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Hajhashemi, Karim; Wong, Bee Eng

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A Validation Study of the Persian Version of McKenzie's Multiple Intelligences Inventory to Measure Profiles of Pre-University Students

Karim Hajhashemi* and Wong Bee Eng

*Department of English Language,
Faculty of Modern Languages and Communication,
Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia
E-mail: gs20553@mutiara.upm.edu.my

ABSTRACT

Traditionally, intelligence was viewed as a single static entity. Revolutionizing the once-dominated "single-static entity" conceptualization, Gardner initially (1983) proposed his theory of Multiple intelligences (MI) that encompasses seven different areas of intelligence (verbal-linguistic, logical-mathematical, musical-rhythmic, visual-spatial, bodily-kinesthetic, interpersonal, and intrapersonal), and later on added the eighth and ninth areas (naturalist and existential) in 1999. Based on the theory of Multiple Intelligences (MI), a person may be viewed as intelligent in any of these areas, and the identification of the dominant intelligence type has proven to have pedagogic implications. McKenzie's MI questionnaire (1999) is one of the established tools to identify the typology of intelligence. The present study aims to validate the Persian version of the MI Inventory (questionnaire) proposed by McKenzie (1999). This instrument provides an objective measure of MI. This paper describes the validation exercise of the abovementioned questionnaire that involved 173 pre-university students of both genders in Tehran. In addition, the variables gender and discipline were also considered in this study. The findings of the study indicate that overall, the Persian version of the questionnaire has a high reliability. In addition, the results show a moderate to high relationship between gender and MI profiles of the students.

Keywords: Multiple-intelligence theory, McKenzie's MI Inventory, pre-university students

INTRODUCTION

Preparing students to deal with the workplace culture, a foreign culture, or the mainstream culture, which may be different from their own, is one of the main responsibilities of educational institutions. Therefore, schools usually tend to assess students based on the same criteria that the society in which it is situated does. A culture which puts maximal value on the verbal-linguistic and logical-mathematical intelligences will result in a focus on these abilities in schools. Armstrong (2003) states that our culture is dominated by linguistic intelligence and most

educators would agree that verbal-linguistic intelligence dominates the teaching-learning environment in our classrooms. Such a limited view of intelligence has alienated numerous students (Armstrong, 2003; Levine, 2003; Ruggieri, 2002), and society cannot afford to continue with this line of thought (Cetron and Cetron, 2004; Eisner, 2004). Similarly, Pearson and Stephens (1994) acknowledge that the information taught and tested in schools has been based on one type of knowledge, while ignoring "other kinds of knowing" (p. 39). They also remind readers that we "have contrived a way of

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*Corresponding Author

‘doing school’ that bears little resemblance to the real learning and teaching that motivate human societies to create schools in the first place” (p. 39). Meanwhile, Eisner (2004) claims that the “primary aim of education is not to enable students to do well in school, but to help them do well in the lives they lead outside of school. We ought to focus on what students do when they can choose their own activities” (p. 10).

The failure of a single general intelligence (g factor) to explain human performance has led many psychologists and educators to believe that individuals, with their specific strengths and weaknesses, can be conceptualized as having multiple abilities (Chan, 2006; Karolyi, Ramos-Ford and Gardner, 2003; Sternberg, 1986: 1997: 2000).

Gardner (1983) disagrees with previous models of intelligence because they focused too much on logic and language and ignored other abilities. Gardner defines intelligence as the ability of a person to respond to new events and situations successfully and his or her capacity to learn from past experience (1983, p.21). He propounded the theory of MI and identified seven intelligences which he claimed were distinct. These are relatively autonomous human intelligences or ways through which people learn. The seven intelligences Gardner put forth in 1983 are verbal/linguistic, musical/rhythmical, logical/mathematical, spatial/visual, bodily/kinesthetic, interpersonal, and intrapersonal. In 1995, the eighth intelligence, i.e. Naturalistic intelligence, was added. Existential intelligence, which is the ninth intelligence, is still under consideration as it is yet to fully satisfy empirical and neurological evidence needed to include it on the list of intelligences (Gardner, 1999; Viens and Kallenbach, 2004).

Thus, to fulfil the educational goals of students, some points which are taken from Gardner (2004) should be mentioned, and these include: 1) individuals use different strategies to process information and solve problems depending on the type and level of their intelligence abilities, and 2) in order to provide suitable learning experiences for students, teachers need to assess the students’

talents carefully and properly, and then guide them to utilize the maximum capacity of their intelligence and talent in the direction of the educational goals.

In order to reach the above mentioned goals, the assessment of the students’ MI profile is therefore required. According to Lazear (1991:1992), the students’ needs, intelligence models, and learning strategies should be considered on the basis of the MI theory and the emphasis should not be strictly on the verbal-lingual and mathematical-logical intelligences alone. On the contrary, Lazear (1991:1992) claims that such an emphasis is unfair due to students’ individual and group differences in Gardner’s different models of multiple intelligences.

MULTIPLE INTELLIGENCES AND LANGUAGE LEARNING

The area of MI and English language learning of students have received attention from researchers. Since this study has focused on one of the tools used to identify the multiple-intelligence profiles of students, that is, McKenzie’s (1999) MI Inventory, the studies that used this questionnaire would also be reviewed. Some of the researchers have used this questionnaire as they have found it an applicable and useful tool to measure the multiple-intelligence profiles of the students (see for e.g., Al-Balhan, 2006; Marefat, 2007; Mokhtar *et al.*, 2008; Pasha Sharifi, 2008; Razmjoo, 2008; Razmjoo *et al.*, 2009; Sung, 2004).

Sung (2004) used instructional strategies based on the MI theory to improve the teaching and learning of Korean among foreign language learners, and to help equip the Korean language teachers in broadening their pedagogical repertoire so that they could accommodate linguistically, culturally, and cognitively diverse students. This study used McKenzie 1999’s MI Inventory to measure the multiple-intelligence profiles of the participants, as well as to practice applying MI theory to Korean teaching in the classroom setting for Korean language instructors.

Investigating whether or not there is any relationship between students' multiple-intelligence profiles and their writing products, Marefat (2007) conducted a research study in which she collected data from 72 male and female EFL Iranian undergraduate students (aged 19-27 years) who studied English literature and translation. The data were collected through the students' average scores on three essays and McKenzie's MI Inventory. She found that kinesthetic, existential, and interpersonal intelligences made the greatest contributions in predicting the writing scores of the students.

Meanwhile, a study carried out by Razmjoo *et al.* (2009) was aimed at identifying the relationship between multiple intelligences, vocabulary learning knowledge, and vocabulary learning strategies among EFL Iranian learners. The subjects of the study were 100 senior students who were studying English Language Teaching at Shiraz Azad University between 2006 and 2007. The data analysis of the findings revealed that there was a relationship between multiple intelligences and vocabulary learning knowledge. It was also found that among the different domains of intelligence, the linguistic and natural intelligences made statistically significant contributions to the prediction of vocabulary learning knowledge.

In order to determine the relationship between multiple intelligences and language proficiency, another study was carried out by Razmjoo (2008) to investigate the relationship between multiple intelligences and language proficiency of Iranian PhD candidates, and to explore whether one of the intelligence types or a combination of the intelligences are predictors of language proficiency, and to examine the effect of gender on language proficiency and the types of intelligences. The subjects of the study were 278 male and female PhD candidates at Shiraz University. The data revealed that there was no significant relationship between language proficiency and the combination of intelligences in general and the types of intelligence in particular. Similarly, it was found that there was no significant difference between the male and female students and between multiple

intelligences and language proficiency in the Iranian context.

Mokhtar *et al.* (2008) conducted a research study entitled, "Teaching information literacy through learning styles: The application of Gardner's multiple intelligences". They believe that making the students independent learners and knowledge workers of tomorrow lies in being information literate (IL). Therefore, they hypothesized that the students' innate interests are stimulated when they grasp IL skills more effectively and apply them to their work. Accordingly, the quality of the work produced would be better. For this purpose, the researchers designed an IL course to prepare the students with the necessary IL skills and divided them into experimental and control groups. Later, the quality of the project work of the experimental group who received IL course training was compared to that of the control group. It was found that the students who had received IL training (experimental group) had better performance in their project work as compared to those who had not received such training (control group).

In a research study conducted among middle-school Kuwaiti children, Al-Balhan (2006) investigated the effectiveness of students' multiple intelligence styles in predicting the improvement of their reading skills through academic performance of both genders and from grades one to four. They had received their first quarter grades and enrolled in an after-school tutoring programme. The students were divided into an experimental group who received training on the basis of Gardner's multiple intelligences and a control group who was subject to a traditional tutoring programme. The data revealed that the students in the experimental group performed better than the students in the control group. It was also found that the female students in the experimental group did significantly better than the males.

In his paper entitled, "The introductory study of Gardner's multiple intelligence theory in the field of lesson subjects and the students' compatibility", Pasha Sharifi (2008) describes the questionnaires and tools used for assessing

various types of intelligence in education processes. Among them, he highlighted the multiple intelligence tests for children by Nancy Fairs, multiple intelligence questionnaire by Harms and Douglas, and the multiple intelligences which were compiled by McKenzie in 1999. The study was conducted with a group of 120 secondary school students in different branches. It was found that there was a low to moderate, but significant correlation among different kinds of intelligence and related school subject scores. Additionally, it was found that the female students in the study were superior in intrapersonal intelligence, while the male were superior in visual-spatial intelligence. However, no significant difference was found between them in relation to other kinds of intelligences.

The studies discussed here have focused on multiple intelligences and classroom applications. To the researchers' knowledge, no study has been done to produce a reliable and valid Persian version of the McKenzie Inventory for a typical Iranian pre-university classroom.

AIM OF THE STUDY

The aim of this study was to examine the reliability and validity of the Persian version of McKenzie's (1999) MI Inventory in measuring the multiple intelligences of Iranian Pre-University students. Additionally, the study also attempted to find out if there are statistically significant differences between genders and branches of study of the students and their multiple intelligences.

METHODOLOGY

In this section, the subjects, instruments used to collect data and the procedures adopted are discussed.

Subjects

The subjects for this study were 176 pre-university students (grade 12, 18 years old) of both genders studying in Tehran in the academic year 2008-2009. The district was randomly

chosen from among 19 school districts in Tehran. Similarly, the students were also randomly selected from two different segregated high schools in that particular region. Random sampling was used to create homogeneous groups without involving any potential biases or judgments.

Instrument

In order to identify the intelligence profile of the participants, the MI questionnaire was distributed to the students. Armstrong (1994) states that the MI Inventory is a form that was designed to assess the strengths of the individual as determined by each of the intelligences. In this study, McKenzie's (1999) MI inventory was used. Some researchers have claimed the overall internal consistency in the range of 0.85 and 0.90 for the questionnaire (Al-Balhan, 2006; Razmjoo, 2008; Razmjoo *et al.*, 2009). It comprises 90 statements related to each of the nine intelligences proposed by Gardner (1999). In the study each respondent was required to complete the questionnaire (*see* Appendix A) by marking *yes/no* next to each statement. If the statement accurately described them, they would then mark the *yes* option. However, if the statement did not describe them, their answer should be *no*.

Procedure

The original English version was translated into Persian by the researcher to ensure that the individuals could easily understand the items as well as to avoid any difficulty related to their (lack of) foreign language proficiency. The back-translation procedure was carried out to ascertain that the translated version had the same interpretation. However, some of the contents had to be altered without losing their original intent to fit the local context. The accuracy of the Persian version was then checked by two Iranian independent professional translators of ESL. Later on, the translated version of the MI inventory was checked and revised by two experts in the field of education. Finally, the

researcher asked two psychologists to check the translated version to ensure that it is suitable for students at that age (18 years) according to the difficulty of the words or sentences, and that it is culturally suitable for the Iranian society. Cronbach's alpha for this translated version with a sample of 173 and by the use of SPSS version 16 was found to be 0.90, indicating a high reliability of the test.

RESULTS AND DISCUSSION

The subjects of the study were initially 176 students, out of which three did not complete the questionnaire. Therefore, the total number of respondents was 173, with 78 males and 95 females, respectively (*see* Table 1). The respondents' disciplines of study are summarized in Table 2.

TABLE 1
Number of students by gender

	Frequency	Percentage
Male	78	45.1
Female	95	54.9
Total	173	100.0

TABLE 2
Number of students by discipline

	Frequency	Percentage
Mathematics	55	31.8
Experimental Science	19	11.0
Humanities	99	57.2
Total	173	100.0

Table 3 summarizes the descriptive statistics for the MI subscales of the students. Based on the data, the entire group is strong in terms of their interpersonal intelligence (M=24.83) as perceived by them. However, intrapersonal intelligence was scored the lowest by the students (M=17.16). These findings contradict with those found by Marefat (2007), who reported the highest score for intrapersonal intelligence

and the lowest score for the interpersonal intelligence. Nonetheless, the findings of this study support those found by Currie (2003) in an ESL reading class.

TABLE 3
Descriptive statistics of MI subscales in descending order

	N	Mean	Std. deviation
Interpersonal	173	24.83	5.72
Verbal	173	23.86	5.83
Logical	173	21.34	5.30
Naturalist	173	20.29	5.07
Visual	170	19.61	5.38
Kinesthetic	173	19.56	5.17
Existential	173	19.32	5.23
Musical	173	19.01	5.21
Intrapersonal	173	17.16	4.93

In order to check for the internal consistency of the questionnaire, Cronbach's alpha for the Persian version of the questionnaire and also for each of the intelligence subscales were calculated. The overall reliability coefficient for the above-mentioned questionnaire was found to be $r = 0.90$ (*see* Table 4). This indicates the large magnitude of reliability coefficient (r) for the translated version as well as the homogeneity of the items within the scales. This reliability is considered as "very good", based on the guidelines provided by George and Mallery (2002). Among the intelligences, intrapersonal intelligence has the highest coefficient alpha (0.75), and logical intelligence demonstrates the lowest coefficient alpha (0.60), as presented in Table 5.

TABLE 4
Cronbach's alpha for the Persian version of McKenzie's MI Inventory

Cronbach's alpha	No of items
0.90	90

TABLE 5
Cronbach's alpha for each subscale of intelligences

Intelligence	Cronbach's alpha =
Intrapersonal	0.75
Existential	0.70
Naturalistic	0.66
Visual	0.66
Musical	0.65
Verbal	0.64
Interpersonal	0.62
Kinesthetic	0.61
Logical	0.60

In order to have further assurance of the reliability of the instrument, the Split-Half reliability coefficient was also run on the data. Cronbach's alpha for the first part was found to be 0.82 and for the second part, 0.85. Similarly, the Spearman-Brown Coefficient was also found to be 0.82 (see Table 6).

TABLE 6
Split-Half Reliability Coefficient

Cronbach's alpha	Part	Value	
	1		.823
		N of Items	45 ^a
	2		.847
		N of Items	45 ^b
	Total N of Items		90
Correlation Between Forms			.691
Spearman-Brown Coefficient	Equal Length		.817
	Unequal Length		.817
Guttman Split-Half Coefficient			.815

The next step was to find out whether there was a significant relationship between gender and the MI profiles of the students. Cronbach's alpha for the female and male students was found to be 0.89 and 0.91, respectively, revealing that there was a moderate to high relationship for

both the males and females (see Table 7) in relation to their MI profiles.

TABLE 7
Reliability by gender

Gender	Cronbach's alpha	N of Items
Female	0.89	90
Male	0.91	90

Meanwhile, to investigate patterns of intelligence in terms of the extent of dominance (strength/weakness) between genders, the same procedure was done for each subscale. It was found that the male students in the study were stronger in their intrapersonal intelligence (0.80) but weaker in logical intelligence (0.58), while the females showed their strength in existential intelligence (0.72), but were weaker in terms of kinesthetic intelligence (0.54) (see Table 8). The findings of the present study seem to contradict those of Teele (1995) and Bouton (1997), who observed that interpersonal, kinesthetic, and that spatial intelligences predominate in both male and female participants of their study. The findings in the present study also contradict with those which did not find any significant difference in the multiple-intelligence profiles of the male and female respondents (Pish Ghadam and Moafian, 2008; Razmjoo, 2008). In his study, Pasha Sharifi (2008) found that the female subjects were superior in intrapersonal intelligence while the males in visual-spatial intelligence. However, similar results were not found in the findings of the present study. Hence, further research is needed to clarify the relationship between gender and MI profiles of the Iranian pre-university students.

TABLE 8
Reliability of MI subscales by gender

Intelligence	Cronbach's alpha	
	Male	Female
Naturalist	0.65	0.67
Musical	0.60	0.65

Logical	0.58	0.59
Existential	0.68	0.72
Interpersonal	0.67	0.54
Kinesthetic	0.67	0.54
Verbal	0.64	0.64
Intrapersonal	0.80	0.66
Visual	0.70	0.63

The present study also attempted to find out the probable relationship between multiple intelligences and students' disciplines. Since the students were from three different disciplines (namely Experimental Science, Mathematics, and Humanities) and as the study did not have access to the female students studying in Experimental science, it was decided not to consider their male counterparts in this part of data analysis. Thus, the analysis was done among those studying Mathematics and Humanities only. In the first phase, Cronbach's alpha for the students studying Mathematics and Humanities was calculated to find out the probable relationship between their multiple intelligence profiles and the disciplines they were enrolled in. Cronbach's alpha for the students studying Mathematics was found to be 0.88, and for the Humanities 0.91, demonstrating a moderate to high relationship between students' multiple-intelligence profiles and the disciplines they were enrolled in (*see* Table 9).

TABLE 9
Reliability by discipline

Discipline of study	Cronbach's alpha	No. of items
Mathematics	0.88	90
Humanities	0.91	90

In the next phase, the subscales of the MI inventory for the students in above-mentioned branches of study were calculated. Among those studying Mathematics, intrapersonal intelligence was shown to be stronger (0.71), and the weakest value was indicated for kinesthetic

intelligence (0.46) (*see* Table 10). It seems quite logical for those studying Mathematics to have a higher combined value of logical-mathematical intelligence, as reported by Hashemi and Bahrami (2006).

TABLE 10
Intelligence subscales and mathematics

Cronbach's alpha	
Intelligence	Mathematics
Intrapersonal	0.71
Existential	0.69
Visual	0.67
Verbal	0.66
Logical	0.65
Naturalist	0.64
Musical	0.54
Interpersonal	0.53
Kinesthetic	0.46

The calculation of the Cronbach's alpha for the students studying Humanities revealed that the intrapersonal intelligence registered the highest value (0.76) as compared to logical intelligence (0.55) with the lowest value (*see* Table 11).

TABLE 11
Intelligence subscales and humanities

Cronbach's alpha	
Intelligence	Humanities
Intrapersonal	0.76
Existential	0.73
Musical	0.72
Visual	0.66
Naturalist	0.64
Interpersonal	0.63
Verbal	0.59
Kinesthetic	0.59
Logical	0.55

Therefore, the findings of the present study are consistent with the study of Hashemi and Bahrami (2006) who also reported that the students studying Mathematics scored higher in logical-mathematical intelligence as compared to those studying Arts and Humanities. Additionally, they also found that students studying Mathematics had higher verbal-linguistic intelligence than the other groups. Their findings are rather similar to those found in this study, as the Cronbach's alpha for the Mathematics students was 0.66 while those enrolled on courses in the Humanities was 0.59. In general, the relationship between some of the components of the students' multiple intelligence profiles and their academic discipline could be seen.

CONCLUSIONS

This study set out with the aim of assessing the reliability and validity of the Persian version of McKenzie's (1999) MI inventory with Iranian pre-university students. The findings indicate that the questionnaire has a high reliability (0.90). Meanwhile, the component of intrapersonal intelligence was found to have the highest coefficient alpha (0.75), and the lowest (0.60) was observed for logical intelligence.

In addition, the study also compared the gender of the individuals. The data of the study revealed a moderate to high relationship between genders and multiple intelligence profiles of the students. The findings indicated that the male respondents were stronger in their intrapersonal intelligence but weaker in logical intelligence, whereas the females were stronger in existential intelligence but weaker in kinesthetic intelligence. A comparison of their branches of studies and multiple intelligence profiles revealed a moderate to high relationship as well.

The important point that should be noted is that Gardner's theory has attracted the interest of many teachers and educational curriculum planners. Therefore, to improve the learning process, identifying the learners' multiple intelligence profiles seems crucial.

Questionnaires or inventories to measure learners' multiple intelligences are not too many; therefore, the most useful tools for such a purpose should be investigated so that they are accessible and readily available to measure the individuals' strengths and weaknesses.

In the present study, the findings should be treated with caution. Further research with other learners from different levels of education and more diverse disciplines would confirm the findings and add to the existing data. Moreover, it would be interesting to conduct a similar study with learners from other L1 backgrounds to find out whether similar results would be obtained.

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Appendix A

The Persian Version of McKenzie's MI Inventory

دانش آموزان عزیز جملات و عبارات زیر را با دقت مطالعه و گزینه هایی که بیشتر به نظر شما نزدیک است را انتخاب نموده و علامت بزنید. چنانچه منظور عبارتی را متوجه نشدید، آنرا بدون جواب بگذارید. مدت زمان لازم برای پاسخ به این پرسشنامه 30 دقیقه می باشد.

قسمت اول

بلی	خیر

- 1) از دسته بندی کردن اشیاء بر اساس ویژگی های مشترکشان لذت می برم.
- 2) موضوعات مربوط به اکولوژیک (بطور مثال چرخه ی حیات حیوانات) برایم اهمیت دارد.
- 3) طبقه بندی اشیاء کمک میکند تا اطلاعات جدید را بهتر درک کنم .
- 4) از کار کردن در باغچه یا پرورش و نگهداری گلها لذت می برم .
- 5) معتقدم حفاظت از پارک های ملی مهم هستند .
- 6) نظم و ترتیب دادن به هر چیزی برایم مهم و معنی دار می باشد .
- 7) در زندگی، حیوانات برایم اهمیت دارند.
- 8) در خانه سعی می کنیم جهت کمک به سیستم بازیافت، زباله ی کمتری تولید کنیم .
- 9) از مطالعه ی زیست شناسی، گیاه شناسی و جانور شناسی لذت می برم .
- 10) می توانم تفاوتهای ظریفی که در اشیاء وجود دارد را حس کنم .

قسمت دوم

بلی	خیر

- 11) به سادگی ریتم های موسیقی را یاد میگیرم
- 12) به صدا ها و آوایی که می شنوم دقت می کنم .
- 13) دوست دارم با آهنگ های مختلف حرکات موزون انجام دهم.
- 14) از آواز خواندن یا نواختن آلات موسیقی لذت می برم .
- 15) وزن شعری را دوست دارم.
- 16) وزن شعر ی یادآوری ام را آسان می سازد.
- 17) در جاهایی که مهممه وجود دارد نمی توانم تمرکز کنم.
- 18) گوش دادن به صداها ی طبیعت می تواند خیلی آرامش بخش باشد.
- 19) کنسرت ها و اجراهای موسیقی برایم جالبتر از نمایش (تئاتر) هستند.
- 20) به آسانی میتوانم اشعار آهنگین را به خاطر بیاورم.

قسمت سوم

بلی	خیر

- 21) همه مرا به عنوان فردی مرتب می شناسند.
- 22) راهنما ئی های گام به گام در زندگی نقش عمده ای دارند.

خیر	بلی

(23) دستیابی به راه حل مشکلات برایم آسان است.

(24) از دست انسان های شلخته زود کلافه می شوم.

(25) محاسبات ریاضی را به صورت ذهنی خیلی سریع می توانم انجام دهم .

(26) جورچین های فکری سرگرم کننده هستند.

(27) تا زمانی که مطمئن نباشم همه چیز به خوبی اجرا می شود، نمیتوانم کاری را شروع کنم .

(28) نظم چیز خوبی است .

(29) از پیدا کردن عیب و ایراد وسایلی که درست کار نمی کنند لذت می برم .

(30) از چیزهایی که مبهم و بی معنی باشند ناراحت میشوم.

خیر	بلی

قسمت چهارم

(31) نقشی که در نظام هستی ایفا میکنم برایم اهمیت دارد.

(32) از سوال و بحث کردن در خصوص مفهوم زندگی لذت می برم .

(33) اعتقادات دینی برایم اهمیت دارد.

(34) از دیدن آثار هنری لذت می برم .

(35) یوگا و مدیتیشن برایم لذت بخش است .

(36) مسافرت به مکان هایی که نگرش و نگاه به زندگی را در من تقویت می کند را بیشتر دوست دارم .

(37) مطالعه در مورد فلاسفه برایم لذت بخش است .

(38) دیدن کاربرد هر چیز جدیدی در دنیای واقعی ، یادگیری ام را آسانتر می کند .

(39) وجود شکلهای احتمالی دیگری از حیات هوشمند در عالم برایم جالب است.

(40) نحوه ی برقراری ارتباط با مردم ، دیدگاهها و باورهایشان برایم اهمیت دارد.

خیر	بلی

قسمت پنجم

(41) در تعامل با دیگران ، بهتر یاد می گیرم .

(42) از بحث های ساده و جدی لذت می برم .

(43) دوست بیشتر ، زندگی بهتر .

(44) معمولا در میان همسن و سالانم ، نقش هدایت آنان را به عهده می گیرم.

(45) به خود روابط بیشتر از نتیجه ی آن اهمیت می دهم.

(46) درس خواندن گروهی یادگیری موثرتری برایم دارد.

(47) عضو یک تیم می باشم .

(48) روابط با دوستانم برایم اهمیت دارد.

خیر	بلی

72) مشارکت در اموری که به دیگران کمک میکند را دوست دارم.

73) خیلی مراقب باورهای اخلاقی ام هستم.

74) چیزهایی که دوست دارم را بهتر یاد میگیرم .

75) رعایت انصاف برایم حائز اهمیت است.

76) مسائل مربوط به عدالت اجتماعی توجه مرا جلب میکنند.

77) کار کردن به تنهایی می تواند به اندازه ی کار گروهی مفید باشد.

78) قبل از موافقت در انجام کاری ، دانستن علت انجام آن برایم مهم است.

79) اگر به چیزی باور داشته باشم برایش تلاش بیشتری می کنم.

80) برای اصلاح نارسائی ها و حل مشکلات ، مشتاقانه اعتراض خود را بیان و بر آن اصرار می ورزم.

خیر	بلی

قسمت نهم

81) می توانم ایده هایم را در ذهنم مجسم کنم.

82) تغییر دکوراسیون، چیدمان و آرایش محیط زندگی ام برایم سرگرم کننده می باشد.

83) از آثار هنری که خودم آن را می سازم لذت می برم.

84) با تجسم ذهنی ، مطالب را بهتر به یاد می آورم.

85) از تمام شیوه های سرگرم کننده (مثل کتاب ، تلویزیون ، رادیو، بازیهای کامپیوتری) لذت می برم.

86) نمودارها، منحنی ها و جدول ها در تفسیر اطلاعات به من کمک میکنند.

87) موسیقی توأم با تصویر بیشتر توجه ام را به خود جلب میکند.

88) اشیاء را با تصاویر ذهنی آن به یاد می آورم.

89) در نقشه خوانی (جهت یابی ، پیدا کردن مسیر و) مهارت دارم.

90) معماهای سه بعدی برایم سرگرم کننده می باشند.