

STUDENTS' PERSPECTIVE ON VALUES IN MATHEMATICS

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ABSTRACT

It is obvious that students learn different values from different teachers' practices. These values impact on students' engagement with mathematics, their mathematical activities and life activities. Three students from the Bachelor of Management program were selected randomly. Qualitative data of students' perspectives on values in learning mathematics were explored. Interviewed data of students' comment on values in mathematics and its importance to real life were recorded and analyzed. This paper also focused on values which belong to each student and how they inculcate the value while learning mathematics. The findings showed that student believes about mathematics are important to real life. Student claimed that mathematics contains values which seriously influence and develop positive character. Students' perspectives on how to make mathematics more interesting and 'alive' were also discussed. This research will report interpretations of the diversity of values and meanings that students attribute to mathematics lessons.

Keywords: *engagement with mathematics, values, diversity of value, positive character.*

1. Introduction

Mathematics is a discipline which has unique characteristics. The various images of mathematics held by students were noted as a 'dry', difficult and boring subject (Wan Zah Sharifah Kartini, Habsah Ismail, Ramlah, Mat Rofa, Mohd. Majid & Rohani, 2005). Norziah, Effandi dan Zanaton (2014) stated that the process of teaching and learning mathematics will become more challenging if the images of mathematics is perceived as negative. One of the reasons for it being perceived this way is due to the fact that less attention is given by the student to understand and inculcate mathematical values.

Kietel (2003) said that the biggest struggle in mathematics is about meaning and significance, which is not revealed by the teaching practice. Lim (2012) stated that school mathematics curriculum of many countries including Malaysia are very concern with how character could be developed. Disseminating values in teaching and learning (Nik Azis, 2009; Bishop, 2007; Seah, 2011) is one of the good solution for this problem. There are various categories of intrinsic values embedded in mathematics education. It is possible to disseminate positive values and thus develop positive characters (Lim, 2012) among our future generation by mindful integration into teaching and learning of mathematics.

Demanding for greater mathematical literacy in the modern knowledge economy need for greater engagement by students with mathematics. The organization for economic co-operation and development (OECD) and the program for international students assessment (PISA) put forward the definition of numeracy puts it:

“Mathematical literacy is an individual’s capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgements and to use and engage with mathematics in ways that meet the needs of that individual’s life as a constructive, concerned and reflective citizen”
(OECD 2003)

Values are not a subject but an inherent part of the educational process (Nik Azis, 2009) at all levels of education (pre-school until university) which play a major role in establishing a sense of personal and social identity for the learners. Bishop, Fitzsimons, Seah and Clarkson (2001) describe the values held by students as representing their beliefs and attitudes. Bishop (2008) stated that values are crucial components of classrooms’ affective environments, and thus have a crucial influence on the ways students choose to engage or not engage with mathematics.

However values do not occur explicitly during mathematics classes (Bishop, 2012). Mathematics is considered to be publicly important; at the very same time as it is considered to be personally irrelevant (Niss, 2004). There are various ways of inculcating values in mathematics (Rokiah & Nik Azis, 2008; Mohd Uzi & Lim, 2009) during the process of teaching or discussion; using individual or group activities; at various levels from pre-school to tertiary level so as to promote positive character.

2. Objectives

This paper explores perceptions among student which can provide information on the perception on mathematics. Thus, this study is hopefully considered to give some contribution to the effort to develop a holistic conception in mathematics education based on the perspective of students.

3. Methodology

Interviews were revealed with two students personally for collective values developed in classroom practice:

Table 3.1: Background Information

No	Student’s name	Program
1	Siti	Foundation of Management
2	Asyraf	Bachelor of Human Resource Management (ex-Foundation)

Why is mathematics to be learnt and taught? Why is math applicable? These questions go beyond ordinary daily lesson and are rarely discussed among students.

4. Findings and Data Analysis

4.1 What is math about?

Students learn to abandon the question 'For what' and surprisingly they have ideas about where to apply math beyond the shopping mall, the knowledge about application mostly achieved what we aim for.

Interviewer: What does this sort of math mean to you essentially? What's good for, what can you possibly do with it?

Asyraf: I can see mathematics is important to our life. In Islam, we need mathematics to make it clear about the calculation of interest which is currently known in Islam as *riba*'.

Siti: For me, mathematics or any subject is important to our real life because it comes from Allah SWT. Something to be calculated like money in and out. In account, we need to note the money which debit and credit similar to what Allah will do by counting in and out for whatever we did. Whatever we learn is actually come from Allah..

4.2 Feeling about math

'Doing math' offer extra practice and some advantage in comparison to other students. However, enjoyment or fun is rarely connected by doing mathematics at the beginning period but it is positively improved. Student claimed that the enjoyment of doing mathematics is when they understand how to solve the problem given. The lecturer should know how to inculcate values in teaching and learning mathematics so that student know the importance of learning the knowledge itself.

Interviewer: You enjoy doing (math)?

Asyraf: My motivation on mathematics is going down when I do not understand it. I was really demotivated and feeling down when learning mathematics during my lower secondary school. During SPM I started feeling good and prepared myself for SPM. I got the awareness on Islam and be a better Muslim. This help me to be a good student and I always settle my homework.

Siti: Oh..when I was in primary school, even I got A for mathematics but this was not really my favourite subject. I learned just because of getting A. Really only for that aim...But time to time I slowly appreciate the knowledge and do not aim only for exam. Sometimes I could not see mathematics and its application to real life but I do try to appreciate it.

5. Discussion and Conclusion

Students as participants agree that knowledge of mathematics comes from God and such knowledge is constructed by human based on their thinking, their sensory experience and guidance from God. Next, in terms of the nature of mathematics, this study shows that the participants' views consider that mathematics comes from God and the knowledge is built by human based on their thinking, their sensory experience and guidance from God (integrated universal view). Integrated perspective or the holistic perspective is predicated on a perspective of faith and devotion to God. According to the integrated universal approach, mathematics comes from God and an individual construct his or her own mathematics.

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