

Using Mnemonic to Facilitate Learning of Economics

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Abstract

The aim of the study was to investigate the effects of using mnemonic device to increase the economics concept understanding and fostering academic performance of undergraduates. A quasi-experimental method was applied in this study. There were 90 students selected randomly and divided into two groups (experimental and control group). Two hypotheses had been tested. ANCOVA had been employed for testing the significant effect in mean score of performance post-test within groups. The results showed that the students in experimental group significantly outperformed in their academic performance mean score. The findings of this study revealed that mnemonics are effective in enhancing students' performance.

Keywords: mnemonic, economics concept, academic performance, learning

Introduction

Mnemonic is a device that to help students remember words and facts. Mnemonic has many varieties that can help in memorization of many information. In another word, mnemonic is a system to develop students' memory. Basically, mnemonic consists of letters or words. Deleshmatt and Nebraska (2007) share their views and stress that mnemonic devices can be divided into two main types: organization mnemonic and encoding mnemonic. Organisation mnemonic organize new information in memory in order to recall information easily, whereas, encoding mnemonic is used to transform abstract words into high imagery substitutes so that they can be stored more easily in memory (Cansino, Maquet, Dolan & Rugg, 2002).

Research findings have shown the significant result between mnemonic strategies and students memorizing (Sweller, 1999; Debrowski, Wood & Bandura, 2001). Varies subjects such as Geography, Mathematics, English, Foreign Language have been proven (Manalo, Mizutrani & Trafford, 2004). However, mnemonic devices can be applied in other disciplines such as, undergraduate principle economic is yet to be proven. This paper is to fill the research gap of this area. Prior reviews Fontana, Scruggs and Mastropieri (2007), Laing (2010), Seay and McAlum (2010) give an overview of the effect of the implementation of mnemonic devices in secondary social studies and first year elementary accounting, auditing courses in their studies. In this study, will measure the effect of mnemonic devices on improving students' performance on economic learning.

Principle Economics was a new course that introduced to this university since 2008. Principle economics teaching in university appeared to be important when there is the increasing demand of students taking this paper as an elementary paper. This phenomenon is supported by the Faculty of Management and Economics (2009) which showed that there were 87, 298 and 263 students took principle economics in 2008, 2009 and 2010 respectively. Although there is an increasing of 242% students take principle economics yearly but there are no students would like to take economic as a major course in the following year. This fact can prove by Faculty of Management and Economics (2009). According to researcher early investigation, students claimed that economic was a difficult subject.

Economics is one of the most difficult subjects for undergraduates to grasp (Marby, 1998; Khoo Yin Yin, 2008) and a lot of memorization requires. Undergraduate students face difficulties to understand abstract concept, analyze data and elaborate graph (Johnston, James, Lye & McDonald, 2000). Most of the art students who take economics are not keen in analyzing and understanding economics concept with application of mathematics elements. Besides, the recent change in the medium from Malay to English in the economics learning poses a great challenge to first year students. Students may not adept to the changing of medium and creating links connection to the new learning materials. Research shows significant association between students respond and the use of mnemonic learning strategies (Muha, 2000). Therefore, lecturers must assist students method of learning (Novak, 1993; Kinchin & Cabot, 2007).

Mnemonic devices are claimed to be a practical strategy for assisting students to grasp new concepts (Swanson, 1986; Seay & McAlum, 2010). Mnemonic learning is based on the concreteness (Paivio, 1979) in fostering recall. Mnemonic can transform information into concrete and meaningful proxies. Mnemonic creates a cue such as keyword, phrase or acronyms which students are familiar. Keyword method uses concrete, acoustically similar words to cue the recall of a new term (Fontana, Scruggs & Mastropieri, 2007), for example: elasticity can be presented by electric. (Scruggs & Mastropieri, 1990; Uberti, Scruggs & Mastropieri, 2003). Keyword method is, implement in this study because prior research show it is the best when the information to be learned is new to students (Wang & Thomas, 2000; Scruggs & Mastropieri, 2000; Mastropieri & Scruggs, 2007). Besides, acronyms are selected because instructor can use letter strategies to help students remember list of information, such as: **Did Flora Make Icing Pineapple Pie Sunday?** Actually is referred to seven functions of marketing: **D**istribution, **F**inance, **M**arketing, **I**nformation, **P**roduct, **P**lace, **S**elling (Scruggs & Mastropieri, 1989). Since principle economic is a new course to first year undergraduates, keyword method would be more suitable. This cue help students to recall the concepts they have learned.

In the present study, two experiments had been performed to examine whether the keyword method or acronyms method were effective for aiding the recall of concept economics by undergraduate students. Besides, this paper was to examine the effectiveness of mnemonic devices and undergraduate students performance in principle economic.

Regarding to the prior related research discuss in the earlier sections, it was hypothesized that Group K1, A2 and C3 would lead to improved their performance. It was also hypothesized that K1 and A2 students would make significantly greater gain than C3. These expectation lead to following hypotheses:

Hypothesis 1:

Students taught via Keyword method (K1) would perform significantly higher than students taught via Acronym method (A2) who, in turn, would perform significantly higher than students taught via with Control group (C3) in performance.

Hypothesis 2:

Students taught via Keyword method (K1) would perform significantly higher than students taught via Acronym method (A2) in performance.

Methodology

Design

Our study employed quasi experimental design with random assignment of 90 undergraduate principles economic from one university in Perak, Malaysia. The experiment was divided into three groups (K1, A2 and C3). Each group consisted of 30 students. The students in the course were assigned randomly into three groups. There were K1, A2 and C3. M1 was a group that student learnt through keyword method (Figure 1) whereas, A2 was a group that students learnt through acronyms method (Figure 2). C3 was using rote learning during tutorial which function as a control group. However, C3 followed the same pattern of testing and instructions as the experimental groups except no mnemonic device was taught.

Scarcity: Scare (of lacking resources)

Figure 1: Keyword Method for *the Word Scarcity*

Shift of The Demand Curve

Population	Pet
Related Goods Prices	Rest
Incomes	In
Preferences	Peace

Figure 2: Acronym Method for *Factors that Cause the Shift of Demand Curve*

Procedure

This study was carried out in the middle of the year of 2010. The experiment took four weeks to complete. In order to control the threat of validity, all instructors had to teach the same principle economics content. Besides, instructor involved was given two sections of briefing prior to implementation of mnemonic strategy in the tutorial to ensure proper usage of the method. Researcher supervised instructors for the progress of the implementation of the mnemonic method.

First of all, students were tested to assess before the implementation. Secondly, the students were introduced to the mnemonic devices according to groups. Implementing of mnemonic devices to treatment group took 20 minutes at the beginning of each tutorial. All the students received the planned instruction for guiding them the independent practice after tutorial. On the first lesson, instructors introduced the mnemonic devices with two samples. Then, students were asked to form a group with four members and discussed with five given new term. Students also directed to take note during the lesson.

Students were directed to take back their notes for preparing their posttest. All the steps summarized in Figure 3.

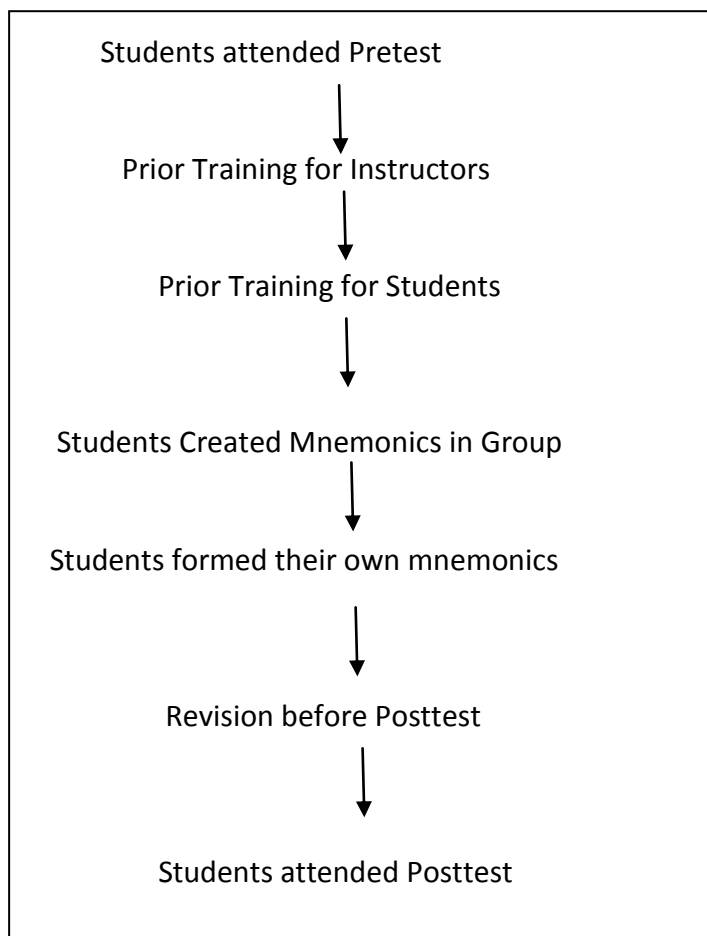


Figure 3: Reserach Procedure

Instrument

Pilot test was conducted to test for validity and reliability of the instruments. The Cronbach's Alpha reliability coefficients of Performance Assessment was obtained in .860. The instruments have been examined and found valid with referred to three expertise of economics education. Besides, the Cronbach's Alpha overall internal validity of Performance Assessment were .883.

There was only one instrument had been used in this study. There was a set of Performance Assessment. Pre-Performance Assessment was given before lecturers taught the topic, there was elasticity in principle economics content. Performance assessment paper consisted of 30 objective questions that similar to the university examination format. Post-test gave to the students after completed learning topic of elasticity with mnemonic methods. The duration of the test was 1 hour. The questions of post Performance Assessment was exactly the same as pre- Performance Assessment questions but the sequences of the questions had been rearranged.

Results

The data for pre and post performance assessment paper were analyzed by SPSS version 17. The first hypothesis involving comparing the performance from three groups after intervention. For the purpose of showing the pretest didn't influent the intervention, the analyses of the mean and univariate F test were reported. Table 1 showed the means and standard deviations of pre- performances by the groups. The mean score of A2 relatively higher on pretest (mean = 37.43, SD =10.36); whereas, the mean score of C3 (mean = 34.27, SD = 9.65) and K1 (mean = 33.37, SD = 10.69), were quiet close on post performance assessment.

Table 1: Mean score for pre- performance assessment

Dependent Variables		K1 N = 30	A2 N = 30	C3 N = 30
Performance	Mean	33.37	37.43	34.27
(Post Performance Assessment)	SD	10.69	10.36	9.65

Table 2: Summary of ANOVA results on pretest

ANOVA Effects dan DV	Univariate F	Nilai <i>p</i>
Performance	1.305 (df = 2,87)	.276

* significant at $P = <0.05$

Table 2 revealed the summaries of ANOVA analysis, the results of the univariate F test indicated that there were no significant statistical difference between the students in pretest between groups with an $F_{(2,87)} = 0.276, p > .05$. . The pre-performance assessment didn't showed any significant result, it meant there was no interaction between dependent variables and covariance. Therefore pretest and posttest would take for analysis. The score for the pre and post performance assessment have been interpreted as the finding of the study.

Table 3 revealed the mean of the experimental groups were higher than the control group. The mean score of A2 (mean=57.50, SD=18.23) showed relatively highest among three groups followed by the mean score of K1 (mean=54.87, SD=9.34) and C3 (mean=47.17, SD=11.75).

Table 3: Mean score for post- performance assessment

Dependent Variables	K 1 N = 30	A2 N = 30	C3 N = 30
Performance Mean	54.87	57.50	47.17
(Post Performance Assessment) SD	9.34	18.23	11.75

Table 4 presents the ANCOVA results indicated that there were statistically significant differences in the dependent variable (performance). The significant $F_{(2, 87)} = 3.136, (p <.05)$ indicated that the mnemonic devices had a main effect on performance. Partial Eta Squared equaled to .099 was observed. This indicated that 9.99% of the variance observed in the performance was accounted by the mnemonic method. The covariate (pretest) was not significantly related to dependent variable ($F = .191, p >.05$)

Table 4: Summary of ANCOVA results on Posttest

ANOVA Effect dan DV	Univariate F	Nilai <i>p</i>	Partial Eta Squared
Performance	3.136* df = 2, 87	.030	0.099
Pretest	0.19 df = 2, 87	.663	0.191

* significant at $P = <0.05$

The result above revealed there was significant difference between groups. This significant different reflects K1 and A2 differ from C3 and hypothesis null 1 and 2 should be rejected. Besides, the mean scores from table 3 indicated the mean score of A2 (mean=57.50, SD=18.23) showed relatively highest among three groups.

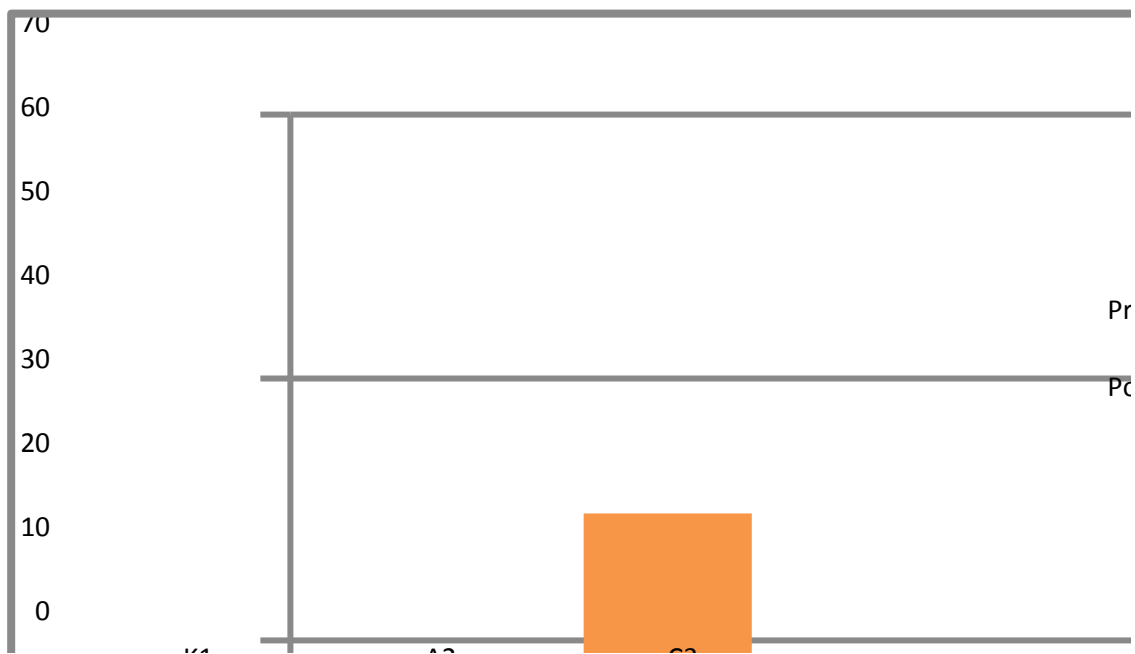


Figure 1 : Pretest vs Posttest

The overall result of these mean scores indicated that experimental groups K1 and A2 showed a greater improvement in posttest compare with control group C3 revealed in Figure 1. Although group A2 showed the highest posttest among three groups, however, the greatest improvement of mean score showed in group K1. This result implied that learning with mnemonic devices better in memorization economic concepts.

Discussion

Mnemonic devices is a very important element for encouraging students in learning of economics subject for university students. Students should be trained in those skills in order to become an independent and skillful individual (Atlas, 1995). Hypothesis 1 and 2 had been rejected. The results showed that a positive effect significant on mnemonic devices and academic performance. Students taught in mnemonics method outperformed the control group in academic performance. This findings are consistent with prior research which revealed a mnemonic device will accelerate the rate at which new information is acquired (Wang & Thomas, 1996; Laing, 2010).

Students who used mnemonic device approaches were personally developed a learning skill that promoted their thinking skill. These students can understand the economic concept thoroughly. Mnemonic device is an effective learning method in promoting the students achievement and fostering their thinking skill. At the same time, it may suggest the future research should employ a wider scope on other variables such as gender and social economic status. Mnemonic devices need to apply in university not only in principle economic but also other courses.

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