

# The Effectiveness of Beam Balance Technique in Learning Bank

# **Reconcilliation Statement**

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Abstract: This study examined the effects of Beam Balance technique: an innovative visual representation on learning the bank reconcilliation statement developed by the authors. The participants in this study were 88 students from two classes in Financial Accounting 1 courses at Politeknik Kuching Sarawak. One class of 43 students was randomly selected as the experimental group which employed the Beam Balance technique in teaching and learning while another class of 45 students was assigned as the control group with normal traditional curriculum activities. The results support the hypothesis that learning with the aid of Beam Balance technique would result in higher learning performance. A questionaire was also developed to elicit the participants' views towards adopting the Beam Balance technique. Almost all the students found that the Beam Balance technique was helpful in understanding the inter-relations of the bank reconcilliation statement content and more importantly, their interest were enhanced in learning the bank reconcilliation statement. It is hoped that the findings of this paper will contribute to the improvement of quality in accounting education by incorporating the visualization presentation whenever applicable.

**Key words:** beam balance technique; virtual representation; bank reconcilliation statement **JEL codes:** M49

# 1. Introduction

The accounting educators in tertiary level today face many challenges in providing an effective learning environment to their students: the millenials whose life are occupied with visual practices and technologies. Hence, it is no longer possible to assume that the learning and literacy could be accomplished solely by ligustic resources. Indeed, it is increasingly essential for the educator to focus on the literacy practices of the students and subsequently adopt relevant pedagogy that fulfil the demands of the contemporary era (Trifonas, 2008).

Visual representation has been proven as a powerful learning tool in many domains. However, it should be highlighted that its effectiveness is highly dependent on the appropriateness of cognitive support (Butcher, 2006). The educator should identify pedagogically which content are difficult to learn and how visual representation can overcome the cognitive barriers. As the accounting is difficult to comprehend, the students may adopt strategy like memorizing the format for solution in order to achieve high grades at the expense of understanding the contents. For instance, the authors noticed that many students tend to memorize the format of bank reconcilliation statement which shows discrepancies to be added or substracted without understanding the rationale of doing so.

Hence, this study develops an innovative technique: the Beam Balance technique that illustrates how the

discrepancies between cash book and bank statement are reconcilled by using a beam balance. The Beam Balance technique was tested on the performance of 88 students consisting of test and control group who studied Financial Accounting 1 courses at Politeknik Kuching Sarawak. A questionaire was also designed to elicit the participants' views towards adopting the Beam Balance technique in learning bank reconcilliation statement.

This study contributes to the literature by adding empirical findings on the effectiveness of visualization representation on students' performance in accounting subject which is relatively scarce. The positive impact of using visualization representation on student performance in the preparation of bank reconcilliation statement seen by this study should encourage accounting lecturers to employ effective visualization representation instead of crowded slides of confusing columns and texts to students. The remainder of this study is organized as follows; Section 2 reviews the past findings on the importance of using visualization representations; Section 3 discusses the methodology and Section 4 reports the results. Lastly, Section 5 provides the conclusion and discusses the limitations of the study.

### 2. Literature Review

Educators have long believed that multisensory teaching can enhance the learning process. Clark and Paivio (1991) showed that information channelled into the system via multiple senses helps overcome the limited processing capabilities of an individual as greater amount of information can be processed when spread between multiple senses. This is further supported by Bagui (1998) who demonstrated that information processed via multiple senses could reduce the cognitive load as the information from different senses can be easily developed into short-term memory and used to build long term representations.

Students nowadays have become visual learners as they are brought up with technology. Hence, without visuals in a pedagogy, the students may not learn effectively (Smaldino, Lowther & Russell, 2008). Bitter & Legacy (2008) further added that students retain more information with the aid of sufficient visual content in their learning materials. It is also noteworthy to highlight that the use of visualization presentation does not only draw the attention but also to instil the interest of the students to learn (Barr & Parrett, 2008). This is in line with Trifonas (2008) who revealed that the incorporation of variety literacies in pedagogy would not only make education and learning more exciting but would also help capture their attention and improve their concentration.

Indeed, past literature in educational research have postulated that using visuals in teaching could result in a greater degree of learning as the learners seem to concentrate better and for more sustained period of time (Sims, O'Leary, Cook & Butland, 2002; Ainsworth & Loizou, 2003). To summarize, it is imperative that the educators in accounting could also integrate the visualization representation into their pedagogy to maximise the learning experience since many students have become visual learners.

#### 3. Methodology

This study used 88 students who enrolled in Financial Accounting 1 course during session June 2016. The first class of 43 students was chosen as an experimental group while the second class of 45 students was used as a control group. It is to note that the students who had taken the subject of Principle of Accounting during their secondary education were excluded as they had been taught the bank reconcilliation statement.

The same lesson was presented to both classes during the lecture time but only the experimental group was exposed to the Beam Balance technique. The Beam Balance technique uses a beam balance to demonstrate the

effect of a discrepacy on the balance in cash book and bank statement. For example, Figure 1 shows a beam balance when there is a uncredited cheque. When there is uncredited cheque, the amount had been recorded in the cash book (inflow) but there is no cash inflow in the bank statement yet. As a result, the balance in the cash book is more than the balance in the bank statement. This is indicated by the beam balance which tilt to the left. In order to reconcil the balance in cash book with the balance in bank statement, the uncredited cheque will be deducted from the balance in cash book (the load on the left side has to be removed so that the beam balance can be balanced).



Figure 1 The Beam Balance with Uncredited Cheque

On contrary, when the balance in the cash book is less than the balance in the bank statement, for instance, the existence of a unpresented cheque that had resulted in credit entry in the cash book (outflow) but no debit entry (outflow) in the bank statement, the beam balance will tilt to the right (as in Figure 2), indicating that the balance in the cash book is less than the bank statement. In order to reconcil the balance in cash book (additional weight will be loaded on the left side of the beam balance so that it can be balanced).



Figure 2 The Beam Balance with Unpresented Cheque

These visual representations assist the students to overcome the cognitive barriers in understanding the effect of each discrepancy. By showing the beam balance, the students can easily see whether the discrepancy causes the balance in cash book to be higher or lower than the balance in bank statement. Subsequently, the students can determine the reconcilliation actions: if the balance in cash book is higher, it will be deducted and vice versa, in order to be reconcilled with the balance in the bank statement.

On the other hand, in the control group, the content was communicated verbally and the same wording was used during both lessons to avoid confounding effects on the experiments. A formative test was then administered to gain the students' learning outcomes from both classes. The purpose was to identify whether the learning outcomes from the experimental group made differences as compared to the control group.

Ronald (2005) proposed to use multiple sources of evidence such as student's performance and student's ratings in measuring the pedagogical effectiveness. By drawing on different sources of evidence, a more accurate and reliable decision can be derived as the strengths of each source will outweigh the weaknesses of the other sources. Hence, a questionaire was also developed to investigate the participants' perceptions from experimental group towards adopting Beam Balance Technique in learning bank reconcilliation statement. The questionnaire comprised of 10 questions which were rated on a five-point Likert Scale from strongly disagree to strongly agree.

## 4. Findings

The mean scores of the quiz in bank reconcilliation statement are tabulated in Table 1. The experimental group recorded remarkable higher means than the control group. This supports the hypothesis that using the Beam Balance technique enhances students performance in preparing the bank reconcilliation statement.

Group	Mean score	Standard Deviation
Experimental	84.5	1.96
Control	54.6	2.84

 Table 1
 Mean Score of the Formative Test

The results pertaining to the perceptions of the experimental group towards Beam Balance technique were encouraging (as shown in Table 2), indicating the usefulness of Beam Balance technique in enhancing their learning. Almost all students were strongly agreed that the Beam Balance technique helped them to learn and understand the interrelationships of the contents in the bank reconcilliation statement. Indeed, they were delighted to learn the bank reconcilliation statement independently and almost all of them indicated that their interest were fostered after they were introduced to the Beam Balance technique.

In terms of acceptance, the experimental group also indicated their intention to adopt the visualization representation in other courses. Almost all strongly agreed that they liked, and were satisfied with, and could adapt to the visualization representation as a learning tool in accounting.

	Perceptions	Score
1.	Beam Balance technique helped me learn bank reconcilliation statement	4.93
2.	Beam Balance technique helped me understand the interrelationships among the contents in bank reconcilliation statement	4.93
3.	Beam Balance technique stimulated me to learn bank reconcilliation statement independently	4.98
4.	Beam Balance technique fostered my interest in learning bank reconcilliation statement	4.98
5.	Beam Balance technique can be a new teaching and learning technique	4.93
6.	I think the visualization representation can be adopted in other courses	4.81
7.	I will apply the visualization representation in other courses	4.73
8.	I am satisfied with the visualization representation in learning bank reconcilliation statement	4.93
9.	I like using visualization representation in learning accounting	4.93
10.	I can adapt to visualization representation as a learning tool	4.93

 Table 2
 Perceptions of the Experimental Group Towards Beam Balance Technique

#### **5.** Conclusion

The results of this study revealed two major findings. Firstly, the adoption of Beam Balance technique can

improve the students' performance when compared to traditional teaching method. Secondly, almost all students from the experimental group were satisfied with the Beam Balance technique as a learning tool. They were able to overcome the barriers in understanding the concept by seeing the interrelationships among the elements in the bank reconciliation statement instead of memorizing the format of bank reconciliation statement. More importantly, it fostered their interest to learn independently. The participants also believed that the visualization representation could be beneficial in other courses too. It is hoped that the findings of this paper will contribute to the improvement of quality in accounting education.

However, whilst the results are encouraging, it should be noted that some of the key factors that affect the students' performance are excluded in this study. For instances, the academic qualification and the experience of the educators. Hence, it is therefore an interesting extension of this work in future.

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