

**MULTIPLE INTELLIGENCE THEORY IN BUSINESS
EDUCATION: DOES IT MAKE A DIFFERENCE?
- A CASE IN MANAGEMENT AND ORGANISATIONAL
BEHAVIOUR**

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ABSTRACT

The Multiple Intelligence (MI) theory has not failed to generate both keen interest and critical arguments since it gained attention among educational researchers and educators in 1983. The theory was investigated at different levels of schooling, from pre-school to adult education, including higher education. However, in business education this theory rarely initiated interest and was not thoroughly explored to find out its significance. It can be argued that this theory may be unpopular and perhaps impractical to use in management or business education.

The more widely used method in business education is the case study. Some researches on using case studies found that this method was able to develop important skills needed in work and professional roles. However, the learning process involved in using case studies is focus mainly on just verbal/linguistic and logical/mathematical intelligences. And it cannot be denied that different people have different learning strengths.

This paper seeks to find out whether using the MI theory in delivering a course in business and recognising the different learning strengths of individuals will indeed make a difference in terms of their learning and task engagement experience, content knowledge, motivation and development of skills.

Keyword: Case study, Learning strengths, Multiple Intelligence, Learning perspective, Learning experience

INTRODUCTION

The MI theory was first proposed in the early 1980s when Howard Gardner published his book, *Frames of mind* (Gardner 1983). According to Gardner, intelligence is defined as the capacity to solve problems or to fashion products that are valued in one or more cultural settings (Gardner and Hatch 1990). This is to mean that intelligence is not cultural-bound and takes into consideration the differences in time and place (Barrington 2004). An earlier proponent of intelligence, Thurstone said that a person is intelligent in many ways (1938).

Gardner proposed that there are eight intelligences that individuals have. Each individual has their own mix of intelligences and these intelligences can change over time.

The intelligences are (Gardner 1997; Stanford 2003):

- Verbal/linguistic intelligence: the production of language, abstract reasoning, symbolic thinking, conceptual patterning, reading and writing.
- Logical/mathematical intelligence: the capacity to recognize patterns, work with abstract symbols and discern relationships or see connections between separate and distinct pieces of information.
- Visual/spatial intelligence: visual arts, navigation, mapmaking, architecture and games requiring the ability to visualize objects from different perspectives and angles.
- Bodily/kinesthetic intelligence: the ability to use the body to express emotion, to play a game and to create a new product.
- Musical/rhythmic intelligence: capacities such as the recognition and use of rhythmic and tonal patterns and sensitivity to sounds from the environment, the human voice and musical instruments.
- Interpersonal intelligence: the ability to work cooperatively with others in a small group, as well as the ability to communicate verbally and nonverbally with other people.
- Intrapersonal intelligence: the internal aspects of the self, such as knowledge of feelings, range of emotional responses, thinking processes, self-reflection and a sense of intuition about spiritual realities.
- Naturalist intelligence: the ability to recognize patterns in nature and classify objects, the mastery of taxonomy, sensitivity to other features of the natural world and an understanding of different species.

MI THEORY IN PRACTICE

For several years, MI theory has been explored in projects at several different levels of schooling. Project Spectrum is one that has developed a number of curriculum activities for preschool children in the U.S. Another project is the Arts PROPEL that looks into the learning of junior and senior high school students through areas like music, imaginative writing and visual arts (Gardner and Hatch 1990).

The Adult Multiple Intelligences (AMI) Project, a collaboration between Harvard Project Zero and the New England Literacy Resource Center (NELRC) at World Education is one of several projects that look into the use of the MI theory in adult literacy education (Project Zero 2003).

The MI theory is well accepted in studies involving children with learning disorders. For example, the theory provides a possible framework that researchers can use to develop assessment instruments that help to identify abilities in children with ADD (Attention Deficit Disorder) or ADHD (Attention Deficit Hyperactive Disorder) (Armstrong 1998). The theory is also well received in countries outside the U.S. For instance, Harvard Project Zero began a professional development project with international schools in northern Europe and subsequently in Asia beginning 1997 (Project Zero 2003).

THE IMPORTANCE OF MI THEORY IN HIGHER EDUCATION

Barrington studied why the MI theory needs be given a considerable consideration in tertiary education. According to him, teaching and learning in most Western higher education institutions still privileges certain ways of knowing and focuses on a narrow view of the intellect and does not allow for socio-cultural differences (2004).

Traditional teaching focus mainly on just verbal/linguistic and logical/mathematical intelligences and students who fail to excel in these intelligences have low self esteem and their own individual strengths go unrecognised (Campbell 1996). Barrington (2004) cites the work of McNinnis et al. (1995) where in an Australian survey of first year students at universities, barely half of the on-campus students found their subjects interesting and about 30% of them were seriously considering deferring.

Barrington further added that universities are undergoing rapid change, both in clientele and demands by society and there is increased diversity of students in these institutions. This diversity takes in the form of different class, gender, race, ethnicity and academic preparation (Coaldrake 2001). For instance, the number of international students in private higher educations in Malaysia has grown tremendously from 2,244 in 1997 to 22,827 in 2002, according to the statistics tabulated by the Department of Private Education, Ministry of Education Malaysia.

With such diversity, it becomes more apparent that the ability to learn will be more important than what is learnt. Students have diverse ways of gaining knowledge and skills. If teachers are able to focus on the strengths of their particular multiple intelligences, then a large number of students are likely to gain the requisite experience (Barrington 2004).

THE USE OF CASE STUDIES IN BUSINESS EDUCATION

In business education at the tertiary level, case studies are often the preferred instrument to use in teaching. One reason is that case studies represent the real-life business or management scenarios and this is beneficial to help students learn to apply concepts. As noted by Dooley and Skinner (1977):

A case typically is a record of a business issue which actually has been faced by business executives, together with surrounding facts, opinions, and prejudices upon which executive decisions have to depend. These real and particularized cases are presented to students for considered analysis, open discussion, and final decision as to the type of action which should be taken. (Dooley and Skinner 1997:278)

In this sense, case studies are useful in skills development as cited by Hassall et al. (1998) the work of Easton (1992) that identified the skills developed by the case method. These skills include knowledge, analytical skills, application skills, communication skills, creative skills, decision-making skills and social skills.

However, in terms of strength-based activities, case studies emphasized only on the verbal-linguistic and logical-mathematical strengths, thus, undermining the importance of recognising other strengths that students have. According to Dooley and Skinner (1977), the nondirective approach to case methods where decisions are left primarily to the students are very rare. Application of the case is very poor when teacher talk dominates 95% of the class and students are only there to listen. Problems like student impatience and boredom will occur as a result.

A study by John Goodlad observed that nearly 70% of classroom time was consumed by teacher talk that involves mainly giving instructions and lecturing to students (1984). And students' main activity in classrooms is doing written assignments.

Although the emphasis is on linguistic and logical intelligences, many students do not excel academically in these areas.

THE CRITIQUES OF MI THEORY

Studies on how the MI theory influences the subject learning in business or management education at the tertiary level are not significantly found. In fact, the use of this theory in the teaching and learning of business subjects are not common. This may indicate some problems in using the MI theory in this context. Barrington's survey of lecturers at the Institute of Vocational Education in Hong Kong found that many supported the ideas of MI but there is a need for more time and resources to help integrate MI into teaching (2004). This gives an indication that practical use of MI will inevitably be more time-consuming and costlier. The research-and-development process to develop instruments that can assess strengths and weaknesses in an "intelligence-fair" way has also proved to be time consuming and costly (Gardner and Hatch 1990). Limited resources make the MI theory seen to be utopian.

Some critics argue that the theory is not well-defined. There is no definitive list of intelligences. Some pointed that notions such as ability in music and art are just talents, not intelligences (Barrington 2004).

Klein (2003) argued that the MI theory is mistaken when it emphasizes on the differences between individuals' cognitive abilities and assumes that curricular tasks correspond to such differences in a one-to-one fashion. "Most educational tasks engage many cognitive resources; and interactions between cognitive resources and curricular representations are dynamic, complex and task-specific" (Klein 2003:46)

It is also argued that the MI theory does not encourage educators to teach 'core knowledge' (Hirsch Jr. 1988). This refers to a body of lasting knowledge that covers for example, important events in history, essential elements of mathematics, oral and written expressions that every individual will need, regardless of the type of intelligence he or she has.

OBJECTIVE OF RESEARCH

The study aims to find out whether the MI theory makes a significant contribution to students' learning in a tertiary course and whether there are any significant differences between the case method and strength-based methods. To be more specific, this qualitative research aims to answer the following questions:

1. By having strength-based learning exercises (based on the MI theory) for the students, what will be their overall learning experience?
2. What is the students' experience in terms of the task engagement (carrying out the exercises)?
3. How is the students' motivation in terms of learning?
4. What are the students' views about using the strength-based exercises in class?

RESEARCH METHODOLOGY

Research sample

Two tutorial groups of a total of 35 first-year undergraduates from the September cohort were chosen as the sample. The students were from different nationalities, ethnic groups, gender and background.

Developing individual MI profile

A short questionnaire developed by © Walter McKenzie was used to identify each student's MI profile. A pre-test was conducted using this questionnaire with 10 students from the January cohort. Individual MI profile was then generated and given to these 10 students based on their feedback from the questionnaire. It was found that 90% of the students agreed to their individual profile.

Designing and implementing strength-based learning tutorial exercises

Exercises were prepared from one topic (Belbin's team roles) in the Management and Organisational Behaviour subject (see Appendix 1). Three sessions of tutorial (two hours each) were conducted as follows:

The first session

All students were given the same exercise that emphasised on one aspect of intelligence i.e. the verbal-linguistic. Each student was given a short case study to work on individually. The case study focused on reading and writing.

The second session

Different exercises were given to students based on their learning strengths/intelligences identified earlier through their MI profile. Students who have shown strong strengths in a few intelligences or in verbal-linguistic intelligence were given exercises that relate to their weakest strength.

The third session

This was a continuation from the second session. In this session, some of the exercises were shared with the class for example, group presentation.

The questionnaire to investigate students' learning experience and perspective

A simple questionnaire was developed to address the four research questions. This questionnaire was administered to students at the end of the first and second session. Their feedback for these two sessions was then analysed and compared to identify significant trends.

The focus group interview to re-affirm the results of the questionnaire

A group of 16 students was chosen from the sample to conduct the interview after all the three tutorial sessions were done. This focus group covered the different learning strengths/intelligences. Reference was made from the questionnaires during the interview and further clarification and information was obtained from the group.

STUDENTS' LEARNING PERSPECTIVES AND EXPERIENCE

The students' MI profile

From the results of the questionnaire used to identify the students' intelligences, it was evident that the students have different learning strengths. The strengths are listed in Table 1 below. Each student has a combination of strengths, but with one that was significantly stronger than the others. Majority of the students were strong in their interpersonal intelligence as compared with verbal-linguistic and logical-mathematical as well as the other intelligences. There was no student in these groups who were strong in terms of their bodily-kinesthetic intelligence.

TABLE 1: Students' Multiple Intelligence Profile

Strengths/Intelligences	No. of students
Verbal-Linguistic	4
Logical-Mathematical	9
Visual-Spatial	5
Bodily-Kinesthetic	0
Musical-Rhythmic	2
Interpersonal	13
Intrapersonal	1
Naturalist	1
Total	35

Findings from the questionnaires on learning experience and perspectives

The students' learning experience and perspectives were investigated from the following areas:

- Overall learning experience
- Experience in task engagement
- Motivation in learning
- Views in using the exercise

Overall learning experience

The students' overall learning experience was examined based on:

- (i) how enjoyable and stimulating was the session
- (ii) the students' understanding of the topic after the session

(i) How enjoyable and stimulating was the session

The following questions were asked to find out whether students enjoyed the session and whether they found the session stimulating:

“What do you like about the whole exercise that you have just done?”

“What do you dislike about the whole exercise that you have just done?”

“Did you find the exercise stimulating or boring?”

“Overall did you enjoy the tutorial session?”

It was discovered that generally both the sessions were enjoyable and stimulating. However, it was evident that the strength-based exercises were more enjoyable and stimulating (see Appendix 2).

(ii) The students' understanding of the topic after the session

How well the students understood the topic was evaluated through these questions:

“Generally, did you understand what Belbin’s team roles is all about?”

“What was the most important thing that you have learnt in the class today?”

Both exercises were useful in helping students understand what the topic is about. Students understood better when they engaged in strength-based exercises (see Appendix 2). Since they enjoyed doing what they were good at, students found these exercises easier to do. They have the opportunity to use their skills and discover their abilities. This in turn aroused the interest of students and thus increased their level of understanding of the topic concerned.

There was an interesting finding on one student who was strong logical-mathematically but was very weak in the verbal-linguistic area. The student’s comments on the first and second session were equally the same and did not favour both the exercises. The comments were:

“I don’t like the whole exercise”

“The exercise was a headache”

“A bit boring”

“Only understood 50% of the lesson”

It can be inferred that the student was good in problem-solving (that requires logical thinking) but the instrument (exercise) used was still based on reading and writing (that requires strong linguistic skills). Thus, this student’s logical-mathematical strength lies primarily on working with numbers and not words.

This perhaps shows that an individual does not only have a combination of a few intelligences but the intelligences are interdependent to identify the context of the individual’s strengths.

Experience in task engagement

The students’ experience in performing the task was identified through two components:

(i) the technical component

(ii) the emotional component

(i) The technical component

This component looked at the content of the task. These questions were given for this purpose:

“How well did you understand what you need to do for the exercise?”

“Did you learn any other skills/knowledge besides the topic through the exercise? If yes, please indicate”

Generally, students clearly knew what they need to do to complete the task required for both the exercises. Both the exercises gave students the opportunity to learn some kind of skills for example, skills in analysing and rationalising, writing, presentation, communication, interviewing and creative thinking.

(ii) The emotional component

This component looked into the feelings of the students when they were doing the task. They were asked:

“What was your general feeling when you are preparing and carrying out the exercise?”

It was discovered that both the exercises caused anxiety and stress to certain extent because they were uncertain whether the answers that they were working on were right. They were more concerned about the ‘right or wrong’ of the answers and this element of being ‘right or wrong’ was found to be very significant in students’ learning, even though they may be good in what they were doing. Strength-based exercises were found to be more exciting for the students when they were doing the task. Table 2 below records examples of the students’ comments.

TABLE 2: Students’ Comments on “What was your general feeling when you are preparing and carrying out the exercise?”

Case	Comments	
	First session (verbal-linguistic)	Second session (strength-based)
1	“Tired. There were so many team roles to read about”	“Excited when preparing questions and carrying out the interview”
2	“Boring, having to read and write”	“Worried that I might have gotten a bit out of point but generally was o.k.”
3	“Anxious due to time constraint”	“Quite relaxing. I was enjoying myself while doing the slide”
4	“I feel it is hard”	“I feel I understand more about what I do”

Motivation in Learning

To understand how motivated the students were from doing the exercises, these two criteria were used:

- (i) the satisfaction from doing the exercise
- (ii) how encouraged were the students to learn more about the topic

(i) The satisfaction from doing the exercise

The following question was asked:

“How satisfy were you after doing the exercise?”

There was no significant difference between the two sessions as to the satisfaction that the students get from doing the exercises. It was noted that the students were satisfied as long as they were able to complete the exercise.

(ii) How encouraged were the students to learn more about the topic

The students were asked:

“Did you want to find out more about the topic and the exercise that you were doing? Why?”

Both the sessions did encourage students to find out more about the topic. The students found the sessions useful in broadening their knowledge and they thought that the topic they learnt can be applicable in the future. The motivation was more content-based and was not related to the type of exercise.

Views in using the exercise

To seek the views of students on using the exercise in the future, this question was asked:

“Will you encourage more of this type of exercise in the class in future? Why?”

It was interesting to note that the students would like to have more of both sessions. The first exercise which was a case study simulated a real situation that the students could relate. The following comments were given:

“It provides real life insights into different organisations”

“It gives a real life situation to ponder about”

The strength-based exercises created a variety for the students. They liked student-centred activities and this can be seen from the following comments:

“Yes, so it won't be so boring, just teaching and listening in class”

“Yes, because learning and exploration of the topic is left to the student and I think we can learn better this way”

“Yes, it makes students work, not the lecturer. It's a very active style of learning”

“Yes, it encourages students' participation”

Findings from the focus group interview

The questions for the focus group interview are shown in Appendix 3.

Generally, students preferred strength-based exercises because these were found to be more enjoyable to do and the students understood better. They thought that the exercises were feasible to do because they like variety and they were able to take control of their own learning. In relation to this, the students also thought that the quality of learning would improve. They believed that the MI theory was useful in teaching and they were in favour to be assessed based on strength-based exercises. The only concern here was a fair marking for the different exercises.

CONCLUSION

This study indicated significant differences in the students' overall learning experience when they were involved in exercises that relate to their intelligence or strength as compared to doing activities that were not. Students enjoyed their lesson and their understanding of the topic was better. Those who were strong in their

verbal-linguistic and logical-mathematical intelligences tend to benefit more from the use of case studies. Those who are not seem to prefer other strength-based activities. However, the MI theory did not seem to have a significant impact on students' motivation to learn more about the topic. As for skills development, both the case method and the MI theory give opportunities for students to develop various skills necessary for a business study.

It is interesting to note that the intelligences can be mutually dependent. So, it is important for us to see the bigger picture, particularly when assessing the students' strengths and when designing exercises related to the different intelligences. It is also interesting to note that in this study, the students' first language is not the English language. Therefore, the lack of proficiency of the language may have influence the students' learning experience to some extent.

It is undeniable that there were a few limitations in this study that included time constraint, completion of a structured syllabus outline within the term and fixed assessment modes. This study was an isolated case of one topic and could not be done continuously for several topics due to the limitations mentioned. Furthermore, the study only involved the first year undergraduates and further studies need to be done for the higher levels of the graduate business course as well as for postgraduate studies. Nevertheless, this study hopes to spur new interest and future studies along the same line among academicians and researchers.

Exercises for Belbin's Team Roles

Verbal-linguistic	Case study – individual written assignment
Logical-mathematical	Solve a problem (analyse the relationship between roles and personality)
Visual-spatial	Design a chart to reflect the roles
Musical-rhythmic	Compose a song about the roles
Interpersonal	Conduct interview with friends to find out roles
Intrapersonal	Write a self-reflective essay about the roles played in a group/team
Naturalist	Assign roles to the different type of animals in the animal kingdom

Note: There was no bodily-kinesthetic intelligence identified from the sample. No exercise in this strength was required.

Overall learning experience: How enjoyable and stimulating was the session
Examples of students' comments on strength-based exercises

CASE 1 – Strength: Interpersonal

What do you like about the whole exercise that you have just done?

“The opportunity to find out more about my friends”

What do you dislike about the whole exercise that you have just done?

“Creating the relevant questions” (involves verbal-linguistic skills)

Did you find the exercise stimulating or boring?

“Stimulating”

Overall, did you enjoy the tutorial session?

“Yes, it was nice to understand people better despite the process being quite tedious”

CASE 2 – Strength: Visual-spatial

What do you like about the whole exercise that you have just done?

“The process of thinking through the graph, since it is easier for me to do that and I can understand more”

What do you dislike about the whole exercise that you have just done?

“There isn't anything that I dislike about this tutorial”

Did you find the exercise stimulating or boring?

“Stimulating”

Overall, did you enjoy the tutorial session?

“Yes”

CASE 3 – Strength: Verbal-linguistic

What do you like about the whole exercise that you have just done?

“It gave me the opportunity to analyse the situation critically which can really happen in a real-life organisation. Very challenging and interesting”

What do you dislike about the whole exercise that you have just done?

“None”

Did you find the exercise stimulating or boring?

“It was stimulating because the exercise allows the student to answer based on their judgmental skills”

Overall, did you enjoy the tutorial session?

“Yes”

Overall learning experience: How enjoyable and stimulating was the session
Examples of students' comments on exercises that was not strength-based

CASE 4 – Strength: Interpersonal; Exercise given: Verbal-linguistic

What do you like about the whole exercise that you have just done?

“Giving opinions. Arguing for the answer”

What do you dislike about the whole exercise that you have just done?

“Reading and writing”

Did you find the exercise stimulating or boring?

“Writing and reading are boring”

Overall, did you enjoy the tutorial session?

“Average”

CASE 5 – Strength: Visual-spatial; Exercise given: Verbal-linguistic

What do you like about the whole exercise that you have just done?

“I like the part when I need to analyse the roles of each character”

What do you dislike about the whole exercise that you have just done?

“It takes time”

Did you find the exercise stimulating or boring?

“I found the exercise boring”

Overall, did you enjoy the tutorial session?

“Not really”

CASE 6 – Strength: Verbal-linguistic; Exercise given: Musical-rhythmic

What do you like about the whole exercise that you have just done?

“Something different from what we have learnt in classes”

What do you dislike about the whole exercise that you have just done?

“So difficult to come out with new lyrics because I am not good in rhythm and music”

Did you find the exercise stimulating or boring?

“Boring”

Overall, did you enjoy the tutorial session?

“No”

Overall learning experience: The students' understanding of the topic after the session - Examples of students' comments on strength-based exercises

CASE 7 – Strength: Interpersonal

Generally, did you understand what Belbin's team roles is all about?

"I understand the difference between each team roles better. So, generally yes"

What was the most important thing you have learnt in the class today?

"That everyone has different mix of team roles which makes each of them unique"

CASE 8 – Strength: Visual-spatial

Generally, did you understand what Belbin's team roles is all about?

"Understand more if compared to the previous tutorial"

What was the most important thing you have learnt in the class today?

"Belbin's team roles"

CASE 9 – Strength: Visual-spatial

Generally, did you understand what Belbin's team roles is all about?

"Yes, I didn't really understand in the first exercise"

What was the most important thing you have learnt in the class today?

"Each person has different competence"

Focus Group Interview

1. Comparing the exercises in the first and second/third session, how different was it in terms of your experience in class, while doing the exercise and how well you have learnt? In which session did you understand the topic better?

2. Do you think that carrying out the strength-based learning activities like what we did in the second and third sessions is a feasible thing to do? Why?

3. Do you think the quality of learning would improve if MI Theory was employed? Why?

4. Generally, do you find the MI theory useful in teaching?

5. Would you like to be assessed based on strength-based exercises?

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