
THE POWER OF USING PAUSE PROCEDURE DURING ACCOUNTING LECTURE: AN ACTION RESEARCH STUDY

Faieza Chowdhury

Lecturer, Faculty of Business Administration,
American International University- Bangladesh (AIUB),
Banani, Dhaka-1213, Bangladesh.

ABSTRACT

This study is a quantitative approach to unravel the effect of pause procedure on two dependent variables (student performance and student satisfaction). The purpose of this action research study is to explore two aspects: Do students in accounting class where the pause procedure is applied (experimental group) perform better compared to another accounting class (control group) where pause procedure is not employed? Do students in accounting class where instructor uses pause (experimental group), experience greater course and teaching satisfaction compared to the students of (control group) where pause was not utilized? The results of this study is quite staggering, as findings indicate that in accounting class where instructor gave two eight minute pauses during each ninety minute lecture, showed greater student performance and satisfaction compared to control group where pause procedure was not employed. Therefore, this study provides strong support for incorporating strategic pauses during accounting lectures to enhance student satisfaction and overall class performance.

Keywords: *experimental group; control group; pause procedure; student satisfaction; student performance; accounting lecture*

1. Introduction

Many educators today are searching for new ways to improve performance of students in the class hence instructors are trying to adapt new innovative teaching practices. Sometimes during the paucity of lecture it is difficult for instructors to use innovative and active learning strategies. It is further more challenging when an instructor needs to teach course materials that due to the nature of the content must be taught in traditional lecture format. Moreover, instructors who need to cover a large proportion of the syllabus within a given time schedule, often try to utilize the full class time without class breaks and deliver maximum information to the students during each lecture. These teachers do not give any breaks or pauses during their lectures as they believe this will lead to wastage of time, decline in student attention and poor performance. According to Rowe (1976; 1980; 1983) instructors can give strategic pauses during each lecture which can help students to enhance their understanding and recall information. Other researchers as Divest and Gray (1973), Divest and Smith (1979), Ruhr, Hughes and Schlock (1987), Davis and Halt (1997) also conducted similar studies on pause procedure which proved the effectiveness of pause procedure as an active learning strategy.

According to Entwisted and Rams den (1983), different academic disciplines can create different student learning approaches due to the different learning environments. Research based on Entwistle's (2000) model of surface/deep learning note that students who study accounting often tend to adopt a surface approach to learning which can lead to poorer academic performance. Despite the suggestion that students studying accounting often tend towards surface learning however instructors can overcome this problem by changing their teaching approach in the classroom. According to Trigwell et al. (1999) employment of student centered approaches to learning can improve the quality of teaching in the class. Furthermore, Orsmond et al. (2002) implies that instructors should change their teaching approach from conventional teaching style to one that facilitates active learning.

A number of active learning strategies can help instructors to improve their teaching process and one such simple strategy is '*pause procedure*'. The concept of pause is derived from the idea that during lectures students should be given the opportunity to reflect back on what was taught by the instructor in the previous session and discuss the key concepts that they have learned with their class mates. Employment of pause procedure in the class can lead to self-monitoring and self-regulatory learning of students as during pauses they can review, compare and discuss their notes with other fellow class mates. Moreover, pause procedure is simple and requires less time and preparation by the instructor to implement the strategy in the classroom. Pause can also benefit students as it can enhance critical thinking and student engagement in the class.

This paper is based on an action research study which was conducted to assess the effectiveness of pause procedure on two dependent variables (student performance and student satisfaction). A total of 75 undergraduate first year students were involved in this study taking Financial Accounting course in the spring semester of 2016. We have applied pause procedure in one accounting class (experimental group) and compared the findings with another accounting class (control group) where students were not exposed to pauses. At the end of the semester students' performance and satisfaction was measured across both experimental and control groups after all the lectures were delivered by the instructor. A comprehensive test using an identical question paper was conducted for both experimental and control groups to measure student performance level. In addition, all the students completed an evaluative questionnaire providing feedback on student satisfaction for course and teaching at the end of the examination. Findings from this study indicate that students in the experimental group where pause was employed, performed significantly better in the comprehensive test compared to those students in control group. This result is consistent with

the findings of other researchers as Ruhl, Hughes and Schloss (1987), Davis and Hult (1997), Drabick, Weisberg, Paul and Bubier (2007) as these researchers affirmed a positive relation between pause procedure and student performance. Furthermore, higher evaluation ratings given by the experimental group compared to the control group also suggest that students enjoyed the pauses during accounting lectures as it enhanced lecture recall, student performance and overall satisfaction. The findings of this study have implications for the improvement of accounting teaching practices and further research in innovative teaching strategies.

2. Literature Review

2.1 What is a pause procedure?

It is a simple active learning strategy in which an instructor gives strategic pauses during each lecture. Students can utilize the pauses or breaks to review their notes, discuss materials with fellow classmates or undertake other interactive exercises that allow them to clarify assimilate and retain information taught by the instructor during each lecture. Pause procedure provides a vessel for an instructor to incorporate various active learning strategies during their lecture in order to improve teaching and learning process.

2.2 When to pause?

Instructors often plan their class session emphasizing on what materials of the syllabus need to be covered during the available class time. However, instructors get so caught-up in covering all the materials within the allotted time that they often forget to pause. The result is a dictatorial style of teaching where students are just passive recipients of knowledge trying to digest as much information as possible during the lecture. There is also a growing concern among the educators today, as they believe that students are failing to perform better due to their inability to cope with excess load of information delivered in each lecture. A research by Stuart and Rutherford (1978) point out that even for the most motivated students in the class, concentration level starts to decline after 10-15 minutes. By incorporating pause procedure during lecture, instructors can alleviate many problems associated with traditional lecturing style. Hence pause is the most appropriate way to provide students sufficient time to clarify, assimilate and retain the materials already covered in the class.

According to the study of Rowe (1983) at least 3-2 minute pauses should be provided during a lecture at 8-12 minute intervals. DiVesta and Smith (1979) also employed the pause procedure in a study but used 7 minute intervals while Ruhl et al. (1987) provided 12-18 minute intervals. Although all the above studies used various lengths of interval for pauses, nevertheless a common finding is an improvement in student recall and learning in the selected classes where instructor applied pauses during lecture.

2.3 Is pause procedure an effective teaching strategy?

For pauses to be effective and enhance student learning it is important to ensure that instructors strategically plan the pauses ahead of each lecture. Moreover, the instructor must utilize the pauses to carryout various active and collaborative learning. Some of the simple techniques that instructors can incorporate during the pauses are discussed below:

2.3.1 Reviewing, Sharing and Comparing Notes: Some students are good at taking notes during lecture compared to other students. Students can use the pauses given by the instructor to compare their notes with fellow class mates, list down or highlight the key points in a lecture, fill in any information gap or discuss the key concepts taught by the instructor with other students.

2.3.2 Writing Summaries: During the pause period, the instructor can ask the students in the class to write a summary in simple words on what they have learned from the prior lecture delivered by the instructor. This can encourage students to review, clarify and retain the materials taught in the class.

2.3.3 Group Discussions: Students can be instructed to have a quick discussion in small groups on the main topics covered in the lecture during the pauses. This will help students to clear their understanding and clarify any misconceptions or confusions as they discuss the concepts with other fellow class mates.

2.3.4 Framing Questions: Another technique that instructors can use during the pause is to ask students to prepare two questions based on the lecture materials covered by the instructor prior the pause. This will encourage students to reflect back on the topics covered in the class and clear their understanding of the key concepts.

2.3.5 Puzzles/Games: During the pauses an instructor can conduct puzzles or games which are designed in a way so that in order to solve the puzzles, the students must use the concepts discussed during the lecture. This technique can enhance critical thinking and analytical skills of the students.

2.3.6 Concept Map: The instructor can also ask the students in the class to create a concept map based on the key topics discussed in the class prior the pause is applied.

2.3.7 Ungraded Quizzes or Assignments: Instructors can use the pause period to take short ungraded quizzes or assignments. These ungraded assessments can be based on topics discussed in the class prior the pauses. This strategy foster free recall and conceptual learning of the students.

2.3.8 Minute-paper: Minute-papers entail students writing a specific topic on a paper for certain minutes in response to a specific question raised by the instructor during the pause period such as “What concepts did you find unclear during this lecture?” or “What is the most valuable concept that you have learned from this lecture?” (Angelo and Cross, 1993; ANON, 1993).

2.4 Previous studies that support pause procedure

Teachers at all levels are trying to find out new ways to improve their teaching practices in order to enhance student learning, performance level and overall student satisfaction. One technique that can help instructors make their teaching more effective is the application of pause procedure during lecture. Pause procedure is a simple active learning strategy where the idea is to break the lecture into strategic periodic pauses which allow students in the class to clarify assimilate and retain information. Pause procedure can be applied in the classroom very easily as it requires very little preparation by the instructor. Many previous studies indicate that pause procedure is an effective tool as it significantly improves student attention and learning.

In a study conducted by Davis and Hult (1997), 79 students were divided into 3 groups and exposed to one of the three conditions: review notes during pause, write a summary during pause or no pause used in the lecture. Their findings indicate that on a recall test which was conducted 12 days after the experiment, the group with written summary during the pause procedure outperformed the other two groups. This corroborates the findings of Ruhl, Hughes and Schloss (1987). A research study on pause procedure was conducted by Ruhl, Hughes and Schloss in 1987, where they divided a class into two groups. One group had three 2 minute pauses during lecture where students were asked to review, compare or share their notes with class mates. But in another group the students did not get any pause during the lecture. Their findings reveal that the group with exposure to pause procedure, scored higher marks (84.39) on a test taken 12 days later compared to another group with no pauses during lecture (76.28).

Likewise, an experimental study on pause procedure was performed by Bacchel and Thaman in 2014. They have divided a class of first year medical students into two groups: experimental group and control group. In experimental group students were exposed to three two minute pauses spaced during a 50 minutes lecture. In the control group students were delivered the same lectures but without giving any pauses. Findings from the study indicate that students in the experimental group performed significantly better than those in the control group on a test taken 15 days later.

Similarly, other researchers as Drabick et al. (2007) suggest that by providing students the opportunity to write for just five minutes on a given topic during each lecture can significantly improve student performance. Their study concludes that students who were exposed to writing condition during pauses, outperformed other students in the thinking condition on both factual and conceptual tasks. As mentioned earlier, Rowe (1976; 1980; and 1983) conducted various studies on pause procedure and advocated the use of pause during lectures for enhancing student learning and recall of information. Additionally, other researchers as DiVesta and Gray (1973), DiVesta and Smith (1979) adopted similar studies on pauses and provided further contributions on the effectiveness of pause procedure. Their findings affirm that interspersing pauses throughout the lecture and using the pauses to conduct various interactive class exercises, is the most effective way to improve student learning and performance.

Research studies on pause procedure as a tool to improve student performance and learning is amply documented. However, to the author's best knowledge this is the first study to investigate the effect of pause procedure on student performance and student satisfaction for students taking accounting courses. The findings of this study are in line with all the previous studies which also found a positive relation between pause and student performance.

3. Research Methodology

This is an action research study designed to measure the effectiveness of pause procedure on student performance and student satisfaction during accounting lectures. Seventy five first year undergraduate students enrolled in Financial Accounting course at a particular university in Bangladesh participated in this study. The selected university is a well reputed private university in Bangladesh with diverse student population. However, the subjects involved in this study are homogeneous in nature as in both the classes participants are first semester students taking Financial Accounting course taught by the same instructor during the spring semester of 2016.

At the beginning of the semester a coin was flipped by the course instructor to determine in which Financial Accounting class (Class A1 or Class A2), the pause procedure would be applied by the instructor. Hence through the coin toss it was determined that the instructor would use pause procedure in Class A2 (experimental group) whereas Class A1 would serve as the (control group). All the students of the experimental group (Class A2) were informed by the instructor that periodic pauses would be employed during each lecture where students would engage in various activities such as reviewing, comparing or discussing notes and writing summaries.

Class A1 the (control group) received similar lectures by the instructor but without any pauses applied during the lectures. In Class A2 (experimental group) the instructor gave two 8 minute pauses after every 30 minutes lecture. During the first pause, students were asked to work in pairs and discuss, compare or review their notes. During the second pause, students were asked to write a short summary on the key concepts discussed by the instructor in class prior the pause. The instructor had planned the frequency of pauses ahead of each lecture and what activities would be conducted during pauses was predetermined. Both Class

A2 (experimental group) and Class A1 (control group) received similar 20 lectures and later at the end of the semester, students of both classes gave a comprehensive exam on an identical question paper. After the examination both classes also filled out an evaluative questionnaire as a student feedback on course and teaching satisfaction.

Action research study of this nature often has potential ethical implications. Therefore the author has ensured that the participants in this study are not harmed or disadvantaged as a result of the study. In fact both the control group and experimental group were delivered similar lectures using the same anecdotes and visual aids by the same instructor. The only exception was the use of pause procedure in one class (experimental group) which was absent in another class (control group). Another major concern for the researcher was whether or not students should be informed about the study. Although some researchers Punch (1986) argued in favor of covert research nonetheless most researchers as Clark (1995) and Kiegelmann (1996) justified that informing participants about the experiment and acquiring their consent in advance do not have any impact on the result of the study. Furthermore, these researchers affirmed that informing participants about the study would allow the participants to share their experiences honestly and provide feedback in a more appropriate manner. Hence all sorts of participation in this study was voluntary in nature as students were informed about the experiment at the beginning of the semester.

4. Objectives of the study

In this study we have performed quantitative analysis to test the following hypotheses:

H1: *The class where students are exposed to pause procedure during lecture will achieve better performance as measured by examination scores.*

H2: *The class where pause procedure is utilized, students will experience greater enjoyment and satisfaction of the course and teaching as measured by evaluation ratings.*

5. Findings and Discussions

Table-1: Results of the study

Participants	Number of students N	Average scores on comprehensive test (Total marks = 65)	Evaluation ratings (On a 5 point Likert scale)
Class A1 (Control group)	39	47.08	4.57
Class A2 (Experimental Group)	36	51.89	4.78

In order to test Hypothesis 1: “whether the employment of pause procedure in class have a positive impact on student performance?” a comprehensive exam was conducted on an identical question paper for all the participants of the study. Test scores of the exam reveal that in experimental group where pause procedure was applied, students had an average score of (51.89) compared to (47.08) in another class (control group) where no pause was employed. In fact the magnitude of the difference in the mean scores between experimental and control group is quite substantially large. We have also conducted an independent sample t-test for both classes which indicates that the difference in means of both the classes was significant ($p < 0.05$). Comparing the scores of experimental group (Class A2) with control group (Class A1), we find that the experimental group outperformed the control group by a significant margin. Therefore, based on the findings Hypothesis 1 was not rejected indicating use of pause procedure in class does have a positive impact on student performance.

To test Hypothesis 2: “whether the use of pause procedure in class have any positive impact on student satisfaction level?” we have used the evaluation ratings provided by the students at the end of the semester. After the examination but before students knew their grades, students completed an evaluative questionnaire providing feedback on three key areas: (1) level of satisfaction with course content, (2) teaching procedures and (3) teacher-student interaction. Students were asked to rank 7 aspects of teaching, 6 aspects of course content and 7 aspects of teacher-student interaction on a Likert scale of 1 to 5 (1 - being unsatisfactory and 5 - being excellent). In class A2 (experimental group) where pause procedure was applied, a high level of satisfaction with the course and teaching was found. The students in that class gave an overall rating of (4.78) out of a possible maximum 5. On the other hand, the (control group) Class A1 which was not exposed to pauses provided a mean score of (4.57) out of a maximum 5, indicating less satisfaction with course and teaching regardless of the fact that they were provided same lectures by the same instructor. Moreover, in one key aspect of the course and teaching evaluation “instructional strategies and motivational techniques used in the class” the experimental group gave a score of (4.80) which was significantly higher than the score given by the control group (4.53) on the same aspect. This indicates that students of experimental group highly appreciated the employment of pause procedure during accounting lectures as it enhanced class participation, motivation and learning in the class. Hence based on the findings Hypothesis 2 was confirmed.

6. Conclusion

Despite the fact that educators acknowledge the benefits of innovative teaching strategies but they are often reluctant to change their current teaching practices. Instructors often do not accommodate new changes in teaching as they fear the preparation time and doubt whether the new teaching style can be applied within the existing work environment. Moreover, often the syllabus that needs to be covered in one semester is so vast that teachers try to deliver maximum information during each lecture with no breaks. This system of teaching can lead to student disengagement as students get no time to reflect back on the lecture materials, comprehend, analyze or connect various concepts taught in the class. “Pausing” can give students a “breather” to disengage from the continuous lecture and reflect back and pose questions on the unclear aspects. This provides students an opportunity to start fresh again after a brief pause and focus on the rest of the lecture with increased vigor and concentration.

Pause is a simple active learning strategy where very little modification is required in the usual conventional teaching. Nevertheless, pause strategy is effective only when the instructor uses the pause or breaks to facilitate various collaborative and active learning (e.g. note comparisons, summary writings, group discussions etc.). This research is a powerful evidence providing support on how incorporation of simple pause procedure during lecture can give students an opportunity to stop, think and reflect back on what was discussed in the class, which can eventually enhance student performance and overall satisfaction. To summarize the result of this study, students of the experimental group who were exposed to pause procedure performed significantly better in the comprehensive test than those students of the control group. Moreover, students of experimental group showed significantly higher level of satisfaction with the course and teaching reflected by higher evaluation ratings.

The findings of this study at the very least, illustrate the importance of giving strategic pauses during accounting lectures to improve student performance and satisfaction. Nevertheless, the author recognizes that the study is exposed to some limitations. First, this is a limited small-scale study based upon 75 undergraduate students from two accounting classes at one selected university. Second, the same instructor taught all the students involved in the study hence students’ response to evaluation ratings may have been influenced by the dynamics of student-teacher relationship. Finally, the students involved in this study had no previous exposure to this type of experiment hence lack of knowledge or understanding can influence student feedback. Further study can be conducted with larger sample size and application of alternative dependent variables to investigate the effectiveness of pause procedure.

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