Multiple Intelligences in the Omani EFL context: How Well Aligned are Textbooks to Students’ Intelligence Profiles?

Fawzia Al Seyabi  
College of Education, Sultan Qaboos University, Sultanate of Oman

Hind A’Zaabi  
Ministry of Education, Sultanate of Oman

Abstract. The present study aims at identifying the multiple intelligences (MI) profiles of grade 12 female students in Oman in the light of Gardner’s theory of Multiple Intelligences (MI). It also presents an analysis of the MI profiles of the English textbooks used in grade 12 to determine the extent to which they align or misalign with the students’ profiles. The study used two instruments: 1) an MI survey addressed to 530 students in Muscat Governorate and 2) textbook analysis of grade twelve English textbooks. The results of the study pointed to the existence of misalignment between the sampled students’ intelligence profiles in comparison with the textbooks’ dominant intelligences. The study revealed that grade twelve female students ranked the intrapersonal talent as their strongest intelligence with 84.4%, followed by the bodily-kinesthetic, and the visual-spatial intelligences, whereas the textbooks were found to be heavily based on the verbal-linguistic intelligence with a 100% presence followed by the interpersonal, and the logical-mathematical intelligences. The study urges that future revisions of the Omani EFL curriculum are done through the lens of MI theory in order to improve the quality of students’ learning experiences.

Keywords: Multiple Intelligences (MI); Textbook analysis; Post-basic education; Oman

Introduction

The theory of Multiple Intelligence (MI) initially evolved out of Gardner’s work in cognitive psychology in the 1980s (Gardner, 1984). Gardner sought to revolutionize and widen the meaning of intelligence. Instead of defining intelligence in terms of the traditional scholastic concepts of mathematical and
linguistic talents, Gardner stated that human intelligence entailed at least seven talents and that people exhibit these intelligences in rather different ways (Campbell, Campbell & Dickenson, 1999; Gardner, 1999).

Gardner’s new concept of intelligence was based upon the results of his studies in cognitive psychology and his examination of both genius people and mentally handicapped. Gardner (1999) confirmed that the brain seems to activate “separate psychological processes” that produce “linguistic, numerical, pictorial, gestural, and other kinds of symbolic systems (p. 5). As a result, Gardner concluded that there are seven distinct intelligences which all people possess and exhibit in rather different ways. Later on Gardner added the naturalist intelligence - observing patterns in nature (Campbell et al., 1999; Gardner, 2006).

The nature of each intelligence and the way the intelligences interact with each other are determined by the surrounding environment and the individual’s genetic makeup. Each intelligence is associated with certain “end-states” and contains central processes (Gardner & Hatch, 1989). Table 1 demonstrates Gardner’s original seven intelligences from 1984, along with their related end-states and core components.

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>End-states</th>
<th>Core Components</th>
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<tbody>
<tr>
<td>Logical-mathematical</td>
<td>Scientist</td>
<td>Sensitivity to, and capacity to discern logical patterns.</td>
</tr>
<tr>
<td></td>
<td>Mathematician</td>
<td></td>
</tr>
<tr>
<td>Linguistic</td>
<td>Poet</td>
<td>Sensitivity to the sounds, rhythms, and meanings of words.</td>
</tr>
<tr>
<td></td>
<td>Journalist</td>
<td></td>
</tr>
<tr>
<td>Musical</td>
<td>Composer</td>
<td>Abilities to produce and appreciate rhythm, pitch, and timbre.</td>
</tr>
<tr>
<td></td>
<td>Violinist</td>
<td></td>
</tr>
<tr>
<td>Spatial</td>
<td>Navigator</td>
<td>Capacities to perceive the visual spatial world accurately.</td>
</tr>
<tr>
<td></td>
<td>Sculptor</td>
<td></td>
</tr>
<tr>
<td>Bodily-kinesthetic</td>
<td>Dancer</td>
<td>Abilities to control one’s body movements and to handle objects skillfully.</td>
</tr>
<tr>
<td></td>
<td>Athlete</td>
<td></td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Therapist</td>
<td>Capacities to discern and respond appropriately to the moods of other people.</td>
</tr>
<tr>
<td></td>
<td>Salesman</td>
<td></td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>Person with</td>
<td>Access to one’s own feelings and the ability to discriminate among them.</td>
</tr>
<tr>
<td></td>
<td>detailed,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accurate self-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>knowledge</td>
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</table>

After a decade of proposing his theory, Gardner weighed the presence of two more intelligences: the naturalist intelligence, and the existential intelligence.
Both intelligences scored high on Gardner’s previously mentioned eight criteria of intelligence. However, Gardner could not fully approve of the existential intelligence, as it may be part of human emotions. Hence, the revised list of Gardner’s multiple intelligences comprised eight intelligences through including the naturalist intelligence (Gardner, 2006).

Numerous advantages of using MI in education have been pointed out in the literature (Ibnian & Hadban, 2013; Dastgoshadeh & Jalilzadeh, 2011; Chan, 2000; Celik, 2012; Ahmad, Seman, Awang & Sulaiman, 2015; Freedman, 2015). One of these advantages is the suitability of the MI theory for the 21st learner as it caters for the individual growth not only at the educational level but also the emotional and social levels. Furthermore, the theory of MI calls for a fuller appreciation of the human intellect. Maintaining learner motivation is another characteristic of MI. Ibnian & Hadban (2013) carried out a study in Jordan to explore the characteristics of MI theory as well as its possible applications in the ELT field. They suggested that considering all nine intelligences - the ninth intelligence is the spiritual intelligence- in designing classroom tasks and lesson plans plays a significant role in arousing learners’ interests and making them more responsive. They further named procedures to incorporate MI in teaching such as handicrafts, songs, drama, and games. Finally, the researchers concluded that MI theory could be an attractive choice to enhance learners’ motivation.

In spite of these well-acknowledged advantages, some studies described how school curriculum could sometimes fail to address students’ multiple intelligences. Some teaching textbooks are found to be misaligned with MI theory and students’ intelligence profiles (Abbasian & Khanjavi, 2012; Ibragimova, 2011; Taase, Satariyan, & Salimi, 2014), as they are more usually built around the traditional intelligences: the verbal-linguistic, and the logical-mathematical intelligences. To help further investigate this issue, the present study is set to examine the students’ MI profiles in one particular EFL context, that is grade 12 students in Oman and then explore the extent to which the Omani EFL textbooks address these intelligence profiles.

**Research Questions**
The present study is guided by two main questions:
1- What are the MI (Multiple Intelligences) profiles of EFL grade twelve female students?
2- To what extent do the MI profiles of grade twelve English textbooks align (or misalign) with the students’ MI profiles?

**Methodology**
**A. Population and Sample**

The study used a website [www.surveysystem.com/sscalc.htm](http://www.surveysystem.com/sscalc.htm) in order to calculate the student sample size: 530 (15%) out of a population of 3486 with a
confidence level of 95% and a confidence interval of 2.8. The student population size comprised of 3486 grade twelve female students in Muscat Governorate for the academic year 2014/2015 according to the Department of Statistics in Muscat Educational Directorate. Cluster sampling was employed to determine the sampled students. The MI surveys were distributed to 530 grade twelve female students; the majority came from intact classes at four randomly sampled schools.

B. Research Instruments

The present study used two instruments: (a) a student MI survey, and (b) textbook analysis.

1) MI student survey. A multiple intelligence inventory -originally developed by McKenzie (1999)- was used in order to identify students’ MI profiles. The survey was first adapted to suit the Omani culture. Then it was translated into Arabic and accompanied with an introduction and a personal section.

The survey targeted grade twelve female students in Muscat governorate. It consisted of two primary sections. The first section asked for student personal information. The second section consisted of eighty MI statements split into four subsections for surveying the eight intelligences; each subsection had twenty MI statements. A yes-no scale was used to identify whether the statements applied or did not apply to the respondents. A panel of eight judges validated the survey.

2) Analysis of grade twelve “Engage with English” textbooks. The “Engage with English” series are textbooks designed and produced by the Ministry of Education in Oman. The researchers categorized the textbooks’ activities (activities in the course book and workbook of “Engage with English” for grade twelve of the second semester) into the eight modalities of intelligences using Campbell et al.’s (1999) instructional menus as a guide. The eight menus list examples of possible instructional objectives that belong to the eight intelligences and thus aid categorization of the activities. A total count of 241 activities was described in terms of their addressed intelligences.

A panel of eight judges validated the textbook analysis. This was done by providing them with a sampled textbook analysis of unit one in theme one along with copies of the coursebook, workbook, related pages from the teachers’ book as well as Campbell et al.’s Instructional Menus (1999). Inter-rater reliability was employed to ensure the reliability and consistency of categorizing the textbook activities into the eight MI types

Results and discussion

Students’ MI Profiles

Results concerning students’ MI profiles are presented in Table 2 below.
Table 2: Students’ MI Profiles

<table>
<thead>
<tr>
<th>Types of Multiple intelligence</th>
<th>Mean (out of 10)</th>
<th>Standard Deviation</th>
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<tbody>
<tr>
<td>1. Intrapersonal intelligence</td>
<td>8.44</td>
<td>1.182</td>
</tr>
<tr>
<td>2. Bodily-kinesthetic intelligence</td>
<td>7.78</td>
<td>1.690</td>
</tr>
<tr>
<td>3. Visual-spatial intelligence</td>
<td>7.60</td>
<td>1.714</td>
</tr>
<tr>
<td>4. Naturalist intelligence</td>
<td>7.33</td>
<td>3.613</td>
</tr>
<tr>
<td>5. Logical-mathematical intelligence</td>
<td>6.79</td>
<td>1.449</td>
</tr>
<tr>
<td>6. Musical intelligence</td>
<td>6.40</td>
<td>1.842</td>
</tr>
<tr>
<td>7. Interpersonal intelligence</td>
<td>6.39</td>
<td>1.843</td>
</tr>
<tr>
<td>8. Verbal-linguistic intelligence</td>
<td>6.36</td>
<td>1.679</td>
</tr>
</tbody>
</table>

Table 2 presents the results according to the types of multiple intelligences. The mean and the standard deviation of the sampled students’ responses towards the statement are given, bearing in mind that the mean is out of a total of ten. By considering the mean, it seems that students’ intrapersonal intelligence dominates their MI profile since students’ responses to the intrapersonal intelligence scored the highest mean of 8.44. The second strongest intelligence for students is the bodily-kinesthetic with a mean of 7.78. Visual-spatial intelligence ranks third with 7.60. Natural intelligence ranks fourth with a mean of 7.33. Logical-mathematical intelligence occupies the fifth rank with 6.79. Musical intelligence ranks sixth with 6.40. The interpersonal intelligence and the verbal-linguistic intelligence rank seventh and eighth respectively.

When applying the concept of quartiles to the data obtained from the students’ questionnaire, the intrapersonal, bodily-kinesthetic, and visual-spatial intelligences occupy the upper quartile, whereas all other intelligences occupy the middle quartile.

In terms of the standard deviation, the expected normal standard deviation for this scale of data (out of 10) is 1.67. By considering the values of the standard deviation of the eight variables as illustrated in Table 2, it seems that the standard deviation of six intelligences falls within normal variance. However, the standard deviation of the intrapersonal intelligence (1.182) and the standard deviation of the naturalist intelligence (3.613) are rather different. To explain further, the sample responses of the statements of intrapersonal intelligence seem to be more homogeneous, while the sample responses of the statements of the naturalist intelligence seem to be more heterogeneous than would be expected in normal variance.

Looking back at the ranking of personal intelligences (intrapersonal and interpersonal intelligences), it seems that students prefer to work individually.
and reflect on their own rather than to work cooperatively in groups. Such an inference comes from the fact that students rank intrapersonal intelligence first while they rank interpersonal intelligence seventh. Hence, intrapersonal activities that involve indulging in self-reflection, setting goals, having options, and carrying out an assessment of one’s own learning, feelings, and life can be more attractive for grade twelve students. In terms of bodily kinesthetic intelligence, which ranks second in students’ list of intelligences, grade twelve students are more inclined to engage their bodily-kinesthetic performance to show their understanding rather than sit still in one corner during lessons. The visual-spatial talent of the students is also at a reasonable degree since it ranks third in their MI profile. The involvement of colors, concept maps, posters, collages, and active imagination in learning could enhance students’ understanding as suggested by neuroscience research (Lazear, 2014).

In addition to the three most predominant student intelligences (intrapersonal, bodily-kinesthetic, and visual-spatial intelligences), other intelligences seem to appeal to students but to a lesser degree. For instance, the naturalist intelligence ranks fourth while the logical-mathematical intelligence ranks fifth in their MI profile. Also, musical intelligence does not appear to suit students’ interests. This may be attributed mainly to cultural factors.

The verbal-linguistic intelligence ranks last in comparison to the rest of the seven intelligences. Although this might suggest that students are less motivated towards languages or language learning, language still composes the major vehicle of expressing and transmitting all other intelligences. The intrapersonal intelligence, for example, is best depicted through writing journals, reflections, and personal aspirations. Without arranging logical meaning in a sentence or paragraph layout, it would be difficult to engage and strengthen intrapersonal reflection. According to Gardner, intelligences do not work separately but they work in combination with each other (2006, p. 8).

Interestingly, Ibragimova (2011) found similar results in terms of students’ MI profiles. In his study, the intrapersonal intelligence ranked first while musical, linguistic, and interpersonal intelligences ranked sixth, seventh, and eighth, respectively, similar to the case in this study. Students’ bodily-kinesthetic intelligence in Ibragimova’s study ranked third which is close to the students’ ranking in the present study. Also, students in Ibragimova’s study ranked the naturalist intelligence as the fourth intelligence just as is the case with grade twelve students in the present study. However, the results of the present study run counter to the findings of the study by Modirkhamene & Azhiri (2012) in which students’ preferred intelligences were interpersonal, musical, and naturalist types.

Students’ MI Profile and the Textbooks’ MI Profile
This section presents results answering the second research question which addresses the level of alignment (or misalignment) between the EFL textbooks used in grade 12 in Oman and students’ MI profiles.
Figure 1 shows the difference between students’ MI profiles and the textbooks’ MI profiles in an ascending order as number one stands for the most dominant intelligence while number eight stands for the least dominant intelligence in both profiles.

As Figure 1 illustrates, there is a noticeable degree of misalignment between students’ MI profile and the textbooks’ MI profile. When correlating the ranks in both profiles, the value of the Spearman correlation is -0.48, which indicates a moderate negative correlation between the ranks of intelligences in student profile and the textbook profile. This indicates that the increase of a certain intelligence in one profile is accompanied by the decrease of the same intelligence in the other profile.

To shed more light on the negative correlation between the students’ MI profile and the textbooks’ MI profile, we should consider the verbal-linguistic, the interpersonal, the intrapersonal and the bodily-Kinesthetic intelligences. To begin with, number one intelligence in grade twelve English textbooks is the verbal-linguistic domain with 100% prevalence. On the other hand, the verbal-linguistic ranks last in students’ MI profile since its mean percentage is 63.60%. By the same token, the interpersonal intelligence comes second in the textbooks’ MI profile, but it occupies the reversed position in students’ MI profiles. In terms of the visual-spatial intelligence, it ranks third in students’ MI profile with a mean percentage of 76% while it ranks fifth with 11.20% presence in the
textbooks’ activities. The logical-mathematical intelligence ranks third in the textbooks whereas it ranks fifth in students’ MI profile. Conversely, the musical intelligence ranks sixth in students’ profile while it ranks last in the textbook MI profile since there is no presence at all for music in the textbook activities. As for the natural talent, there is relatively less misalignment for it ranks fourth in students’ profile while it comes sixth in the textbooks’ profile.

In the section that follows, the nature of the misalignment is further highlighted. Linking students’ preferences in terms of MI theory into the existing MI profile of the English textbooks sheds more light upon the extent of the misalignment, its possible reasons as well as its possible solutions.

**Misalignment in the verbal-linguistic and interpersonal intelligences**

There is a sharp contradiction between the presentation of the verbal-linguistic and interpersonal intelligences in the textbooks as the two most dominant intelligences when compared to their presence in students’ MI profile as the least dominant intelligences. All 241 activities in the textbooks are of a verbal-linguistic type as 39 out of the 241 activities are purely linguistic, while the rest are merged with other intelligences particularly the interpersonal intelligence. Even so, the surveyed students ranked both the verbal-linguistic and the interpersonal intelligences as their least favorite ones. Other descriptive studies have also indicated a disparity between English language textbooks and students’ MI profiles such as Ibrigimova (2011); Abbasian & Khajavi (2012); and Taase et al. (2014). The discrepancy in the Omani setting may indicate that the verbal-linguistic and interpersonal nature of the activities in the English textbooks fail to develop students’ positive attitude towards these two intelligences. Here it is important to mention that “Engage with English” textbooks are taught in both grades eleven and twelve. Consequently, the quality of these activities needs to be upgraded and made more varied to appeal to students’ varied interests and satisfy their intelligences.

**Misalignment in the intrapersonal, bodily-kinesthetic, and visual-spatial intelligences**

As mentioned earlier, the intrapersonal, bodily-kinesthetic, and visual-spatial intelligences rank first, second, and third in the students’ profile while they rank fourth, seventh, and fifth in the textbooks’ profile. This trio of intelligences constitutes the students’ preferred intelligences. On the other hand, there is a less emphasis on them in the textbooks, especially the bodily-kinesthetic intelligence that is represented in less than 1% of the activities. It can be concluded that grade twelve students are taught “Engage with English” textbooks without much attention to their dominant learning inputs. This might partially explain what some studies have reported in terms of Omani students lack of motivation and hence lack of command of the English language (Sergon, 2011; Ministry of Education and the World Bank, 2011; Al Maashani, 2011; Al-Issa & Al-Bulushi, 2011).

**Misalignment in the naturalist intelligence.** The naturalist intelligence ranks fourth in students’ profile with 73.30%. As for the textbooks’ MI profile, it ranks sixth with 10%. The environmental nature of the passages in one particular
theme in the textbook is what accounts for the 10% presence of the naturalist intelligence. Thus, the tasks and activities in themselves do not invoke naturalist intelligence. Hence the 10% of naturalist material in the textbooks needs to be raised both in quantity as well as quality through the adaptation of more genuinely naturalist tasks.

**Misalignment in the musical intelligence.** As for the musical intelligence, it ranks sixth in students’ profiles with a mean’s percentage of 64% while it ranks eighth in the textbooks’ MI profile since it is not addressed at all in the activities. The absence of musical activities in the textbooks could partially be attributed to students’ age; there is a stronger presence of music in elementary classrooms (Mills, 2001) compared with post-basic education as students are expected to be more focused on their academic goals, considering that year 12 marks the last stage of their school years. Lazear (2014), however, stresses the importance of musical intelligence in the learning process when he stated “the consciousness altering effect of music and rhythm on the brain is probably the greatest”. Similarly, Eberle (2011) emphasized the connection between the musical and the linguistic talents describing the relationship between them as “complementary”, especially when one attempts to play with the patterns and sounds of the language.

**Misalignment in the logical-mathematical intelligence.** The logical-mathematical intelligence ranks third in the textbooks’ profile while it ranks fifth in students’ profile. The observed trend in textbooks’ logical-mathematical activities is its presence in the form of answering the question “why” and ordering topics. Since one of the textbooks’ aims is to nurture the students’ higher order way of thinking (Ministry of Education, 2009), such logical activities might not suffice to promote the cognitive domain, taking into consideration that students’ logical-mathematical talent ranks fifth in their MI profile.

**Conclusion**

Based on the apparent misalignments between the textbooks’ MI profile and the students’ MI profile in almost all of the intelligences, it is fair to conclude that there is an MI gap that separates students, on one hand, and the English textbooks, on the other hand. It hence becomes urgent that future revisions of the Omani EFL curriculum (Ministry of Education and the World Bank, 2011) are done through the lens of MI theory in order to improve the quality of students’ learning experiences.

Textbooks are essential tools for teaching English at schools. Thus, textbooks plus their resources need to be reformulated in the light of the MI approach. As Gardner (1999) points out there are three main stages in designing “an MI environment” (p. 145). These steps are (a) establishing practical educational goals, (b) carrying out practices or strategies (based on MI theory), and (c) evaluating the process and the product (based on MI measurements). In this case, syllabus designers need to be precise on their educational objectives. Then,
after grasping the concepts of MI theory, they can use MI strategies and practices to achieve the clearly stated goals. Finally, syllabus designers along with teachers, students, school administrators, and parents can be involved in evaluating the success of the MI practices and modifying them if necessary.

Saying so, it is still important to acknowledge the fact that textbooks used to teach at schools constitute only one part of school curriculum. Besides textbooks, schools can create other conditions supportive to their students’ most dominant intelligences. This can be achieved through a variety of methods such as raising teachers’ awareness of the importance of considering students’ MI profiles, varying teachers’ teaching techniques to accommodate students’ most dominant intelligences and involving students in a wide range of extracurricular activities that address different intelligence types.

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References


**Fawzia Al Seyabi** has a PhD in TEFL from the University of Essex, UK in 2002. She is a faculty member in the Department of Curriculum and Instruction in College of Education, Sultan Qaboos University. Her research interests involve EFL curriculum and teaching methods, intercultural communication, humanistic approaches in teaching and the role of culture in foreign language teaching and learning.

**Hind Al Zaabi** has a Master of Education in Curriculum and Teaching Methods in English language from Sultan Qaboos University in the Sultanate of Oman. She has been teaching English in Omani schools for more than ten years. Her research interests include teaching methodology and curriculum design.