

ELEMENTS ACROSS CURRICULUM: THE IMPACT OF INTEGRATING MI ON STUDENTS' INTERACTION IN CLASSROOM

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ABSTRACT

This paper discusses the findings of a study on the impact of integrating elements of multiple intelligences (MI) on students' interaction in classroom learning. The study was done based on the concept of integrated curriculum. It embarked on teaching and learning History subject. The students in the selected classroom were given instructions that integrate elements of MI in their learning activities. Data were collected through observations and interviews focusing on students-teacher interaction; and students-students interactions. In general, results of the study revealed that integrating elements of MI in teaching and learning processes has significant impact on the conduciveness of the learning environment in classroom. Student-teacher interaction and student-student interaction in the classroom observed to be good. It was inspiring and motivating the teachers to do their teaching job as well as to the students in their learning activities. The results of the study were in parallel with previous studies; that integrating elements of MI in curriculum implementation gives benefit to students as well as to teachers. It is also in line with the aspiration of Malaysia National Education Philosophy for developing individuals' potential in a holistic and integrated manner. More comprehensive studies should be done to get clearer ideas on it.

Keywords: Multiple intelligences; student interaction

INTRODUCTION

Discussion in this paper is on procedure and findings of a study about the impact of integrating elements of MI in teaching and learning process on students' interaction in classroom. The study embarked on teaching and learning Form 1 History subject in a selected Malaysian Lower Secondary School. The first section of the discussion is an overview of the study or research background that includes research questions and research significance. The following discussion describes literature review about MI and MI in education. The discussion is then about research methodology used in the study that includes design, sampling and research instrument. This is followed by discussion on research finding which includes methods used for analysing data that aims to answer the research questions which are basically to identify the impact of the integration as mentioned above; this brings to the research findings of the study. The section continues with conclusion and discussion. The final section discusses conclusion and suggestions for future study.

RESEARCH BACKGROUND

In recent years, development of MI amongst younger generation becomes more important as it is in parallel with recent challenges or competitions in a global and borderless world. Younger generations are asset for future nation development. Developing individual's MI potential means to develop their abilities and faculties for enhancement of their intellectual, spiritual, emotional and physical; and to develop the confidence and the resilience to face upcoming challenges and competitions in their life. In Malaysia, one of the roles of education system is to equip younger generation with competencies holistically for their success in the modern era. The education system is based on Malaysia National Education Philosophy (NEP) that states as follow:

“Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards, and who are responsible and capable of achieving high level of personal well-being as well as being able to contribute to the harmony and betterment of the family, the society and the nation at large”

(Malaysia Ministry of Education, 2006)

Malaysia Ministry of Education since the year 2001 introduced MI in curriculum implementation to meet the aspiration of NEP. However in practical, education in Malaysia mainly focuses on academic achievement (Ikhsan Othman; 2005). Findings from preliminary studies show that teachers were in curiosity with the effect of integrating elements of MI in their classroom instruction, especially on students' academic achievement (Ikhsan Othman; 2005, 2010). Additionally teachers were also in doubt on technically how to integrate elements of MI in their classroom instructions although in the year 2001 Malaysia Ministry of Education through Curriculum Development Centre had introduced MI in curriculum implementation. In light of these issues, this study specifically focused on identifying the effects of integrating elements of MI in teaching and learning process on classroom learning climate especially on students' interaction.

Research Objectives

This study aims to identify the impact of integrating elements of MI on students' interaction in teaching and learning History. The objectives of the study were as follows:

- (a) To identify the effect of integrating elements of MI on student-teacher interaction in teaching and learning History.
- (b) To identify the effect of integrating elements of MI on student-students interaction in teaching and learning History.

Research Questions

The study is to answer the following research questions:

- (a) How is the effect of integrating elements of MI on student-teacher interaction in teaching and learning History?
- (b) How is the effect of integrating elements of MI on student-students interaction in teaching and learning History?

Research Significance

The findings of this study can be used significantly as sources to obtain a more complete picture of what is being studied about the implementation of MI theory in education especially in classroom teaching and learning process. The findings of this study used to support former research findings done by the researcher about the integration elements of MI in classroom teaching and learning process. Finding from preliminary studies show that teachers were in curiosity with the effect of integrating elements of MI in their classroom teaching and learning process. Thus the findings of this study are significant for them to get clearer picture regarding with the matter.

LITERATURE REVIEW

The MI Theory

In 1983, Howard Gardner mapped a broad range of human abilities by grouping them into seven kinds of intelligences. In his book named *Frame of Mind* initially he suggested seven kinds of intelligences (Gardner, 1983). The seven kinds of intelligences are linguistic intelligence, logical-mathematic intelligence, visual-spatial intelligence, bodily-kinesthetic intelligence, musical intelligence, interpersonal intelligence and intrapersonal intelligence (Gardner, 1983). However in 1997, Gardner suggested the eighth intelligence, namely "naturalist intelligence" as additional to the original list of the multiple intelligences. All the intelligences are complimentary between each other (Gardner, 2004). When one has a problem to solve or a project to accomplish, all intelligences work together in a well-orchestrated, integrated way; the stronger intelligences tend to train the weaker ones to do their part in solving the problem or accomplishing the project (Lazear, 1999).

The MI theory by Gardner is a theory that values nurture as well as nature in accounting for the development of intelligences. Intelligences develop on three main factors namely biological endowment; personal life history; and cultural and historical background (Armstrong, 1994). Biological endowment refers to heredity or genetic; personal life history refers to experiences in life; and cultural and historical background refers to time and place in which individuals born and raised.

MI in Education

Through instructions and experiences, everyone has the capacity to develop their intelligences. Virtually everyone has the capacity to develop all intelligences to a reasonably high level of performance if given the appropriate experience, encouragement, enrichment and instruction. In classrooms, elements of MI can be integrated in curriculum and instruction where teacher can integrate a unique blend of all intelligences. Armstrong (1994), Jasmine (1996), Campbell & Campbell (1999), and Lazear (1999) in their books elaborate explanation on how to integrate elements of MI in classroom instructions. This study implemented the procedure call Ask Key MI Question by Armstrong (1994) for integrating elements of MI in the teaching and learning activities. Table 1 is an adaptation of the procedure used.

Table 1: Integrating Elements of MI in Teaching and Learning Activities

SPECIFIC LEARNING OBJECTIVE	MI	ASK KEY MI QUESTION FOR INTEGRATING ELEMENTS OF MI IN TEACHING AND LEARNING PROCESS
	Linguistik	How can I use the spoken or written word?
	Logical-mathematic	How can I bring in numbers, calculations, logic, classifications, or critical thinking skills?
	Spatial	How can I use visual aids, visualization, colour, art or metaphor?
	Musical	How can I bring in music or environmental sound, or set key points in a rhythmic or melodic framework?

.....	Bodily-Kinesthetic	How can I involve the whole body or use hands-on experiences?
	Interpersonal	How can I engage students in peer sharing, cooperative learning, or large-group simulation?
	Intrapersonal	How can I evoke personal feelings or memories, or give students choices?
	Naturalist	How can I bring the skills of observation, identification and classification of the world?

(Adapted from Armstrong, T. 1994, *Multiple intelligences in the classroom*)

According to the procedure, the teacher for the subject will first determine the specific learning objective of the selected topic or subtopic. This will be followed by asking questions about the relevant elements of MI to be integrated in the selected learning activities. It is not necessary to integrate all elements of MI in the activities. Instead only the relevant one will be chosen.

RESEARCH METHODOLOGY

This is a descriptive study by observation focusing on student’s interaction in classroom during teaching and learning History subject. The study was done in Malaysia. Prior to the commencement of the study, permission was obtained from Education Planning and Research Division (EPRD) of the Malaysia Ministry of Education. Permission was also obtained from Selangor State Education Department and upon approval; further permission was obtained from the principal of the selected school where the study was done.

Design of the Study

Two classrooms of Form 1 Lower Secondary School in the selected school were involved in the study. One of the classrooms that are classroom A consists of 35 students that comprise of 20 male and 15 female. The other classroom that is classroom B consists of 38 students that comprise of 17 male students and 21 female students. The students in the classrooms were following teaching and learning process of History subject that integrate elements of MI in the teaching and learning activities.

The teaching and learning processes were done in a period of six week. The teaching and learning process base on lesson plans prepared by the researcher of the study. Teaching aids and facilities needed for the teaching and learning process was provided by the researcher. Prior to the intervention, briefings were given to the teachers involved on how to run the teaching and learning process. During the period of six weeks, randomly two observations were done to gather data during series of instructions in the classroom, one observation in classroom A and another observation in classroom B.

Data Collection and Data Analysis

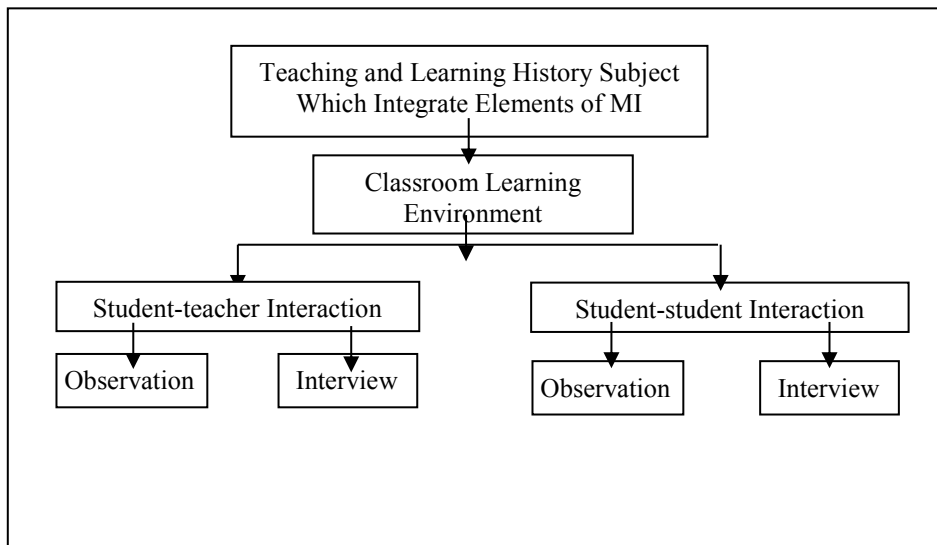
According to Gay, Geoffrey & Airasian (2009), data can be recorded manually or mechanically by a recording device. According to Ary, Jacobs, Razavieh & Sorensen (2006), checklist is the simplest device to use which presents a list of behaviors as indicators be observed. From the observations the frequency of students that show the indicators were calculated. Therefore in this study checklists were used in the observation. Checklist A for the purpose of observing student-teacher interaction in classroom. Checklist B for observing student-student interaction in classroom.

Just after the observation, a semi-structured interviews were done with the students and the teachers involved to gather data needed in this study. An interview protocol was developed by the researcher to meet the purpose.

Framework of the Study

The aim of this study was to identify the impact of integrating elements of MI on students’ interaction in teaching and learning History. The first interaction is student-teacher interaction the second is student-student interaction. Figure 1 illustrates the framework of this study.

Figure 1: Framework of the Study



RESEARCH FINDING

Research findings of the study will be discussed in this section accordingly with the stipulated research questions.

Research Question (a): How is the effect of integrating elements of MI on student-teacher interaction in classroom?

To answer research (a), an observation had been made to students in the classroom A of Form 1 Lower Secondary School. There were 35 students in the classroom following teaching and learning process for the History subject with integrate elements of MI. A check list A check list for student-teacher interaction was used in the observation. The observation took place within a period of 80 minutes, that is for double teaching and learning session. Table 2 is the record of the observation.

Table 2: Student-teacher Interaction in Classroom

No.	Observed Criterion	Tally	Frequency
1.	Students questioning teacher (Q&A).	IIII IIII IIII IIII IIII	24
2.	Students trial giving correct answer to teacher’s questions.	IIII IIII IIII IIII I	21
3.	Students giving their opinion or suggestion.	IIII IIII IIII III	18
4.	Students go to see their teacher.	IIII III	9
5.	Students helping their teacher to manage their classroom.	IIII IIII	10

Base on the observation done and recorded as in Table 2, the researcher find that the lesson in the classroom was an active session where student-teacher engages actively. In the period of 80 minutes lesson, the frequency of students questioning teacher (Q&A) is 24. The frequency of students try to give correct answer to teacher’s questions is 21. The frequency of students giving their opinion or suggestion 18. The frequency of students go to see their teacher is 9. The frequency of students helping their teacher to manage their classroom is 10.

Besides observation, interview was also made. After the session over, students were identified randomly to be interviewed. Base on their response in the interview; basically the students were happy following the teaching and learning process. They had chances to interact with their teacher.

“I’ve chances to ask and response to teacher’s questions as teacher gave us time to do so”
(SMCA-1)

The students also felt confident with their teachers in the teaching and learning session as teachers as teacher was not so autocratic.

"I felt confident with my teacher; because they accept our ideas and never reject the idea even though it was not so correct"

(SFCA-1)

Based on interview with the teacher, he said that the class gave good response to his teaching. Students are excited to learn and doing learning activities.

"I'm happy with my students. They're excited to learn and they're cooperative... I've no problem in achieving my teaching and learning objectives"

(TCA)

Overall, integrating elements of MI in the teaching and learning process has positive effect on student-teacher interaction in the classroom.

Research Question (b): How is the effect of integrating elements of MI on student-student interaction in classroom?

To answer research (b), an observation had been made to students in the classroom B of Form 1 Lower Secondary School. There were 38 students in the classroom following teaching and learning process for the History subject with integrate elements of MI. A check list for student-student interaction was used in the observation. The observation took place within a period of 80 minutes, that is for double teaching and learning session. Table 3 is the record of the observation.

Table 3: Student-student Interaction in Classroom

No.	Observed Criterion	Tally	Frequency
1.	Students ask question from their friends.	1	21
2.	Students give their opinion or suggestion to their friends.		18
3.	Students answering questions from their friends.		20
4.	Students help their friends in learning activities.		24
5.	Students disturb their friends in learning activities.		4

Based on the observation recorded as in Table 3, we find that the lesson in the classroom was an active session where student-student engages actively among themselves. The frequency of students ask question from their friends is 21. The frequency of students give their opinion or suggestion to their friends is 18. The frequency of students answering questions from their friends is 20. The frequency of students help their friends in learning activities is 24. There were only 4 cases showed attitude that can be classified as disturbing friends.

After 80 minutes teaching and learning process, the session was over. Students were identified randomly to be interviewed. One of the students said that the teaching and learning process was conducive and flexible in the sense of interaction in learning activities.

"I've so many opportunities to interact with my friends in the classroom during the lesson"

(SFCB-1)

Based on an interview with a male student, he said that he had chances to ask their friends in completing exercise given in the learning activities.

". . . I felt confident doing exercise given by the teacher because I can check and discuss with my friends before I'm completing my exercise. It's important to me"

(SFCB-1)

Based on interview with the teacher in classroom B, he said that the class gave good response to his teaching. The teacher was satisfied that the teaching and learning activities were focussing to the achievement of the planned learning outcomes.

"Students were very cooperating and they can also follow the learning process. Therefore the learning objective of the lesson was achieved successfully."

(TCB)

Overall, integrating elements of MI in the teaching and learning process has positive effect on student-student interaction in the classroom.

CONCLUSION

In this study students' MI namely verbal-linguistic intelligence, logic-mathematic intelligence, visual-spatial intelligence, kinesthetic intelligence, intrapersonal intelligence, interpersonal intelligence, musical intelligence as well as naturalistic intelligences were promoted to enhance the development of the intelligences among students. That was in teaching and learning process especially in the learning activities which integrate elements of MI. Integrating elements of MI is in parallel with the aspiration of Malaysia National Education Philosophy which says that education is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious.

Base on the observations and interviews done, this study found that teaching and learning process which integrates elements of MI gave students chances for the development the intelligences. In terms of classroom interaction, integrating elements of MI in the teaching and learning process has positive effect on students' interaction in the classroom. Students' interactions in classroom that is student-teacher interaction and student-student interaction were good and inspiring the teachers to do their teaching job. It also inspiring and motivating students in their learning process as the classroom environment and conduciveness is high.

The results of the study were in parallel with previous studies done by Ikhsan Othman (2013) which integrate elements of MI in teaching and learning Primary School Science. It is also in parallel with the findings from Fortner (2004), Ozdener & Ozcuban (2004) that integrating MI in classroom instructions manage to improve student learning process. These findings can be used to erase teacher's curiosity with the effect of integrating elements of MI in their curriculum implementation. Finding from preliminary studies show that teachers were in curiosity with the effect of integrating elements of MI in their classroom instruction, especially on students' academic achievement.

ACKNOWLEDGEMENT

The authors of this paper would like to acknowledge the contributions of fellow researcher Dr. Norila Md Salleh and Mohd Rafizi Rafie who involved in this study and who had kindly contributed with integrity and honesty.

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