A Study on Effectiveness in Learning Sampling Design through Interactive Slides among Students' in UiTM Machang.

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Abstract: Research is conducted to infer or generalize research objectives from a sample to a larger population. Statistical methods is used in order to accomplish the process of inference, where a sample is selected as an unbiased representative from the population. The result for research (reading subject) performance were the lowest reading rates (78.4%) compared to other Southeast Asian neighbors. This is due to the weakness of teaching and learning (P&P) techniques. Mind mapping techniques were used to overcome the weakness. This research focuses on using interactive slides as a tool to help in drawing the student's interest. Therefore, Sampling Design topic was used as the content of interactive slides. Two groups were used in this research. The result for the group that used interactive slides were positive result (93%) as compared to group that were not using interactive slides (7%). Overall, all the students agreed that the slides arrangements are clear, organized and easy to understand. More than 50% of the students agreed that the slides help them to increase their interest on the subject. As a conclusion, all students were satisfied and strongly satisfied with the interactive slides provided in the teaching and learning (P&P) process.

Keywords: Teaching and Learning (P&P), Mind Mapping, Interactive Slide, Sampling Design

1. Introduction

Reading skills have becomes essential element in making Malaysia as industrial developed country by year 2020. Malaysia has made many conscious efforts to improve and develop literacy so that it will achieve a literacy rate of 100% by the year 2020. It has becomes the mandatory subject that need to be mastered for each students because every field work applied reading for every level. Unfortunately, the result gained from UNESCO (1993) states that Malaysia then had one of the lowest reading rates (78.4%) compared to her other Southeast Asian neighbours. This situation is due to the weaknesses of teaching and learning (P&P) techniques that are still using routine practices such as textbooks, lecture notes and exercise notes. As a result, the topic becomes unattractive and students lose focus hence students' performance were affected (Abd. Aziz Abd. Talib, 2007).

Therefore, one of effective approach that to help student understanding in teaching and learning (P&P) is mind mapping techniques as said by Edwards, S. and Cooper, N. (2010), Ismail, M. N., Jalil, K. A. (2009) and Mohd Mahzan, A., Abdul Razak, A., and Mohd Muhaimi, A., R., (2014). Mind mapping techniques can be use critically, for interpretation, and relate one event with another for certain purpose. Furthermore, it will increase students' intellectual as well as rational, critical and creative thinking (Kementerian Pendidikan Malaysia, 1992).

Based on student centred learning (SCL), mind maps was a popular tools among student that increase their interests hence increase their performance (Siti Noor Asyikin, M., R., Suliadi Firdaus, S., Norazman, A., (2015); Seyihoglu, A., & Kartal, A., 2013). One of teaching and learning (P&P) techniques that uses mind mapping as tools to increase effectiveness is interactive slides.

2. Method

This research focuses on using interactive slides as a tool to help in drawing the students' interest. Therefore, sampling design topic in Fundamentals of Research (STA220) has become the major focus in using the interactive slides. This topic covered here include probability sampling, nonprobability sampling and type of errors in selecting the sample. The lecture notes will explain details in each slide. As an interactive slide, the user will easily go and back to another note with one click. This interactive slides of sampling design consists of 10 major slides which are the front page, learning outcomes, introduction, types of sampling design, types of error, quizzes, exercises, insight video, glossary and conclusion.

Figure 1 shows the front page of sampling design slide, which include all the details including notes of related subtopic in sampling design.

Figure 1: Front Page of Sampling Design

Figure 2 and Figure 3 showed the slide about the introduction to research and learning outcome as an overview for the whole topic including video of sampling design.
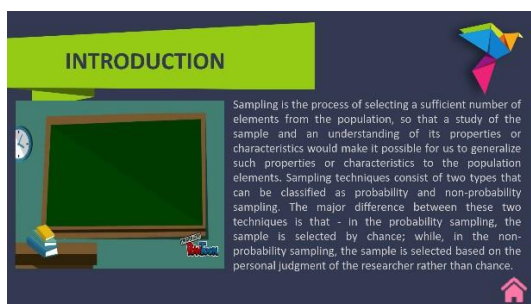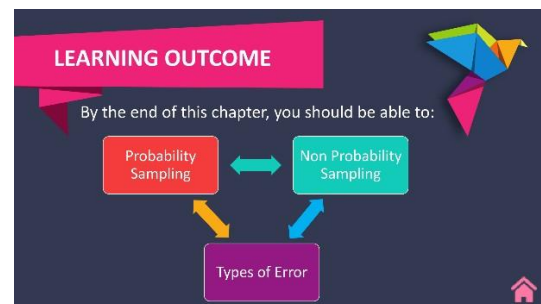

Figure 2: Introduction

Figure 3: Learning Outcome

Then, one of the novelty of the sampling design interactive slides is shown in Figure 4 and Figure 5. The novelty is that, for each topic, the summary is represent in infographic slide template form.
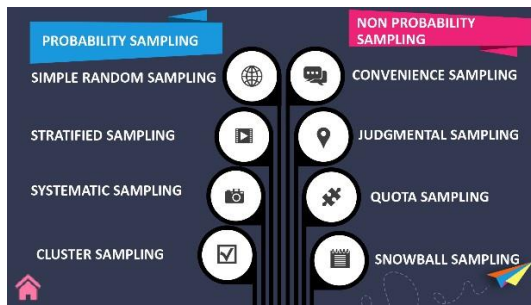
Figure 4: Type of SamplingDesign   Figure 5: Type of Error

The second novelty of the sampling design interactive slides are the Quiz form and Exercise form that being build using i-spring software showed in Figure 6 and Figure 7. This quiz is provided as an exercise for students in students' centered learning. Then, the marks of quiz will automatically sent to lecturer's email so that students' performance can be tracked and evaluated. Thus, students' performance can be monitored. The exercise form was built to train students to be ready and as an exercise before they submit the quiz.

Figure 6: Quiz   Figure 7: Excercise

Furthermore, students also can view another video on this topic in insight video and understanding the definition in glossary provided in Figure 8 and Figure 9 respectively.
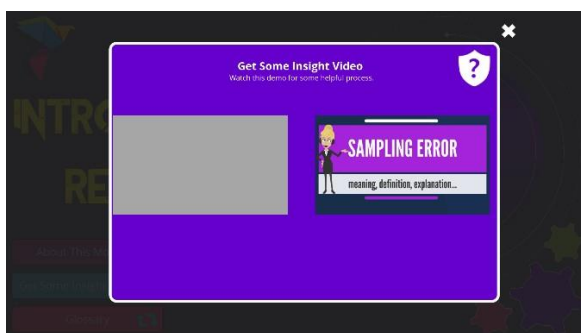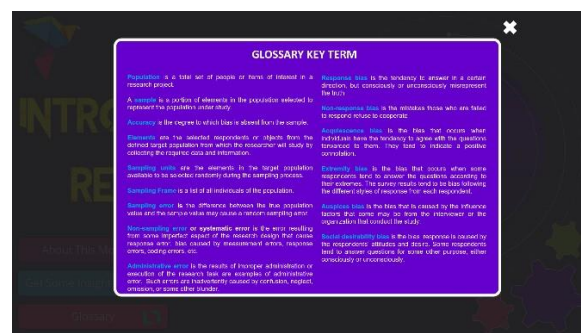

Figure 8: Insight Video   Figure 9: Glossary

Lastly, the conclusion slide summarize the entire topic of sampling design showed in Figure 10 below.

Figure 10: Conclusion

3. Result and Discussion

The respondents chosen were two groups in semester Mac-October 2018. 1 group was chosen to be participants and another group acted as control group. Their results later be compared in Final Exam on October 2018. The findings was shown in Table 1 below.

Table 1: Final Result on Sampling Design

Class	Final marks (15 m)
Not using interactive slides	9
Using interactive slides	14

Table 1 showed that the result of 1 group that used interactive slides showed positive result (93%) as compared to group that were not using interactive slide (6%) as teaching and learning (P&P) techniques. These shown promising result for improving and promoting teaching and learning (P&P).

The survey were used to evaluate the performance of interactive slides that used the 5 points Likert Scale (Strongly Disagree, Disagree, Neither Agree nor Disagree, Satisfied, and Strongly Agree). The survey consist of 5 questions which are as follows:

1. The arrangement of slides/notes are clear
2. The contents of the slides/notes are organized and easy to be understand
3. The slides/notes are interesting
4. The slides/notes helps in increasing my interest in the subject matter
5. Overall I am satisfied with the slides/notes given

In the pretest survey, most of the students are disagree on all aspect which all questions result more than 70%. This means that, conventional method of teaching and learning (P&P) techniques are commonly used. This was shown in figure 9 below.
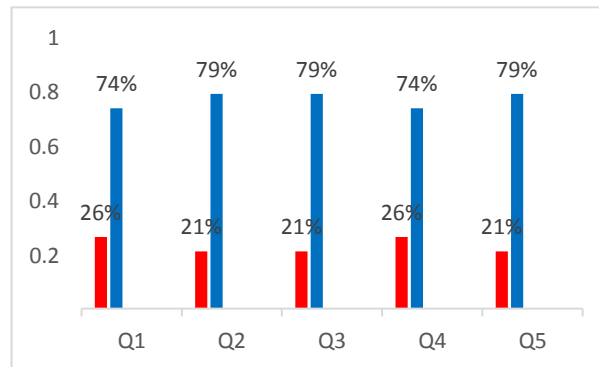
Figure 9: Pre-Test

In contrast to the Pre-Test, post-test results are encouraging (shown in figure 10). Overall, students agreed and strongly agree that the slides arrangements are clear, organized and easy to understand due to the flowcharts arrangement which can conclude the overall process in the topic. More than 70% of students agreed on the slides really helps them in term of understanding and developing their interest of the subject, because instead of learning through reading the students are also provided with self-virtual learning in term of video and interactive slides.

As a conclusion, overall the students were satisfied and strongly satisfied with the interactive slide provided in the teaching and learning (P&P) process.
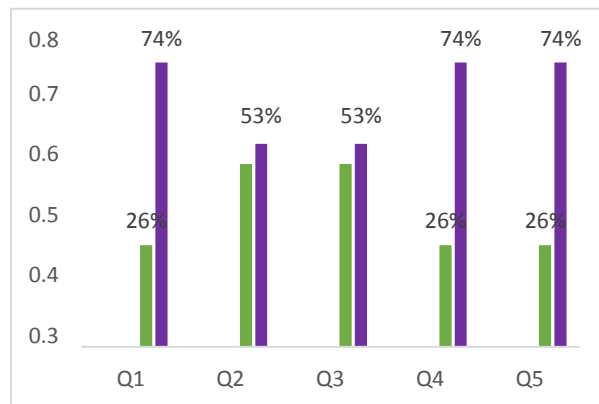

Figure 10: Post-Test

4. Conclusion

In a nutshell, the result has shown that the teaching and learning (P&P) techniques that uses mind mapping as a tools to increase effectiveness of student performance was positively good. This interactive slides enhanced teaching and learning (P&P) process by aiding lecturer to fully utilized OBE-SCL concept in teaching and learning (P&P) problem.

Acknowledgments

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