning, multiple intelligence, mathematics, students' performance, positive reinforcement

INTRODUCTION

Teachers continue to deal with mathematics curriculum reform in order to make mathematics more relevant and meaningful for students. They encourage students to think critically and make the process of learning mathematics more student-centred and interactive. They have been trying to include a number of references for the need for learner-centred approaches such as cooperative learning strategies in mathematics education. The curriculum framework, however, does not prescribe specific methods for implementation of cooperative learning strategies. This article attempts to fill the gap by describing three approaches to implementing cooperative learning in

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mathematics classes. The use of cooperative structures extensively does not preclude the use of mini-lectures or teacher lead whole class discussions. Cooperative learning activities help identify widespread student misconceptions, and enable the teacher and students to focus on specific concepts. Effective mathematics instruction should involve active student participation. The interactive and collaborative learning states that mathematics teachers will foster interactive learning through student writing, reading, speaking and collaborative activities so that students can learn to work effectively in groups and communicate about mathematics both orally and in writing. Oral and written claims can be made and interpreted so that they can communicate effectively while working with others and can convey the results of their work with clarity and power (REC, 2014).

Problem Statement

It has been observed that students' performance in mathematics in Gelephu Higher Secondary School has been declining successively over the past five years. This has raised concern amongst school academics and management as it has increased number of academic failure in mathematics. So, there is a need to evaluate appropriate teaching and learning strategies that would overcome the aforementioned problem on time. It was unclear whether a collaborative setting would help increase their students' success in these areas. Further, the data also showed low standardized test scores owing to the lack of daily homework completion and the students' poor motivation in mathematics. Hence there was an urgent need to conduct a serious research based on actual classroom practices and find solutions

Research Question

How can students' achievement and attitude towards mathematics be improved through collaborative learning?

Situational Analysis

Modern education in Bhutan was introduced in 1960 in which 3R were important indicators of education being delivered as well as acquired. Overtime the notion of education has changed wherein the idea of wholesome education was brought in. In tryst with development of students in all spheres of life, the academic standard were weakened without being realized. Subjects like mathematics and sciences which needed more interaction and collaboration were affected. Although there could be many contributing factors to this fact, minimal research is available to ascertain this fact. In fact, it is a global phenomenon. Students in different countries exhibit the same symptoms of being weak or not interested in mathematics. Bhutanese students are exceptions. The national education assessment was conducted in 2013 to assess standard of English and mathematics and findings show that students' ability to do well in examination paper and what was done in the class according to the marks given for it as CA do not match at all. It is felt either the way we provide feedback (the CA) is not appropriate, or we need a rethinking for an overhaul.

Even at Gelephu Higher Secondary School students show that they could obtain pass mark in the overall aggregate due the help of CA. However, students do very poorly in standardized tests. Teachers need to think from different perspective such as the methods of teaching mathematics (which is quite often chalk and talk). Teachers should be mindful of catering to the needs of multiple intelligences in classroom and the way they give feedback. Teachers need to convey the shortcomings of each student by providing positive feedback for positive reinforcement. In other words, there is need to rectify the ineffectiveness of strategies for learning mathematics in the classrooms.

Competence

The research was conducted by a team consisting of two teachers with fifteen and twenty three years of teaching experiences. They have even facilitated national level Teacher Professional Development Programmes, written academic textbooks and participated in National Level Curriculum Conferences. The researchers have taught mathematics, physics and information technology in classes nine to twelve. One of the researchers has, to his credit, published research papers in international journals. The researchers were part of a research team for the action research conducted by the school in 2017. The participants for this research consisted of one section of class nine students of Gelephu Higher Secondary School (ranging from ages 14 to 16 years).

LITERATURE REVIEW

Literature states that students find difficulty in learning and understanding science and mathematics because of their theories about how the world works - their schemes for understanding phenomena - conflict with scientific understandings (Fellows, 1994). According to Herrera, Murry and Cabral (2007), students are now being asked to use their cognitive development, academic knowledge, and language skills to read, comprehend, synthesize, analyse, compare, contrast, relate, articulate, write, evaluate and more. There is a need for appropriate teaching strategies in the classrooms that enhance learning and support the shift in perception of assessment of learning to assessment as learning and the teachers/instructors can measure academic performance incremental gains distinctly.

Educationists and enthusiastic researchers around the globe have proposed several findings and new approaches to get rid of difficulties in teaching science, satisfy the needs of students and help students retain and develop higher thinking skills. One such approache is corporative learning strategy. There are numerous studies on the benefits, detriments, advantages, and disadvantages of cooperative learning. In addition, there are many ways to utilize this strategy in the classroom. Cooperative learning is usually perceived as a generic name for a number of instructional techniques. Among those are group investigations, student team learning, structural approach, and learning together (Köse, Sahin, Ergü & Gezer. 2010). Choosing the most appropriate instructional techniques that fits the learners' level, subject and interest is crucial. So, the cooperative learning strategy that incorporates creating lessons based on multiple intelligences, incorporating more group work, and the use of feedback for positive reinforcement in the classroom has been chosen to improve academic performance of learners in the classroom

Use of Multiple Intelligences

To develop higher level thinking skills and better retention level in learners, inclusion of learning strategies catering to multiple intelligences in the classroom lessons is important. As per Howard Gardner's Theory of Multiple Intelligences (MI), MI has significant implications for all mathematics teachers who are looking for diverse instructional methods that encourage depth of understanding by tapping students' particular inclinations. According to Binet and Simon (1973), intelligence is a fundamental faculty, the alteration or the lack of which, is of the utmost importance for practical life. This faculty is judgment, otherwise called good sense, practical sense, initiative, the faculty of adapting one's self to circumstances. A person may be a moron or an imbecile if he or she is found lacking in judgment; but with good judgment he or she can never be either. Indeed the rest of the intellectual faculties seem of little importance in comparison with judgment. The potential of students is no longer just based on a student's IQ. Research has shown that a students' IQ accounts for only 20% of the students' potential. To utilize students' potential, Gardner (1993) proposed each individual having multiple intelligences, such as mathematical-logical intelligence, linguistic, spatial, bodily-kinaesthetic, musical, inter-personal, intra-personal, and naturalist. The use of multiple intelligences in teaching and learning has been described as a framework allowing teachers to explore their teaching styles and assisting them in making decisions about ways to structure teaching and learning experiences for students (Ozdemir & Tekkaya, 2006). According to Teela (1999), teachers who have experience in the use of multiple intelligences have expressed its strength in conveying interdisciplinary content and concepts. Gardner (1993) found that a teacher who has a decade's worth of experience greatly improved student progress, parental communication, and growth. In other words, the use of multiple intelligences within the classroom is an ongoing process and highly beneficial.

Grouping students

Stearns' (1999) indicated that there is improved student achievement when there is difference in the quality of instruction involving working together. For instance, children learned to listen to their teacher and to each other in a way that was self-edifying. It was also found that students shared ideas and encouraged each other's efforts. Moreover, group activities became an excellent vehicle by which students

achieved successes and gained peer recognition, an important issue with all students. Grouping students in the mathematics setting is very substantial and effective according to many sources (Lee, 2006). For example, Lee in The Power of Groupthink, stated that when people pull together their knowledge, they can outperform the brightest of individuals. One of the researchers explained that groups have an edge because they build on each other's insights, making it easier to recognize correct answers. According to Panitz (2000) in using cooperative learning in the mathematics classroom, there are many benefits of cooperative learning. It not only benefits the students and their learning, but it also benefits the teachers. Working together with those around me in a group was a great help in understanding the material and the many different ways in which a problem can be tackled and solved. Grouping students motivates them and their critical thinking skills are enhanced, as well, students becoming more familiar with their peers while still enjoying mathematics. The groups that worked together also had no problem with reporting to the class on something they had produced as a group (Williamson, 2006).

Positive Reinforcement

There have been many debates about whether teachers should incorporate positive reinforcements to their students. Some argue that students should not be rewarded for things that they should be doing anyway, while other teachers believe that student demographics are changing and that education and pedagogical practices need to follow that change in order to better help our students (Lysakowski & Walberg, 2001). Despite these views, there have been many studies that have shown the benefits of giving positive reinforcements. Effective feedback appears as one of the most powerful influences on learning, achievement, and teaching. Sutton (2010) stated that feedbacks can be of evaluative scores and descriptive comments that are used extensively in learning science and mathematics including other subjects too. According to Hattie and Timperley (2007), feedback serves as part of assessment for learning. It focuses on the students' receiving, understanding, and acting on the feedback in their learning which reduces discrepancies between a current understanding of a performance and a targeted goal, in order to enhance students' learning and performance. Therefore, an effective piece of feedback should provide explicit information to close this gap, and teachers must continue monitoring and evaluating students' understanding. Patzelt (1992) reported one case where a 9-yearold student was failing to complete daily homework assignments. In response, the teacher created a three-week contract that required the student to complete homework assignments neatly, check homework with the teacher, and complete a homework recording chart with the teacher. As a reward for the student complying with the contract, the teacher gave positive reinforcements, such as certificates of accomplishment, food, verbal praise and encouragement, and being able to function as the teacher's helper. Awarding points has been discovered to be a way to help students stay on task and as a way to implement positive reinforcement.

The literature supports using multiple intelligences, incorporating more group work, and using positive reinforcement to increase student achievement in mathematics. The articles provided the processes and uncovered the advantages of using these strategies. Through the use of lessons driven by the multiple intelligences, it has been found that teachers have reached more of the students' needs. Grouping students together in the classroom not only supports their learning of mathematics, but improves their confidence as well. Positive reinforcement gives the students the extra incentive needed for them to do well in mathematics. It also becomes a way for students to take responsibility for their choices. All three of these strategies together would contribute to student success in mathematics.

RESEARCH METHOD

Research Design

The objective of the research was to implement collaborative learning strategy with MI based lessons and feedbacks for positive reinforcement by teachers in class nine, and its impact on their academic performance. So to collect the data, a survey questionnaire and conceptual tests (pre-test and post-test) were administered and data analysed to record improvement in mathematics.

The attitude questionnaire was adopted from Subba (2011). It consisted of 13 items as referred in Appendix, which were categorized under three categories, viz. interest, participation and satisfaction. The questionnaire investigated students' attitude/satisfaction level towards the collaborative learning strategy. The survey questionnaire was administered only with those students participated in experimental group. The items were rated through highest satisfaction, high satisfaction, moderate satisfaction, low satisfaction and least satisfaction. Standardised pre- and post-tests scores on a portion of mathematics content taught to control and experimental group of students were also compared through descriptive statistics.

Standard research procedures were followed including permission taken from the school administration for the conduct of action research, consent from individual students and permission from their parents in case the participants were minor. Data confidentiality were strictly maintained for participants' indignity and security. It was solely used for analysis of research objectives only.

Participants

The participants for this research consisted of one section of class nine of Gelephu Higher Secondary School. The students were divided randomly into two groups: a control group and an experimental group, both groups having 17 mixed ability students each. Both the groups were taught the same concept for the same duration separately from grade nine mathematics. The intervention was implemented with experimental group participants only whereas control group participants were taught in traditional teacher-centred method.

Intervention

The intervention consisted of using Multiple Intelligences in lessons, assigning more group work, and using feedback in the tasks they did for positive reinforcement. This was treated only with participants of experiment group. Firstly, lessons were planned with activities incorporating various multiple intelligences. Secondly, students were grouped into small group for activities as per the multiple intelligence dominant in them and they were asked to do the activity in the learning style they preferred. The students were encouraged to share ideas, teach their peers so as to improve their interpersonal abilities. Lastly, the feedbacks were provided regarding their completed task verbally as well as in written. This acted as positive reinforcement and aroused interest in learning mathematics and helped them change their attitude towards the subject.

Research instruments

The following instruments were used in collecting data.

Performance Tests

The performance tests were classified into two categories – pre- and post-test respectively. The tests for 30 marks were administered to both the groups that could be answered in an hour. The test items were purely based on the concept/content that was taught.

Pre- test

The objective for implementing pre-test was to determine the level of competency that the student possessed prior to implementation of the intervention program. It was conducted before the start of the program in both the pilot groups.

Post- test

Similarly, the objective of administering post-test was to investigate students' level of performance in the subject after participating into four weeks interventions in term of learning outcomes. So, two post-tests were implemented. First one was conducted during the mid of intervention and second one at the end of the program.

Satisfaction Questionnaire

A 5-points Likert scale questionnaire was developed and administered to investigate students' attitude/satisfaction level towards intervention program (Appendix). It was surveyed only with participants of experimental group. The data collected from the questionnaire was analysed in terms of mean scores and standard deviations to determine the satisfaction level towards the program.

Anecdotal Records

Anecdotal records were maintained by the researchers during delivery of the lessons to the experimental group of students. The responses, in terms of behavioral and Journal of Educational Action Research, Vol 1, No. 4 November 2020

psychological changes to the intervention methods of each student were noted and analyzed. **RESULTS**

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Performance tests

The mathematics mid-term marks were taken as the pre-test marks which was administered to the participants covering a number of chapters that were taught in the past. The scores of control group and experimental group were analysed by calculating the mean marks. Two post-tests having same items were administered to both the groups. First one was conducted during the mid of intervention and another one at the end of the program. Second post-test included skills and content learn from entire content area taught. The means of post-test score was compared with means of pretest score and means of post-tests among different groups was compared for analysis and interpreted. The graphical representation of the means are depicted in Figure 1.



From Figure 1, it is clearly seen that the experimental group and the



control group in the pre-test have same mean score. The mean marks are 24.67 and 25.33 for experimental group and control group respectively. It is observed both the

		Journal of Educational Action Research,			
<i>Vol 1, No. 4 November 2020</i> Satisfaction			Mean	SD	Remark
Participation	•	I enjoy lessons very much when integrated with multi- intelligence tasks.	4.31	0.60	High satisfaction
	•	I become more curious and observant in the class when teacher teaches lesson(s) with multi-intelligence and positive feedback methods.	3.81	1.22	Moderate satisfaction
	•	I was encouraged to participate in the team discussions when the lessons are taught using multi-intelligence and positive feedback methods by our teachers.	3.25	1.29	Moderate satisfaction
	•	The lessons using various multi-intelligence tasks related to our day to day life situations activities make me more attentive in the class.	4.38	0.81	High satisfaction
	•	Integration of Multi-intelligence and positive feedbacks in the lesson promotes better interaction amongst friends and teachers.	3.56	0.51	Moderate satisfaction
	•	It is easier for me to understand the content taught as multi-intelligence tasks helps to develop the relevance between the course and real world situations.	3.75	1.06	Moderate satisfaction
	•	I found the multi-intelligence tasks with positive feedbacks useful in enhance me to think and analyze the real things in world.	3.81	0.98	Moderate satisfaction
	•	I get learning satisfaction when I learn the lesson with multi-intelligence tasks as it broaden learning ability.	3.50	0.82	Moderate satisfaction
Satisfaction	•	I gain confidence when I learn the lessons when teacher engaged me actively and meaningfully with positive feedbacks.	4.06	1.12	High satisfaction
	•	I was helped by my friends to learn faster and better when sessions are integrated with multi-intelligence lessons.	3.81	0.91	Moderate satisfaction
	•	The use of multi-intelligence in the lesson helps me to build confidence in understanding the concept of mathematics clearly.	4.13	0.81	High satisfaction
	•	Lessons with multi-intelligence tasks allow me to develop skills needed in the real world.	4.06	1.00	High satisfaction
	•	I like multi-intelligence tasks with positive feedbacks teaching strategy to be integration in all the subjects to help enhance our critical thinking.	4.13	0.72	High satisfaction

groups were equally competent. In the first post-test, mean marks of both the experimental group and control group have increased. They are 46.39 and 40.88 for

experimental group and control group respectively. Increase of mean mark of experimental group (88.04 %) is much higher than that of control group (61.39%). In the second post-test also mean marks of both the experimental group and control group have increased as compared to that of pre-test but have decreased as compared to first post-test. They are 43.68 and 41.07 for experimental group and control group respectively. Again increase in mean marks of experimental group

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(77.06 %) is found to be higher than that of control group (62.14%) when compared to the pre-test mean marks. It is seen that the experimental group has performed better than the control group in the tests during and after the intervention.

Learning satisfaction analysis

Finally, to answer the third research question, the attitude questionnaire was implemented with a research objective, "to investigate the students' satisfaction/attitude towards the corporative learning to enhance the academic performance in class nine mathematics with those students participated in experimental group". This questionnaire found students' attitude with regards to students' interest, participation and learning satisfaction as a result of corporative learning strategy in learning mathematics.

The questions were made simple to the level of grade nine students. The researcher explained the statements before answering them. The total of 16 students in experimental group answered the questionnaire. The data collected from attitude questionnaire were analysed by mean and standard deviation to determine the learning satisfaction level/ learners' attitude towards the intervention implemented in learning one of class nine mathematics unit (Commercial mathematics). The means of learning satisfaction were then compared to the predetermined criteria as shown in Table 1.

Table 1. Analysis of students' satisfaction survey questionnaire items.

	Least atisfactio	Low Satisfaction	Moderat e Satisfact ion	High Satisfaction	Highest Satisfaction	Total
Interest	3.15 %	3.15%	15.65%	40.65%	37.5%	100 %
Participation	6.3%	0%	31.3%	39.6%	22.9%	100 %
Satisfaction	1.3%	3.9%	27.3%	36.7%	30.5 %	100 %

Table 2. Summary of students' satisfaction in term of three classified factors.

The overall analysis of the responses from the survey questionnaire revealed that participants had "High Satisfaction" in all category factors. Table 2. shows that 40.65% of learners rated "High Satisfaction" for their interest towards learning mathematics unit through collaboration learning strategy, 39.6% of the participants stated that they had "High Satisfaction" in classroom participant in learning

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mathematics better as it encouraged them to participate in the learning activities through frequent group interactions. Another 36.7% of the participants rated "High Satisfaction" for satisfaction in learning concept through the corporative learning method which includes MI activities for various level of MI students, grouping into smaller groups for better learning and positive reinforcements to encourage individual learners as shown in Table 2. Eventually, the conclusion was derived that students were satisfied and had positive learning attitude towards the collaborative learning strategy for learning mathematics.

CONCLUSION

This study was conducted to improve students' performance in mathematics and attitudinal change towards mathematics through multiple intelligence based lessons, collaborative group work and reward-based positive reinforcement. The comparative analysis of mean marks of two post-intervention tests of experimental group with that of control group revealed that performance in mathematics of experimental group was significantly high. From the analysis of learning attitude survey results, it was found that most of the students had positive attitude, satisfaction and interest in learning mathematics due to the change of learning strategy. Anecdotal records analysis too revealed that students in experimental group, who in the beginning were passive, started to get involved more and more. Thus, it can be concluded that performance of students in mathematics improved significantly in the experimental group of students due to collaborative learning strategy. The traditional teaching methods with book, chalk and board merely gave learning satisfaction to students, because, it could not create joy, excitement and a love for learning. Therefore, how hard and different approaches teacher teaches the concept in a subject like mathematics, still remains as abstract and vague in their brains. That is the reason of students never putting into application the theoretical learning from school in their daily lives. If we are to inspire and engage students in learning, then we should show them how we learn rather than tell them what we know. This desire for learning can be fulfilled by collaborating some teaching strategies that cater to individual learning styles. This is because cooperative learning evolves into peer tutoring, where individual learner coaching or teaching specific material to another student to help weaker learners in their group (Armstrong, 2008). Along with peer learning, inclusion of MI based lessons serve three main purposes: it matches teaching to the way students learn, encourages students' development, and encourages diversity (Ozdemir & Tekkaya, 2006). By using all of the multiple intelligences it has been shown that lessons can be presented in more interesting ways. I also leads to students' having confidence in themselves and inducing in them the desire to learn the material their ways (Gardner, 1997). Moreover, positive feedbacks and reinforcement are vital in learning mathematics because it serve as incentive for learners to build positive attitude and then perform better in the subject. All three of these strategies together can contribute to students' success in mathematics as collaborative learning strategy improves conceptual understanding of the subjects. This study also revealed that teacher-centred and text book-oriented mathematics instructions are not enough to improve students' conceptual understanding of the subject. There is, thus, a need for the inclusion of collaborative learning instructions for learning abstract concepts in mathematics classes.

Limitation and Recommendation for Further Study

The study is limited by small size of both the participants and the content area. It was observed that intervention period saw many distractions in which research participants participated in other more important school activities. They were also preoccupied. So there were difficulties in planning lessons to meet the research objectives. The conclusion drawn could be further authenticated if the participants are more diverse and content area is wider. It is recommended that future researchers conduct the same study with different level of participants and different teachers with minimal distractions to the participants during the research period.

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Importance of students participation in improving the English Language Proficiency.

Ugyen Wangchuk

Abstract

The involvement of students in the process of teaching and learning to give learners the hands on experience to practically prepare them for lives and living in the process of educating and to equip them with better abilities to make the best use of reading, writing, speaking and listening skills, to be a fittest person in this ever challenging world is very crucial and important. The modern students unlike in primitive era prefer and enjoy the student centered classroom teaching learning (active learning process), which is also the overriding goal of the ministry of education over the teacher centered teaching classroom (passive learning). The learnings and impact on overall developments are far better in student centered classroom teaching practices. However, as of now without any proper record and evidences on the benefits of students' centered teaching learning method, our teachers have been practicing the traditional method (lecturing), simply rushing to cover lengthy and vast syllabus for the examination purpose which actually on the other hand has minimal impact on learners or no learning for some students and become sheer wastage of time and energy. Therefore, this paper aims to throw the lights on teachers on the benefit of students' centered classroom teaching and learning and to create a paradigm shift from learning through lecturing to learning by doing. This student participatory teaching method will not only make learners competent but also ease the workload of teachers.

Key Words: Participation, learning by doing, impact, teacher-centered, student involvement,

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Introduction

This action research on 'importance of students participation to improve the English language proficiency' is conducted to find out whether the teacher centered classroom practices or the student centered classroom practices (student participatory method) plays important role in improving the English Language proficiency in students in Bhutan. This paper also explores other influencing factors which are necessary for the development of the English language proficiency, which will help guide the teachers to follow the best practices which will contribute the most to the students learning of the English language. To produce students with proficient in the international language, English, is vital in this globalized world to be remain fit and competent candidatures for the working space not only in the country but also at the international level. As it is stated in the Darwinian evolutionary theory, "the only fittest will survive", likewise, our future children will have to be fit with all the competent skills anywhere in the world.

Many educational stakeholders in Bhutan agree that the English language proficiency of our children is not meeting national standard and also up to the international level. The reports (Pupil Performance Report, 2012) have also clearly shown that our students are not able to meet the standard that is being set in the **English Curriculum Guide for teachers (2005).** This shortfall is not that our children are incapable, it's of the mismatch between teaching method and the expected outcome. This confusion and deviation which bring adverse effect in the lives of our children will be addressed should the teacher embraces students participatory method (students centered classroom learning). Further this will open the door for our learners to explore information beyond the prescribed text and equipped them with the required skills and knowledge of twenty first century. This will also make the bulkiness of syllabus less burden for teachers. Besides our students will be well equipped with new tools and relevant skill to face the ever mounting challenges in this fast changing world. This action research, therefore, aims to guide our teachers based on the concrete findings of the paper.

This action research on the importance of students' participation (practicality model) to improve English language proficiency for the eleven standard came into thought when senior students could not repeat the words and pronounce the words correctly that the teachers have been using frequently while explaining the text. Besides, the students in the teacher centered classroom are neither active nor responsive and found not learning what teacher taught. In fact teacher centered teaching learning becomes wastage of energy and time of both the teacher and students. Therefore, this paper explores how effective is the students centered learning: active, productive, efficient and impactful teaching learning practices on

contrary to teacher centered classroom-passive, inefficient and least impacted teaching learning skill.

Literature review

The purpose of education is to cater ideas and create skillful students which will make the life and living of them better. Education must make them capable to tackle any kind of challenges in their endeavor in the world. According to Dr. John G. Hibben, former president of Princeton University, 'Education is the ability to meet life's situation' and Herbert Spenser 'The great aim of education is not knowledge but action'. Further, Bernard Shaw once remarked 'If you teach a man anything he will never learn, learning is an active process. We learn by doing' (as cited in Dale Carnegie, 1937, p. xiv-xvii). It is paramount for education to instill sense of competence with an ability to use all the four skills- reading, writing, speaking and listening in intact which is highly in demand in job markets both internationally and nationally.

Stephen R. Covey (2008) created a pyramid of influence which says that there is very little learning in hearing and teaching; little better in feeling and relating; and the best learning is in seen and in modeling. Further, 'One seeing,' says an old Japanese proverb, 'is better than hundred times telling about,' (Dale Carnegie, 2011, p.120)

Dr. Shashi Tharoor, Indian politician talked that students in Indian schools have 'filled mind'-filled with text book information not with 'Formed Mind'-better and responsive to stimuli (TED X Gateway, 2013). The Bhutanese educational practices are no better than Indian, which only produce students of filled mind and not with 'Formed Mind', whereby become incompetent as they lack the language skills to use in their day to day situation. Therefore, it is high time to re-think, re-look and make our education system more versatile to promote the over-all development of our students to make them able person to deal with any kind of unexpected situation in this challenging world.

According to Dorji Thinley and Sangay Bidha, in Bhutan in most classes, the teacher talks and students listen passively. They say in a typical Bhutanese classroom, the chances of deleting English from the students' classroom discourse are high since the students use their home language to learn academic content and the teachers do not generally insist on the use of the target language (RABSEL the CERD Educational Journal, 2010). Further DEBORAH G YOUNG writes 'Bhutan is dedicated to the holistic development of their students and their society, it is important to challenge students, teachers, and administrators to think critically about their lives as they shape their future (BHUTAN JOURNAL of RESEARCH & DEVELOPMENT, 2012, p. 13). The importance of explorative teaching learning process is understood from T.W. MAXWELL words 'Teaching in Bhutan has been to many students and academics the transmission of prior knowledge (see Gyamtso and Maxwell 2012). In a western university this is only partially the case. What to teach is also imbued with new

discoveries, new relationships and applications of ideas that test and often go beyond prior knowledge' (BHUTAN JOURNAL of RESEARCH & DEVELOPMENT, 2012, p. 41). BHUTAN PROFESSIONAL STANDARDS FOR TEACHERS (2020) too states 'Maintain supportive learning environment that nurture and inspire learners to participate, cooperate and collaborate in teaching learning process (p. 41). Teachers to adopt the students participatory teaching-learning method to improve English language proficiency for our students is very paramount especially at this ever fast changing world for them put at the international standards.

Even the Education Ministry is trying to create an activities based learning center classroom in Bhutan. One clear evident of our ministry's effort is integration of Dr. Spenser Kagan's cooperative learning structure in Bhutanese classroom which can make students participate and active in learning in the class. According to Tashi Namgyal Kagan's structure emphasizes student engagement, participation, ownership and making learning processes fun and exciting (Kuensel, 2016). Students' participation is found imperative for English language proficiency and also to make learning interesting and enriching. The concept of student centeredness featured in Bhutanese Education system with the introduction of New Approach to Primary Education (NAPE) in the early 1980. A student centered approach views each child as the centre of the educational process. The student's needs in the cognitive, psychomotor affective domains are priorities to be addressed (Singye, 2011). Finding the student centered learning imperative, Royal Education Council (REC) now started advocacy on place based learning where the students are involved practically in their learning. The ministry's effort on changing the educating practices is further clear from the extract below:

The ministry asked for a change in the way in which students are taught, signaling a movement away from the teacher-dominated classroom. The revised curriculum, therefore, reflects a student or learner-centered approach to classroom instruction, that means will be more involved as active participants in the classroom.(Curriculum and Professional Support Division (CAPSD), 2010).

Therefore, it's high time for educationists and all stakeholders to sail on same board to implement the highly effective educating methods; participatory learning-learning by doing, with once own hands experience for the best education of our children in the building of our future generation.

Methodology

The mixed method, the mix of quantitative (questionnaire) and qualitative (interview) method is employed to collect data for this research (Singye Namgyal (PhD), 2011).

The questionnaire with likert scale variables (strongly agree, agree, disagree and strongly disagree) were used to collect quantitative data for this action research. Forty seven students of class eleven (twenty two female and twenty five male) from two sections have used questionnaire for quantitative data collection. Five experienced

teachers; two female and three male also used questionnaire, slightly different from students to cross check and validate the students' responses. Besides, unstructured qualitative method was also used for students and teachers participants to collect information to further authentic the responses they have given in the quantitative questionnaire. According to Gay, Mills & Airasian (2006), the importance of employing the mixed method is:

Mixed methods designs combine quantitative and qualitative approaches by essentially mixing both quantitative and qualitative data in single study. The purpose of mixed methods research is to build on the synergy and strength that exists between quantitative and qualitative research methods in order to understand a phenomenon more fully that is possible using either quantitative or qualitative methods alone (as cited in Singye, 2011, p. 84).

Further, the advantages is made cleared by the line of Schutz et al (2004) 'the use of more than one method in the study of a phenomenon is helpful in the development of construct validity' (as cited in Singye, 2011, p. 85). Interviews and the observations were used as tools for the qualitative methods for the same participants who used the quantitative questionnaires.

The student participants were of different ability groups and also of different family background. The questionnaire for quantitative data collection covers different aspects of areas that deemed necessary to produce accurate result. Summary of the questionnaire is as shown in the table below.

Part	Content	No. of Items
А.	Students participation	7
В.	Teaching Strategies of the Language	5
	Teacher; Effectiveness of teachers	
C.	Gender Differences	6
D.	Examinations	3
E.	Parents Support	3
F.	Teachers Motivation and Support	3
G.	School Study Culture	3
H.	Peer Influences	3

Table 1: Summary of the Questionnaire

Quantitative Data were analyzed using excel to calculate the percentage of overarching items of different variables of the questionnaire.

Findings of the quantitative questionnaire

The pie charts below of some of the quantitative questionnaires which are of the most important questions for the findings of this action research conclude that students who take active participation are the most proficient in English and also the toppers are active participants. Our twenty first century learners prefer student centered unlike the past generation where there is a learning with fun. According to the findings Journal of Educational Action Research, Vol 1, No. 4 November 2020

students go for all round development than examination and bookish testing which according to them impedes the exposure and controls learning. The finding also suggests that school should create more platform for students' participation and the needs of teacher's exploration of better and fitting teaching methodology for students centered teaching and learning. The percentage shown in the pie charts below for the important questions, prove the overhaul changes needed in teaching learning in the education system Bhutan.

Figure: 1







Figure: 4



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Figure: 5





Findings of the qualitative method-substructure interview

In an interview, students' participants say that in a participatory learning, teacher gets to know the weakness of students which opens door for teachers and students friends to correct the mistakes and learner gets opportunity to learn through their own mistakes. Further, they say the students centered learning encourages to do research, get chance to share the information gathered and grow and groom analytically. The students say when brain get on work, new ideas pop up which motivate them for more and better ideas with interest and energy. Students also say the information learned, involving their own learning faculties could retain for a longer duration.

Students are also observed that when they keep speaking, they improve their fluency; when students engage in more writing they learn to write properly; when they keep reading they turn to become an avid reader which culminate students to become a sound and all round development. Students become more courageous and confident and prepare better for the subsequent activities. The participant candidate No: 7 summarizes the advantages of participation when he/she says, 'participation is important to improve English language proficiency because we will get chance to speak, chance to share our ideas to other and when others speak we will understand and learn more'.

Opportunities

Teaching learning with students' involvement can be the best method in educating the children in the education system in Bhutan to ensure the quality of education for our children which is also one of the grave concerns of our nation. The students' centered teaching learning can create forum for our students to explore the information beyond the prescribed text book which in turn can equip the students with skills to face the challenges and unexpected twist and in turn the course of their lives in preparing for their lives and living.

Students' centered teaching learning can keep students active throughout the teaching and learning process where about it happens. The educators must simply arouse in the students and eager wants to learn (Dale Carnegie, 1937). Besides, it ignites the sense of motivation and encourage students to volunteer for participation with greater enthusiasm which will help keeping the learning faculties of children active for maximum learning and better result as Alfred Lord Tennyson, in his poem writes 'Ulysses', 'How dull it is pause, to make an end, To rust unburnished, not to shine in use!'(ENGLISH CLASS XII; READING & LITERATURE, 2013, p.63)

Unlike a teacher centered teaching and learning, it provides platform for the students to think more and critically when they are made to unearth the hidden meanings and

the reasons of learning of any particular topic. This can make students think broad and take them beyond the horizontal limit of teachers' limited knowledge that in teacher centered teaching learnings controls the student's innovative thinking. This can also make children engage in the social activities. When learners are made to search and inquire the information from different sources they could learn to cooperate to get the help for themselves and also for others. The needs of both self and others will be felt and understood and become a good human being which is one purpose of educating the children. Besides, when there is learning through hands on experiences, students can retain the information for longer duration and social survival skills to be the fittest person unlike learning by hearing which disappear from memory within no time and hardly instill any life skills.

With this students participatory teaching and learning, hugely work burden of teachers can be significantly lessen and able to teach with a greater energy level, meaningfully and productively. Teachers just have be facilitators facilitating learning and guiding the learning taking on the right track. In addition when there is learning with fun and learning with heighten motivation students can give the best answers ever which is missing in teacher centered teaching and learning where teacher has to spoon feed the students in fact. On the other hand the end result of teaching, involving the students will be much more effective, better ever and an in-depth analytical which creates wider scope for our students to come up with new and an innovative ideas. In fact this method can not only care the standard of education system in our country but also make educationist and learners realize ironical phrase 'the more output with the less input'.

Challenges

Going by the present scenario of the education system in Bhutan, the practical implementation of the most suitable and the most effective teaching learning method (students' centered teaching learning) will not go with without a mounting challenges for the educators. The bulky prescribed syllabus which are necessary to cover on time for the examination purposes and time limitation for the huge sizes of students in the classes would be the few obstacles which are of course in time can make break through with good adaptation with this world's most aspiring teaching and learning method. Quantum leap for our learners who are very much used to feeding from educators will not be easy possible without endurance, motivation and encouragement. Of course with the versatility and different taste needed in time, present students who are already looking for unleashing from the tyrant hands of teachers to learn of their own through experimentation, can make students' centered teaching and learning get root in the education system.

Limited facilities such as internet and relevant books for self-explorative learning will make the learning by doing little tough. More over the over work, the huge sizes of the students in the class and the limited time for teachers owing to more teaching periods could impede the bearing of fruits of the of students centered teaching learning practices. There will be also a criticism from people around and parents of the students and deem teachers who are educating children, practicing students centered learning as ineffective teachers with their shallow understanding as teachers could not be in position to explain every line and every sentence.

But going by the demands of job markets and the expected skills of educated graduates for the works, all the stakeholders in the making must joint hands to produce such graduates that are versatile enough and fittest persons for the job markets available with all the competent skills to realize the noble goals of education.

Conclusion

Though the education remained central focus throughout the generation in the string of humanity, the same education that served best in the past cannot work anymore at present, in this fast ever changing world. The job market at present scenario demands such versatile candidatures who are well equipped with skills. More over in this globalized world graduates must compete for the job internationally. For this the education system must produce the graduates sound and proficient in the international language 'English'.

The present practice of educating children in Bhutan mostly of 'Rode' learning and spoon feeding with text books information doesn't align with demands of education and cannot serve any purpose in their lives. Therefore, to create person with holistic skills, ever fitting in every space with versatile all round development, students' involvement teaching learning must be incorporated to make the learning: speak, write, listen and read most to give hands on practice to face interview with well preparedness and execute the job given perfectly which are the true purposes of education. Besides, the children of this digital age would never enjoy the humdrum learning of teacher centered, in the fist of authoritative teachers where the free will and imagination of the students are controlled.

The researchers have proven that the top learners and the class toppers are the great practitioners. They learn practically using all their learning faculties effectively and actively involved. Same like in English too, the most proficient students are avid reader, passionate listener, writing lovers and enthusiastic speaker. They understand the latent potential available in learning by doing, in active participation, in hearing and listening and in reading and writing and they reap the true fruits of education. Journal of Educational Action Research, Vol 1, No. 4 November 2020

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Ĩ Ĩ <u>ਅਗਾਐ</u>ਰ'ਫਿੋਸ'ਨੈੱਕ'ਸ਼ੇ)'ਸੈੱਰ'ਰੱਰ'ਵੈੱਟ'ਕਿਨੇ'ਘੋਗ' नर्चे भर कुरा गहन दे दे में गा भु दिन दर्के भर तनन พี่กุณฑิล วัสาซ์สาววิที่วัสทาญ ดีการชี้ญาวาก न्र्वे'से'र्न्न'भून' नुष'ग्रे'र्न्युर'न'न्न'न्ह्रुवस'न' न' नरुषार्रते कुलावनावनातुः जे वातननार्वेवः धेवा মিষামার্যান্ডামার্যবাদ্যস্থামার্যামার্যা বের্রার্যান্ডামার্যায়ার্যা বের্রার্যান্ডা

ٚڟؚٛ؆ٮۿۿٚ؆ڂؚۧۜ؏ٮۿٙ؏ٮٚٵؙۣ؆ڂ؆ڲٛٳ

พฃ๚ฬาสา้สุราสส์ผา দ্বি ক্র' আঁমা নই অম ক্রুম মাদদ প্রমা न्नुग'म र्कटायक्षेंचयाः स्रेप র্শ্রান্য ব্যাথান।

พลา ฟลูสาน ซูสา ສູບ นาดนบบนทางสบาดนบา ฟิสุา ธานอลานาสาวานนาวานบบบบนาลามสามสาม ซู้า ฟุศสามิสามูลามนิวามนาลาม ฟักนาลามาร์

 $\hat{\omega}$ កេកក និង ន៍ ណ ណ៍ក ភូក ភ្ញាណ ហេក ហេក ភ្ញាង ភេញ៍ ន៍ ក ភេកិ ស្ថ៍ កូសងា ភ្ញិ ន៍ ជា ភិជា តុកាសាន៍ ភា ន៍ តា ភ្ញាភា ន៍ ជា លេខា និ សិ ភេកិ សក សូ សិជា ណ៍ក សាស័ក្រ កាភកាណកា លំជា ភិជាងា ជា សិ ភា ភេនិ ភ្លែក សាក សិ អ័តា សិ ជា ភិជា ជា ន៍ ជា លេខា និង ភ័ ណ៍ក សាសា កា ភ្លាំ ភ្លា សក លំជា ភេនិ ភេកិ សភា ក្នុសងា ភេញ៍ ក័ ភេនិសា សិ ជា លក លំជា ភេនិ ភេកិ សភា ក្នុសងា ភេញ៍ ក័ ភេនិសា សិ ជា

ผेव र्द्धयाया न्यों पा केवा यहिं में राधे या वर्त र्द्ध झ्या न्र्यो अर्ते रो रो नून थे गुरि तर्वन अठा र्रु थन শ พित्र भारत मार्ग के साम कि स קל' तनन्भायमा धेयान्त्री तन् नानरुषान्ते कार्य्त्रा स्या नेश्वा की र्सु यात्र को न र र को न र र को न र र Fidder & Jernemer (2007) ปีสาวารีรา พี่ญาารี่าวร่า ราจสงารา ने अर्ळन नुषाग्री तशुरान नम्मुवयान के अन् ইন্মিশ্ট্যীমা এবা নিবামাবা উদ্যান্ত্রীমান্ডদা স্ক্রিবা নিবা র্হ্রবা พबा बहुन क्वेंत मुन क्वे विबार्न थेन्ता भवाय योबा र्त्ते से भिषा नर्त्रे रूटी रूट षा के नाषग के नेर नम्दर พित्रायम्। ८.ग्रीसाययराउटा पर्दाखायायदेवयारुया ผิสาวรุขาสิราผส์หาผมา गार्छा दयदा बेराया छेता क्षेंत'ग्रु'वृत्त'शु'ਘत्त' क्षें'गुष्पत्र'क्षेंत'नेव्र'भष्र'भर्थो'तत्रुत्त' हुं अर्वे रेग होंन मु र्ह्त हेंन राषट वट भगया में भर दी

ลาพิญารส์เลริเรรา ๆซึ่งรับผู้สารับพรรมพลุ ลริเ नतुबाञ्चे' याधुबायरावबायरातननुरुमः धेयार्भेयाबा ריחשאיזןידיתקריזרי שאויחאיתלי אייררי अद्युत्र र्हेगा र्हे रत्यन् लेगाया में या त्यन् ही न्यें या तने २५ वनमा सेन्य रेगा केवा Fulori (2009) मेर्भा तमन् मार्छेन नेन कार्या तुराखु के र्दु'गेषा रूट'गेषाद्वेषाक्षे'भेगानई'र्द्र'सु'नक्षाक्षे' रूट' ݖݴ᠈ᠳᢩᠯ᠉᠊ᢁᡏ᠆ᡝ᠆ᢅ᠄ᢁᡏ᠆᠆᠋᠋ᠵ᠋ᠮ᠋ᡎᢎᢩᠯᢂ᠉᠍ᠴ᠋ᠴᠴ᠋ᡘ᠆᠋ᠴ᠉ᢂᢋ᠉ᢂ ਗੂਸਾਸ\$ਸ਼ੁੱਸਾਘੋਂਸਾਬੇਸਾਗ੍ਰਾਬੇਾਲੇਕਾ गਾਲੇਾਨਸਸਾਬੇਸਾਸਾਲੇਕਾ ଐ'য়ৢ'ॡॖ॔ॱ ॡ॔॔ऀॴॱॸॖ॔ॸॱॺड़ॖॖॖॖॖॖॖॖॖਗ਼ੑੑੑੑਸ਼੶ਲ਼ਫ਼ੑਗ਼ੑੑਸ਼੶ਖ਼੶ਲ਼ੑੑਗ਼ੑੑੑੑਸ਼੶ਖ਼੶ਲ਼ੑੑਗ਼ੑੑਸ਼੶ਖ਼੶ਲ਼ੑੑਗ਼ गवन्गोभागक्षानरे झन्भा देते तर्खे भाषा नमणी गवन-न्वादने झगावे खेवर्यन धेया नर्वे खुनक्ष हे
न्र्योप्याचेन् गर्देंग्रेंथेगान्त्रें रदी राषगाकेसायमा रदी พराज्जुरुषायाहृदाव्यव्यासानुरसेवा भयायेवा विनापर्ळेलापटी लगानहेवाने टार्रे कुट् सु स्टापते พิ่ญาวส์าพารฐญาญกรายวญารุกา พาศักญา রিমার্নমার্শী শ্বিদ র্ভুমারদ শ্রে দি দের দের্দ প্রদা 5 พषा क्वेंन सुगानना गवन झना तर्नन थेन के र्कु गो कुन सुं हॅट पिते भेगा पई तदे. लर के शाय थे. ऄऺॺॖॺॱॺॱॡ॔॔ॸॱॸॸॱॺॊॱक़ॖॗॖॖॖॖॖॖॱॶॱ ऀॺॻॱॸॾॕॱऀॺ॓ॻऻॺॱय़ॕक़ॱऄॻऻॱ बेन्यायमा नेते'नगत'न्यामेयावनमाखासेवा नेता ฮ์สาววิ'गิ'ฮ์ग'ญ' ผขาผิสาดิวาวฮ์ผาววรุษาผพ नेषार्रेगायी श्वेत हुषातृता स्यातृतायस्य ये र्सु ये यव हुट वन्या भुरत् दे न्य हु के हो के स्ट येया है ૡઽ૾ૼૼૼૼૢૻૼ૾ૻઌ૾ૻૢૼૻૻ૱ૡૢૼૼૡૢૻૻ૽૾૿૾૾ૣૣૣૣ૽ૼ૾ૻઌૻૻૻૢ૾ૢૻૢૻૢૻૻૻૻૻૻૻૢ૽ૼૻ૾ૻૻૻૻૻ૾ૢૻઌૻૻૻૻૻૻૢ૽ઌૻૻૻૻૻૻૻૻૻૻૻૻ૾૾ૻૡૼૻૻઌૻ૽ૼૻ૽ૢૺૼૻૻ র্ন্তব্যম্বয় স্র জিবা ัดุ่ฉารสัสาญร้าว

芒對 พगायेम् वियादर्सेयादर्दे गर्डे र्ये रूट वियादर्सेयाया ౯ ౫ఀఄ ౫ౢౖౢ౼ౣ౺ౣ౻౻౻ౘఀఀఀఀ౻౻ఀఀౘఀఀఀఀఀఀ क्षेत्रा दे'त्वन्भायमा हेंटामदे'झून्'येगामगाळ'रेट' हिंदायते' येगा यत्रें प्रया के' केटा हिंदायते' येगा קקין দর্রি'অম'ক্রুম্ম'যাদদ' প্রদায় র্ন্তু'য়া'র্শ্ধীম'এম্ব ইন্ধান্থ্ৰমা न्दायकार्वे के र्दुं जन्दाया कर्दे राज्यूरारे देवायका য়য়য়য়৾৾ঢ়ৼ৾ৼ৾ড়৾ঢ়য়৾৾য়য় मुलावनार्रा सेंदे लका सुवाहा है लारे वा मे सु आपना พี่न्याक्षेत्र रुटा क्ष्यायमात् टायठकामति कुलावयाग्री

र्देवां मेका यक्षेत्र विय

<u>ୠ</u>ୄୖ୲୷୶୶୶୶୶*୲*ୡ୕୷୲୷ୡୖ୶୴୷ୠୄଈ୶୶

केंसाननारेयायावन <u>श</u>ुयाह्य'ग्रे)'झूट्'ॅंथेया'ट्ट'॥ 'বিশ্বম' <u> এ</u>যাম'র্শ্রম'র্ক্নদ'র্দা র্শ্রযা দাবিব ' শ্ৰন্থম' ₹'٦'ઽ઼ੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑ ऄॱय़ॸॕऀॸॖॱॸॺॖऺऺक़ॱॸॖॖॱय़ॻॖ॓ॖॖॖॖॵॻॸॱय़ॻॖ বাৰবা ੜੇ ਨਾ শধ্যদর্শস্ট্র'বের্নু শা দ'নন্তম'নমি' ক্ৰুএ'দেন' দেন্ট্ৰ' নিৰ্মান্ত্ৰ শিল্প' ক্ৰিম' ক্ৰুএ'দেন' বাৰিক' भूतराषा सेवयात्वन वर्न क्रुंन गो प्रत्न शु ম্রুমান্ডা ক্র্রুম'বিদ্ব'র্ন্যু'মঝ' ᡷᢅᢩᢂ᠃ᠴ᠋᠋᠋ᠴ᠆᠂ᡶᢅ᠂᠋᠊᠋᠊ᡠᢆᡃ᠂᠗ᡃᢙᢂ᠋᠊ᢂ᠋᠋ᠯᠮ᠆᠂ᠺ᠊᠍᠌ᢂᡧ᠃ᠴᠮ᠆᠂ᠺᢤ᠋ জিব। এই নের্ঝায়ী স্থিন্দা বর্না ই স্কের্ডা রা নির্মান না মির্বা र्वे'द्या'दा'रुया'यो' तगवास्र रतन् अपनियासर न्यलाख्वात्व्यायते से से राया राये से त्व्याया से राय

শश्च श्रिंगगविव न्दन्या भेग्व भेन् भेन् निर्माय के क्रियो के क्र

गसुमासुः ५८७४५८५४४४४४४४ ক্রুমাদন'শ্র্টাশ্রশামাই্রমানর্লন'র্দ্রার্জ্ব' প্রুম'শ্বা ইন্য'মম্ব' श्विव्यातनन्गतवगाविवावा तत्त्र्यायोर्धन्यासुः त्युरा न' सेन्' पति' ति' नन्ने' तर्वे न' वन्न स' सु' न म स से के में गोरे मा' જ્યું રુવા યા તે બાદ એના ने'तनन्भ' म' कुं भगा भेव 'तवन' केंदे' में व भा ষনমানীমানী প্রার্থনি দেনে বন্দা মার্হ দাঁ মান্তমা স্থিনি দেনে ব্যু ૡૻૡઙ૽૾ૺૼૼૼૼ૿ૺૹૢ૾૾૾ૢૻૡૻઌ૾૾ૹૢ૽ૺૼૢૻૡૻ૽૱ૻૹૢ૾ૡૻૡૼૻૹ૾૾ૡૻૡ૾ૡૻ রূষাযাদদ বা দেই জীবা ॾॕॎॸॱॺॎॱय़ॸऺॕॱॱॸॱॸऺऺॖॖख़ॵॸय़ऀॱक़ॖॖॖऒॺॎॸॱग़ॖॖ॓ॱक़ॖॖऒऒऀॸॺॱ भूम र्भवा अवयायया तमे सुगत्व्या ये या मायेया ন্য্যম' वनसाननानरे द्वानग्रामः द्वानानक्रेनानग्रीयाः अवा <u>બદ ફ્રેંદ વાય તરે. દ દ રજ્ય મંત્રે મ</u>ૈખાવય મુંદ ત્રનુ ત્રાંગે. য়ৢৣ৵৽ড়৾৾৾ঢ়ৼয়৾৾৻৾য়৾য়ৢ৾৾৾য়৾৾৾৴য়৾৾৽য়৾য়৾ৣয়৾৾য়৾য়৾ শ্ব'ব' नवे भन्न भन्न के भाषा में मार्ग के मार्ग मार्ग मार्ग मार्ग के मार्ग मार

উন্যাজিব অম্যা <u>स्ट्रियया भ्रियया के दिवाया के किया मु</u> न्तन र्रे येश्र भन्। "द्र्वे ग्रेंग क्वान्दर रेगा दरे गावेर नेषा चुते केंश गुव क्विंत जम अहें न ना ন্র্রুন'র্ষা भ्रद्म-'^ऒया'द्द=''र्द्रव'र्द्रया'य'या'र র্দ'বরুঝ' वैते'गवि' स' में 'ब' रेग' तही' ग्लेंग हो 'वे' मान के' के' के' के' के' के' के क २८ अंत चेर गह्य राष् – पठरायाः न्योसः ई ਸਿੰਘਾਨਸਨ੍ਰਾਸਨਗਾਨਵਿੱਕਾਨਸਨਾਨਾ ਸ਼ੇਾਸਾਲੇਕਾ ਵੇੱਨਾਕਨਾ थॅन्स क्षेत्रा गार्छ त्यन् चेर यार्छता दर्च क्ष्या थेतु नुत गुव'ग्रुं'गॅंबे॥ वेर'र्दे'पत्रुब'ञ्चे' ८'पठब'ग'र'शु'षिग'ळे र्वेषायमें भेगार्वेगासुपर्द्वावेप्यमें खेवा कु अर्ळवायमें तत्तन्भायमा भेषा वैगासु तही र्खुगमान् गें पार्छना गर्छि วันข้านสังหรับสารสินที่ เพลา เพลา เกลา เกลา (1994) য্য্য্য नम्दॅंग्न् आश्चे नार्छन् दानरुषा रते कुट्रा था খবা न्र्वे भेषास में सर्जीय रहे जा के नाषण के चेर सेक

र्द्धवः र्श्वेनायमावमायायाया राहीयो येगानर्ही तमे रूटा गर्छि में क्वेन में येन्य क्षेत्र उटा दारे का तृत्वा या ন্ধ্র্মান্ট্র্যামা *ন*দুশ্ব'শিব্দুর'র্দুর্দ্দেশেশ্বা নর্হুরাদ্বার্দ্দ বদায়ী ८`र्खु'ग्'र' জঁব 'অম্য য়ৢ৸৾ঀয়৾৾য়ৼ৾য়ৢয়৾৾৾৾৾য়৾ঀ৾য়৾ बट सुर् हेवा भेंत्रा भवा टर दे कुत् सुर भवा पर्वे ૡઽ૾ૺૻૻ૱ૻઌૢૼ૱ૡૻૻૡૼૼૺૢૻૻઽૼૻ૽૾ૻૣ૽ૼ૱૱ૻ૾૾૾ઌ૽ૻૻૡૼૹ૾ૼૼૠૼ૱ૡ ने तनन्भायमा मेनि भुगनमन में नज्जमा नामरमा रते'त्व्या'कुभ'षय'ग्रे' שֿאי אָקישׁזי *צָּׁר*יוזיגל׳ שאישַאיזקריקאָזיזיטיפֿק नेश'रेग'झेन् ायग'गेश' র্ম্বিন'মৃ'দেশ্য'শ্বা'শ্বান্ শার্স্ট'র্না न्र्येन नन्द्रें में सुगार्खु सुग के स्वायो में में स्वायेन नन नर्हेंन मुगमान मुन नर्गे भाषा करा करे सु न र में न र न्माधेषाळेषा ख्रेंसान क्रुनि नरुषा नर्वेनि गर्दे गवसा सेन ষ' ঝদ' দেয়া ' কন্ম' জীব ' ঝমা *ই*ঁদোমনৈ'ঊষা'নই'অম'ক্তুম'যাদদ' প্ৰনমা

नेश्व द्वेति यानेना विन्यं के में में गार्ख हुन्य त्वन्य रुंतु' *ॾॕॖ*ॸॱॺॎ॔य़॓ॱॵॺऻॱॸऻॾॕॱॴॸॱक़ॖॖॖॺॱॺऻॸॸॱॡॖ॔ॺऻॺॸऻॱढ़ऀॸॱ র্রম'মার্ক্রম্র'মাম্যা รานา Gulbin (1959) ปีสาวาราชีส พัญาวริ নন`শ্লনম'শ্ৰ' অগদাযামৰিমাদীম'নেইৰি'মি'মিৰ'নান্তিৰ' <u>5</u>7 ૹ૾૾ૢૼૼૼૼૣૻઽૻૡૻૻૻ૱ૻ૱ૡૻૡ૱ૡૻૡ૱ૡૻૡ૱ૡૻૼૡૻૻ জিব'মমা দি'শমা জার্শীর্ন্তু'নেইার্ব'ন্ড্র' ম্রুদ্র'নার্ন্তুদ্র'নার্ন' અર્ધેુગ[્]યા પાસે તે તે સુત્ર ના રહું સુત્ર ન વે પ THT'NN' न्न भेगात्व्ते भ्रेंगखुनान्नात्र करे शा केना ने भाषा দ্ট্রিনমার্ন্তু অন্দেশ্যামার্শ্বিরার্বন্দ দ্রীমান্দর্যা রিনাজারা

ਗ਼ਗ਼ਗ਼ੑਗ਼ੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑਸ਼ਗ਼੶ਜ਼ਗ਼ੑਸ਼੶ਗ਼ਫ਼ੑੑਸ਼੶ਗ਼ਗ਼੶ਗ਼ੑਸ਼ੵੑਸ਼ਗ਼੶

র্ম্ট্রা'ন্য'উর' দুমার্স্রিদ'ন্দ'র্মামম্পুযাম্ম' দ্বাম্'রা रूपांगे'भेगापर्वे'र्द्र' गार्दे'श्वे'भराकुर्यापतृत्यं सेव' বি'দদ' বয়'স্ট'য়া'র্ক্টম'য়ার্বি'র্দ্তু'অদ' র্মিম'র্থ'মদ'ষ্রি'বঞ্জ' নান্চিরা দেই দীমাআনা আঁদাই ক্লিন্টা মারা মিয়া মারা মিয়া মারা মিয়া মারা মিয়া মারা মিয়া মারা মিয়া মারা মারা র্আন:এম:এমিম:জুপ্রজ্ঞা ধর্মন্য দের্জ্ব আর্য্য দের্র্রা হার্ম শ্লনমা নদ দিঁ বা দি নেদ ক্রিমান ক্রি ব্রান্ধ ব্যা বী দেই ਕੋਕੇ ਨੌਂ ਕ੍ਰਾਮੁਾ ਅਧਾਧਾ ਅਨਾ ਆਪ੍ਰਾਨਾ ਪਨਾ ਸ਼ਿੱਧਾ ਗ੍ਰਾ ਕਨੇ ਅਨਾ ณิฆฺฆฺๅลีฆฺ พลาสิ่า เกลา ন্পূদ্র'শ্রুর' ने लग्ग भे मा रदी नते का तुरा सुग सुग मा ना लग দমশ্বেমাদী অধ্যার্ক্সীধাদদে আর্দ্রবার্কীর্দ্ত আন্ত্রমাদ্রমাদ উর ^আয়া নিবাম প্রিয় দেনদ দেই স্ত্রিবাম ইন জিব অম্য দ'দন্তম'র্ক্তু'শীম' ଐ'ম্যু'র্ক্তু'ন্দিদাম'র্শ্বিম' নবন্দ্র'মঙ্গ' त्तन्' र्चे र्द्धगमा वे ते ' में व रखा आपमा मिं' मेमा न नन् ' से' **र्क्र**'भग'मेत्र'तवन'म'रुत् भेग'नई'मेग्र'र्न्स' ক্রুন্ম' দদ অদ্বুর দিঁ বা দিঁ নে দদ দ্রী র্ন্তু বামদা জীবা

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A. dot-to-dot worksheets द्वे'न्यें'वेर'खेव'यया द्वे'नेन'या वैया'नमुन'हे'थेन' ऺऺॻॱऄऺॺॖॱ ऒॵॖॱऄॖॕॺॱॡॖॸॱॻॊॱॡ॔ॸॱ ख़ॖॺॱॸॖॕॻॱॸॖॕॱय़ॻॸॱॼऀ॒ॺॱ ส์ขางกามาส์กา โล่ขายสานักามากก้าข้าง การจงาก ૾૾ૻ૽ਗ਼ૢૻૡૼૼ૱૽ૻૻૡૼૠૢૻૺૻૹૻૡૺૻ૽ ૾૽ૻૹૣૻૻૹૻૻૠૻૡઽૻૹ૾૽ૻ૽૱૽ૼૡૺૻૹ শ্বদামাননদ'র্ন্তুদামদা'ঈবি'ঝমা ห้าหารายางสาย เก่า เก่า เป็น เก่า เก่า เก่ त्वन्य्येन्ये अव्यर्श्लेन्य्योन्नेत्यातन्येत्वन्यः धेषायर्भे ਝੂਟ ਸਾਨਸਟ ਸਾਲੇਕਾ ਵੇੱਟਾ ਕਿੰਨਾ ਘੋਧਾ ਸੜੇ ਨਹੇ ਲੂੰ ਆ ਨਟਾ

Harron (2011) मैसिर्यन्य पार्छेन देया यो जुर्झे देरे रेखाया র্ন্ড'শী'র্শ্রিশান্দমা র্ন্তনামন্দ্রবাদনদানাউবা অন'ক্রুম' য়ঢ়৾৾ঢ়৻ড়৾য়৻য়৾৾য়৾৾য়৾য়য়৻৾৾ঀ৾৾৾ড়৸৾৾য়৾৾য়৾য়৾য়৾য়৾ शुःगुःग्नुम् वन्त्रायमेः क्रिंग्स् वुवयायनमः শ্লব্যান্থা नजुन-न्येंनि सेव समा ने श्वे स्वय स्वय स्वय राजन নর্র্রন্ঞ আঁম্যার্মের্রান্যান্টরা অগ্যান্যার্মের্রার্সনার্টনার্টার্মেন্ พฤยาลีานาลีนานคนาเพลา พฤ वे'न्न **α**5' नतुबाञ्चे' भेगानर्वे तर्दे लेगुबार्वे काञ्चे तर्वे तर्ने पा

ষদ্ভবৃষ্ণবেদ্য দ্রী র্ন্তব্যুম্মদা র্বৈদ্য অর্থীয় যা ঠি বেদদা ੜੇ ਨਾ ਨਾ ਨੂੰ ਦਾ ਆਗਾ ਤੋਂ ਕਿ ਆ ਨੂੰ ਕਾ ਗਾ ਨ ਕਾ ਗਾ র্কু' थे'स्ति' শশাশন্ব দেৱন স্কু' শশামা দ্বিম দেনদ দ্বিম দি' নন্বা Norris (2011) मेंसारतन्गारंहेत् धेया नर्झे धराकुरा শদদ-দর্বা দান্টরা वन्राययाये निर्णेत् वर्रात्त्वर ଈୖୖୖ୵୶୷୶୶ୖ୴ୄ୶୲୵ୡୖୢୗୖୖୖୖ୷୷ୡୖ୷୷ୡୢ୲୷ୖୄଈ୷ୄୖ୷ พे'स्ति'मुल'मुं)'रेस'म'नवग' इन्स'र्द्ध' भन्न' भेगस' वैस' ন্দ্দ্র স্থ্রি স্থ্রি দের্ঘ্যা জীর রিম দের্দ্র জীর আমা ने'नज्ज्याञ्चे' हें'हे' (२००९) गेष' हेंन'मते'णे'गु' য়য়য়৸৾৾৾ঀৢ৾৾৾ঢ়৾৾৾৻য়ৢয়৾৾৻ড়ৢ৾৾৻য়৾৾৾য়৾য়৾য়৾য়৾৾য়৾য়৾ र्म्च न्यू भीयकार्भे. ৾৸য়৾য়য়ৢয়৾য়৾৾ড়ৢ৾৾৾ र्द्ध भारतमा सह वा के गा के रतना 5 त्रियात्र्चे न्वी पते हें न्यायां भेषा न्वेते न्ये केंव वेन

$$\begin{split} & \prod_{n} [n, n] = \sum_{n} [n] = [n] = [n] = \sum_{n} [n$$

৸৾৾য়ৠ৸৾৾৾ঀ৾৾৾৾৾৾৾৾৾৾৾৾৾৾৾৾ঀ৾৾৾ৠ৾ अप्येया'नगूर'यहेंस'यस' দ্বমাৰ্ক্ৰিমান্থা ক্ল্ৰীমা হী মাৰ্যাৰ্ক্ বি নম্র্র্র্ম প্র্ম ক্র্র্ম যার্চ্ মা ळगषा वेंगषा गुत्र ज्ञ भक्तुं प्रधाय के শর্দন প্রান্দন প্রা तहवान्तवन्तां वहुर्या वर्षे व्यक्तां यार्थ्य वर्षे केन् सुर ठेया। वेरायते में लेंगा दर्दे अवार्क्षेव प्यत्र यावरावे थेन्या अर्कन ने में केंग्र में ने केंग्र कें यान केंग्र केंग न्र्वेञ्झन'वैदे'र्नेव'शु' वै'र्भे'ग्र'र्दर'र्रू শব্য শব রহার্ন্ড'র্রম'শ্রম্যুদেমঝ'ঐর'ঝম্। র'বরুঝ'শ্রু' শ্লুঁন' न्रेंबर्से हे (१००६) में राषा हे हे राष दे में राष আঁব্য' नर्त्रिंगे' शबार देव र देवे र दे देवे र देवे אָראי אָיאֿיזייאיגל׳דרי מיזימקיתפהישֿקטאזימילי र्श्वेन'गु'षिग'वट'शु'ਘट' हेंट'र्श्वेन'ग्रट'र्वेष'ग्रेष' र्वे'र्थ' יותליאבי מימוימא יתפתיליעקעיאא מימאן *Ĕ*ૼૼૼઽૻૡૡ૽ૺૼૻઌ૾ਗ਼੶ઌ૽ૼૼૼૼૼૼૼૹૢઌૻૡ૽ૺૡૻ૾૾ૡ૽ઌૡ૽ૼૺૻૡ૽ૼઌૻૹૻ૾ૡ૽૾ૼ শ্বাশ্বাম্বা অন্য র্রা রার্য জার দ্রন্য ক্রুন্য দেন আর্ম ক্রুর্য নের্ট্রা ম্ব স্

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ୖଵୣୣୣୖୖୖ୕ୖ୷୳ୄୖୢୄୠୄୖ୲ୢଌୣୣୣ୷୶୲୶ୡୄ୲ ัดุ่วาวสี้ณาฏิเฮาฆาผล่^ล ผ่าๆาพี่รารน้ำสุราผฆา দ'শঝ'দ'শীঝ' ঢ়ৢঢ়ৢৢৢঢ়ৢৼ৾৾৵ড়৾৾৾ঀ৾য়৾ঀৢ৾৾য়৾য়৾৾ঢ়ৢ৾৾য়৾ঢ় ग्रह्मेह्य लगायेत्र वियादर्केलामुं देयायहा देत्र केंद्र हेंदा র্ম্যা`শ্র্র্ম্য'ন্দ্র্ষ্র'[™] র্দ্র' ने में हैन मदे खेया नर्चे <u>અંત્ર મુશ્વાયોન્ટ ક્વર્યો ગુ</u>ર્ે વે જેવર યોટ્યાય મુન્ટ વર્યો ਪੰਨੇ ਸ਼ਿਸ਼ ਨੇ 'ਆਆ ਸੈਂਗ ਕੱਗ ਕਸੇ ' ਆ ਸਾ ਸਿੰ ' ਸ ਸ দশান দেশ শা উ স শিদ্দা জীব ব দেশ ন শী ৰিশা শাৰ্ম न्रश्च न्द्री न्द्यन्^{, c} ग्रे झ्निम् स र्हेन् मिंदे थेग नर्वे दने ग रुग्तनम् येगम् मेंबा हो पहीं या रही माम सेवावा माम्ते अष्यश्व र्योश्व न्योंन र्येन के रदे नर्भसा तकर न्द র্ন্তুর্ন্বার্থন্য জিব্য ୖ୶ୣ୕ୖ୷୲୵୷ୖୖୖୖୖୖୄୄୖଈ୵୷ୄୖୠୄୖ୲୰୷ୠୄ ัดุ่น.นฐาลปะเพณ যা'ঊ'ম্ম'শ্বা'শ্ব वनमाङ्गे तनन् उत्त ने वत्त खा विन तर्ळे भावनमा वेमा वृत्त'त्र्केंभ'अमिं कस्र'^E न्म'र्वेन'दर्ळेंश'नर्चे'नर्गेन्

A. Research methodology
G. Quantitative Method

Baseline data collection
H. Mixed method

C. Baseline data collection
H. Mixed method

D. Research methodology
E. Research tools

F. Qualitative method
$$\int (x^2 + y^2) (x^2 +$$

৾ঀ৾৾য়৾৾৾ঀ৾য়৾৾য়৾য়৾য়৾য়৾য়৾ *゙*ਕੇ੍ਰਾਨਫ਼ੈੱਆ'ਸ਼ੁ)'ਜੱਗ ਫ਼ੱਗ 'ਰ੍ਰਾਨਸੀਂ ਆਪਨੇ 'ਰ੍ਰਾ ਨਲ਼ੂਰ' <u>ୖ</u>ନॱୖ୶ୣୣ<mark>୳</mark>୵୳ୖଈୄୖ୶୲ୄୖୄୢୗୄୄୖୄୄ୷୷ୖୖ୶୲୷ୄୖ୷୷ୖ୷ୄ୷ୄୖ୷୷୷ୄୖ୶ न्रमेश्रान्येशेश भगायेत्र विनायर्केशायमें तन्य विना ५४४९४ मुं) अपिं कस मार्चे में रूटा येगा क दुरे दुर्द के स ᢜᢆ᠋ᡏ᠋ᡎ᠙ᠵᡆᠲ᠂ᡆᢆ᠂^ᡄ᠊ᠲᠲ᠊᠂ᡆᢩᡆᠲ᠂ᠺᡆᠯ᠋ᠯ᠋ᡃ᠊ᢐ᠋ᢋ᠂ᢆᡚᡃ᠋ᢁ᠂ᡬᠯᠯᢩᢂᡃ कु শগ্ব'নেপ্রন'ষ্ঠা দ'আদ' য়ঀৢৢয়য়য়য়য়য়৾য়৾ৣয়৾ र्रेग्र गा मा मा गह्य गुरु के कि पर राष्ट्र के का का मा मा महाय के का के कि দশান' <u>त्रायेंत्रं से रत्ये कें र</u>ायस पि'यार्श्वर्थ'त्यन् 'मेर्श्व'र्थ' न्दर्भाषाम्गार्गर स्टान्टा अनुवार्छेगार्श्चेन्दे स्टा য়৾৾৾য়৾য়ঢ়৾৾ঢ়ৼ৻ড়৾ঀ৾য়৾য়য়৾য়৾য়ৼ৾য়য়৾৾য়য়৾৾য়য় <u>न्न्रेस्र</u>न्ये'ग्रे'विन्न तर्ळेल वृत्त्र सुर শ্বন্দ নেশ্যশ ૱૱ૡ૽૽ૢૻૺ૱૽૾ૼૼૼૼૼૼૼૼૼૼૼૼૻૢૢૢૢૢૢૢૢૢૢૻઌૹૣ૱ૡૢ૱ૻૡૻૼૼૢૻૼૻૻૡૻૻૼૼૼૼૼૻૻૼૻ૽ૼ૱ૡૻૻૼ૱ૡૻૻ૱ૡૻૻ૱ૡૻૻ૱ૡૻ૱ૡૻ૱ૡૻ૱ वेरातांचेता किंटांगी कुट्टा शुर टार्रटा त्र हुआ खेर हेंटा मिंदे ৠয়য়য়য়৸ तहत के के नृत्त भा मृते केन भव कु ৾৸য়৾৾য়৾৾ঀয়৾৾৾৾৾৾য়৾৾৾৾য়৾৾ড়ৢ৾য়৾য়৾ৼ৾৾য়৾ৼঢ়য়৾৾ঢ়য়৾৾য়৾য়৾৾য়৾ देंगो हैंदा मदे खेया नई दर्द केया का मिया के दिया तरा द

বা A. Research tools B. Document analysis C. Observation D. Critical friend न्त्रुव्रार्छेषा गन्वायामुनार्थेन्यार्भ्वे चेरायार्छेवा नार्क्वेप्ता '৸য়'শ্লব'র্দ্তুবাম'র্ঝ' য়্য শ্লুঁস देंगों र्हेट पा भेग पर्वे भर कुरा गहर विते देव खु মূর্যুম্য' दर्च मैगानगम र्वगा শমা বাবমার্ন্তনানস্থানবাদনেন্দার্মনা ลเกลานาสู์ ที่สา ๆสู่กลา มีงายกลางสาวก็ র্কু' মগ্র নের্ব নর্ব স্থান रोकार्यायम् प्रमायानिः য়ঀ৾৾ঀ৾৾৾ঀয়৾৾য়৾৾ড়৾৾য়৾য়৾ড়৾য়৾য়৾ড়৾য়৾য়৾ড়ৼ৾৾য়৾য়৾৾ড়ৣ৾৽ พगान्वें तर्ने के सान्म खुन्यान (१०% मे) অন'ক্রুম'

क्ष केंग जन्म र्वेग भया ૡઙ૽૽ૺ ૡૢૼૼૼૼૼૼૼૼૼૼૼૡૢૻૼૻૻૻ૽ૼ૱ૡૢૻૺ ক্রুব' क्रुंर तत्र ये <u>र्'रेश'र'गेश'</u>भगाभेव'वेरा'तर्ळेश' 'तनन्'नते'ङ्गनब' য়ঀৢৢৢয়ঀয়৾৾ড়৾য়ৢ৾য়৾য়য়৾য়

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नुराञ्चग्रा ६२१ वियातळ्या या तयम् यति हे या गी थिया यही

בוצויקיואיואליואין אילטויאיולוואילינטיולאיטאיו אוא 127 Hudguind Hunul मनुदे झाण्हग्रामग्री दुमी גאיזרירי ראשווצרי אוראיאיאדיוצרו ראיי Bustantan afrumundum Big, additted fund गेग महिरासाण्डिरागिरमो चरायाणपत्र

wap ATTAR TURAT 9' ALIS Big Big and Star and A way w az gran Sylvia zagrifizitad ar perminagar 389139 and Altabar 1 x 9 3 2 1 6 1 12 K 3 9 3 5 3 A 2 1 6 2 A A 239 rigj APTAR BANATER AVANING BERGE व्यासा की सार रेंबा माते हा (व्राशा नी जीव का रेंबा वु SAN ANTHO CAMEN (1) MAY D'SAN' AT NYAP MASS Trailing 34 3 1 2 1 2 (2 2 Cardina

and muran wy ale a di Brien any Sur arean in white and a stall and sur roug in ou stray and Said find ald 31, 21, De, Jun, or Gran, or Gran or Silver and ALS MINIAN HAS after a's P. Brien

LANTEN B' MAL AN MAL AN MAN B' 37 B MAN 64 קביעאי קביקאוֹקיליעֹקן *ঈ* অন শ্রী থিয়া নাই

J नत्रुम्राञ्चे' न'रते' कुन' भु' हेन मिते भेग'नर्त्र' के म'नन'

नुराञ्चग्रमा ५६७ वितालक्रिंगतनम् करानते मुलालका ग्री धेग

สีเกราเสมสายการ สรากะณาส์กิหาลังสา รูแม่ว่า รัพาส์อารุงาษณ์มีอุณพา พระสมสากสรา ועקייעליה אמואנשי בפייאפייגקיים אייהמיניה איי มใเลเนียาเพิ่ง) พรุ่งเลยีเขางรู้ง เป็นสีหนึ่มีเพริ

雪ないあれいあ ヨシクラちょくい くないのろう)



gain Inig Baniner)

ัดการสึญากกราชีวนารัญาันสารส์

אוויאיישה ביישואי המיואקי השוישו מקישאייאקשו איצועיי

agitar valarita

amon Generalial

Sali mean si Bunny and isyn

ਸ਼ੁਰਧਾਰ ਘਣ ਗੁਣਾ ਕਗੂੰ ਘੇਂ ਨਾ ਕੇ ਕਦੇ ਘਟ ਗੁਰ ਨੇ ਰਾग र्देटायते'भेगानर्डे'शुटानातनन्'नते'झ्नारा যীম্য' ମ୍ମ୍ୟାର୍ମ୍ମର୍ମ୍ନ୍ ଅଭିନ୍ୟାର୍ମ୍ମ୍ୟାର୍ମ୍ନ୍ୟା ଆହାଯ୍ୟାର୍ଯ୍ୟୁ गैर्श्व केंत तर्र गे वैगासु <u> नगात नगरको को के त</u> वनमा नेमा मा तत् भा तते रही. भगाभेव रम्हन वेते तकर गाँवे पर्वे पर्वे भूतरू पर्गेट र्थेट के र्कु র্শার্মার্মা দিম মের্যা শ্লু নেয়া এর দেরমা বার্বিক্ষামা ८.४५.९ ધેષા નર્સે ભેષા મેં સે આ બેંદ્ર એ જું બન્ના દું નક્ષુ র্নব্যম্য' ८.२.५.४.४.४.४ व्ययामेयाद्वयायाञ्चा শহ্মুঝ'শ্বা র্জবামান্দ্রবাহীবা এমা অবা দাই স্ট্রদ দ দ দ দ দ দ স रात्योन्यार्थेन्याक्षेत्रा ने श्चे भ्यारात्योन्याने थेया દારા સું ખેંદ્ર પાંતે દ્વાતા દ્વાતા દ્વા તે સું ગામ જ ઽૺૻ૾ઌ૾૾ਗ਼ૻૻઐૡૻૡ૾ૢૼૼૼૼૼૼૼૼૼૼૼૻૢૹૻૻૹૻ૽ૹૼૼૼૼૼૻૢૻ૽ૼૻૻૻ૽ૼૻ૾ૼૻ૽૱ૻૻૹૻ૽ૼૡૼૻૻૹૻ૽ૡૼૻૻૹૻ૽ૡૼૻૻૹૻ૽ૡૼૻૹૻ૽ ৠয়'য়৾য় শ্রুব'ন্দ্রশ

ਸਕਾਕੋਸ। ਕਿਸਾਨਡੈੱਆਸ਼ੇ) ਸੱਗ ਕੱਗ ਵੇੱਟਾ ਸਿੰਨੇ ਘੇ ਥਾ ਸੱੱ ਸ਼ੂਆ ਗ੍ਰਹਾਨ ਹੈ ' ਕੇ ਸਾਨ ਨੇ ਦੀ ਸਾਨ ਸੰਦਾਨ ਦੇ ਸਾਨ ਸੰਦਾਨ ਦੇ ਸੰਦਾਨ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ਿਹਾਨ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ਾਨ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ਿਹਾਨ ਦੇ ਸ਼ਾਨ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ਿਆ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ਿਆ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ੁਹਾ ਸ਼ੁਰਾਹ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ੁਰਾ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਹਾਨ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁਰਾ ਦੇ ਸ਼ੁ

रूरायो र्हेटायदे थे या रहे किया के रहेया के तनन् देशायार्ख्यायायार्ख्य न रेश्वायनन्धान् विन तर्ळेला तर्ने लमा यत्ते तर्ने वा वित्र मे मे के मे लगा लेव रत्वन र्वेग लग हॅन मति चे जुर्तु जून तहत के ଛି' ଝ୍ଟସ୍ୟ'ମ୍ସି'ଅର୍ଶି'ଲି'ଲି'ନମ୍ମ'ସ୍ଥିଷ'ର୍ଯ୍ୟସ୍ଥ୍ୟ'ମନ୍ଦ୍ର' ଅନ୍ୟ' ଅନ୍ୟ ਗੁਆਂਗੇ ਨਗੁਣ ਸਾਬੇ ਕਾਬੇ ਕਿੱਥੇ ਘੱਟਸਾ ਐਥ ਐਥ ਤੁਸਾ ਘੇ দেই্রাঝা र्खुगमां से रते रर्खु स र्वे न्या राखु भेगमा नर्दे स रतन रे ইার্ন্ড্র্যাম্বযাদের্বার্জীরা আর্দ্রাম্বান্থ্য বদ্বাবরুয়া वृत्तः भगाभेवातवनाङ्गे भेत्रायते वनमा मेयायातत्या ର୍ଙ୍ଗ ୟ୍ୟା ୟିକ୍ ୟିକ୍ ୟିକ୍ ଅନ୍ୟୁ ୟିକ୍ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ ଅନ୍ୟୁ

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र्वेन्द्र स्वान्य स्वान्य के स्वयंत्र के स्वाय्येन तवनाङ्गे रूषासुवाये वातनामुङ्गमा तनमा वे सेवा विनालकेंगपाना विनालर्केंभावदीभाषानहेवाहे ਸ਼ਁᡭ੶ਗ਼ੵੑੑੑੑੑੑੑੑੑੑ੶ੑੑੑੑਸ਼ੑ੶ੑਞੑੑੑੑੑੑੑੑੑੑੑਸ਼੶ਸ਼ੑਸ਼ਗ਼੶ਸ਼ੑਖ਼ੑਗ਼੶ਲ਼ੑਗ਼੶ਲ਼੶ त्यन् र्दे केंद्र मेगा रुवा অম'ক্রুঝ'যাদদ'র্ন্তুযাঝ'থন' দিন স্ক্রিনাম্যাদিয়া'র্বন'শর্মাধ্বন' দ'নমি'র্স্রিন'র্য্রাজার্মি' वैते में वासा भग्ने वार्यमा के प्राया के कि का के कि के क ঀ৾৾য়৽ঀয়৾৾ঀ৾৾৾ঀ৾৾য়৾য়৾য়৾য়৾ড়৾য়ৼৼ৾৾য়ৢৼ৾৾৽ ক্লিঁব'শ্ৰুমান্দ্ৰ্যমান্দ্ৰ'মান্দ্ৰ'আমা' तर्ळेलातनन्भेन्गे लेनातर्ळेलामा मन्मनुआ ଞ୍ଚି' ଭିଷ୍ୱ'ସର୍ଶି' ଈିକ୍'ସାହି'କ୍ଷା'ଦ୍ୟାହିକ୍'ଛି' ଭିକ୍'ଛି' କ' ক্লিঁন'র্য়া' দ'শেম' দেই'ঞ্জিা'র্শম'র্ম'যা'ম'র্যা'ক্রুদ'র্শ্ত' ধর' वैग्राय्य मुन्य कुर्यायय ग्रे र्श्वेग वेट. केया लुट्य क्रां स्टर ॕऒऺॺऻॱॾॖॕॖॖॖॸॎॱय़ॱय़ॕॾॖॖॖऺॱॷॺऻॱय़ॸॸॱक़ॖऺॱॶॱॱॱॱॳक़ॱॾ॓ॺऻॺॱख़ॖॖ॔ॺऻॺॱ

ন্দ্রীঝানকন त्यन्रन्यों यां देवा याई में वेश्वार्यायी हायावृत्वन र्दुन्'न्येनि'' दने' अन् ' तया' के' नया दे' अन् स्यालन র্ক্রমান্দ্রবার্দ্রমান্দ্ ୴୶ୖୢୄୖଈ୶୲୶୳ୠ୵ଽ୳୶ୄୠୄ୷ୖୠ୲୳ୠୄ୶୲ୢୖଈ୲ୠୖଽ୷୶୶୶୲ ने'नत्तुब्र' क्वेंन'म्]'वन' भष्य पर भाषन' क्वेंन'न्येंव' र्दु'गेषा क्वेंन'स्यार्द्ध'गे'कुट्र'सु' धेया'नर्त्रे'तर्द्र'यया'केस' तनन् गर्रे में क्वेन नगेंग तन्ग वेर लु वे केवा

র্থনি'মেন্ন ক্রিম'মেন'অন্ট্রেম'শ্র্টি'যান্দি'স্ত' দীম'ন্দিযা'য়ী' শ্ভূম'র্জন্ব'নের্ন' ঈ'ঝ'মমাস্কেযান'নেনন্ব' অন'ক্রুম'যাচ়ল' র্জ্তবাম'র্ন'ম্র' নমঝ'শ্র্টি'মি'দ্রেন'র্মের'র্মিন্ব'র্মিরা মন্থ্ৰা নম্থ ধর র্ষিগম স্থ্রির দেনদ দেশ আঁদদ জীব। र्र'थार्र ন্যযা พेव वितायकेंग यदा अवर मुंबया श्वे यत्त रा छेवा য়ৢয়য়৾য়য়ৣঢ়৾ঀৣ৽ড়৾৾ঀ৾৾য়৾য়৾য়৾য়৾য়৾ र्भायां ते' न्द ॻॖॱॾॖॕ॒<u>ॸ</u>ॱऒॺऻॺॱॸऄॕॺॱग़ॖॖ॓ॱॿॸॺॱय़॓ॺॱऒॺऻॺॱय़ॕॺॱऄॺऻॱਘॸॱ लेवा दे'त्यदस्थ'यया यया'येव'विय'वर्ळेय'वर्दे' শ্বিয यरात् तात्रकाः र्ह्येतान्देव र्द्ध सुर तेका यरात्र विषा के Ferrance (2000) योषाप्तन्द'र्देग्त्रुआञ्चे' भया भेत्र' वित्त' दर्ळेभ ਕਸੇ ਸੀਆ ਸਾਹਲਆ ਸਕੇ ਗੁਰ ਲਾ ਘੇਂਸ ਸਕੇ ਸਹਾਲਾਂ र्देषा तहें वा तत्र दा रोया लेव वा यहा का रें द वा राये र्नेव' सु' দি'শ্বি শ্র্রীম' येंद्र चेर लेव रबसा वर्दे सुर टर्रट में सा वर्त्त रु 91. नन्देवस'रुंग'सेव'त्त्गा'नेर'सर्वेभ्र'सस' শান্ত মন্দ পৃষ্ণর্জ্ব্যাম্যদামার্শনের্'র'জিব। নন্দম'ন্ 24 'শব' रूटांगे कुट्ट सुर्धेट रादे ट्यात विनामर्केलामने योगा দম'র্ন্ডু'র্ঝম'র্ন' প্রদার্ম'র্ন্সমান্দ্রমার্শ্বনিয়'র্ভব্য'র্জার'রজ্য

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Activity	Timeline	Remarks
AR proposal preparation	Week 3 February	
AR proposal presentation to	Week 1 March	
School AR Committee		
AR proposal presentation to	Week 2 March	
Cluster AR Committee		
Baseline or pre-data collection	Week 4 March-Week 1	
and analysis	April	
Conduct intervention	Week 2 April-Week 4	
	May	
Post-data collection and	Week 1 & 2 June	
analysis		
Research finding presentation	Week 1 August	
School AR Committee/Cluster		
AR Committee		
Research report submission to	Week 3 October	
the Ministry of Education		

Action plan for Action Research

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JOURNAL OF EDUCATIONAL ACTION RESEARCH

Guidelines for Manuscript

The *Journal of Educational Action Research (JEAR)* is published once a year in Autumn by the Centre for Educational Research and Development, Paro College of Education, Royal University of Bhutan. The *JEAR* aspires to develop a strong educational research and scholarship culture, through which a systematic, collaborative and participatory process of inquiry can actively seek to address areas of concerns facing education today. This would not only help provide technical skills and specialized knowledge, but also bring about positive changes within the classroom, schools or the community at large. The Journal welcomes contributions from researchers and scholars who work in the field of action research and related activities in education. The *JEAR* utilizes a blind peer review process of its manuscript and involves both the national and external reviewers.

The authors/contributors are requested to use the instruction below for preparing a manuscript to submit to the *JEAR*.

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- □ is your own original work and it is not the duplication of any previously published work, including your own previously published work.
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- 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.
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- 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.
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- 10. The Editorial Board reserves the right to reject a manuscript without substantive reasons, if it does not fulfill the manuscript guidelines as specified.

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- 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.
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- 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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