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Effectiveness of the Postgraduate Diploma in Higher Education Programme: A Tracer Study Report

CHOEDA, UGYEN PEM, CHENGA DORJI AND LHAPCHU

Abstract

This paper reports the tracer study of graduates (from nine constituent colleges) under Royal University of Bhutan (RUB) who have graduated from Samtse College of Education (SCE) with Postgraduate Diploma in Higher Education (PgDHE). PgDHE is a two-year part time programme with PgCHE (a nested programme, Postgraduate Certificate in Higher Education) awarded as an intermediate award in the first year. Both are part-time programmes offered to the newly recruited lecturers in the colleges who have not obtained any professional teacher training prior to joining their college. The tracer study was done on the graduates with the aim of finding the relevancy and improving the contents of the programmes and to meet the needs and demands of a dynamic higher education system in the country. For data, a survey questionnaire was administered online via Google Apps. Focus group interview was also carried out to get in-depth views and opinions from the graduates. To enrich the qualitative responses, open ended questions were included in the questionnaire. The study revealed positive perceptions of the college management, who observed improvement in the graduates' knowledge and skills in their academic practices upon attending the PgCHE and PgDHE. The graduates shared their experiences of professional growth such as making them more effective and competent in teaching, and also improving their academic practices in the respective colleges as a result of these programmes.

Key words: PgCHE, PgDHE, tracer study, higher education, pedagogy, reflective skill

Background

Postgraduate Diploma in Higher Education (PgDHE) was launched in December, 2013 with its nested programme or intermediate award, Postgraduate Certificate in Higher Education (PgCHE). The PgCHE and the PgDHE (which is the final award) are both one year part-time programmes. Students completing PgCHE take on PgDHE as a continuous professional training. The programmes are offered to newly recruited college lecturers under the Royal University of Bhutan (RUB) who do not have any formal professional teacher training. The students (College lecturers) enter the programme with their enrollment inPgCHE (taking four professional modules) and exit with PgDHE (taking additional modules). All together students will have taken eight professional modules by the time they graduate with PgDHE. The modules offered were designed to fulfil the needs of the university academic practices.

Lecturers from nine constituent colleges under RUB namely, Gedu College of Business Studies (GCBS), College of Language and Cultural Studies (CLCS), College of Natural Resource (CNR), College of Science and Technology (CST), Jigme Namgyel Engineering College (JNEC), National Institute of Traditional Medicine (NITM -presently Faculty of Traditional Medicine under Kheser Gyelpo University of Medical Sciences of Bhutan, KGUMBS), Sherubtse College (SC), Royal Institute of Health Sciences (RIHS- presently Faculty of Nursing and Public Health under KGUMBS) and Royal Thimphu College (RTC) have availed the PgCHE programme. However, only seven Colleges have availed the PgDHE programme (Figure 2). The figures on the top of the bars are the number of graduates from each college.

While three cohorts (with a total of 39 students) graduated with PgDHE, four cohorts (with a total of 107 students) graduated with PgCHE (Figure 1 and 2). Since three cohorts have completed taking both PgCHE and PgDHE, the college wanted to gather feedback (through tracer study) from the graduates to study how the programmes had benefited them in their teaching - learning practices or their professional development. As mandated by the Wheel of Academic Law, researchers carried out the study as a component to base the periodic review to evaluate quality, standard and relevance of the programme. Tereza et al (n. d.) often termed the study as 'graduate tracer study' besides other terms such as 'graduate survey', 'alumni study' and 'follow-up study' (p.7). The main aim of carrying out such a study is to assess the impacts of the programmes the graduates have gone through (Schomburg, 2003 as cited in Tereza et al). So carrying out tracer study is an important exercise for higher education institutions to avail invaluable information which will have direct implication for higher education institutes to make important decisions for the future.

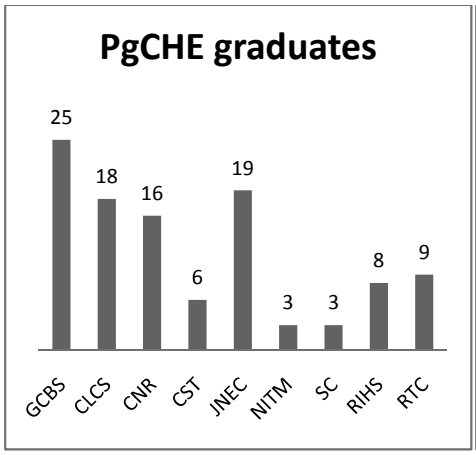

Figure 1: No. of PgCHE graduates

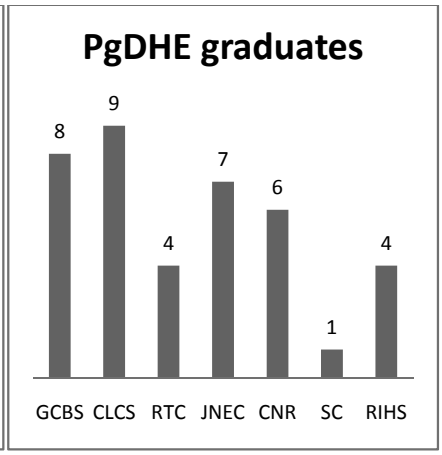

Figure 2: No. of PgDHE graduates

Objectives of the study

The tracer study was conducted to review the relevance, benefits and overall health of the programme. The impact of the graduates on their profession and work places needed to be studied so that improvement and modifications of the programmes could be done as necessary. Therefore, the following were the two main objectives set by the researchers for the study:

a. to review the relevance of the programme with the professional development
b. to identify gaps between the programme content and the needs in the real working situations

Literature Review

According to Schomburg (2016), a tracer study is a standardized survey of graduates done verbally or through written mode in an educational institution sometime after graduation of the students. Obando and Shisanya (2013) say, "Graduate tracer studies are important as a way of understanding the relevance and quality of programmes offered by the Universities …."Paro College of Education carried out tracer study on the first B. Ed graduates in 2002 with a purpose of finding the needs of the schools to match with the B. Ed programme of the college (Wangchuk, 2002). Samtse College of Education also did a similar study on the teacher graduates of the four-year B. Ed programme in 2014. Aquino et al.(2015) carried out teacher education graduate tracer study in State University in Batangas in Phillipines with an aim of evaluating the "educational efforts pertaining to its graduates, the labour market and employer" (p. 45) to further improve teacher education preparation and better employment opportunities. Further they also point out that:

Graduate tracer studies are one form of empirical study that can appropriately provide valuable information for evaluating the results of the education and training of a specific institution of higher education … and the relevance of their educational background and skills required in their job. Graduate tracer study can also collect data on the relevance of the curriculum and graduates' level of satisfaction of their academic preparation. (2015, p. 46)

As per Rojas and Rojas (2016), the values are placed on opening doors of opportunities for future employment and sustainability of the graduates' career through higher education programmes. Since the university's academic practices and culture go on evolving, the programmes that are offered by higher education institutions also need to cater and fulfil the demands of the changes that happen. The lecturers who are provided with professional training by PgDHE should be updated

in terms of knowledge and skills of their specific profession and modules developed to help establish sustainable career. The colleges under RUB have already started developing new programmes to cater to the demands of the nation's development process. In line with the process of changes and development, college lecturers not only need to update their knowledge and skill but also foster positive attitudes through the delivery of different modules in higher education programmes. Ocampo, Bagano and Tan (2012) mention that tertiary education should develop, instill and foster "appropriate and relevant, knowledge, skills and attitudes to enable each individual to become a useful, productive and gainfully employed member of society" (p. 2). Further Aquino et al. (2015) stated that teacher education institutes should aim to produce "competent and highly qualified graduates employable [within the country] and abroad" (p. 45).

Graduates in general receive professional training before or after becoming teachers. There are situations when they are directly employed as teachers without having gone through proper or formal professional training. However, professional development of teachers is considered necessary for bringing effectiveness in teaching and learning in the classroom. According to the Teaching and Learning International Survey (TALIS), "Professional development is defined as activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher" (2009, p. 49). The training can be done formally as well as informally and duration would vary from hours to days, weeks to months or for even longer duration. Some of the professional trainings are for in-service teachers as well. In a research conducted on secondary school teachers who underwent professional training through in-service mode, it was found that the training significantly improved teacher effectiveness (Udoh, 2014).It has also stated that in-service training helps employees acquire new skills and knowledge increasing their efficiency and productivity and in turn contribute to the development or progress of one's organization or institute. In the same note, PgDHE as a programme for in-service lecturers of the Royal University of Bhutan is expected that professional development occurs in the individuals and have positive impact to their colleges.

Methodology

The study adopted mixed methods approach. The quantitative data was collected through using Likert scale and qualitative data was garnered through focus group interview. The Likert scale survey through Google apps was administered online since the participants were based in the colleges, located in different parts of the country. In the Likert scale, the y-axis have been used to represent the number of respondents and x-axis to represent the rating starting from lowest point 0 meaning

not at all, 1 (poor), 2 (fair), 3 (good), 4 (very good), to highest point 5 (excellent). Refer to Figure 3.

Study Participants

The participants involved in the study included the Deans of Academic Affairs (DAA) and the lecturers of the nine constituent colleges of RUB, who graduated from Samtse College of Education with PgDHE and PgCHE.

Eleven individuals who carried out officiating responsibilities in the management in the capacity of Dean and Officiating Dean have participated in the survey questionnaire. Participants from the management were included in the study to get wider perspective of how the programme impacted the graduates. The Academic Deans in particular could share the transformation or professional growth and practices of the individual lecturers prior to enrolling in the PgDHE and the corresponding impact after the graduation. Therefore the Academic Deans of the colleges were considered belonging to the Management group since they form the core group in College Management. However, since some Deans were out of the college at the time of data collection, some officiating deans (even with designation of associate lecturer) took part in the survey questionnaire. The terms students (having been enrolled as students for the programme), lecturers (having already been recruited by colleges as lecturers) and graduates are used synonymously or interchangeably in the present study since they are the same people.

Sixty-one (57%) PgCHE and eight (21%) PgDHE graduates participated in the online survey. Nine PgCHE graduates participated in focus group interview during the residential school. For PgDHE, open-ended questions were included in the survey questionnaire to get qualitative responses. For analysis simple descriptive analysis was done using excel (creating graphs and charts) and content analysis was used for interview analysis. The interviewees (the graduates) were coded as P1, P 2 to hide their identity.

Results and Discussion

Upon analyzing the interviews (using content or thematic analysis), qualitative responses from the survey and quantitative data (using simple descriptive analysis), five major themes were drawn which are discussed below. Further, feedbacks that were gathered over three years (on each module) were also analyzed to study the views of the graduates regarding the contents of the programme, whether it needed changes.

1 Enhanced pedagogical knowledge

The PgCHE and PgDHE programmes offered at Samtse College of Education are viewed positively by both the management of the colleges and the graduates of these programmmes. The study revealed the programmes as highly relevant to their teaching career. For example, the courses within these two programmes have helped to enhance the pedagogical knowledge of the participant graduates as shown in Figures 3, 4, and 5. The Figures 3, 4, and 5 reveal significantly higher agreement regarding the effectiveness of the two programmes with most of the ratings ranging from 3 to 5. Further the opinions as expressed in the interviews confirm the positive impact of the programme with regard to enhancing pedagogical knowledge. A participant graduate (P1) said,

I didn't have knowledge how teachings and assessment are done. After attending the PgCHE last year, I have lots of changes in my teaching styles and even I got feedback from my students saying that my teaching style has been improved and they are able to understand compared to previous teaching.

Another (P2) said that upon taking modules in PgCHE programme, he experienced the improvement in his professional practices and became confident in his teaching. As per the idea of Ocampo, Bagano and Tan (2012), the progammes have been found to have instilled and fostered appropriate knowledge, skills and attitudes for participant graduates have rated on the higher side in their rating in the survey.

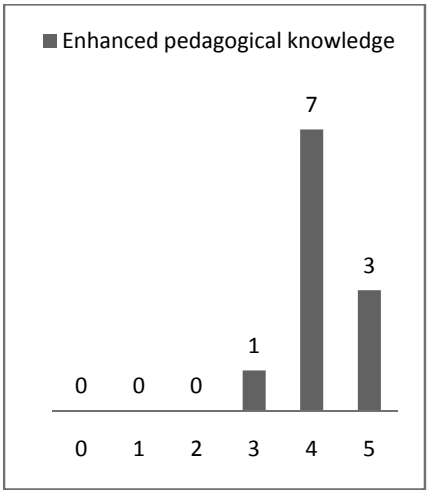

Figure 3: Deans (AA)

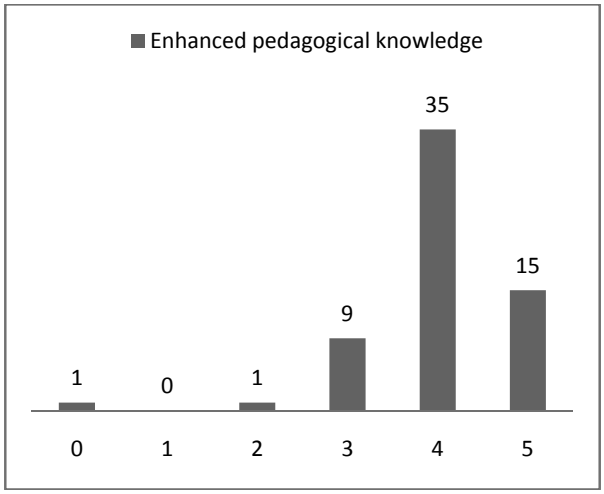

Figure 4: Lecturers (PgCHEGraduates)

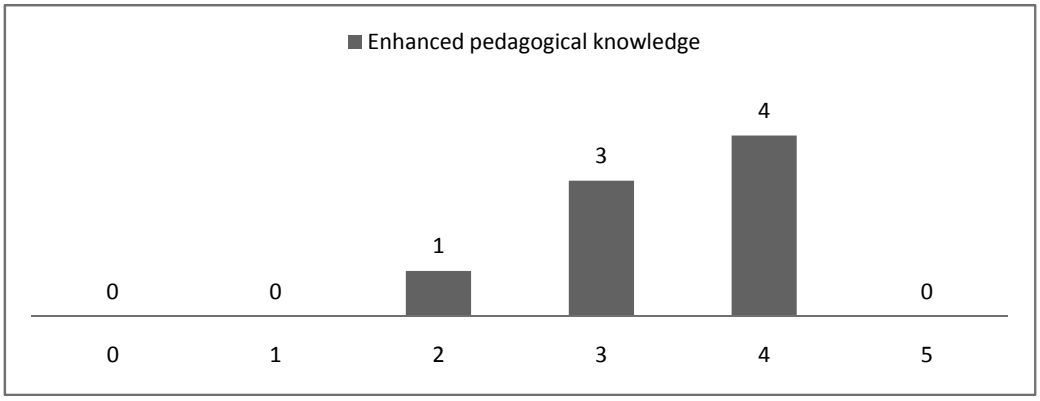

Figure 5: Lecturers (PgDHE graduates)

2 Improved reflective skills

Academic Deans (the management) also noticed improved reflective and research skills in those lecturers who took part in the programme as the response shows the higher rating ranging between 3 and 5 Likert scale. Almost 100% at managerial level and 96.8% of the graduates agree that the reflective skills of individual lecturers were enhanced which would ultimately contribute to better learning and teaching.

3 Improved research skills

Research skills were also a core graduate attribute of the programme as the 82% of management of the respondent colleges felt the programme graduates showed improved skills. Further, 70% of the lecturers enhanced their research skills (Refer to Figures 8 and 9). The graduates claim that the programme helped them develop research skills. They must have become more knowledgeable in using research approaches in their classroom performance though may not be explicitly visible to the Deans as expressed by a participant graduate with regard to research base strategy. A participant graduate (P3) pointed out about using the reflective based teaching strategy, in his teaching. He said, "I have learned that once I teach a lesson, I let students to reflect on it, what some of the lessons that they have understood are and what they did not. I asked them how they can attribute meaning to what they learnt. What values that they have learnt".

However, the Deans' observation did not match with the graduates' perception and display of research skills as evident in Figures 8 and 9. Almost all the Deans (excepting one who had rated excellent) have rated on the low scale (good, fair and

poor). Their views must have been influenced by their knowledge and observation to what extent the graduates were involved in research. In the similar line of thought, the Dean who had rated excellent could have been on the fact that a graduate in his college must have been actively involved in the research. However, this interpretation is based on the assumption of the researcher.

The Deans as well as the graduates have rated the improvement in reflective skills on the higher rating scale as shown by Figures 6 and 7. Aquino et al. (2015) pointed out that graduate tracer study should reveal to what extent the programme was relevant to the graduates in terms of the relevance and level of graduate's satisfaction. A participant graduates' (P3) opinion on his improvement in his teaching technique using reflective based strategy is evidence that the programme was relevant and that it had contributed to the improvement of graduates skills and knowledge as expected.

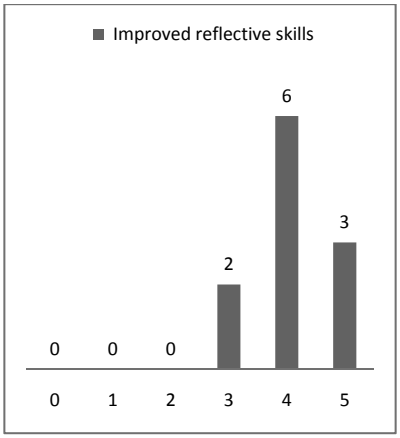

Figure 6: Deans (A A)

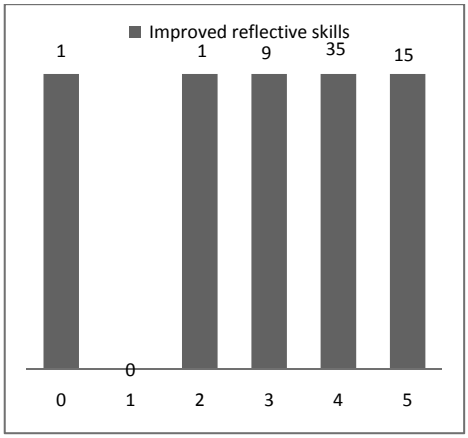

Figure 7: Lecturers (Graduates)

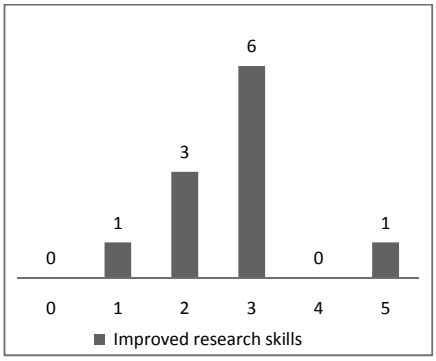

Figure 8: Deans (A A)

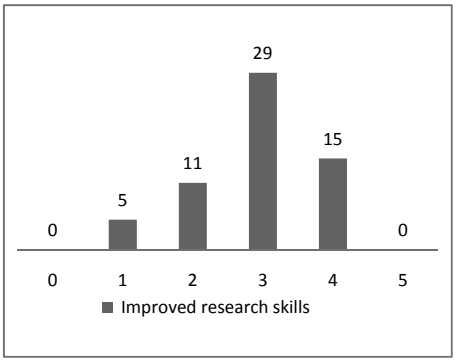

Figure 9 Lecturers (Graduates)

4 Improved communication and ICT skills

The study also showed improved learning efficiency, communication skills and also information technology skills as the result of the programmes. Even it helped to improve and enhance the leadership and social skills which would make lots of positive impact on the college. A lecturer (P 4) mentioned that the programmes enhanced his communications skills as the delivery of the modules was done through interactive approaches. The interactive lecture method that was learnt as a teaching pedagogy helped him bring communicative classroom when delivering lessons. He further pointed out that his teaching became two way communications – between teacher and students. He remarked, "Teaching is a two-way communication where teachers don't feed the content, but the students are motivated to think beyond the box". Thus the study revealed that the programme impacted positively on improving communication skills.

5 Improvement in the resourcefulness of the graduates

The respondents felt that the nested programme, PgCHE contributed to the enhancement of being resourceful in their teaching profession and making teaching learning very effective in their colleges. They were able to ensure effective student feedback and integrate research in their teaching learning processes. The graduates rated on the higher points with regard to improvement in system of providing student feedback (Figures 10 and 11). Now, research has become an integral part of teaching and learning which also includes giving effective feedback on student learning. The findings show that the programmes offered at SCE is a good opportunity for our RUB faculty members to enhance such knowledge and skills. Refer to the Figures 7 and 8 below. The Dean of GCBS remarked that the graduates have been resourceful in teaching their colleagues how to prepare assessment techniques particularly question preparation. It is evident from such example that teaching faculty in college derives benefits from the graduates through sharing of knowledge and skills. As Udoh (2014) stated that the training that one receives have positive impact benefiting one's institute or organization, the new skills and knowledge gained though PgDHE have been seen affecting the college positively. The graduates are observed to be sharing their knowledge and skills with their colleagues.

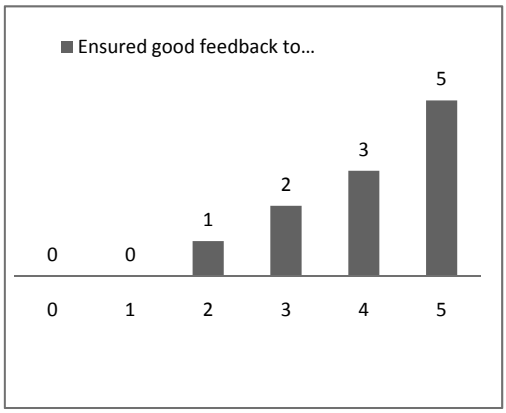

Figure 10: Deans (AA)

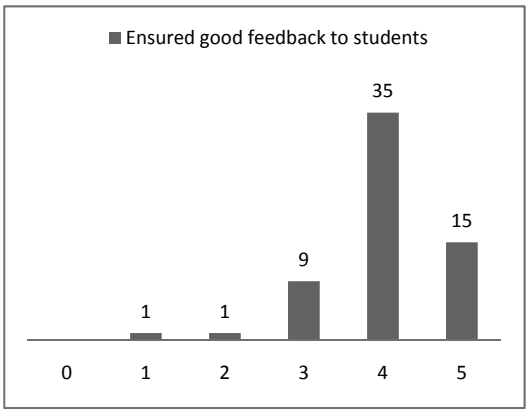

Figure 11: Lecturers (Graduates)

Student feedback on the modules

To validate the views and survey report, researchers also analyzed the semester end feedback by students on individual module report. The feedbacks collected over three consecutive years show consistency in the opinions of the graduates with regard to the modules of the programme. Following are some of the feedbacks given students on the question, 'What area of the module requires improvement?':
In EDU505 (Introductions to University Learning and Teaching), a student commented that, "module contents are good enough, most of the lessons were good too" (Student feedback, 2015). Another said, "Module contents are fit, I have no comment". Regarding EDU603 (Contemplative Education) a student mentioned "it was the most interesting module I have learnt. It is very relevant to our daily life". Another commented the module to be "important for academicians"(Student Feedback, 2016). For EDU507 (Professional Ethics and Mentoring) a student mentioned that, "the course content was enriching and informative". On the whole graduates expressed contentment with the contents of the modules and did not recommend changes.

Mode of delivery

Regarding the DAA's opinion on the mode of delivery, although six out of the eleven DAA involved in this study preferred full time mode of study, the other five DAA showed preference for the part-time mode of study. Since the DAA are often involved in the working out of the workloads of individual lecturers, they have been able to evaluate whether it would be worthwhile exercise to try with full time mode. The six DAA must have been from the colleges where they have adequate or excess lecturers. However, it is important to note that the difference in numbers is not signifi-

cant. Majority of the participant graduates (41 out of 61) which is 67% preferred part time mode. They said that during full-time enrollment they might miss some short continuous professional development programmes and also might lead to shortage of faculty in their department in the colleges as they will have to be in SCE campus. A constituent college felt that relieving their lecturers on full-time mode will have lots of impact on the college. The following Figures 9 and 10 show the respondents preference of part-time and full-time mode of delivery.

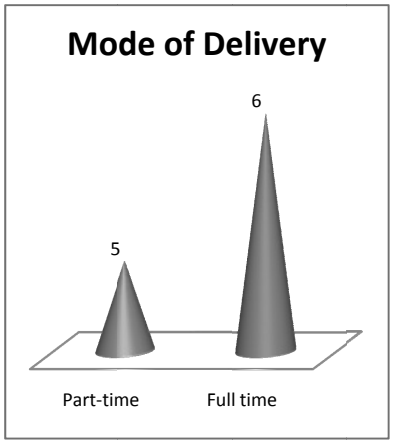

Figure 9: Deans (AA)

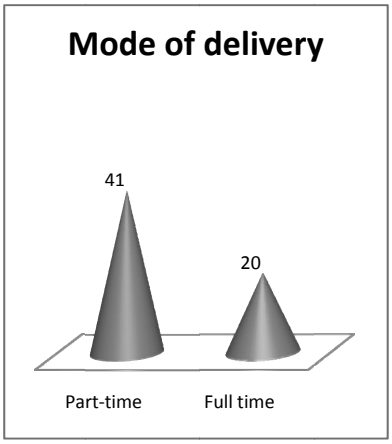

Figure 10: Lecturers (Graduates)

Conclusions

The tracer study participants (PgDHE and PgCHE) revealed positive perceptions on relevancy and usefulness of the contents delivered by the programmes. The study showed that the programmes enhanced the pedagogical skill, improved academic practices, fostered reflective and research based teaching and learning in college classrooms. The College Management, particularly the Deans (AA) reveal their positive outlook having observed changes and improvement in the professional practices of lecturers who underwent the programmes. Apart from enhancing the teaching learning practices of the graduates, improvement in the use of ICT based teaching, research skills and providing appropriate feedback and assessment too have been revealed by the tracer study. Further, the study also found that the programme had enabled graduates to become resourceful for they were observed to be sharing and helping their colleagues in designing assessments tools. In addition, graduates also revealed that their communicative competencies too have been enhanced. They expressed their view on how the classrooms became more communicative between them and their students. There is no conclusive opinion with regard to changing the

mode of delivery from part-time to regular. While the management has equal preference for part-time and regular mode of delivery, graduates have indicated their preference for the programme to continue as part-time. Overall, the contents of the programme were found relevant indicating SCE should continue offering the programme.

Acknowledgement

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The Effects of Multi-media Technology on Learning Achievement and Perception of Eighth Grade Students of Kamji Central School Towards History Subject.

THINLEY, PEMA LHENDUP, DIL MAYA GHALLEY AND KINLEY RABGAY DRUKPA

Abstract

History is one of the subjects in the Bhutanese curriculum learnt by our children. Learning History provides insight into our culture,human behaviour, evolution, society, future generation,science and technology. It also enhances critical thinking resulting to intellectual growth. In gist, History teaches trust and values. History cannot be taught as one subject but correlates with other subjects like Geography,English,Civics and Economics. Despite its significance, teaching History had been found to be challenging because of employing traditional mode of teaching. The purpose of this study was to compare learning achievement and investigate perception of eighth grade students towards History subject by using a multi-media technology. The study was an experimental research and used two groups pre-test post-test design. This study was conducted at Kamji Central School under Chhuka district in Bhutan. A cluster random sampling was used to select two sections out of three with 45 students each in experimental and controlled group. The quantitative data was analyzed using mean and standard deviation while students' reflective journal was analyzed using coding system.

The findings of the study showed a significant difference in the post-test. The mean for control group was 13.6 and 17.73 for the experiment group with a mean difference of 4.13. This indicated that the learning achievement of students in the experimental group was higher than student's in the controlled group. At the same length, student's reflective journals revealed that the use of multi-media technology was interesting and captivating. Students also said that they gained adequate information, achieved better understanding, enhanced long-term retention power and active participation in the class.

Key words: Multi-media technology, Learning achievement, Perception, History.

1. Background

Learning History has become part and parcel in the Bhutanese education system. The concept of history has been imbibed by the students from the primary classes when they studied Social Studies. It is crucial to learn history because it covers wide spectrum of issues related to social, cultural, political, tradition and etiquette of the country. The Bhutanese History textbook has touched many lives because of its contents covering developmental activities, leadership, unity, hardship that forefathers had faced as well as about the farsighted monarchs. With introduction of many other subjects, History must remain as an integral subject because it represents Bhutanese as a whole.

However teaching and learning history has been considered challenging due to the problems associated with the nature of the subject. Firstly learning History is considered monotonous because of lecture method of teaching generally used by

teachers. Secondly, students seem to be least interested in the subject as History is a narration of stories through text. Inadequate availability of concrete evidences such as video clips and pictures and no use of hands-on learning have been causing boredom in students learning approach. Thirdly the vividness of pictorial sketch and maps are either out-dated or lacks updated information. All these aforementioned factors strongly affect the learning achievement of the students. For instance, the press release from Department of School Education, Ministry of Education [MOE], Bhutan (2017) on BCSE (X) held in December 2016, revealed that the overall mean marks for regular candidates in history subject was only 62.76%.

Through the BCSE result analysis of history, it depicts the average score cautioning the educators to bring changes in teaching strategy. The mediocre performance in history is mostly because of ineffective classroom learning and teaching strategy limited to traditional mode mainly lecturing. Therefore, to enhance learning achievement strategies such as field trip, project based, inquiry based and use of multi-media technology should be incorporated.

According to Ilhan and Oruç (2016),multi-media technology is very effective in education as it is the fastest mode of learning whereby students can learn new information within short period of time. Owing to the importance of Information and Communication Technology (ICT) in Bhutanese education system, the Ministry of Education has drafted its Education ICT Master Plan in 2014. Its objectives are to have effective teaching and learning environment, efficient educational administrative systems and to motivate lifelong learners for the 21st century (as cited in Education ICT Master Plan, MoE, 2014-2018). Similarly, Patel (2013) argued that multimedia courseware can offer the students with abundant information; more plentiful than textbooks and help them to get of displays vivid cultural background, rich content and true-to-life language materials, which are much natural and closer to life (p.118).The importance of multi-media technology was further supported by Sousa (2017)who argued that the nature of social science can be effective or unique when various combination of multi-media technology is being used.

Further researchers have found the use of multi-media technology effective in History lesson. For instance, Ilhan and Oruç (2016), Patel (2013) and Ni (2012) claimed that the use of multi-media technology is considered as one of the techniques to improve the students' learning and their interest in history lesson. Similarly, Adesote (2013) also pointed out that the appropriate use of ICT can influence and change traditional methods of teaching and learning of history thereby ensuring quality education. According to Iqbal and Muhammad (2015),multi-media- aided teaching helps to develop higher order cognitive skills and appeal the students' psyche towards learning.

2. Objectives

Since not many studies were carried out in the Bhutanese context using multi-media technology, this study was designed to evaluate the effects of multi-media technology on learning achievement and perception of eighth grade students towards history. Therefore the main objectives were:

1) To compare the learning achievement in History of eighth grade students who were taught using multi-media technology and students taught in a traditional way.

2) To investigate eighth grade students perception towards History lesson by incorporating multi-media technology.

3. Research Question

Based on the objectives the following questions were asked:

1) Does the learning achievement of eighth grade students who were taught by incorporating multi-media technology show higher result than the students taught in a traditional way?

2) What are the perceptions of eighth grade students towards multi-media technology in teaching a History lesson?

4. Literature review

4.1 Multi-media technology

Multi-media technology is computer-based techniques of text, images, audio, video, graphics, animation, and any other medium where every type of information can be represented, processed, stored, transmitted, produced and presented digitally (Wikipedia, n.d).According to Rose and Fernlund (1997) as cited in Acikalin and Duru (2005), it is a process of blending information with the use of sounds, graphics, texts and images. The use of multi-media technology has become very important in the education system as it provides fast hand information which cannot be generated at any means. Teaching and learning in the school system has changed over the years so are the teaching strategies that teachers use in the classrooms on daily basis. With this rise, it has provided a better platform for teachers to make use of its benefits and

use it as a teaching technique in order to enhance the learning achievement of students.

4.2 The role of multimedia technology in teaching a History subject

History is one of the school subjects that narrate the stories that had happened in the past through pictures, videos, and textbook. Due to the nature of the subject, it entails explanation as well as evidences with video clips or pictures to support the story. As such, the use of multi-media technology has become one of the tools that can accomplish the hassles of the History subject.
According to Adesote and Fatoki (2013), the role of ICT in the teaching and learning of History in the 21st century can be seen in four major angles, namely, the impact on teacher, learner and the image of History as a discipline. Similarly, Flecknoe, 2002; Mc Cormick and Scrimshaw, 2001 and Wagner, 2001(as cited in Adesote & Fatoki 2013) argued that ICTs can play a number of roles in education such as developing the kind of graduates and citizens required in an information society; improving educational outcomes, enhancing and improving the quality of teaching and learning" (p. 2155). Sousa,Richter and Nel (2017) also stated that using multi-media is the only avenue to showcase interaction, animation to present concepts, sound cues, and incorporating visual and auditory effects which stimulates learning History concepts. Multimedia as a technology has also been found to be helping learners in self-exploration, team work and active participation.

4.3 Advantages of multi-media technology in teaching a history lesson

The fundamental role of multi-media technology in education is to have effective teaching and learning by using ICT as per the needs of 21st century. Many researchers had carried out studies in History subject by using multimedia technology to enhance the learning and students' attitude towards history subject and revealed awesome results. As argued by Adesote and Fatoki (2013) the proper utilization of ICT can influence and substitute conventional methods of teaching and learning resulting in quality education. Similarly, the study conducted by Ilhan and Oruc (2016) revealed that multi-media technique increased the academic success of students in social studies lesson compared to the traditional classroom. On the other hand, Hii and Fong (2010) also investigated on the effects of multi-media redundancy in History learning among 'Deep and Surface' students and found that cognitive load in multimedia-based learning can be minimized and the pace of learning is under the

learners' control.

Nevertheless, Acikalin and Duru (2005) also found that preferring to use multi-media has helped to solve the mental models of problem by viewing visually. At the same length, Adesote and Fatoki (2013)found that the use of ICT not only discourages the traditional means of teaching and learning, but also heightens the quality education with sophisticated use of multi-media. Use of multi-media in classroom will provide opportunity for interacting with diverse texts that give students a solid background as relevance of history in the school curriculum. Andresen and Brink (2013) supported that multi-media is very helpful and fruitful in education due to its characteristics of inter activity, flexibility, and the integration of different media that can support learning, take into account individual differences among learners and increase their motivation.

5. Research process

After the acceptance of action research proposal from policy and planning division under Ministry of Education, the researchers obtained an approval from the principal of Kamji Central School, Chhukha to conduct the research. The researchers then prepared instruments and conducted the study for three months.

6. Research methodology

Research methodology of this study is a mixed method study. In the quantitative approach, the researcher used pre-test and post-test to collect the data while students' journal was used to collect the data for the qualitative approach.

6.1 Population and Sample

Total population comprised of 135 students from 3 sections of eighth grade students at Kamji central school under Chhukha district, Bhutan. Each section had 45 students and consisted of mixed gender and mixed ability students. The researcher used cluster random sampling to select two sections as a sample for this study. One section was used as control group and other sections as the experiment group.

6.1.1 Research Instruments

Two instruments were used to collect the data. The quantitative data was collected from pre-test and post-test administered to experiment and control group while qualitative data was collected from the students' reflective journals.

7. Quantitative Data Collection Instrument

7.1 Learning Achievement test

Twenty multiple choice questions were prepared from chapter five from history course book for class eight Bhutan History with a weighting 20%. Firstly pre-test was conducted for both the groups. After that, normal teaching was done for controlled group while experimental group was taught by incorporating multi-media technology to conduct the post-test. Finally, post-test was conducted for both the controlled and experiment group with the same question. The very purpose of the pre-test and post-test was to compare the learning achievement in the experiment and controlled group before and after the intervention.

7.1.1 Qualitative Data Collection Instruments

7.1.2 Student journal

The participants in the experiment group were asked to write a reflective journal about what they have learned and their perception towards History lesson when taught using multi-media technology. The guidelines on how to write reflective journal was given beforehand. The students' journal was to examine their learning perception towards History lesson after incorporating multi-media technology.

8. Data analysis

The data obtained from pre-test and post test scores of both the groups were compared in terms of mean (x) and standard deviation (SD). Further, the data collected from student's reflective journal was analyzed by using a coding system (open, axial, and selective) based on the Grounded Theory of Strauss and Corbin (1998).

1: Analysis of Learning Achievement Test

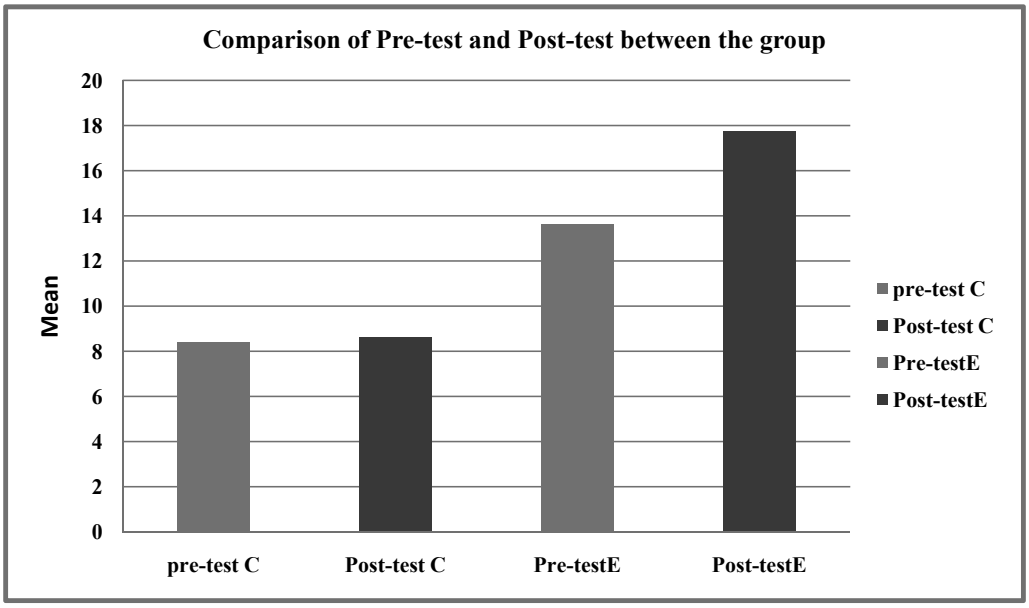

Figure 1: Comparison of pre-test and post-test between the groups.

Figure 1 shows comparative analysis of mean scores between the two groups before and after giving the intervention. It is clearly depicted that the learners in the experiment group who were intervened with multi-media technology showed higher level of learning achievement when compared to learners in the controlled group who were taught in a traditional method. It is clearly explained as shown in Table 1.

Table 1

Comparison of Pre-test and Post-test Between the Groups.

Test	Group	Mean	Mean difference	Standard Deviation
Pre-test	Control	8.38	0.26	3.200
	Experiment	8.64		2.577
Post-test	Control	13.6	4.13	3.21
	Experiment	17.73		2.54

The mean for pre-test of the controlled and experiment group was 8.38 and 8.64 respectively with a mean difference of 0.26 as indicated in Table 1. This showed that the participants in both the groups had equal learning ability at the beginning. However, the mean for the post-test of the controlled group and experiment group was 13.6 and 17.73 respectively with a mean difference of 4.13. This indicated that the test scores in the post-test of both controlled and experimental groups were statistically significant. The post-test score of the experimental group is significantly greater than post-test score of the controlled group.

2: Analysis of the participant's reflective journal

The second objective of this study was to investigate eighth grade student's perception in History lesson when taught using multi-media technology. The data collected from participants' reflective journal was analyzed by using a coding system (open, axial, and selective) based on the Grounded Theory of Strauss and Corbin (1998). Firstly in the open coding, the data from participants' reflective journal was organized systematically. Then the data was identified and categorized using axial coding. Finally selective coding (see Appendix A for codes) was used to categorize and interpret the data collected from the participants. The researchers used five following core themes from the participant's reflective journal as explained below:

i. Interesting and captivating (IAC)
ii. Gained adequate information (GAI)
iii. Better understanding with evidences (BUE)
iv. Ensure Long term retention power (ELR)
v. Enhanced active participation (EAP)

1. Interesting and captivating.

The participants were of the opinion that use of multi-media in teaching History was interesting and captivating because they were engaged vividly with the pictures, videos and documentaries. They were enthusiastic about learning new concepts and ideas broadening knowledge beyond the horizon. Participants shared their opinion of learning through fun and remained alert. For instance, the extracts from students' journals revealed:

> The lesson was very interesting with full of pictorial evidences from the Google and we were able to link the topic with the retrieved pictures (IACSRJ4)
> We were very excited to explore and learn more from the Internet and other form of technology which made us interesting. (IACSRJ7)

2. Gained adequate information.

Those participants claimed that using of multi- media helped to gain adequate information because Internet provided infinite platform in gaining information. Students could explore for any sort of information from the web. Students could avail diverse information from different source which helped the participants to analyze the best information as expressed below:

> We could generate lots of information from the Internet other than the ones reflected in the textbook (GAISRJ1)
> We could compare and analyze on the information given in the text and information derived from other sources (GAISRJ9)

3. Better understanding with evidences.

The participants were in favour of using multi-media to teach History lessons as it enhanced better understanding of concepts with concrete evidences like the use of power point presentation, time line in chronological order, videos, and pictorial facts that had ultimately boosted better understanding than lessons taught in the traditional setting with the use of text book. Nevertheless, the use of multi-media had provided diverse information when compared to the information given in the textbook. As evidenced from Journal # 3 and 10:

> Some of the topics about the world wars were better understood by going through the picture and video clips (BUESRJ3)
> The Power Point presentations helped us understand more with picture as well as explanation by the teacher (BUESRJ10)

4. Ensure Long-term retention power.

Use of multi-media had enhanced long term retention memory power because the evidences, statistics and images had given a forum for participants to see, analyze, interpret and comprehend about the realistic things happening with context to the content being taught which ultimately helped them remember the information in the long run resulting better performances in the exam or test. Use of ICT has enabled students engage visually and auditory as indicated below:

> Explanation of each topic with the help of pictorial evidences and time line helped us remember the particular topic for longer period of time" (ELRSRJ27)
> By watching videos of World War I and II, I can remember what kind of incidents were occurred during the cause of the war (ELRSRJ31)

5. Enhanced active participation.

The participants discovered that use of multi-media had enhanced active participation because when they were engaged in Internet browsing, students were bound to participate, discuss and ask questions related to the context resulting to effective learning. Further students had felt that they do not feel bored and monotonous as the nature of using multi-media kept them curious and active. Moreover, this new style of teaching method best fitted the learners of 21st century. Even low achiever students who were reluctant in opening their opinions were found to be interactive and energized when placed in groups for discussion and learning as expressed in Journals 1 and 13.

> I got an opportunity to actively participate in this lesson because we were given each topic in a group to discuss by exploring from the website (EAPSRJ1)
> I can see most of my friends contributing for their group work sincerely. They were very much happy to learn from the Internet than from the text which is more of lecture (EAPSRJ13)

9. Conclusion

The aim of this study was to compare the learning achievement and investigate student's perception on multimedia technology in teaching a History subject. The findings from this study showed that the use of multi-media technology enhanced academic achievements of students in history lesson. The learners when taught by incorporating multi-media technology showed higher level of interest in history lesson. The result supported the findings of Aloraini (2012); Hii and Fong (2010); Ni (2012) and Ilhan and Oruc (2016)and who conducted a similar studies using multi-media technology and found that multi-media technology serves as an alternative teaching strategy to achieve the learning outcome of the students in History subject.

Therefore, one must play proactive role to create innovative teaching approaches to achieve the academic excellence in students to encourage them to be a lifelong learner in the 21st century. Teachers cannot escape from the realities of 21st century where the world has become information rich society and it is imperative that they use multi-media technologies for enhancing teaching learning process.

10. Recommendations

It was found that the use of multi-media technology had greater impact on learning achievement in History lesson and boosted students' interest. In this regard, based on the findings the following recommendations have been made;

1) History teachers in Bhutan can use multi-media technology while teaching a history lesson in order to achieve academic excellence and to boost students' interest in history subject.

2) History can be taught using multi-media as it gives an opportunity for students to explore more information from internet than the prescribed text books.

3) Multi-media technology can also be used in other subjects as it creates platform for the learners as well as the teachers.

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Enhancing Students' Academic Achievement through 3 Tier Remedial Class System

CHAKRAPANI KHANAL , UGYEN DORJI, DAMCHU DEMA, TARA DEVI TAMANG, UGYEN DORJI, RAMESH KUMAR CHETTRI AND KELZANG SHERAB

Abstract

Remedial class is not new in educational parlance for uplifting the low achievers to the expected competency level. Despite the numerous remedial classes being conducted in Gelephu Higher Secondary School in different forms such as, after school questions solving in groups and teacher supervised studies, no study has been done to test its effectiveness. An action research was carried out to improve students' academic achievement through systematic remedial classes. A pre-test on selected chapters was conducted to check the existing level of competency of all the students from selected section of classes 10 and 12 in different subjects. A modified 3Tier remedial intervention was given for 3 weeks; remedial to whole class, peer tutoring in smaller groups, individualized tutoring and quality answer writing. A post-test, based on same blue print as for pre-test, was administered to check on the level of improvement. Further, a survey on satisfaction level in students due to remedial classes was also conducted. Pre-test scores and post-test scores were compared through five-number summaries and means. Responses from the satisfaction survey were analyzed using SPSS software. The results of the research revealed that the academic performance of participants improved. The participants were positive about the effect of remedial classes conducted for them. The research recommends that remedial classes be conducted with appropriate intervention for all the subjects across schools to improve the academic performance of students.

Key words: Remedial, 3Tier intervention, peer tutoring, individualized tutoring, quality answer writing, improvement, academic performance.

Introduction

Gelephu Higher Secondary School (GHSS) is located 1.3 kilometre away from Gelephu town. GHSS falls under the jurisdiction of Gelephu Thromde under Sarpang Dzongkhag. It is a co-educational day school with an annual enrolment of 865 students ranging from classes nine to twelve. The school offers Science, Mathematics, Language, social studies and commercial studies. Students are also provided elective subjects such as Computer Applications, Environmental Studies, Media Studies, Vocational Studies and Agriculture for Food Security. Life skills and value education, that nurture children holistically, are imparted through various co-curricular and extracurricular activities.

The prime goal of school education system is to deliver education that would foster the children to be innovative, creative and enterprising to join the world of work in a competitive job market (Planning Commission, 1999). From pre-primary till the college, there are some forms of assessments conducted to maintain standard

in each level. The academic achievement in a subject is measured by the mean score obtained in the examinations. The students of class ten and class twelve sit for common examinations conducted by Bhutan Council for School Examination and Assessment (BCSEA). The performance in these examinations determines whether the students can continue their education in government schools/colleges. So, students and the teachers put their best effort to achieve good scores.

Factors such as number of students in the class, students' background, quality and duration of classroom instruction, parental support and availability of remedial support by teachers affect individual student's academic performance. Since children come from diverse background, all the students may not have the same capability to comprehend ideas and concepts at the same pace in the class. Some students may get help from parents or guardians at home but others are deprived of such help. This leads to the requirement of remedial classes. According to Schwartz (2012), remedial classes are education programs defined as specific educational interventions aimed at addressing learning needs of a targeted group of children who are lagging behind academically or not mastering specific competencies. Similar classes separate or along with low achievers, can be conducted for the high achievers to accelerate their learning or to facilitate them to perform even better. The remedial classes consisting of all the students promotes peer tutoring which is one of the strategies of remedial education (Starr, 2009).

Poetry is one of the most difficult genres for the students to learn as it requires varied interpretation. Students also express difficulties to understand the elements of fiction in short stories and novel. Transferring concepts learnt in Physics, Mathematics and Biology and applying them to solve problems is yet another difficulty faced by students due to change in curriculum. New curriculum requires a change in classroom environment which includes more peer and group work and emphasis on communication. Royal Education Council [REC] (2015) stated that it is only in such ways that students will really become engaged in thinking scientifically and mathematically instead of being mere spectators. In addition, there is no prescribed textbook in Geography. The concepts are taught from various references which need to be interpreted in Bhutanese context which is difficult. The prescribed textbook supplied for Computer Application is outdated and equipment in the lab is inadequate. This situation necessitates additional information input and time.

Problem Statement

The BCSEA 2016 result upon analysis by School Examination Committee revealed that out of 229 students of the school who sat the Bhutan Certificate for Secondary Examination (BCSE) in 2016, only 124 students qualified for higher studies, that is

about 52.5 %. Also in the Bhutan Higher Secondary Examination Certificate (BHSEC) examination 2016, out of 206 students, only 77 (37.4%) students qualified for undergraduate or diploma courses offered by various colleges in and outside the country which is poor compared to the achievements of boarding schools. Students in this school do not have scheduled and monitored study hours as can be found in boarding schools of Bhutan. This means, the overall academic performance is very much dependent on the number of study hours children spend on their study table, preferably, with someone who could clear their doubts that they may have.

Remedial classes have been tried out in GHSS in the past but its effect on students' performance have not being studied. It is generally felt that remedial class does improve academic achievement. So, there is a need for a study to investigate the effect of remedial classes (integrating suitable teaching/learning strategies) on students' performance. Thus, it has become important to consider a more integrated approach of remedial programs that develop students' interests and self-confidences in the subjects which eventually results in excellent average performance. The purpose of this study, therefore, is to investigate the effectiveness of remedial classes (After School Alternative Program) in enhancing academic achievement of class ten and twelve students of GHSS.

Reconnaissance

Situational Analysis

It is almost a norm for teachers to help students in scoring higher marks in examinations. Schools try various ways to help students obtain good marks in the examinations, especially the board examinations. According to Pupil Performance Report (BCSEA, 2016) schools are said to perform well academically on the basis of mean scores in these examinations. GHSS cannot be an exception to not to give its students opportunities and support to obtain good scores. In the past years (2010-2014), students obtaining scores below 40% in the midterm examination were given instructional support as a remedial measure while other student scoring higher than 40% were not required to attend. This arrangement did not serve its objective because the students who were supposed to attend remedial classes either purposely absented themselves or were not interested in remedial sessions. Most of the students shared about their embarrassment as it gave them feeling of being labelled as weak students. Thus, the school had to stop the remedial sessions altogether. However, in 2015 and 2016 all students appearing the board examination were made to stay back for one hour after the regular classes were over. Subjects perceived to be difficult by students, such as Mathematics, English, Science, Accountancy and

Dzongkha were allotted for a week-long one hour after-class sessions for remedial classes. During the week-long session, respective teachers gave review questions chapter-wise and students answered through discussion amongst themselves in small mixed ability groups. Students who obtained high scores in mid-term examination in the subjects led discussions. Teachers visited the classes to help with the complex doubts and difficult concepts.

Success of such system was neither studied nor recorded for retrospection. Some teachers claimed that the peer-support remedial sessions were useful, as it had improved scores in their subjects. However, other teachers said it was just a waste of time and did not help children. They also expressed fears that it might continue the same way in the future. Many teachers expressed the need for a study to look at the effectiveness of remedial classes on students' scores. In this study, some teachers collaboratively organized remedial classes for students of classes ten and twelve in the subjects they taught. These teachers wanted to try a systematic way of helping students so that mean score of the students in their subjects improve. These teachers believe that remedial classes have to be planned well and specific strategies have to be used for a positive outcome. From the way the remedial classes were conducted in the past years, it indicates that it was a partially a failure. Therefore, taking the lessons from the past experiences, remedial classes need to be organised in a systematic manner so that it turn out effective for students' academic achievement.

Competence

The research team consisted of seven teachers with five to twenty three years of teaching experiences. They also held other responsibilities in the wide range of fields such as, school academic head, cluster lead teacher, head of department, examination coordinator, head of Information Communication Technology department and class teacher. Some have even facilitated national level teacher Professional Development programmes, written academic textbooks and participated in national level curriculum conference. The researchers teach subjects such as English, Mathematics, Physics, Computer Applications, Biology and Geography in classes nine to twelve. Most of them have conducted research during their pre-service training or for their Master's degree, which has given enough footings for conduct of action research. One of the researchers has to his credit research papers published in international journals and conference proceedings. The cluster lead teacher being one of the members in this research team conducted the action research training to the rest of the researchers, which was given to the lead teachers by the Royal Education Council. The Principal and Vice Principal of the school were critical friends for this action

research as they possess more than 20 years of teaching and administration experiences in schools. The participants for this research consisted of mixed ability and gender studying in class ten and twelve in GHSS in the age range of 15 to 20 years. Although, most of the students were familiar with the research process but they had not participated in the intervention of any action research.

Literature Review

Modern education in Bhutan dates back to 1914 when subjects such as English, Arithmetic, Hindi and Dzongkha were taught in the schools. It emphasised development of skills and knowledge, which they believed would produce citizens like doctors, engineers, administrators which would be useful for the development of the country (Rabgay, 2012). The system gave special attention to inculcate "principles and values including critical and creative thinking, ecology literacy, practice of the country's profound ancient wisdom and culture, contemplative learning, a holistic understanding of the world, genuine care for nature and others to deal effectively with the modern world, preparation for right livelihood and informed civic engagement" (Karen, 2009). Despite the various efforts by the government to improve the quality of the education in schools, undesirable trends like the teacher-centered classrooms, rote learning and exam-oriented learning still prevailed which resulted in poor student academic performance and achievements. Due to poor academic performance, most students failed to continue higher education and that hindered in producing skilled people for developmental activities in the county. Many researchers as well as our own personal experiences as teachers have confirmed that the answers students write in the exams are just regurgitation of what they have learnt by heart. Any twist or rephrasing of the questions made most students unable to answer the questions.

According to Lever-Duffy and McDonald (2005), learning is a complex activity that can be seen differently depending on individual's needs, because the perception of learners differs on how and why they do that way. The learning can take place in three different means such as, auditory, visual, and kinesthetic. Learning includes the selection, arrangement, and information delivery in a suitable environment and in the way learners interact with the information (Smaldino, Russel, Heinich, & Molenda, 2005). Riding and Smith (1997) stated that every individual have different learning abilities and styles, and they possess and represent knowledge in diverse ways. Some students learn more effectively when taught with their preferred methods.

Therefore, it is important to open up the 'black-box' of remediation strategies and identify which types of intervention have an impact on students' outcomes

and in what context. For instance, Xin and Jitendra (1999) indicated that length of teaching time (intervention) has significantly higher effects than short- or intermediate-term interventions for group-design studies. Similarly, as group or individual teaching, different teaching orientation, after school alternative program (Remedial classes) are also very important and has a wealth of explanatory power (Lin, 2013). Remedial interventions are the process of creating more time for our academically challenged students to get additional academic supports, so that these groups of children achieve incremental growth in their score card. However, the general perceptions that are commonly observed in our education system restrict remedial intervention only to weaker students. The very concept of remedial classes can be applied to academically performing students to improve and excel in their learning.

Remedial education is an indispensable part of teaching and learning process. Its results proved that remedial class's policy, strategy, and techniques have a positive effect on improving low achievers. This improvement pushes up low achievers to their grade level on one hand, and raise their motivation towards learning on the other hand (Jarrar, 2014). He further recommends that teachers should give more emphasis to remedial techniques while teaching, and cooperate with remedial teachers to help low achievers and make progress in their achievement. Schwartz (2012) stated in a paper published for Global Partnership for Education that remedial interventions, in an ideal situations, should be part of the national education policy that calls to make necessary arrangement in training of teachers, pedagogy and materials.

The Royal Government of Bhutan (RGoB) has been at the forefront in advocating education for all. In its Education and Policy Guidelines (EPGI), districts and schools are directed to provide remedial classes to students so that the dropout rate is low. According to the of National Education Assessment (NEA), 2013-14 report (BCSEA, 2015) various support systems such as remedial classes, additional study measures, guidance and advice, access to learning materials and conducive learning environment given to the students have increased student performance in class 10 Mathematics and English. The report also recommends that teachers must take remedial classes.

According to Huang (2010) the goal of remedial classes is to provide low-achieving students with more chances to reinforce the basic knowledge in common subjects, so that they can meet minimum academic standards. In order to achieve this, it is important for teachers to make a little more effort to give extra coaching to students. Echevrriam (2003) stated that an effective remediation must affect or change the classroom practices in which a teacher uses instructional tasks that draw on students' prior experiences and interests, which relates those experiences to new learning. Remedial classes should include use of supplementary materials to make lesson

concepts clear and meaningful. The tutor should use different strategies to cater to the needs of individual students. Eventually, precise and comprehensive diagnosis methods are needed to facilitate students' classification and as a result designing or choosing appropriate remedial strategies that render to better performer.

A study conducted by Panlilio (2012) found that remediation alone has no observable effect on the measures to evaluate the outcomes of under-prepared students. Moreover, Schwartz (2012) stated that there is academic improvement from remedial classes but he argues that long-term benefits depend on the type of remediation and how systematically it is organized. Remediation as an intervention was found to be statistically significant influencing academic outcomes. Beside all the above, providing extra hours to those academically low achievers is the greatest challenge in a day school. Each year a large number of students graduate middle secondary school but only 50% of them qualify for higher secondary school. Parents and the educators are often confused as how to prepare those leftover 50% students for colleges (Venezia, 2005). Researches have indicated that students must be given remedial classes before enrolling into higher secondary school and colleges.

According to Choden (2005), when individual attention and special care were given to the weaker students through remedial classes, they tended to perform better than teaching all students in the class. She observed, although providing remedial classes to the students was a tedious job in the beginning but when improvement was seen in students, she got certain sense of satisfaction. It further boosted her energy to help students to perform even better.

Response to Intervention (RTI) is a 3-tiered remedial intervention that is popularized in K-12 schools across the USA. The National Research Centre for Learning Disabilities defines RTI as "an assessment and intervention process for systematically monitoring students' progress and making decisions about the need for instructional modification or increasingly intensified services using progress monitoring data", (Johnson, 2006). At each tier of the intervention, strategies used are research based and systematic according to the need of the individual child and have proved positive in screening process. In the work done by Fuchs (2006), the strategies become intensified and more individualized as the screening process goes on. The 3 tiers are as follows (Figure 1):

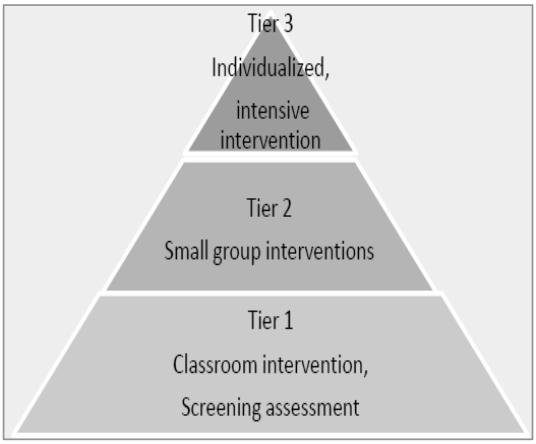


Figure 1: Response to Intervention (RTI)

Tier 1: In this tier, support is delivered to the identified students during regular class room instruction to the whole class,

Tier 2: In this tier, support is provided almost always small-group instruction. The group consists of students who could not be remediated in tier 1, and

Tier 3: In this tier, support is provided to one-to-one tutoring, other intensive ser vices, or possibly assignment to special education (Schwartz, 2012).

RTI or 3-tier intervention model can be adopted to give remedial classes involving the whole class. Peer tutoring is another effective remedial measure that has resulted in increased students' achievement (Horbath, 2011). High achieving students can be made to tutor their low performing peers. Its effects are double fold; tutor as well as tutee benefit academically from such a partnership and tutees get their self-esteem boosted (Clarkson & Luca, 2011)

Research Question

How can students' academic performance be improved significantly through systematic remedial classes?

Research Design

The objective of this study is to examine whether remedial classes improve the academic performance of students. This study employed quantitative method, such as Multiple Choice Questions (MCQ), short response questions and extended response questions for pre- and post-tests. In this study, the performance test items were developed to compare the performance level before and after the interventions for 3 weeks. Finally, to assess students' level of satisfaction for the program, the attitude survey questionnaire using 5-point Likert scale was developed and administered after completion of the remedial program with randomly selected participants.

Participants

The participants for this research consisted of class ten and class twelve students of GHSS. Since the research method demanded high achievers to help the academically poor students, all the students in the five sections of class ten and three sections of class twelve were taken for remedial classes. There were 227 participants, both male and female in the age range of 15 to 20 years. There was no selection method: it was almost automatic to choose the above sections due to the fact that the researchers taught the subject to those sections. The remedial classes were given in

Literature, IT, Physics and Mathematics to class ten and Literature, Biology and Geography to class twelve (See Table 1).

Table 1:
Concepts and Topics that were dealt with during the Remedial Session

Class	Subject	Concept	Duration (hours)
10	Literature	Novel and Short Story	20
	Mathematics	Non-Linear functions and equations	20
	Physics	Work and Energy, Electricity	20
	Computer Applications	Network and Introduction to Internet	20
12	Literature	Poetry	20
	Biology	Theories of evolution	20
	Geography	Transport and Communication	20

Intervention

Remedial intervention was given to the above-mentioned participants for three weeks after the regular classes as in case of After School Alternative Program in Taiwan. It was learnt from the literature review that although remedial is usually meant for students that performed poorly but can also be given to all the students so that overall mean can be increased, at the same time high achievers tutored the low achievers. RTI (3-Tier intervention) framework, which proved very effective, was adapted to suit our scenario as described below:

Tier 1: Teacher presented the concepts from the topic to the whole class.

Tier 2: High achiever students coached low achievers in small mixed ability groups. Low achievers were identified through observation of their responses in tier 1 and looking at the performance in the pre-test. Different students were made to present the topic that was being discussed in the group.

Tier 3: Teacher gave individualized help to targeted low achievers. They were identified through observation of performance in tier 2. Students were taught how to answer different level of questions according to the marking scheme usually followed in the BCSEA. The quality time the teacher spent with the individual student helped to boost their confidence in themselves as well as the subjects.

Research instruments

The following instruments were used in collecting data.

1. Performance Tests

The performance tests were classified into two categories, pre- and post-test respectively. Both the tests consist of Multiple Choice Questions (MCQ), short response questions and extended response questions but were parallel in nature. The tests were administered for 30 marks that could be answered in an hour. The test items were purely based on the concept/content that was taught with the following learning objectives in respective subjects.

a) Pre-test

The objective for implementing pre-test was to determine the level of knowledge that the student possessed prior to implementation of the remedial program. So, it was conducted before the start of the program in all those pilot classes respectively.

b) Post-test

Similarly, the objective of administrating post-test was to investigate students' level of performance in the subject after participating into 3 weeks interventions in term of learning outcomes. So the test was implemented at the end of the program.

2. Satisfaction Questionnaire

A 5-point Likert scale questionnaire was developed and administered to investigate students' attitude/satisfaction level towards the 3 weeks remedial program (Appendix A). The data collected from the questionnaire was analyzed in terms of mean scores and standard deviations to determine the satisfaction level towards the program.

3. Class Observations

Observation of general behaviour of each of the students in each of the classes taken for intervention was done. Day-to-day anecdotal records were kept for each of the students by the teachers. Anecdotal records form the third source of data. Any slight as well as critical shift in the students' behavior in each of the tier of the intervention was recorded.

Validity and reliability of instruments

The same test specification was used for making pre- and post- performance tests in each of the subjects. The test items were adapted from BCSE and BHSEC questions which have been validated by a team of subject specialists. The satisfaction survey questionnaire having 5-point Likert was adapted from Students' Satisfaction Questionnaires published in journal of education and culture. The items in the questionnaire were revised and standardized accordingly as to fit into the Bhutanese students' grade and understanding. The final set of items in the questionnaire was validated by research expert from Royal Education Council, Paro.

Data analysis

To analyse the data following procedure were used:

- Mean
- Box and whisker plots/Box plots
- Anecdotal records from class observations

Although there are numerous graphs used to see how a data set is distributed, all the display do not directly show how the data is related to the median. Box plot was used to see how specific pieces of data compare to the median. The data was grouped into four intervals, which are centred around the median.

The values for Q1, Q2, and Q3, along with the minimum and maximum values, in order from least to greatest, is called the 5-number summary for a data set and is used to frame the construction of the box and whisker plot (Small, 2007).

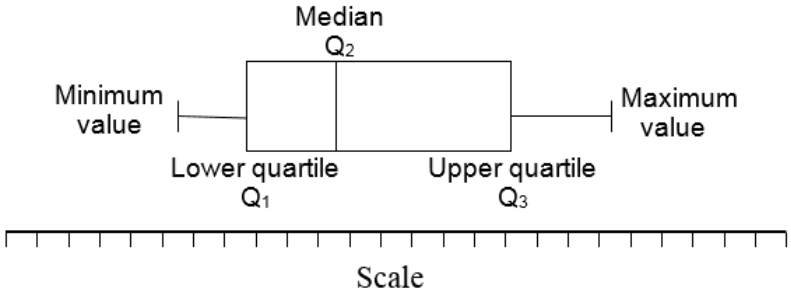


Figure 2: Components of box and whisker plot

A box plot shows how the data is distributed relative to the median:

- ❖ The width of the box in relation to the median indicates how the middle 50% of the data is clustered around the median.

- ❖ A wider box indicates a greater spread in the middle 50% of the data.
- ❖ Longer whiskers indicate a greater spread between the extreme values and the upper and lower quartiles.

Data collected from anecdotal records was inspected for any shift in the behavior towards learning. The data consisted of behaviors such as, answering a questions, taking part in discussion, raising a doubt and solving a problem individually. Such behaviors were filtered from other records and said to be caused due to the intervention.

Results

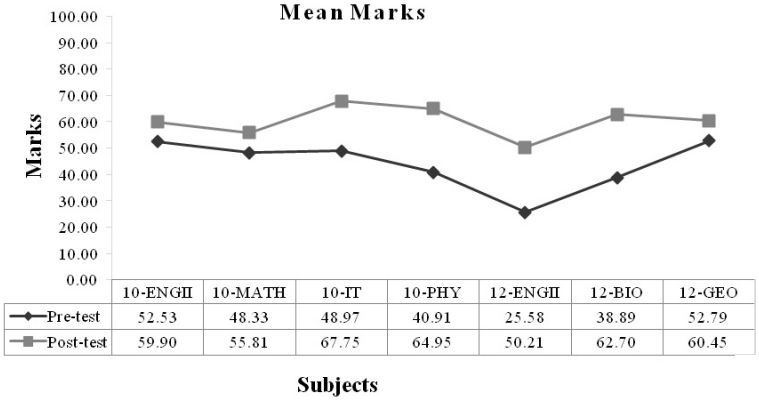
Performance tests

A pre-test was administered to the participants covering a number of chapters that were taught in the past. The questions asked were Multiple Choice Questions, Short Answer Questions and Long Answer Questions for 30 marks that could be answered in an hour. The participants were informed of the pre-test a day before the actual test so they become mentally prepared. The score was taken and analyzed by calculating the mean mark and box and whisker plots in each of the subjects.

A post-test was conducted following an intervention period of three weeks. The questions for the post-test were parallel to the pre-test questions (Test Specification for both the test was the same). Students were made aware of the test a day before the test. The post-test score was compared with the pre-test score, and analyzed and interpreted.

Data analysis (subject wise)

Mean marks for pre-test and post-test for class 10 and 12



	10-ENGII	10-MATH	10-IT	10-PHY	12-ENGII	12-BIO	12-GEO
Pre-test	52.53	48.33	48.97	40.91	25.58	38.89	52.79
Post-test	59.90	55.81	67.75	64.95	50.21	62.70	60.45

Figure 3: Mean marks for pre-test and post-test in all the subjects.

Figure 3 shows the comparison of mean marks before and after the intervention in all the subjects. It is observed that there is increase in mean mark after the intervention in all the subjects. Further, the detail analysis of scores of individual subjects before and after the intervention program is given below.

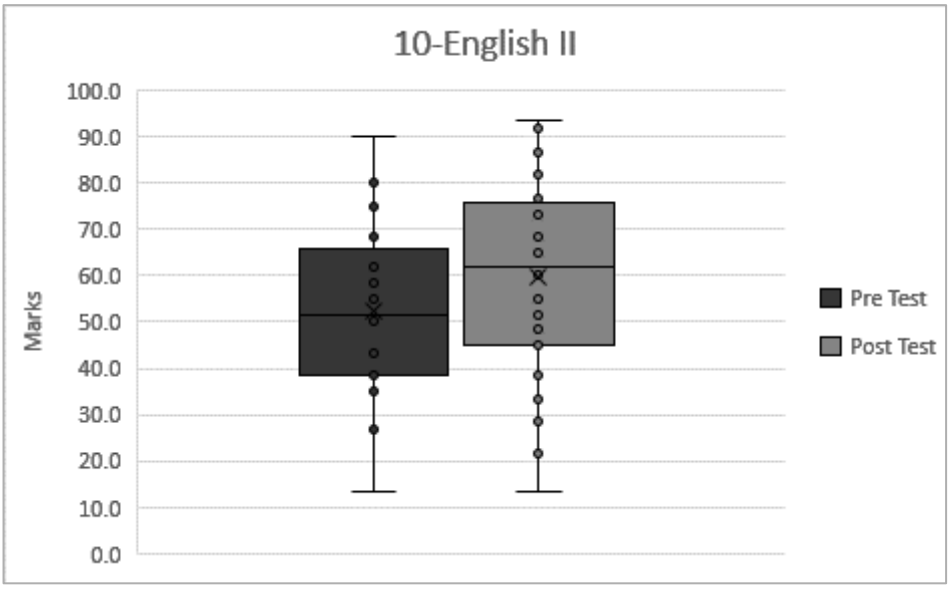


Figure 3: Box-plots for pre-test and post-test in 10 Literature

The median (N=33) marks are 51.67 and 61.67 in pre-test and post-test respectively. The lowest marks are the same in both the test which is 13.33. The maximum marks are 90.00 and 90.33 in pre-test and post-test respectively. The middle 50% of students scored between 38.33 and 65.83 in pre-test, and between 45.00 and 75.83 in post-test. The mean mark is 52.53 in pre-test and 59.89 in post-test.

It is seen that the performance in 10 English II improved after the remedial intervention since maximum mark, mean and median have increased by 0.33, 7.36 and 10.00 respectively, and range of marks of middle 50% of students has shifted upwards.

The median (N=31) marks are 50.00 and 60.00 in pre-test and post-test respectively. The lowest marks are the 6.67 and 16.67 in pre-test and post-test respectively. The maximum mark is both the test is the same at 100.00. The middle 50% of students scored between 36.67 and 66.67 in pre-test, and between 36.67 and 71.67 in post-test. The mean mark is 48.33 in pre-test and 55.81 in post-test.

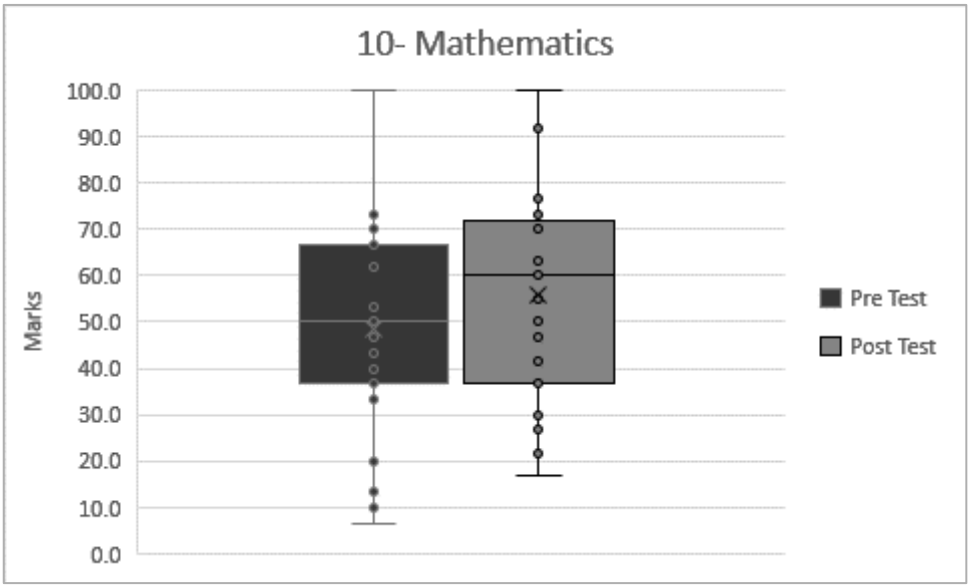


Figure 4: Box-plots for pre-test and post-test in 10 Mathematics

It is seen that the performance in class 10- Mathematics improved after the remedial intervention since minimum, mean and median have increased by 10.00, 7.48 and 10.00, and range of marks of middle 50% of students has shifted upwards.

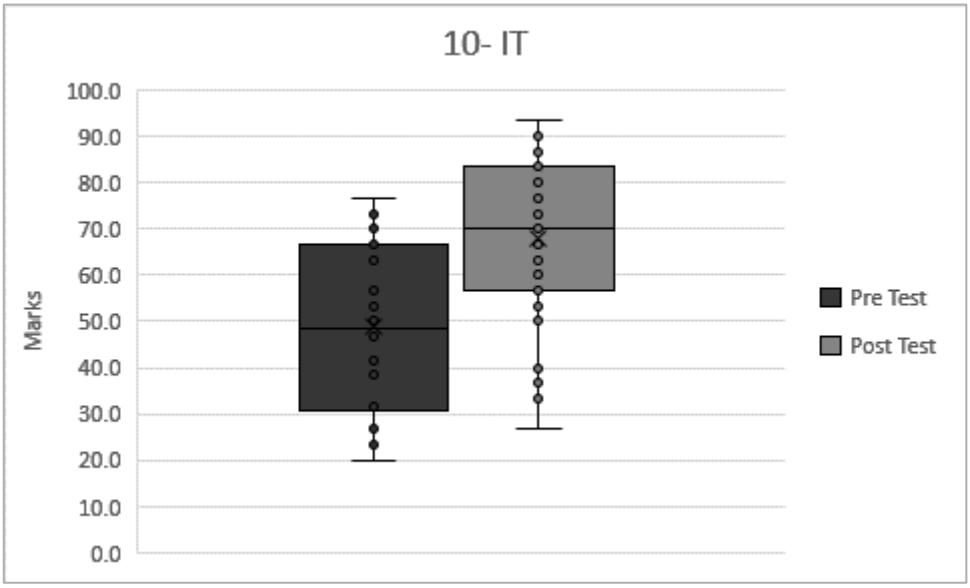


Figure 5: Box-plots for pre-test and post-test in 10 Computer Application (IT)

The median (N=34) marks are 48.33 and 83.33 in pre-test and post-test respectively. The lowest marks are 20.00 and 26.67 in pre-test and post-test respectively. The maximum marks are 76.67 and 93.33 in pre-test and post-test respectively. The middle 50% of students scored between 30.83 and 66.67 in pre-test, and between 56.67 and 83.33 in post-test. The mean mark is 48.97 in pre-test and 67.75 in post-test.

It is seen that the performance in class 10 computer application improved after the remedial intervention since maximum mark, mean and median have increased by 16.66, 18.78 and 35.00 respectively, and range of marks of middle 50% of students has shifted upwards.

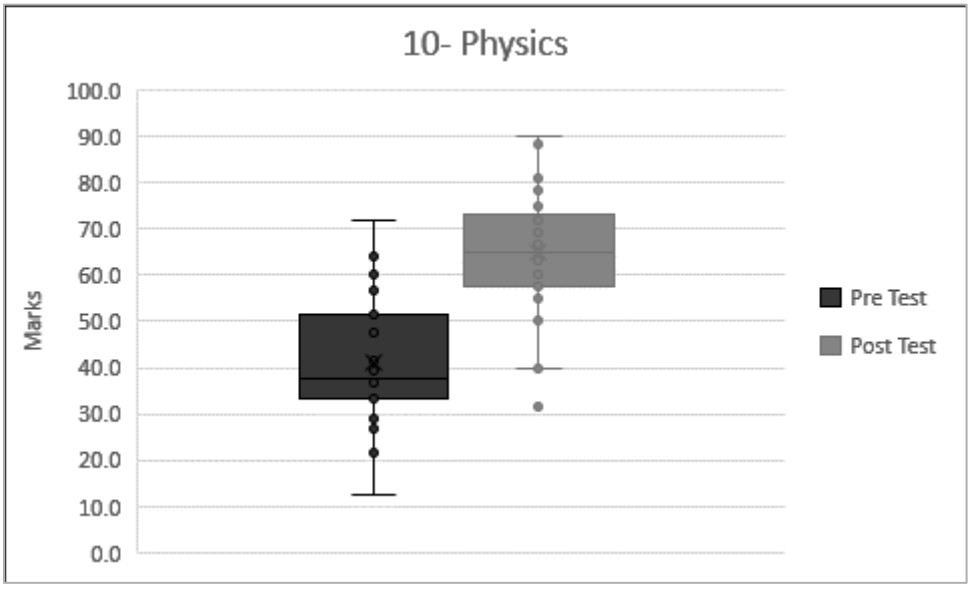


Figure 6: Box-plots for pre-test and post-test in 10 Physics

The median (N=31) marks are 37.50 and 65.00 in pre-test and post-test respectively. The lowest marks are 12.50 and 31.67 pre-test and post-respectively. The maximum marks are 71.67 and 90.00 in pre-test and post-test respectively. The middle 50% of students scored between 33.33 and 51.67 in pre-test, and between 57.50 and 73.33 in post-test. The mean mark is 40.91 in pre-test and 64.95 in post-test.

It is seen that the performance in 10 Physics improved after the remedial intervention since minimum mark, maximum mark, mean and median have increased by 19.17, 18.33, 24.04 and 27.50 respectively, and range of marks of middle 50% of students has shifted upwards.

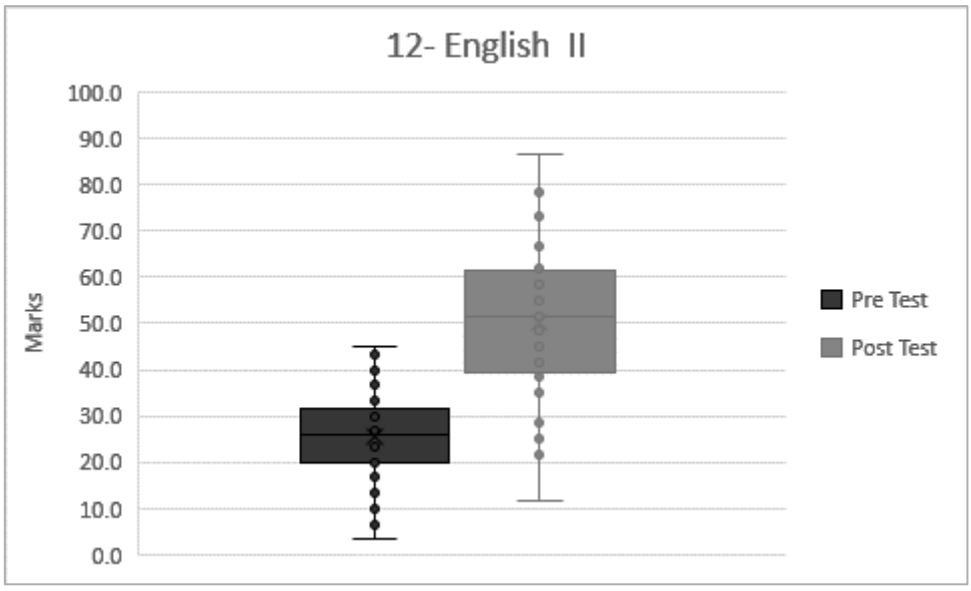


Figure 7: Box-plots for pre-test and post-test in 12 Literature

The median (N=40) marks are 25.83 and 51.67 in pre-test and post-test respectively. The lowest marks are 3.33 and 11.67 in pre-test and post-test respectively. The maximum marks are 45.00 and 86.67 in pre-test and post-test respectively. The middle 50% of students scored between 20.00 and 31.67 in pre-test, and between 39.17 and 61.25 in post-test. The mean mark is 25.58 in pre-test and 50.21 in post-test.

It is seen that the performance in 12 English II improved drastically after the remedial intervention since minimum mark, maximum mark, mean and median have increased by 8.34, 41.67, 24.63 and 25.84 respectively, and range of marks of middle 50% of students has shifted upwards.

The median (N=21) marks are 37.67 and 61.67 in pre-test and post-test respectively. The lowest marks are 13.33 and 31.67 in pre-test and post-test respectively. The maximum marks are 68.33 and 100.00 in pre-test and post-test respectively. The middle 50% of students scored between 30.00 and 50.00 in pre-test, and between 50.00 and 75.83 in post-test. The mean mark is 38.89 in pre-test and 62.70 in post-test.

It is seen that the performance in 12 Biology improved after the remedial intervention since minimum mark, maximum mark, mean and median have increased by 18.34, 31.67, 23.81 and 24.00 respectively, and range of marks of middle 50% of students has shifted upwards.

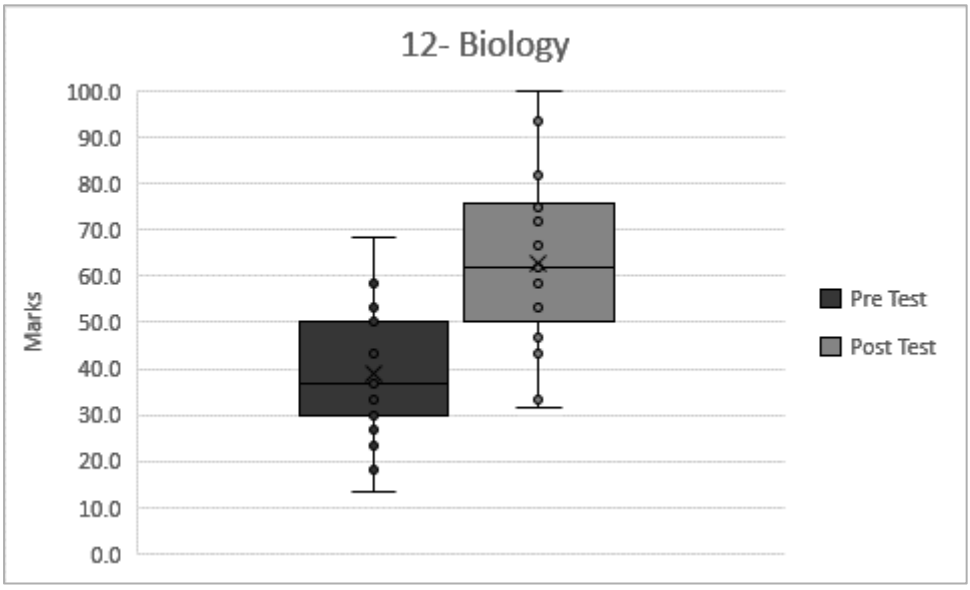


Figure 8: Box-plots for pre-test and post-test in 12 Biology

The median (N=37) marks are 53.33 and 61.67 in pre-test and post-test respectively. The lowest marks are 30.00 and 20.00 in pre-test and post-test respectively.

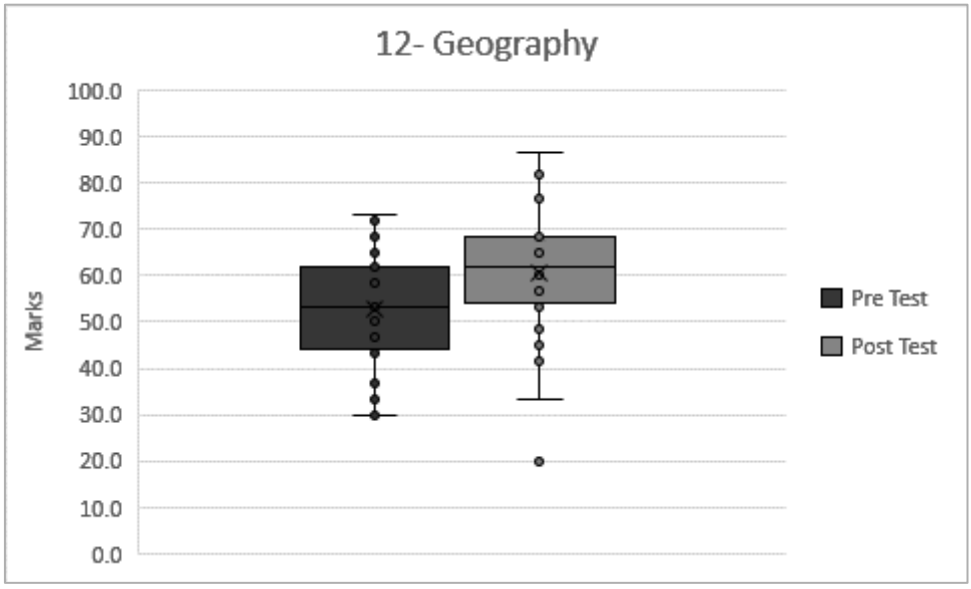


Figure 9: Box-plots for pre-test and post-test in 12 Geography

The maximum marks are 73.33 and 86.67 in pre-test and post-test respectively. The middle 50% of students scored between 44.17 and 61.67 in pre-test, and between

54.17 and 68.33 in post-test. The mean mark is 52.79 in pre-test and 60.45 in post-test.

It is seen that the performance in class 12 Geography improved after the remedial intervention since maximum mark, mean and median have increased by 13.34, 7.66 and 8.34 respectively, and range of marks of middle 50% of students has shifted upwards. However, the minimum mark in class 12- Geography after the intervention has decreased.

Learning satisfaction analysis

The survey questionnaire was administered with participating students to investigate their learning satisfaction towards the four-week remedial program. The questionnaire consisted of 14 items around students' attitude, students' interest, participation and learning satisfaction. 114 students answered the questionnaire.

The data collected was analyzed by mean and standard deviation to determine the learners' satisfaction level and learners' attitude towards the remedial program. The mean of each item for learning satisfaction was compared with the mean of other items as shown in Table 1.

Table 2

Summary of Students' Satisfaction Survey Questionnaire

	Satisfaction	Mean	SD	Rating	%
1	I took remedial classes seriously.	4.15	0.81	Strongly Agree	83%
2	Remedial duration of three weeks was enough.	3.56	1.20	Agree	71%
3	Remedial classes timing was appropriate.	3.83	1.22	Agree	77%
4	I could follow instructions during remedial class better than normal classes.	3.72	1.01	Agree	74%
5	I was encouraged to participate in the team discussions.	4.45	0.78	Strongly Agree	89%
6	I enjoyed interacting in a team.	4.46	0.80	Strongly Agree	89%
7	I was helped by my friends to learn better.	4.39	0.67	Strongly Agree	88%
8	Teacher gave me individual attention.	3.61	1.09	Agree	72%
9	Teacher engaged me actively and meaningfully.	4.12	0.93	Strongly Agree	82%
10	I felt closer to the teacher after the remedial classes.	3.90	0.89	Agree	78%
11	I acquired skills and techniques to answer different type of questions.	4.22	0.88	Strongly Agree	84%

12	I am confident about my own abilities after the remedial classes.	3.82	0.91	Agree	76%
13	Remedial class was helpful.	4.55	0.73	Strongly Agree	91%
14	I recommend such remedial classes in future.	4.15	0.81	Strongly Agree	92%

The overall analysis from the questionnaire revealed that 83% to 89% of learners "Strongly Agree" that they took remedial classes seriously, remedial classes encouraged them to participate in the team discussions, enjoyed interacting in a team, helped by their friends to learn better, teacher engaged them actively and meaningfully, and acquired skills and techniques to answer different type of questions. 71% - 78% of the participants "Agree" towards remedial duration of 3 weeks was enough for particular unit, appropriateness of remedial class timing, able to follow instructions during remedial class better than normal classes, teacher's attention to individual learner, in developing close relation with subject teacher and confident about my own abilities after the remedial classes. Interestingly, more than 90% of the participants rated "Strongly Agree" that remedial class was helpful and recommend such remedial classes in future as shown in Table 2.

Class Observation analysis

It was observed that students showed more interest, were motivated to take part in discussion, and the frequency of clarifying doubts with teachers and peers were seen to increase in course of the intervention. It is interpreted as positive impact brought about by the intervention.

Data Triangulation

Data collected through different sources and methods were triangulated to confirm the results. Data analysis from all three showed positive results; i.e., 3 tier systematic remedial classes proved to improve students' performance. The performance tests results indicated that there was general improvement in the score of individual students except for few cases where the score of the students have decreased due to unknown reasons. The analysis of attitudinal survey data revealed that students were satisfied and had positive learning attitude towards the remedial classes conducted. From the anecdotal records, it was observed that the students changed their learning behavior as they were encouraged and motivated to ask more questions and perform better in course of intervention.

Reflection

We were all excited at the very thought of being researchers. But excitement was short-lived due a second thought of daunting task ahead; action research on effect of remedial classes on student academic achievement. We believed that remedial classes have to be planned well with appropriate strategies that suit general learners. A team of seven teachers with different subject background collaboratively were involved in this action research. "So, what are we going to do?" We selected one of the classes that we were teaching, especially from class ten and twelve. Initially some of us were not confident in the research process. However, our doubts were clarified after the presentation done by Cluster Lead Teacher who had attended a 5-day action research workshop conducted by REC.

We faced multiple challenges during the conduct of research. There were differences in the understanding of the process itself. Debates and discussions were part of daily meetings. Each debate took us a step forward in making each one of us professionally matured and competent. Many of us came across problems such as students not having interest, missing the remedial classes and lazy students. Some priority school activities also hindered the smooth flow of the action research process as well as the intervention. We observed that high achievers were very active and cooperative. However, the low achievers were least bothered and were reluctant to participate in the team discussions.

Since we were not able to achieve the objective of the action research that we started if things go as mentioned above, we changed some strategies in the middle. Initially remedial classes were taken after regular classes for a duration of 60 minutes using modified 3-tier intervention. So, to avoid above-mentioned problems, remedial classes were conducted in the morning before start of first period for 50 minutes. Besides, the sitting arrangement was also changed, each group consisting of two high achievers and rest low achievers in which the high achievers were made to sit diagonally to each other to facilitate effective peer tutoring. Each group had group leader appointed in rotation basis who coordinated progress of their group members. Assessment of the learners was done randomly in each group to keep every learner alert and attentive of what they were learning. This way we could give better remedial intervention to the students.

With every passing remedial class we could see the positive behavioral changes brought in participants towards learning. Peer tutoring and individualized attention strategies helped to improve interpersonal relationship between the teachers and the students, thereby boosting their confidence. Students were keen on learning the techniques of answering the different levels of questions which helped them to improve their scores. We felt students accepted the remedial program positively.

Eventually dawned on us that action research on any problem has two-fold benefits; benefit to teachers as researchers; professionally, and students as participants; academically. Free time, if any, could be used meaningfully On the other hand, since school is a busy place where teachers have to take up all sorts of responsibilities, it is hard to find meaningful timing for such research. We feel there should be extra support for teachers carrying out researches till such a time action research culture is institutionalized. However, we encourage others teachers to take up such action research.

Conclusion

This study employed a comparative analysis of pre- and post-test results to find out the effectiveness of remedial classes on class ten and twelve students' academic scores. Pre-test was conducted to determine the level of knowledge that the student possessed in unit/topics taught prior to the remedial classes. Post-test results showed how students responded to the 3-tier intervention targeted to affect students' performance through remedial classes. A separate cross sectional data was also collected from about 227 participants to measure individual attitude towards remedial classes and the manner in which remedial classes were conducted. The collected data were analyzed with the help of SPSS software into descriptive statistical inference.

The study concluded that a significant share of students responded positively to the intervention in all the subjects under study whereby increasing their scores. Although students in general performed better after the intervention, the impact has been less amongst the low achievers. This could be due to the short intervention time available for giving adequate practice to low achievers to write quality answers in those subjects. Therefore, it still validates that the remedial classes have positive effect on students' academic performance. The study, in particular, found that, out of many strategies, the 3- tier intervention worked well with the participants and the subjects in the study. From the Learning Satisfaction Survey result, more than 90% of participants strongly agree that the remedial classes were helpful and recommended such classes in future. It is also found from the anecdotal records and survey results that the students performed better due to quality time the teacher spent with the students. About 89% of students were found to be encouraged and motivated to participate in the team discussions and performed better as the teacher spent more time interacting with individual learner.

Three-tier remedial intervention can be applied in regular classroom teaching-learning to improve performance of low achievers in different classes in different subjects. It can be used as a part of everyday teaching strategy by every teacher after conducting professional development programs on it.

Limitation and Recommendation for Further Study

The major limitation of this research is inadequate data. The study could have been more reliable if intervention period was longer and sample size was larger. Further, testing on limited subjects cannot authenticate the positivity of such intervention in other subjects. Teacher's willingness to stay longer duration for intervention without additional incentives may also deter them from practicing the strategies mindfully. For better results, the future researchers are recommended to have longer intervention period with adequate support system for our teachers. They are also advised to roll out the strategies to all the teaching subjects to measure how individual subjects respond to the 3-tier intervention. Future researchers are also suggested to extend their study to other levels without prioritizing the students appearing for board examination. There is a scope of further research involving parents in students' academic support.

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Children,Parent and Teacher Perception on Project-based Learning Approach in School

TSHEWANG DORJI

Abstract

This paper is a first attempt to throw light on project-based learning approach in schools. The study was qualitative in nature and used non-probability convenient sampling technique. The study was carried out in one Middle Secondary School in Thimphu. Data were collected through focus group interviews, minutes of the meeting and records of observation of children. 10 parents (5 males and 5 females) participated in the focus group interview, two teachers for one to one interview, and 20 children for a group interview. The interviews were conducted in English and Dzongkha after the completion of the project. The findings revealed that project-based learning approach enhanced the quality of learning through promotion of collaboration and teamwork, planning and organization, creativity and innovation among children. Project-based learning also promoted collaboration among teachers, students, and parents in making learning meaningful for children.

Key words: Project-based learning approach, Collaboration, Creativity, Planning, Organization, Meaningful learning

Introduction and Background

Project-based learning approach is a relatively new learning-based-instructional method. The project-based learning approach is different from the traditional mode of teaching that teacher provides structure, guidance and resources, and children are fed with information or skills being taught (Stanley, 2012). Instructions in the schools are changing from teacher-directed and teacher-assigned to student-initiated, goal-driven, independent, and knowledge building (Bereiter & Scardamalia, 1993).

The implementation of project-based learning approach has positive impact on children and teacher on attaining a higher level of professionalism. It is based on the philosophy of learning by doing (Sidu, 2003).According to Harada, Kirio and Yamamo to (2008) project-based learning approach helps children construct meaning and practical skills through the process of inquiry. Project-based learning approach has positive impact on building motivation, and abilities in solving problems (Stites,1998). Project-based learning approach embraces the integration of curriculum, community and home in learning, and the involvement of students in cooperative teamwork (Tomlinson & McTighe, 2006; Yuen, 2009).

In order to change teaching instruction in my class used project-based approach to teach economics to class IXA children of a Middle Secondary School (MSS) in 2013. All 20 children studied their chosen topic of interest on small and

medium enterprise using project-based learning approach. This was my first attempt at project-based learning approach. Prior to this, I had been teaching economics using traditional method of teaching for over nine years. Thus, my classroom activities shifted from teacher-centered lessons to wholesome learning activities that are interdisciplinary, student-centered, and integrated with real-world problems and practices (Yuen, 2009). This paper consists of two parts. The first part is a brief description of the project-based learning approach. The second part discusses the children, parents' and teachers' reflections and their perceptions on the use of project-based learning approach in teaching learning process.

Objectives of the study

The objectives of the study were to

1. examine the effectiveness of project-based learning approach in teaching Economics.
2. Assess the perception of children, teachers and parents on project-based learning approach.
3. investigate the problems and challenges faced by teachers, children and their parents in successfully carrying out projects.

Research Questions

1. What are the challenges faced by children participating in project-based learning approach?
2. What are the reflections of children, parents and teachers in project-based learning approach?
3. How can children's participation in project-based learning approach activities be encouraged in schools?

Research Methodology

The study was qualitative in nature and based on focus group interviews, minutes of the meeting and observations.

Thirty two respondents were selected through non-probability convenient sampling techniques. 20 children of IX A of a MSS who studied Economics and their parents, two teachers of the MSS for one to one interview, and 20 children from same class participated in a group interview.

Data Collection

The study was based on primary data collected through focus group interviews, minutes of meetings and records of observation of children. The interviews were conducted in English and Dzongkha after the completion of the project. I ensured anonymity and confidentiality to all participants and briefed on how the data were going to be used and protected.

Data Analysis

The semi-structured interviews were recorded and then transcribed. The transcribed data were analyzed and interpreted using both open and axial coding. Minutes of the meeting and records of observation of children were analyzed.

Part 1

What is project-based learning approach?

To be able to use project-based learning approach in teaching learning it is important to understand what project based learning approach is. Project is based on John Dewey's philosophy of pragmatism. Acquiring theoretical knowledge only is not useful by itself. Kirkpa trick and Dewey developed project method where learning focus was shifted from single lesson to larger units of time.

There are many definitions of project-based learning. According to Moursund (1999) project-based learning is a systematic teaching method that engages children to learn knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and task. Project is an important method of finding the relevance of economic theories to practical life. Project helps students to understand themselves how much they had learnt outside school. Indeed, project plays a very important role in the coursework too (Cohen, Manion, Morrison & Wyse, 2010).

Jones, Rasmussen and Moffitt (1997) outlined a comprehensive definition of project-based learning which states that"projects are complex tasks based on challenging questions or problems, that involve children in design, problem-solving, decision making, or investigative activities; give children the opportunity to work relatively autonomously over extended period of time; and culminate in realistic products or presentations" (p. 1). In short, it is learning through project over a period of time (Stanley, 2012). It begins with difficult task of stimulating and comprehensive than traditional mode of teaching (Stanley, 2012). The project-based learning ap-

proach is developed as a tool to transform classroom in the 21st century.

The Buck Institute for Education (2002) describes the project-based learning as a systematic teaching method of engaging children in learning knowledge and skills through an extended inquiry process. Project has room for children to discovery and creativity. Through project children know how to learn independently as well as become responsible in the society.

Project-based learning aligns with the Confucian saying, "give a person a fish, and you feed him for a day; teach a person to fish, and he'll eat forever". Therefore, through project-based learning children acquire skills of how to get information for the project. Thereby the children learn the process to gather information and finally will become more independent and confident about learning. Thus, the major portion of instruction in schools changed from teacher-directed and teacher-assigned to student-initiated, goal-driven, independent, and knowledge building (Bereiter & Scardamalia, 1993).

Although project-based learning is similar and interchangeable to problem based learning and inquiry based learning, the differences lie in children exercise choice. Project-based learning acts as an umbrella where one can incorporate problem-based learning and inquiry based learning. The differences are elaborated as follows (Table 1):

Table 1

Difference between Problem-based Learning, Project-based Learning, and Inquiry-based Learning

Problem based learning	Project-based learning	Inquiry based learning
I. Generally the problem is prescribed	i. Problems are not specific	i. It involves a lot of choices
ii. Children are given a problem to solve. Children can choose the methods by which they can arrive at the solution	ii. Projects involve simply learning more about a topic and children have more control over the direction of project and project they choose	ii. Learning is open and there is no prescribed target toward which children are heading
iii. It begins with the problem and charges children with finding a solution	iii. It begins with the solution and the children must produce that shows what children have learned. Project-based learning definitely has an end goal in mind.	iii. Inquiry based learning requires more structured in order for children to meet certain requirement and develop as learner although it is valuable in some setting.

Source: (Stanley, 2012)

Project-based learning is intended for applications of enrichment, pullout, whole school, classroom, gifted and normal children, and whole school. The project-based learning model is a child centered learning, where learning is usually done in a small or larger children group of 6-15. It is more appropriate for gifted children (Stanley, 2012).

Research by the Buck Institute for Education (2011) have found that project-based learning can:

i. increase academic achievement on standardized assessment tests
ii. learners master both content and process
iii. increase long term retention of knowledge, satisfaction of teacher and children and skill development
iv. be used to teach economics, mathematics, science, social studies, medical skills and medical subject more meaningfully and effectively than traditional mode of teaching
v. prepare children to integrate and explain concepts better than traditional mode of teaching
vi. enhance life skills such as critical thinking, communication, problem solving, and independent research, etc.

Therefore, the gifted children can be taught best using the project-based learning model. Project-based learning provides gifted children a room to do high quality work, structure their own tasks, and allow children to work to their full abilities and, set their own deadlines (Renzulli, Smith & Reis, 1982; Stewart, 1981).

The literature shows gifted children learned more through project-based learning and retain content more accurately (Stanley, 2012). In project-based learning approach children construct knowledge, meaning and skills through the process of inquiry. There is increased benefit in learning when gifted children are taught through project-based learning (Stanley, 2012). When gifted children work in groups, they develop cooperative learning skills and teamwork to solve problems (Peterson, 1997). Even when gifted children are engaged in project-based learning, they perform better in difficult subject such as mathematics than those children taught using traditional instruction (Grant & Branch, 2005). Gifted children reassemble and create more complex products with deeper understanding (Matthews & Foster, 2005). Project-based learning gives a bunch of responsibility for learning and teaches gifted children the valuable skills of responsibility (Stanley, 2012). Responsibility is crucial for gifted children when they enter the real world. Compared to traditional rote learning, project-based learning helps gifted children learn in more naturalistic way, exploring subjects at their own pace, interest and ambitions.

One of the most valuable things that project-based learning has for gifted children is with choice. The choice is very crucial for the learning process. In traditional teaching the passion for learning diminishes because every aspect of teaching becomes obligatory. According to Stanley (2012), the aspects of learning vary within a project-based learning classroom with choices such as:

i. topics children explore
ii. products children make
iii. types of research children conduct
iv. how children are assessed
v. how children manage their time
vi. whether children work in groups or alone.

With gifted children, Rogers (2002), argue in her book titled Reforming Gifted Education: How Parents and Teachers Can Match the Program to their Child that "…. matching a child's preferences for how she learns with how the curriculum is actually delivered almost certainly will enhance the child's motivation to learn so that attitudes toward school remain positive. Positive attitude and motivation are important if the children want to reach higher achievement(p. 278).

According to Stanley (2012), the project-based learning is the best practice for gifted classroom instruction. It provides

i. project authenticity
ii. children shape curriculum and make product
iii. active learning to solve problems
iv. rigorous communication skills in reading, writing, speaking, listening and presentation
v. practical life skills such as decision making, collaboration, critical thinking and problem solving skills etc.

Characteristics of Project-based learning approach

There are a number of characteristics in project-based learning. Some of the characteristics of project-based learning are children choice, a real world problem, an open ended question, lack of teacher prescribed activities, authentic assignment, children-led constructive investigation, children-driven time management, collaborative learning, children-driven learning, children autonomy, challenge for every student, independent work and unique end products (Stanley, 2012). If such characteristics are missing in the lesson, one may not call it a project-based learning. In addition, if teachers have not mastered the subject content and proficiency in conducting investigation, then the project fails to make children proficient in inquiry and

problem solving (Blumenfeld, Soloway, Marx &Krajcik, 1991). The project-based learning is a systematic teaching method that engages children to learn skills and knowledge through an extended inquiry process with authentic questions and carefully designed tasks and products (Moursund 1999).

Types of Project

According to Sidu (2003), there are two types of project:

a. Individual project, carried out by a single individual.
b. Social project,carried out by a group of individuals.

Keys to a successful project-based learning classroom

Finding the right structure is the key to a successful project-based learning in the classroom. The right structure could be structure that works best for children or teachers for learning. After having a formula, we should not assume that project-based learning would work with every gifted classroom. According to Mathews and Foster (2005), a formula for successful project-based learning is that the teacher should develop an appropriate framework such that learning is scaffold and productive, and there is ongoing monitoring and guidance when project-based learning is undertaken. It is an overwhelming task to find the right project-based learning structure for the gifted. It is also important to find the best fit for classroom and schedule strength of teachers, strength and limitation of children in both individual and groups.

In project-based learning, the gifted children should know what is expected from a project and what to expect of them. Depending on what grade, a teacher can incorporate different subjects into projects. If a teacher decides to incorporate interdisciplinary subject in project-based learning in the classroom, all teachers of particular grade need to collaborate among themselves.

Teacher's role in project-based learning

In an ideal project-based learning approach classroom, the goal of teachers is not to teach. Teacher's role is to guide children, put children on track; at the same time,children should determine what to do, figure out how to learn, what resources are required, how much time to spend, and where to look for resources they need. In project-based learning, teachers give responsibility of task prioritization, time management, learning goal, and product choice to children (Stanley, 2012). In a project-based learning classroom, the source of all knowledge is the children. The role of the teacher is more than that of a coach rather than just being an enforcer.

Part 2

The implementation process of project-based learning approach in the classroom

My role as a teacherin project-based learning

I planned project-based learning approach after identifying possible topics that children could explore through projects. The topics were shared with children to finalize their choices and make changes according to their common interest and goal. All the planning was done during the month of June and the projects were carried out in August 2013.

As children were new to the idea of project-based learning, I briefed on important skills such as collaboration, interpersonal relationship, and respect for ideas, time management, and research that are all crucial for completion of the project.

Since project-based learning approach is based on the constructivist theory,the project allows children to construct knowledge based on their experience, observation and their previous knowledge. To facilitate learning by children through exploration, my role as a teacher changed from someone transmitting knowledge to being a facilitator of learning. Children become more engaged and responsible for their own learning.

As children engaged in their project works, my role was more of a facilitator and a consultant who had to listen to the children's experiences, provide additional information, encourage children, and ask questions (Cohen et al. 2010). I tried to stimulate inquiry in children to ensure their project met the content standards and it is shaped to meet their goals.

Role of parents in project-based learning approach

I shared my plan to implement project-based learning approach with parents during the first parent teacher meeting in the school in April. I informed parents on the new approach and how they could help children in their project in terms of providing materials.

In addition, every week I held meetings with parents to share information on the child's progress and their concerns and observations.

After the completion of the project, a joint review was done with participant parents and teachers. During the review,experiences gained from participating in the project were shared.

Inquiry Process

Pappas and Tepe (2002) describes project-based learning as an investigative process that engages children in answering questions, solving real-world problems, confronting issues, or exploring personal interests.

Phase 1: Answering Questions

After the midterm break, the topic theme "businesses" was discussed in class IX A during the economics period. I presented a set of problems and children were given the freedom to choose and work on it.

I wrote all their ideas on the green board. During the discussion and brainstorming, children expressed their knowledge on different kinds of business. In the process, children discovered that they are interested in Small and Medium Enterprise (SME). Project work is not to force upon the learners but rather it is an option exercised by the children (Stanley 2012). We discussed about the Small and Medium Enterprise in Bhutan. I gathered relevant resources, teaching-learning materials; books and did some homework on project-based learning.

After the school sent letters through children informing their parents on the kinds of books and resources needed to carry out the projects. The children started planning their projects, collecting information and resources for their project.

Phase 2: Solving Real-World Problems

Once the children focused on "SME," I developed activities to encourage discussion and sharing of their ideas. The topic 'SME' made children curious to find out more about SME. I found out that children had a broad knowledge base on SME. Children seemed particularly interested in carrying out the project and I found them starting to discuss on SME.

During the discussion, the children became more curious about SME in Bhutan and raised a number of questions. Some of the questions were: why was SME lagging behind in Bhutan? Why is SME important in Bhutan? How could SME in Bhutan be improved? I listed all the questions on the green board. At the end of the discussion, we came up with learning activities for the project on SME in Bhutan. Children outlined the following topics to study the problem:

Question 1

Small and medium enterprises are cornerstone of economy. And it constitutes a larger share of enterprises in most developed and developing countries. They are major sources of income, revenue and employment.

Study the role of small and medium enterprises in growth of the Bhutanese economy. Analyze the trend of its growth in the past ten years. What are the future prospects and challenges for small/medium enterprises in Bhutan? What measures are recommended for the growth and development of small and medium Enterprises in Bhutan?

Question 2

Classify the small, medium and large enterprises in Bhutan based on investment and turnover.

What is 'entrepreneurs'? What are the challenges faced by women Entrepreneurs in Bhutan? As a policy advisor how would you recommend the Royal Government of Bhutan in overcoming the difficulties and challenges faced by Bhutanese women?

Question 3

Do you think SME plays a crucial role on economy? Justify.

Explain the employment trends in Bhutan since 1960.

The National Labour Force Survey (2006) reflects that unemployment rate have increased from 3.2% in 2006 to 4% in 2009. To combat these issues what are some strategies taken by government to promote and support self-employment and entrepreneurship?

Since the ideal project topic is short and less happening in the classroom (Sidu, 2003),I asked children to draw their initial idea/plan on paper, which would guide their effort in carrying out project on SME. Children shared their ideas in groups.

Phase 3: Exploring Personal Interests

From time to time, I stimulated interest, suggested new information and ideas, alternate avenues of approach and exploration (Cohen et al., 2010).

Children then started working in three groups with Group A and Group B consisting of seven members each, and Group C with six members. Group A chose question 1, Group B chose question 2 and Group C chose question 3. During the process, I observed children proposing their ideas as well as accepting ideas of other members.

Similarly, during review, any changes or inadequacies were attended to. I had consultation with each of the groups during which the progress of the project was reviewed. Groups worked to incorporate changes in their project. After completion of the project, group presentations of the findings were made to the whole class. The children have shown good recall and understanding in their presentations. Children also shared their problems, difficulties and experience while working with friends or in groups. I also came to know that the group composition was not fairly mixed, for instance, Group A had children who are generally high performers and also the large group size hindered full participation of all the members.

After the group presentation, children decided to have an exhibition for their parents and other children to show case their project. I found children further making necessary changes on finishing part of project, presentation in booklet form and labels for the display (Cohen et al., 2010)

During the exhibition, I found the participating parents read documentation of the project. They believe children acquired skill of collaboration, shared responsibility and other social skills. The children gained broad knowledge on entrepreneurship development, entrepreneurship skills, and information and skills to set up small scale business.

Finally, I evaluated the project-based on the criteria as decided in the class. The best projects were kept with me for future references [to carry such project in near future] (Yuen, 2009).

Phase 4: Reflection

Katz and Chard (2000) said that the project approach brings opportunities for children to engage in investigation in addition classroom activities. Learning through project approach is more natural resulting in deeper knowledge and competence. During project I used documentation such as observation and feedback from teachers and children. Therefore, the project allows me to reflect on the learning outcomes.

This project helped children to understand the concepts, technical terms and ideas through writing. The project further motivated children to read books and journals to find answer-to-answer questions that popped up in the project. Project-based learning provides a platform and a purpose for representation of information, ideas, observation, issue and solutions.

In the process of projects, children acquired social skills, exchanged ideas and opinions, shared responsibility, offered suggestions, made corrections, and encouragement. The project provided room for children to use tools for investigation, and observation, and to make comparisons. Or in other words, project enables children to identify the key issues involved in the problems, and to evolve an appropriate policy to overcome or resolve problems (Sethi & Andrews,1999).

Since the teacher acts as the facilitator or guide in project-based learning approach, the children enjoy a high degree of freedom and learn through groups. Such freedom will allow children to facilitate the process of intellectual and emotional development. Children were very engaged in the activities and they were very self-motivated in doing this activity.

Children's view on project-based learning approach

All children learned how to work well in team and how to collaborate in groups. Some children remarked, "the project give them insight to work as a team for progressive learning". They have learned how to learn, and enabledus to be more responsible. One child mentioned, "I guess I have overcome difficulties by respecting opinion of friends, timetables and accomplishing group tasks on time".

Majority of the (75%) of children mentioned that, they have learned to communicate knowledge through writing and presentation. Ten children remarked, they had learned how to organize a report, how to present the materials to the group, teachers and other children. Twelve children remarked that the project helped them to solve problems, gain self-confidence, and to find out how to deal issues. It improved their abilities, motivate learning and help them to understand concept/ issues better.

Children faced a number of problems while doing the project work, one of which is time management. Resource and time management were the main difficulties in the Project. 80% of the children referred to limited time as one of the main difficulties in the project. One child remarked, "Honestly speaking, the time given to us to do the project was not enough I think". The MSS is a day school where 30% of students spend nearly one hour walking to and from the school. 60% of students come from the nearby school campus. Once reaching home, students run domestic errands for the family, besides having to complete homework assigned in other subjects. The nature of the project is such that the students will require to visit institutions outside the school, costing them resource and time. Since most of the institutions that they are required to visit function during the weekdays, students must have found it tough to find time as well as the means, in terms of travel cost to visit institutions of their interest.

Three children found difficulty working in groups since they had joined the school this year and were only adapting to the new environment. Entering a new learning environment and at the same time having to engage actively in a self-directed learning activity would have been difficult for these children. Since the grouping was done by the children, it was found out later that the abilities of children were not distributed well and that affected performance by all groups. The large group size also hindered every member's participation with their full potential. In project-based learning approach, learning becomes more effective if the size of group is small. In some case there was presence of group confrontation, group members hardly cooperated among themselves, some group members were dominant while the final marks obtained by the group were shared by all members irrespective of their contribution. This is a very important observation for me to take into account and plan well for the future.

Parents' view on project-based learning approach

Bhutanese curriculum is centralized and the teaching is teacher centered. This project experience is new to the parents. Till now parents have not heard of such project undertaken in schools. 15% of parents found their children doing project at home, which is no less than homework. The difference is only the length of the completion.

The parent-teacher meeting and review meeting are the forum for learning process. Initially, parents were nervous, excited and lacked confidence in children's learning abilities. One participant parent said, "I am worried about my daughter because she is quiet and reserved. At home she never talked what is happening in the class". Likewise, another parent said, "I was afraid that most of the time my child gives wrong message to us. I was also afraid that I might give wrong information, books and learning materials. And he might lose the learning opportunities in the school".

All participant parents agreed that project enhanced the children's learning. In project-based learning,children usually have a sense of ownership. Thus most parents found that their children took it seriously. Parents felt their children are truly contributing information and carrying out project meaningfully in the classroom. "In the past my son was quiet and reserved. I was surprised to see that he was an active member in carrying project on SMEs. My wife and mother in-law found him excited and nervous at the beginning of the project. At the end of the project he is talking about the project all the time. I think children have done awesome job".

During review meeting, one parent's comment recorded says "the project is an opportunity for children to learn and put their ideas, feelings, efforts, thought and time together in order to solve the problems". All participants found their children

have benefited from the project. It has improved the writing skills, knowledge, interpersonal skills, improvements in learning motivation and knowledge in social relations. Children are more confident in sharing and presenting their ideas/information.

One parent mentioned that, the project was valuable for her child. The project taught her to study in-depth real-world issues, and enhanced her investigation, and negotiation skills. Although she found children find it hard to manage appropriate time to do their work, children seem to be excited to meet their team members and work on their project. The project exhibition is a good opportunity to display the hard work of children. It's always good, proud and fun for parents to see what their children are learning in the school. In addition, 70 percent of parents felt that that the project is also a means to enhance daily communication and interaction between children and parents.

Three parents mention that, they enjoyed being with their children and teacher. The parents also could not stop talking about the daily progress of the project and what was happening every day in the classroom. The project made these parents too close and involved with children. In all, this project is trustworthy, valuable and meaningful for parents and children.

Majority of the (90) participants [parents] commented the project has developed a good relationship between teacher and parents. Parents are confident in dealing with children because of the good relationship and meeting between parent-teachers. A parent said "the project developed a closer link with the class teacher, school, and made my daughter happy for participating in the project".Project is a great way to involve community and parents in educational process. Some participants made positive comments on the project "brilliant," and "very informative". One parent remarked, "I think children become more responsible. They learn to work on their own with less assistance from the teacher and parent".

Among all the participants, two parents felt the project is bit stressful. These two parents are overloaded with office work, and get limited time to involve in children's project. Parents reported of not understanding the technical language of the subject matter. One parent remarked, "It's frustrating. I don't know how to support the children. There's not enough time".Overall both parents still enjoyed the project despite limitation.

According to Edwards, Gandini and For man (1995) the interest of parents in children's work help strengthen parent-child discussion and deepen parents' understanding of the nature of learning.

Teachers' view on project-based learning approach

Of the two participant teachers, one participant teacher remarked,"it is challenging to carry out project-based learning approach in classroom. There is not enough time to do such activities in Bhutanese classroom. Moreover, it is really difficult to support the children's thinking and motivations and need frequent negotiations with children. Sometimes I became too flexible for learning and I felt lost in the project. The project demands active participation of the children and teachers".

Other teacher said, "Project provides an opportunity for the learners to acquire knowledge through work and practical experience. This makes learning a memorable and an enriching experience. This idea is highlighted in the saying; "I hear and I forget, I see and I remember. I do and I understand". The participant teacher also highlighted the following as the challenges he faced while using project-based learning approach in the classroom:

i) Time consuming

Most of the children found greater workload, insufficient support from the teachers, and more responsibility with limited time to complete a task. Children are uncertain and are not motivated about project-based learning approach and prefer the traditional learning approach. Project-based learning approach needs more time for planning, implementing and reviewing. Some children are bogged down with more work than other members.

ii) Limited resource

The main aim of project-based learning approach is to help children learn. Due to limited resources and lack of definite answer in the project, most of the children and teacher are unfamiliar with the process.

iii) Ambiguity

As the ideal project-based learning approach is absent in Bhutanese schools, I found most children are not clear about the objective of lesson and the standard of work required in project. In absence of careful planning and assessment, the use of project in Bhutanese classroom will be unsuccessful.

iv) Completion of syllabus

Since Bhutanese curriculum is teacher centered and exam oriented, it is not wise to let children go out of control and allow the children to work on their own in the classroom. The completion of syllabus is hampered if project based learning approach was used.

My reflection on the project-based learning approach

This is the first project I have carried out so far in my nine years of teaching. Personally as a teacher, project-based learning approach is new for me although I have learnt project-based teaching strategy at erstwhile National Institute of Education. The SME Project is a doable approach and the experience has been enriching for my children and me. This study has given me confidence and insights to engage in similar studies in the future. I will be using project-based learning approach henceforth.

I realized it's time for us to focus more on learning based strategy than teaching based strategy. I also felt it is time for us to change the curriculum. I never believed in learning until I tried this approach with children. The project-based learning approach is more demanding but more rewarding too.

In project-based learning, children become more motivated, and take the ownership of learning. The project-based learning approach has provided many challenges and opportunities to use different skills, concept and terminology. Children use different skills such as writing, reading, and problem solving, and interpersonal relationships. Children have learned a lot by working in groups and sharing ideas. I am pleased and confident to carry out project-based learning approach in near future. I hope the children can apply their gained knowledge in different fields in near future.

Literature argues that ideal project stimulates children's intellectual, social, and problem solving skills, to lead a satisfying and complete life in near future. I strongly believe that the collaboration between parent and teacher in the children's learning will enhance learning outcomes.

In the beginning,I was bit doubtful about the parents' involvement and children's abilities. I was not sure how children will construct knowledge and be able to motivate children to learn. The idea of involving parents gave me full support to carry out this project-based learning. The parent–child discussion and interaction enhanced the child's curiosity of searching, and inquiring the project. The collaboration and facilitating between teacher and parents made learning more fruitful than teaching only at school or home. During meeting I shared my feelings, information, observations with participant parents for the better understanding of project-based

learning approach.

I am glad that I have completed the project-based learning approach on SME. Now I have gained a better understanding on the ways and means to support children while carrying it out in the classroom.

Conclusion and Recommendation

Overall,the children, parents and teachers value project-based learning approach to be promoting authentic learning. The use of project in teaching economics has brought real life experiences to children. This approach helped foster collaboration, working for a common goal, team spirit, and resourcefulness in children. Children also learnt to do proper planning, communication, building consensus, remaining focused and meeting deadlines. They learnt use of power points, preparing presentations and doing presentations of their work. On my part the study has helped me understand more about project-based learning approach; it requires a teacher to be adaptable, and it is important for a teacher to remain engaged in the students' work. It helped me understand my children and their potential. I have experienced that comparing to traditional teaching learning methods, project-based learning approach helps children learn in more naturalistic way, exploring subjects at their own pace, interest and ambitions.

I recommend teachers to incorporate at least one project-based teaching in their subject areas in an academic year. Teachers can implement project-based learning approach after children have acquired basic knowledge about the approach. Schools should make it mandatory for teachers of higher classes to assign project works to students. Schools should also institute a forum for students to share their project works.

Limitations and implication of the study

This paper has limitations: it uses small sample size, limited number of children, teachers and parents participated in the study. Therefore, the findings cannot be generalized.

The paper has several implications for school in Bhutan. Schools can now adopt and incorporate project-based learning approach in teaching learning process. Children, parents and teachers can all benefit from the project-based learning approach. It enhances creativity and problem-solving skills of children and foster teacher competency in the 21st century.

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Effects of Using Rubrics on the Learning Achievement of Students in Educational Assessment and Evaluation

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Abstract

The quantitative study was designed to examine the learning achievement and the opinions of the freshmen students towards rubric usage in Educational Assessment and Evaluation module. The study was an experimental research and used two groups: pre-test-post-test design. The study was carried out in one of the colleges under the Royal University of Bhutan with 120 students from 4 sections of first year. Through cluster random sampling, 2 sections of students for the control group and the experimental group were selected out of 4 sections. Each section had 30 students. The students in the experimental group were taught using rubrics and the students in the control group were taught using a traditional method. Instruments such as achievement test and survey questionnaire were used to collect the data. The quantitative data collected from the achievement test and questionnaire were analyzed and interpreted using inferential statistics t-test with $p<0.05$ level of significance, mean and standard deviation. The data analysis of test scores revealed that the overall mean for the post-test for the control group was 19.67 and for the experimental group was 25.4,which indicated that the learning achievement of the students who were taught using rubrics was higher than the students who were taught using a traditional method. The overall mean for survey questionnaire was 4.76 out of 5, which showed that students in the experimental group had positive opinions towards rubric usage in Educational Assessment and Evaluation. The findings showed that rubrics enhanced students' learning achievement and they had positive opinions towards rubric usage in Educational Assessment and Evaluation.

Key words: rubrics, educational assessment,evaluation

Introduction

In recent times, higher education has begun to shift from an emphasis on the traditional paradigm of testing knowledge and teacher-centered learning to a paradigm characterized by active, student-centered learning and thoughtful deliberative assessment (Howell, 2011).The shift from summative assessment to formative assessment has taken place in many developed countries and the scoring rubrics has emerged as a formative assessment model for teaching learning, and assessment (Mc Millan, 2013). A rubric is one of the tools to assist students as they engage in self-regulated learning process. Self-regulated learning is a student driven process in which a student reflects on the attributes of his or her own work, analyzes how well his or her work meets the stipulated criteria, and revises to meet the criteria. Wolf and Steven (2007) define rubric as a scoring tool used to evaluate students' performance in a

given outcome area based on a list of criteria describing the characteristics of products or performances at varying levels of accomplishment. The word 'rubric' is derived from the Latin word "Rubber", which means "Red". During the medieval period, rubric was a set of instructions attached to the law and was written in red (Renjit, Geroge, Renu, & Souza, 2015). Thus,a rubric is referred to something that is used to authoritatively guide people. A rubric divides the assigned work into separate components and provides clear description of characteristics of work associated with each component at varying levels of mastery. The criteria and the performance-level descriptions in a rubric help students understand what the desired performance is and what it looks like (Brookhart, 2013).

In a student-centered approach, a rubric could be shared with the students in order to support their learning (Jonsson, 2008; Jonsson & Svingby, 2007). Reddy and Andrade (2010) found that rubrics aren't just for grading. They can be used as teaching tools as well. When used by teacher as a part of formative assessment, rubrics can help students understand both the holistic nature and /or specific analytics of learning expected, level of learning expected, and then make decision about the current level of learning to inform revision and improvement. Rubrics are increasingly gaining recognition as valuable tools in teaching and learning in higher education (Bharuthram, 2015). Empirical evidences in rubrics studies show that using them can make both learning and assessment reliable (Jeong, 2015). Used widely in the USA at school level, rubrics are increasingly being accepted in higher education as well. Reddy and Andrade (2010) stated that research on the relationships between rubrics and self-regulatory behavior in students in higher education would be illuminating. Similarly, the use of a rubric as an assessment and formative evaluation tool, oriented toward learning and the acquisition of competence is spreading in universities along with learning-centered teaching model, largely promoted by the European Higher Education Area (Martinez-Figueira, Tellado-Gonzalez, & Raposo-Rivas, 2013).

Lecturers hardly use rubrics in teaching and learning. Some who use assessment criteria do not articulate what counts when they give grades which leadsto inconsistent assessment of student performance across modules. Seldom rubrics are provided to students and they are not involved in the development of rubrics. Therefore, they rarely address the qualitative issues of learners' progress. Lecturers often use lecture method which neither facilitates nor empowers learners' autonomous study-skills and lifelong learning skills(Trilling & Fadel, 2009). As a result, students lack initiative and problem-solving skills because they have not been trained to search for data by themselves (Samah, Jusoff, & Silong2009). They rely on lecturers to decide what, when and how to learn. Continuous spoon-feeding students in higher education perpetuates the issue of stifling their creative thinking and independent

learning.

Using rubrics as an instructional approach facilitates or empowers learners' autonomous study-skills which leads to lifelong learning. The learner-centered approach using rubrics encourages independent learning where learners are responsible for their own learning. The use of rubrics can be another skill for survival in 21st century where knowledge is abundant. The approach can further enhance learning by doing, critical thinking, analyzing power and organization. Rubrics improve students' quality of work through self-assessment and feedback. Rubrics also guide, monitor, facilitate and scaffold students while they are engaged in learning. Based on the advantages of rubrics discussed in his section, they can be regarded as the most appropriate method for teaching, learning and assessment of students. Since not many studies have been conducted on using rubrics in learning especially in Bhutan, this study was designed to examine learning achievement and opinions of first year students towards rubric usage in Educational Assessment and Evaluation module.

Materials and methods

A quantitative approach was used for the study. It was aimed to find out the learning achievement and opinions of first year students towards rubric usage in Educational Assessment and Evaluation. The data were collected through pre-test, post-test and survey questionnaire. The population of the study comprised of 120 students from 4 sections of first year students in one of the colleges under Royal University of Bhutan. The cluster random sampling was used to select 60 students from 2 sections out of 4 sections of first year students. One section was used as an experimental group and the other as a control group. Each section had 30 students. The two types of rubrics were analytical and holistic rubrics which were designed and used in the lesson to study the effects of using rubrics on the learning achievement of students. In the experimental group, the researcher introduced rubrics to the students and then taught how to use them to learn Educational Assessment and Evaluation concepts. The researcher provided students with rubrics along with the topic. Students learned the given topic using rubrics. The rubrics had the description of expected outcome of the given topic. They guided the students to achieve the expected learning outcomes. Teacher facilitated, monitored and scaffolded the students when they were learning the given topic using rubrics. Teacher made resources such as internet, textbooks and journals available to the students.

The control group was taught in a traditional way using a lecture method where teacher used power-point presentation, textbooks, and board to teach the students. Pre-test and post-test were conducted in both the control group and the ex-

perimental group to collect the data. Thirty multiple-choice questions were prepared from unit two of Educational Assessment and Evaluation course book. Twenty survey questionnaires using five-points Likert scale were prepared based on rubrics used in Educational Assessment and Evaluation and administered once to the experimental group to investigate their opinions towards rubric usage.

Comparative statistical analysis was done using paired sample t-test and independent sample t-test to analyze the data collected from pre-test and post-test. A comparative statistical analysis using paired sample t-test was done within the group. Comparison of pre-test and post-test scores of two groups was done by conducting independent t-test to assess and compare the learning achievement between the control group and the experimental group. The inferential statistics t-test with $p<0.05$ level of significance, the mean and standard deviation were used to infer the results in this study. The total average mean and standard deviation were computed for questionnaires on students' opinions towards rubric usage and presented in the form of tables and figures.

Result

Result Analysis of Test Scores (Learning Achievement test)

1. Comparison of pre-test and post-test scores within the group(paired sample t-test)

Table 1

Comparison of pre-test and post-test scores within the group (the control group and the experimental group).

Group	Test	Mean	Mean Difference	Standard Deviation	Sig. (2 tailed)
Control	Pre-test	7.03	12.64	2.25	0.000*
	Post-test	19.67		2.76	
Experimental	Pre-test	7.10	18.30	2.43	0.000*
	Post-test	25.40		1.61	

* Significant ($P<0.05$)

The comparison of pre-test and post-test scores within the group was done by comparing mean, standard deviation and significance value (p) as shown in Table 1. The mean of the pre-test and post-test of the control group were 7.03 and 19.67. The mean of pre-test and post-test of the experimental group were 7.10 and 25.40 respectively. The mean difference of pre-test and post-test of the control group

was 12.64 and the mean difference of pre-test and post-test of the experimental group was 18.30. The significance value (p) for both the group was 0.000 which is lower than 0.05($p<0.05$). This means that there was a statistically significant rise in students' scores in the post-test when compared to the students' scores in the pre-test in both the control group and the experimental group.

2. Comparison of pre-test and post-test scores between the groups (Independent Sample t-test)

Table 2

Comparison of pre-test and post-test between the group (control and experimental groups).

Group	Test	Mean	Mean Difference	Standard Deviation	Sig. (2 tailed)
Pre-test	Control	7.03	0.07	2.25	0.91
	Experimental	7.10		2.43	
Post-test	Control	19.67	5.73	2.76	0.00*
	Experimental	25.40		1.61	

* Significant ($p<0.05$)

Table 2 shows that the mean difference in the pre-test of the control and the experimental group was 0.07 and the two tailed significance value (p) was 0.91, which is higher than 0.05 ($p>0.05$). This indicates that the test score in the pre-test for both the groups were not statistically significant. This shows that students in both groups had an equal learning ability before the treatment.

The mean difference of post-test between the control group and the experimental group was 5.73 and significant value (p) was 0.00 which was lower than the significant value $p<0.05$. This indicates that there was a statistically significant difference in post-test scores between the control group and the experimental group. This shows that the test scores in the post-test for the experimental group were significantly higher than the test scores of the control group in the post-test. As expected by the researcher, students in the experimental group who were taught using rubrics performed better than the students in the control group who were taught using a traditional method.

Analysis of the Survey Questionnaire

Table 3

Illustration of the mean, standard deviation and students' level of opinions towards rubric usage in Educational Assessment and Evaluation.

Sl. No		Mean	Std. Deviation	Level of Opinion
A	**Opinion on Interest**			
1	Learning educational Assessment and Evaluation with rubrics is fun.	4.67	.498	Strongly Agree
2	I like the assessment tool-rubrics.	4.80	.407	Strongly Agree
3	I enjoyed learning Educational Assessment and Evaluation with rubrics.	4.87	.346	Strongly Agree
4	Rubrics makelearning interesting.	4.77	.430	Strongly Agree
5	I like learning with rubrics.	4.87	.346	Strongly Agree
	Total	**4.79**	**.405**	Strongly Agree
B	**Opinion on Guidance**			
6	Rubrics guided me while learning.	4.73	.450	Strongly Agree
7	I became an independent learner with rubrics.	4.80	.407	Strongly Agree
8	I understood the Educational Assessment and Evaluation concept more clearly with the help of rubrics.	4.77	.430	Strongly Agree
9	I became more responsible for learning with rubrics.	4.73	.450	Strongly Agree
10	My performance improved after using the assessment tool-rubrics.	4.73	.450	Strongly Agree
	Total	**4.75**	**.437**	Strongly Agree
C	**Opinion on Confidence**			
11	I am confident in learning Educational Assessment and Evaluation concepts with rubrics.	4.63	.490	Strongly Agree
12	I learn better with rubrics.	4.87	.346	Strongly Agree

13	I get good grades in Educational Assessment and Evaluation when rubrics are used.	4.67	.479	Strongly Agree
14	I can perform better if there are rubrics.	4.77	.430	Strongly Agree
15	Learning Educational Assessment and Evaluation concepts are easier with rubrics.	4.67	.479	Strongly Agree
	Total	4.72	.445	Strongly Agree
D	**Opinion on Feedback**			
16	Feedback from my teacher improved my learning.	4.77	.430	Strongly Agree
17	Feedback were specific to the criteria used in the rubrics and very helpful.	4.77	.430	Strongly Agree
18	Feedback motivated me to learn more.	4.77	.430	Strongly Agree
19	Feedback improved my performance in Educational Assessment and Evaluation.	4.83	.379	Strongly Agree
20	Feedback were given immediately by teacher and helped us learn a lot.	4.70	.466	Strongly Agree
	Total	**4.77**	**0.43**	Strongly Agree
	Total Mean for all components	**4.76**	**0.429**	Strongly Agree

Source: (Choden, 2012, p.12; Mc Millan, 2013, p.61; Miller, Linn & Gronlund, 2009, p. 351; Garcia-Ros et al., 2012)

Level of opinion: 1-1.50 strongly disagree, 1.51-2.50 disagree, 2.151-3.50 undecided, 3.51-4.50 Agree, 4.51-5.00 strongly Agree.

The total mean for all components (interest, guidance, confidence and feedback) was 4.76 out of 5 as shown in Table 3. This indicates that the students' level of opinion towards rubrics usage in Educational Assessment and Evaluation falls in the (Strongly Agree) category on the Likert scale. This indicates that students in the experimental group had positive opinions towards rubric usage in Educational Assessment and Evaluation. The data analysis of students' opinion questionnaires also showed that majority of the students strongly agreed that rubrics used in Educational Assessment and Evaluation enhanced their interest, provided guidance and feedback, and boosted their level of confidence in learning Educational Assessment and Evaluation.

It is concluded that students had positive opinions towards rubric usage in Educational Assessment and Evaluation.

Discussion

a. Learning Achievement Test

The finding from the analysis of students' achievement tests showed that there was no significant difference in the mean score of the students in the control and the experimental group in the pre-test before giving the treatment. However, there was a significant difference in the mean score in the post-test for both the control and the experimental groups. The post-test mean score of the experimental group was significantly higher than the post-test mean score of the control group. This indicated that the students in the experimental group performed better than the students in the control group. The researcher concluded that rubrics used in Educational Assessment and Evaluation enhanced the learning achievement of students.

The findings of this study were consistent with Uddin's (2014) finding that rubrics has a significant impact on students' academic performance. The finding was also congruent with Jonsson (2014) and Howell's (2011) finding that rubrics contributed to a solid academic performance by playing a substantive role in positively impacting academic performance. It was also similar to Panadero and Jonsson's (2013) finding that rubrics has the potential to influence students' learning positively after analyzing 21 studies on rubrics. However, Pinto and Santos (2006) argued that an exclusive use of assessment rubrics may not help achieve effective learning outcomes and that there was a need to move beyond basic usage to a more innovative approach that guarantees students the experience of ownership. Egodawatte (2010) expressed that conducting training and guidance on the use of rubrics will help reduce the discrepancies, and intrinsically motivate students to use them for learning. Andrade (2001) had also shown that just providing a rubric to students was not consistently associated with better performance, and concluded that students must engage deeply with rubrics, perhaps by co-creating them and using them for self and peer assessments, as students did in the Reitmeier, Svendsen, and Vrchota's(2004) study.

The possible reasons to account for such significant gains in the test scores in the experimental group could be due to immense implication of rubrics on students' academic performance. Students used rubrics to support their own learning and academic performance. Using rubrics helped them to focus on their effort, produce work of high quality, earn better grades and felt less anxious about the given task (Andrade & Du, 2005). Another reason for the significant increase in the test scores

was due to shift in traditional paradigm of teacher centered teaching to a paradigm characterized by active and student-centered learning. Use of rubrics in the classroom had changed the role of teacher to a mentor and students as discoverers of their own new knowledge. The learner- centered approach using rubrics encouraged independent learning where learners were responsible for their own learning. The other reason for better performance by the experimental group was due to several learning theories associated with rubrics used in the module. Learning using rubrics was based on self-regulated learning theory, constructivism and behaviorism. Rubrics assisted the students in managing their thoughts, behavior, and emotion in order to successfully navigate their learning experience. Cheng and Huang (2014) also agreed that self-regulated learning had positive effect on students' academic performance. The integration of rubrics in Educational Assessment and Evaluation had also supported constructivist theory of learning where learners actively constructed their own knowledge using explicit criteria listed in rubrics. Other studies also supported that constructivist learning enhanced student's academic performance (Akanwa & Ovute, 2014; Qarareh, 2016). The feedback provided by rubrics is based on the Behaviorist theory of learning which believes that learners get motivated to learn when they receive positive feedback. The motivation fostered students' learning. This was supported by Gbollie and Keamu's (2017) finding that motivation had a significant impact on students' academic performance.

b. Survey Questionnaire

All statements under the four components of opinion were rated above 4.51 which falls in strongly agree category. This is because students found rubrics as a valuable tool in teaching and learning in higher education. Students' response to the statement 'I am confident in learning Educational Assessment and Evaluation concepts with rubrics' was rated the lowest from the 20 items. A possible reason could be time constraint because this study was carried out for only four weeks. Since students were using rubrics for the first time, it was not easy to gain confidence in a short period of time. However, the total mean for all the components (interest, guidance, confidence and feedback) was 4.76 out of 5 which falls in the (Strongly Agree) category on the Likert scale. This indicates that students in the experimental group had positive opinions towards rubric usage in Educational Assessment and Evaluation. This finding of the study was supported by Eshun and Poku (2013) who concluded that in terms of studio based learning, 86% of the students had a positive perception on the use of rubrics for they supported learning process but Andrade and Du (2005) reported that students not only had a positive perception towards rubrics but they also agreed that rubrics supported their academic performance in the contexts of

providing feedback, guidance and generation of interest. In Raposo-Rivas' (2016) study, almost one in three students (72.4%) was satisfied with the use of rubrics in their learning. Similarly, Kulprasit (2016) also found that students showed a positive attitude toward the writing rubrics when they were used as assessment for learning in English as Foreign Language (EFL).

The possible reasons for students' positive opinions towards rubrics usage could be because of learner autonomy, guidance and less anxious learning environment created by rubrics. Like in Moni and Moni's (2008) finding that the rubrics were strongly favored by students, majority of the students in the experimental group strongly agreed that rubrics used in Educational Assessment and Evaluation enhanced their interest, provided them guidance and feedback and they gained confidence while they were learning Educational Assessment and Evaluation concepts. Another reason why students had positive opinions towards rubrics could be because they understood their value. That's why they had rated all the statements above 4.51.

Conclusion

The data analysis of learning achievement test revealed that students in the experimental group who were taught using rubrics performed better than the students in the control group who were taught using a traditional method. The data analysis of survey questionnaire showed that students had positive opinions towards rubric usage in Educational Assessment and Evaluation. This finding indicated that students strongly agreed that rubrics used in Educational Assessment and Evaluation enhanced their interest, provided them guidance and feedback, and boosted their level of confidence in learning the module. The result of the study was also consistent with previous researches done on similar topics.The study concluded that rubrics enhanced students' learning achievement. Further students had positive opinions towards rubric usage in Educational Assessment and Evaluation. Therefore, rubrics had positive effects on students' learning achievement in Educational Assessment and Evaluation.

Implications and Recommendations

1. Since the study indicated that teaching Educational Assessment and Evaluation module using rubrics enhanced learning achievement and also students had positive opinion towards rubric usage, the Royal University of Bhutan lecturers may use rubrics as an instructional approach in other modules as well.

2. It is crucial that students take part in the creation of the rubric. Students' involvement in the development of rubrics may empower them to be more engaged

and active in their own learning. Collaborative creation of rubrics can hopefully address students' difficulties in understanding the expectations of the teacher which can result in improved learning outcomes (Marie, 2013).

3. The Royal University of Bhutan could train lecturers in using rubrics in teaching, learning and assessment.

4. Notion of rubric as an only assessment tool should be corrected among the lecturers and teachers.

5. Further research may be carried out to find the dimension of how the use of rubrics influences students' attitudes and self-regulation behaviours.

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BOOK REVIEW

Tuesdays with Morrie

SONAM ZANGMO

Abstract
The review of the book, 'Tuesdays with Morrie' discusses the author and his achievements in the field of literature. The review consists of a critical analysis of the theme, setting, and characters in the book. It also reflects the reviewer's personal interpretation and meanings of the events depicted in the book. It highlights significant features of a unique narrative style adopted by the author.

Key words: Narrative, Amyotrophic Lateral Sclerosis, Personal-transcendence, Foreshadow

Author of the Book

Mitch Albom is an international renowned and best-selling author, journalist, screen-writer, playwright, musician, and radio and television broadcaster. His books have collectively sold more than 35 million copies worldwide. His works have been published in 49 territories and 49 languages around the world. He is also the author of the international best sellers such as, The Five People You Meet in Heaven and For One More Day, as well as eight other books. His works like The Five People You Meet in Heaven, Have a Little Faith, For One More Day, and Tuesdays with Morrie have been adapted into critically-acclaimed movies. He lives with his wife, Janine, in Michigan, USA.

Introduction

Tuesdays with Morrie by Mitch Albom was first published in 1997. The story was later recreated by Thomas Rickman into a television movie of the same name by Mick Jackson, which aired on December 5, 1999, and starred Jack Lemmon and Hank Azaria. The book examines the interaction and phenomena between the human experience of living and dying. A theme of personal transcendence occurs for both the characters, Morrie and Albom.

The book allows the readers to get in touch with the softer side of their lives as it narrates about the final lesson between a college professor, Morrie, and one

of his long lost students who is the author of the book, Mitch Albom. It compels the reader to stop and reflect on what is important in life. It provides new insights into how one can actually figure out what is important in life. In addition, it also conveys the message of how to strike a balance between living and dying, and to accept life and death as the ultimate phenomena of nature.

This book will be most relatable to those, who like Morrie, are coming to an immediate term with ones' own mortality and draw inspiration from his personal story.

Mitch, who was Morrie's student sixteen years ago, by chance learns that his favorite professor Morrie, is dying from Amyotrophic Lateral Sclerosis (ALS). Amyotrophic Lateral Sclerosis is a group of rare neurological diseases that mainly involves the nerve cells (neurons) responsible for controlling voluntary muscle movement. The disease is progressive and gets worse over time. Getting to know this tragic fact, Morrie gets to philosophize about life and Mitch once again takes up the role of his student. Along with Mitch, the readers also become Morrie's students this time round.

Summary

Tuesdays with Morrie is the final lesson between a college professor Morrie and one of his long lost students and the author of the book, Mitch Albom. After seeing his professor in an interview on the show "Nightline," the author is reminded of a promise he made sixteen years ago to keep in touch with him. Now stricken with ALS, Morrie does not have much time left and Mitch knows this fact. He travels from Michigan to Massachusetts to meet him. The meeting goes well and affects Mitch and Morrie so much that they meet for the next fourteen consecutive Tuesdays until Morrie passes away. During each of these meetings, they discuss a variety of topics such as death, love, culture, marriage, regret and the world. They talk about almost everything under the sun. While reading, the reader will experience a variety of emotions, ranging from happiness to sadness and most likely end up in tears. It will make the reader think about his/her own live and ponder on related issues like aging, forgiveness, family, compassion, and mentors in life, just as Mitch Albom does throughout the book.

Commentary

I love how the concept of foreshadowing the author has adopted to prepare the readers for the events that take place in the book. It is written in a narrative style. Mitch Albom did justice in writing one of the best narratives as readers could easily visualize every event in detail. The best part of the book is that, it forces the reader

to take a break from reading a few pages to let the words sink in, thereby impacting the reader's heart. With no jargons, the language used is simple.

The setting, theme, and characters of the book are easy to follow. The setting is relatable to our own experiences of graduation during which we also cherish our beloved teachers. If we reflect on our own we hardly get time to reconnect with our high school and university friends and teachers after graduation. It is very difficult to find time from our busy schedule as life gets busier in the world of work. Every one of us has a teacher or teachers, who has or have made a great impact in our lives just as the author had it with his university professor, Morrie. He spends every Tuesday of the week with his professor, thus the title of the book, 'Tuesdays with Morrie.' The theme of the book revolves around things which we tend to take for granted. Those taken-for-granted things in life are discussed and covered eloquently in the conversations between Mitch and Morrie. It condenses all the key messages of life in a truly beautiful and heartwarming manner. The characters are inspiringly depicted as a dying old professor and a young man, who wants to learn life lessons from the former during his last few months. Though both of them are aware of death lurking around, yet not even a tinge of fear and regret are displayed by either of them.

Recommendations

This book is for people of all ages. It is amazing from start to finish. The old readers will be able to relate with Morrie and might also help to accept death with grace. The young readers will find themes discussed in the book helpful to view life from an entirely different perspective. Every reader would definitely try to reach out to their teacher to thank them for all the lessons taught to them, upon the completion of reading this book. Every learner needs to read this to empathize with teachers and view them as a mere human being and every teacher should read this to realize that even the smallest things or events can bring positive change in their student's lives. Since Samtse College of Education is a teacher training college, I would urge the student-teachers and faculty to read this book as it is one of the must-read books. It is a life-changing book or even an attitude-changing one as reflected in the following lines from the book:

> "So many people walk around with a meaningless life. They seem half-asleep, even when they're busy doing things they think are important. This is because they're chasing the wrong things. The way you get meaning into your life is to devote yourself to loving others, devote yourself to your community around you, and devote yourself to creating something that gives you purpose and meaning."

About the Reviewer

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