

International Conference on Mathematics Education Research 2010 (ICMER 2010)

Mental Image and Representation of Ogive by Students of Diploma in Accountancy in a Mara Institute of Higher Education

Sharida Hashim^{a,*}, Nik Azis Nik Pa^b

^aStaff Training Institute, Majlis Amanah Rakyat

^bDepartment of Mathematics and Science Education, Faculty of Education, University of Malaya

Abstract

The study based on radical constructivism seeks to identify Semester Two Accounting Courses students' mental images and representations of ogive. Data for this study include verbal and non verbal information gathered from two students of Semester Two Accounting Courses in two clinical interview sessions. This study has identified four properties showed by the mental image of the research participants. In addition, four types of representations used by research participants to describe the ogive were identified. Participants used three methods to identify whether something represents an ogive or not.

© 2010 Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Keywords: Ogive; Mental image; Representation; Radical constructivism; Clinical interview; Meaning in mathematics

1.0 Introduction

Statistics is an important course for most streams at the post-secondary level in MARA higher education institutions. For the Diploma in Accountancy program, statistics is made a compulsory courses as a condition for graduation. Among the objectives of the Diploma in Accountancy program is to produce graduates who are skilled and able to compete with the giants of employment and internationally (Bahagian Pendidikan Tinggi MARA, 2007).

This study is related to statistical learning in post-secondary education. Issues that often arise in statistical learning in post-secondary education relate to student conception of statistics (Carter, 2005; Groth, & Bergner, 2006; Lehrer, Kim, & Schaubble, 2007; Petocz, & Reid, 2005; Saldanha, & Thompson, 2003), the strategies used by students in learning statistics (Gardner, 2007; Lancaster, 2007; Mills, 2004; Nicholas, 2004), and the technology used in the learning of statistics (Kennedy, & McCallister, 2001; Scheaffer, 2000; Schenker, 2007). This study focused on Accounting diploma students' mental images and representations on ogive.

Mental image and student representation on ogive are important because it is a complex matter that requires detailed analysis and it can improve thinking and learning statistics. Further, the mental image and representation of the ogive cannot be transferred from the thinking of teachers to thinking of students in perfect shape, but the mental image and

* Corresponding author.

E-mail address: sharida@mara.gov.my

representation of the ogive are constructed by the students on their own experiences.

So far, the current research in statistical learning in the West focused on several aspects such as conception and understanding of students on some specific aspects of statistics (Carter, 2005; Jacobbe, 2007; Leavy, & O'Loughlin, 2006; Meletiou & Lee, 2003; Saldanha & Patrick, 2002; Watson & Moritz, 2000), the strategies used in teaching statistics (Gardener, 2007; Kennedy, & McCallister, 2001), the use of technology in teaching statistics (Schenker, 2007), and the difficulties and mistakes of students in learning statistical concepts (Fishbein, & Schnarch, 1997; Shaughnessy, 1997).

Current studies in statistical learning in Malaysia have focused more on the relationship between attitudes and beliefs towards mathematics and statistics (Leong, 2006) and studies on the relationship between ethnic group, gender, trait self-efficacy and effort with the attainment statistics for the Malay and Chinese undergraduate students (Rosna, 1999).

Although there are many studies in the West and a few in Malaysia on the mental images or representations of students on statistics, none have covered the mental images or representations on ogive. The focus of the studies included the mental images or representations of students of sampling, mean, frequency distribution, standard deviation, probability and histogram; there were no studies on mental image and student representation on the ogive. The mental images of the ogive and the methods used by accounting diploma students to represent the ogive have not been studied in detail.

It is desirable that the study aimed at identifying the mental image and the representation of the ogive of diploma students in MARA Educational Institutions be done. The information obtained from this study will hopefully help teachers, curriculum developers, module writers and administrators of MARA institute of higher education to produce educational statistics products to achieve the aims of statistics education at MARA higher education institutions.

This study is based on radical constructivism and focused on mental images and the representations students' experiences to build students' knowledge of the ogive and to give meaning to experience in learning activities on the ogive (Nik Azis, 1999b; von Glasersfeld, 1995).

1.1 Theoretical Background

This study is based on two basic principles (von Glasersfeld, 1995). First, knowledge is actively constructed by the students. Second, the reality owned by an individual is a reality built by himself or herself, and it depends on the quality of action and operational schemes of individuals (von Glaserfeld, 1995).

According to Nik Azis (1987, 1999b) and von Glasersfeld (1995), there are five assumptions in the radical constructivism of learning ogive: the reality of the ogive to each student is an integral part of the construction of their thinking; knowledge of the ogive is constructed for each student based on his or her experience; knowledge of the ogive is derived from sensory-motor activities and its basic building block is a particular schema; the schema forms mental activity used by students as material for the reflection and abstraction process; and, each intellectual action is built in a progressive manner based on the previous and more primitive cognitive structure.

Based on the above assumptions, for this study, the clinical interview is deemed sufficient to answer the basic questions as described in this study. The clinical interview method consists of observation, questioning and evaluation. This method allows researchers to identify the mental image and representation of the ogive owned by students (von Glasersfeld, 1995).

1.2 Objectives and Research Question

Download English Version:

<https://daneshyari.com/en/article/1124748>

Download Persian Version:

<https://daneshyari.com/article/1124748>

[Daneshyari.com](https://daneshyari.com)