The Representation of Multiple Intelligence Types in Touchstone Series Course Books

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Abstract

Course books play a significant role in the realm of language teaching and learning, through providing valuable ready-made material to teachers and language learners; yet inappropriate selection of course books results in negative effects on teaching and learning process. This study aims to investigate the extent to which the Touchstone series course books reflect the Multiple Intelligence Theory introduced by Howard Gardner (1983). To obtain the objectives of the study, the researchers used a checklist developed by Botelho (2003) on the basis of this theory. A randomly selected sample of units, activities and tasks were extracted from the eight course books and analyzed then the frequencies and percentages of the occurrence of each type of intelligence were calculated. The results of the study indicated that Verbal/Linguistic and Spatial /Visual types of intelligence were the most addressed intelligence types in the analyzed course books. Musical, Bodily/Kinesthetic, and Natural types of intelligence were the least common types represented in the course books. A comparison was also made between the student books and work books of the series. The results showed that the student books were more representative of different types of intelligence than the work books since four types of intelligence were totally absent in the work books. The findings of the study have some implications for teachers, policy makers, and specifically those involved in designing materials for EFL learners to take into consideration the necessity of applying all types of intelligence when designing EFL learners' course books.

***Keywords*:** Multiple Intelligences, Textbook intelligence profile, Course Book Evaluation, Touchstone Series

With the shift from teacher-centered classrooms to learner-centered one, textbooks are considered as one of the main applicable language resources in classrooms to transfer the curriculum objectives that have already been set according to students' needs. This importance is emphasized by different researchers such as Hutchinson and Torres (1994):

> The textbook is an almost universal element of [English language] teaching. Millions of copies are sold every year, and numerous aid projects have been set up to produce them in [various] countries….No teaching-learning situation, it seems, is complete until it has its relevant textbook" (p.315, as cited in Rozmjoo & Jozaghi, 2010).

Therefore, careful selection should be made, and "that the materials selected closely reflect the aims, methods, and values of the teaching program" (Cunningsworth, 1995, p.7). In addition, it is possible to consider the effect of textbooks and teaching materials on people who use them through textbook evaluation (Tomlinson, 2001). Different criteria have been proposed for the sake of textbook evaluation, among which is Multiple Intelligence (MI) theory, introduced in 1980s by Howard Gardner, Professor of Education at Harvard University which has revolutionized the realm of education.

The MI theory is concerned with learners' individuality and their capabilities, emphasizing their different learning styles and potentials of language learning. It assumes that all human beings have different and unique intelligences, with their own weaknesses and strengths. Christison (1996) argues that through applying MI theory, teachers can "address the great diversity in learners; develop learners' intelligences and create an individualized learning environment" (p.10). As an illustration, Snider (2001) states that "MI theory-related materials have the strong potential to improve foreign language instruction because they engage learners' innate abilities" (p. 6). Consequently, in order to fulfill different ESL/EFL learners' needs based on the MI theory,

teachers should take individuals' different learning styles and potentials into consideration, while selecting the right course book.

In line with aforementioned arguments, this study is an attempt to evaluate one of the English Language Teaching (ELT) materials, which has been recently used throughout the world and especially in Iran , namely Touchstone series course books using a checklist devised by Botelho (2003) based on the Multiple Intelligence Theory. With regard to this objective, the following questions are raised:

1. To what extent do the Touchstone series student books reflect the MI theory in their activities?

2. To what extent do the Touchstone series work books reflect the MI theory in their activities?

3. Is there any difference between the student books and their workbooks with regard to representation of MI types?

Review of the Related Literature

From the traditional point of view, intelligence was conceived as a single, measurable inborn entity. This view assumed that intelligence is a fixed construct which cannot be developed after age five (Williams & Burden, 1997, as cited in Estaji & Nafisi, 2014). The attempt to measure and define human intellectual abilities started from the beginning of the nineteenth century. In 1906, Alfred Binet, the French psychologist, developed the most famous IQ test had ever designed to that time. In order to conform to American society, this was reformed in 1920s and 1930s and became known as the Standard-Binet IQ test. It was used specially in elementary schools to predict the learners' success in academic studies. (Gardner, 1999, P.12) Based on this usage of the IQ

tests, they have been exploited for several purposes, such as making decisions about occupational and educational opportunities (Gardner, 1999, P.3). Unlike the long period of administrating the IQ tests, their validity has been questioned by many psychologists. Due to the singular, static, and inherited characteristic of the IQ test, this concept has always been subject to criticism.

In 1980s, Howard Gardner questioned the validity of the conventional perspectives toward intelligence, for considering only language and logic capabilities as well as reporting this intelligence in a form of a single score defined by IQ tests. He also questioned the description of human intelligence as a general ability and considered it as a bio-psychological potential with an emergent, responsive, and pluralistic nature (as cited in Razmjoo & Farmer, 2012). Gardner introduced the Multiple Intelligence Theory (MIT) and defined intelligence as "the ability to solve problems and fashion products that are valued in a particular cultural setting or community" (Gardner, 1993; as cited in Tasse, 2012, p. 74). This view implies that intelligence is not restricted to cultures and considers differences in time and place. Gardner (1993) described human cognitive competence as a set of potentials, talents, and abilities which are called intelligences and he added that "individuals possess each of these skills to some extent; individuals differ in the degree of skill and in the nature of their combination" (p.15).

In his book, "Frames of Mind", Haward Gardner (1983) proposed the possibility of having many different types of intelligences instead of one single intelligence type. Initially he proposed seven basic types of intelligences; including verbal/linguistic, logical/mathematical, spatial/visual, bodily/kinesthetic, musical, interpersonal, and intrapersonal. Further, he added two more types of intelligences, namely naturalist and existential. He emphasized that human beings possess nine intelligences, each of which can be developed given the appropriate context and opportunities. In the words of Thomas Trahern, the 17th century poet, "All men see the same objects, but do not

equally understand them; Intelligence is the tongue that discerns and tastes them" (p.232). According to Armstrong (1994), all individuals have all types of intelligences but to different degrees. In addition, these intelligences usually have interaction and work together.

Gardener's MI theory, gained an increasing attention in field of education, especially in the realm of language leaning, classroom, syllabus design and material evaluation. This theory challenged the conventional views toward intelligence. Application of MI theory in education entails its positive effect on learners' interests, motivation and success as well as improving teaching practices and assessment techniques. As Koksal and Yel (2007) asserts "the MIT-based activities have been providing multiple approaches for individuals so that they may have opportunities for getting knowledge through ways that are sufficient for them" (as cited in Razmjoo & Jozaghi, p. 60) .

In this regard, many studies attempted to evaluate the textbooks in light of MI theory:
One of the main important studies in this regard, is a research carried out by Botelho in 2003 who achieved a great deal of attention among the researchers of this particular field of study. Focusing on Gardners' MI theory, first she analyzed six main widely used ELT textbooks (*American Headway 2, Explorations 1, Gateways 1, Go for it!* 4, *'New Interchange 1,* and *Passages 1*) in Brazil. The results of the study revealed that verbal/linguistic, intrapersonal, spatial/visual and interpersonal are the predominant intelligences in the activities. The least dominant intelligences are logical/mathematical, bodily/kinesthetic, musical, naturalist and existential. Botelho also analyzed the teachers' perception of application of MI theory in ELT textbooks. The results of which showed their awareness and interest in use of MI-related teaching materials. In addition, she designed a checklist based on the theoretical framework and underlying assumptions of Gardner's

MI theory, which is amongst the most applicable and important checklists that is widely used for textbook evaluation in this field.

Kırkgöz (2010) investigated the representation of MI theory in locally designed English textbooks for students of primary state schools. The results of study indicated that verbal/linguistic intelligence followed by visual/spatial type of intelligence, were the predominant ones and naturalistic intelligence was the least applied one. In similar vein, in Iran's context, Nasiri, Ketabi, and Dastjerdi (2012) did parallel investigation, but found that the predominant types of intelligence were logical/mathematical and visual/spatial. Musical and Verbal/Linguistic intelligence were identified as the least intelligence type, with no example of Natural, interpersonal or even intrapersonal intelligence.

Taase (2012) also analyzed the locally-designed EFL textbooks in high schools in Iran and concludes that Iranian EFL textbooks lack distribution of intelligences. However, as Razmjoo and Farmer (2012) assert "paying attention to the individualism which each student brings to the classroom and helping each student grow in his own unique way is the very basis of Gardner's multiple intelligence theory" (p. 157). Using Botlho's (2003) checklist, they analyzed Course books taught at the intermediate level of adult and young adult departments of the Iran Language Institute to investigate the textbooks intelligence profile. The findings of the study indicated that the most dominant intelligence types were verbal/linguistic, logical/mathematical and visual/spatial intelligence, while naturalistic and bodily/kinesthetic intelligences were among the least common types represented in their textbooks. They finally suggested that the material designers should revise these course books in a way to include all the intelligence types homogenously to accommodate the individual differences. Considering reflection of MI in ten

first-year college German textbooks, Snider (2001) suggested to adapt activities which enhance all the intelligences in learners.

Reviewing the findings of related literature reveal the fact that in addition to students' different learning styles and personality types, they possess a variety of intelligences and it is necessary for textbooks to provide as many intelligence types as possible to meet the students' needs. To the best of the researchers' knowledge no one investigated the representation of MI in Touchstones books series, so this research seeks to explore the representation of MI theory in these popular ELT course books in Iran,

Method

Materials

The material of this study was the Touchstone series written by Michael McCarthy, Jeanne McCarthen and Helen Sandiford published by Cambridge university press in 2006. From each of the four course books, 4 units (2 units from student books and 2 units from workbooks) were randomly selected and their activities and tasks were analyzed based on the Gardners' Multiple Intelligence Theory (1983).

Instrument

A checklist developed by Botelho (2003) was used to analyze the tasks and activities of the randomly selected units. In her checklist, each of the eight types of Gardner's intelligences is described and their related activities are listed under each type. For example, the Interpersonal intelligence is defined as the ability to understand another person's moods, feeling, motivations and intentions and having skills like responding effectively to other people, problem solving and resolving conflict. Some of the activities related to this type of intelligence are also listed such as

pair work, peer teaching, board games, group brainstorming, project work and working cooperatively.

Procedure

In order to make the study feasible, four units (including two student book units and two workbook units) of each of the four course books selected for this study, were randomly chosen to be evaluated. Each unit is divided into different parts which are called activities and tasks in this study. All of the units of these four course books have the same activities and tasks. All the four skills of language (listening, reading, writing and speaking) as well as vocabulary, grammar and pronunciation exercises have been covered through these activities.

Sometimes an activity contains more than a single type of intelligence. For instance, in the first course book of the Touchstone series on page 119 (Unit 12) there is an activity which asks the students to circle the correct words in some questions answers them subsequently and then they are asked to work in pairs, practice asking and answering the questions. In this particular activity two intelligence types are included such as verbal/linguistic and interpersonal intelligences.

Data Analysis

After determining the intelligence types of all activities according to Botelho's (2003) checklist, descriptive statistics including frequencies and percentages of all types of intelligences were calculated and a table was created for student course books as well as the workbooks of the series. Finally, a single table was made which included the sum of the percentages of the occurrence of each intelligence type in all the course books.

Results and Discussions

The evaluation of the EFL course books seems to be of great importance since they are the most crucial and essential sources that teachers use in language classrooms. As the results of previous

studies show (Razmjoo & Farmer, 2012: Tasse, Satarian, & Salimi, 2014;), the significant role of the Multiple Intelligences in the success of language teaching and learning process is undeniable.

The Touchstone series course books which are widely used in many language institutes in Iran were analyzed to identify different types of intelligence they contain. Course books' intelligence profiles were extracted and the extent to which they reflect the MI theory was determined. A comparison was also made between the student books and the workbooks. None of the eight books of the series realized the key principles of MI theory in language learners. Botlho (2003, as cited Rozmjoo & Farmer, 2012) states that ELT course books have not been designed to apply MI theory but language teachers can refer to some resource books to apply MI to their teaching.

First the results of the analysis of each student book and work book are presented separately, and then a comparison is made between the student books and workbooks of the series.

Research Question 1: To what extent do the Touchstone series student books reflect the MI types in their activities?

Table 1: Distribution of Intelligences in Touchstone series Student books

Intelligence types f %

Student books	Verbal/ Linguistic	Logical/ Mathematical	Intrapersonal	Interpersonal	Musical	Spatial/ Visual	Bodily/ Kinesthetic	Natural	Total f %
Book 1	45 33.83	13 9.77	20 15.03	24 18.04	3 2.25	24 18.04	1 .75	3 2.25	133 100
Book 2	44 38.26	20 17.39	12 10.43	15 13.04	4 3.47	17 14.78	3 2.60	0 -	115 100
Book 3	33 32.35	8 7.84	16 15.68	21 20.58	2 1.96	22 21.56	0 -	0 -	102 100
Book 4	46 38.98	19 16.10	18 15.25	15 12.71	3 2.54	16 13.55	1 .84	0 -	118 100

Table 1 displays the distribution of Multiple Intelligence Types in the four student books of the Touchstone course book series.

Student Book 1

As Table 1 shows, the intelligence profile of the two units selected from this course book contains all the 45 activities of them 33.83% of which caters predominantly for Verbal/ Linguistic intelligence. Interpersonal and Spatial/Visual intelligence types are equally the second most frequently addressed categories of intelligence, each of which accounted for 18.04% of all the activities. Intrapersonal intelligence is the third most frequently represented type of intelligence in this book (15.03 %). The less commonly addressed intelligence types in this book are Logical/ Mathematical (9.77%), Musical (2.25%), Natural (2.25%), and Bodily/ Kinesthetic (.75%).

Student book 2

Regarding the second textbook of the series, the most frequently represented intelligence types are Verbal/Linguistic (38.26%), Logical/Mathematical (17.39%), Spatial/Visual (14.78%), Interpersonal (13.04%), and Intrapersonal (10.43%). And the less commonly addressed intelligence are Musical (3.47%), Bodily/Kinesthetic (2.60%), and Natural intelligence which was totally absent in course book intelligence profile (0.00%).

It should be mentioned that as the level of the learners has changed, the percentage of Logical/Mathematical type of intelligence has increased (student book 1: 9. 77%; student book 2: 17.39%) while the percentage of the occurrence of Spatial/Visual intelligence type has decreased

(student book 1: 18.04%; student book 2: 14.78%)which is in line i with the results of Razmjoo and Farmer's (2012) study.

Student Book 3

According to Table1, verbal/linguistic intelligence is the predominant type of intelligence accounted for 32.35% of the activities in the third student book of the Touchstone series. Spatial/Visual (21.56%) and Interpersonal (20.58%) are respectively the second and third most frequently used types of intelligence, followed by Intrapersonal intelligence with 15.68% of the activities in this course book. Logical/Mathematical (7.84%), Musical (1.96%), are the least frequently represented MI types. Surprisingly, Bodily/ Kinesthetic (0.00%) and Natural (0.00%) were totally absent in this book.

Student book 4

In the profile of the fourth course book of the Touchstone series again Verbal/Linguistic type of intelligence occurs in 38.98% of the activities and tasks and natural type in none of them (0%). 16.10% of the activities analyzed in two selected units of this book catered for Logical/ Mathematical intelligence and 15.25% contained Intrapersonal intelligence. Based on the frequency of occurrences, other types of intelligence are presented as follows: Spatial/Visual (13.55%), Interpersonal (12.71%), Musical (2.54%) and Bodily/ Kinesthetic (.84%).

Research Question 2: To what extent do the Touchstone series workbooks reflect the MI theory in their activities?

Table 2: Distribution of Intelligences in Touchstone series workbooks

	Intelligence types f %								
Workbooks	Verbal/ Linguistic	Logical/ Mathematical	Intrapersonal	Interpersonal	Musical	Spatial/ Visual	Bodily/ Kinesthetic	Natural	Total f %

Book 1	27	2	5	0	0	8	0	0	42
	64.28	4.76	11.90	-	-	19.04	-	-	100
Book 2	24	10	7	0	0	10	0	0	51
	47.05	19.60	13.72	-	-	19.60	-	-	100
Book 3	30	2	9	0	0	12	0	0	53
	56.60	3.77	16.98	-	-	22.64	-	-	100
Book 4	30	5	10	0	0	11	0	0	56
	53.57	8.92	17.85	-	-	19.64	-	-	100

Table 2 displays the distribution of Multiple Intelligence Types in the four workbooks of the Touchstone Course book series. As the table shows, none of the Touchstone workbooks contained Interpersonal, Musical, Bodily/Kinesthetic, and Natural types of intelligence.

Notably, there was the same pattern in the order of the frequency of occurrences in 3 of these four workbooks. Except the second workbook in workbooks 1,3, and 4 the most frequently addressed type of intelligence was verbal linguistic followed by Spatial/ visual, Interpersonal, and logical/ mathematical.

Work book 1

In the first work book of the series, the most frequently used intelligence type is Verbal/ Linguistic (64.28%), followed by Spatial/Visual (19.04%), Intrapersonal (11.90%), and the least commonly occurred type of intelligence was Logical/Mathematical (4.76%).

Work book 2

In the same vein, the most frequently represented intelligence type in the second workbook is Verbal/Linguistic (47.05%) Notably, the only difference between this book and the other workbooks is the order of the second, third and fourth types of intelligence. Unlike the other workbooks, the second most frequently reflected MI types are equally Spatial/Visual (19.60%)

and Logical/Mathematical (19.60%). The less commonly used type of intelligence in this workbook is Intrapersonal (13.72%).

Compared to the previous book, the percentage of the occurrence of logical/ mathematical intelligence has increased to 19.60% which is approximately 10% higher than the average percentage of the occurrence of this type of intelligence in the general profile of the workbooks. This might again be due to the learners' higher level of language proficiency.

Work book 3

In line with the first and fourth work books of the series, in the third work book, Verbal/ Linguistic was the most dominant type, followed by Spatial/Visual (22.64%), Intrapersonal (16.98%) and Logical/ Mathematical (3.77%)

Work book 4

The first most frequently addressed intelligence type in the last workbook of the Touchstone series was Verbal/Linguistic (53.57%), followed by Spatial/Visual (19.64%), Intrapersonal (17.85%), and Logical/ Mathematical (8.92%).

Research Question 3: Is there any difference between the student books and their workbooks with regard to the representation of MI types?

Table 3: Distribution of Intelligences in Touchstone series books

Table 3 displays the frequency occurrence of intelligences in overall student books and workbooks.

Student books

	Verbal/ linguistic	Logical/ mathematical	Intrapersonal	Interpersonal	Musical	Spatial/ visual	Bodily/ kinesthetic	Natural	Total f %
Intelligence types f %									
Student books	168 35.89	60 12.82	66 14.10	75 16.02	12 2.56	79 16.88	5 1.06	3 0.64	468 100
Workbooks	111 54.95	19 9.40	31 15.34	0 -	0 -	41 20.29	0 -	0 -	202 100

In sum, as Table 3 shows, Touchstone series student books catered predominantly for Verbal/ Linguistic intelligence (35.89%). The next most frequently addressed intelligence types are Spatial/Visual (16.88%), Interpersonal (16.02%), Intrapersonal (14.10%), and Logical/ Mathematical (12.82%). Musical (2.56%), Bodily/Kinesthetic (1.06%), and Natural (0.64%) are the least commonly used types of intelligence in these books.

Work books

According to Table 3, from the eight types of intelligences, four types are not presented in the workbooks of the Touchstone series at all. Verbal/Linguistic intelligence (54.95%) was found to be the most accounted intelligence type. The second most frequently represented MI type is Spatial/Visual (20.29%), followed by Intrapersonal (15.34%), and Logical/Mathematical (9.40%).

Finally, a comparison is made between the student books and work books of the Touchstone series. Four student books which are taught to adult EFL learners in Iranian context and four workbooks which are utilized as supplementary exercise books are analyzed in the present study.

The eight units selected from four student books include 468 activities in contrast to workbooks which include 202 activities. For more details regarding the profile of these two groups of books see Table 3. As this table displays, there are many differences between these two groups of books but what remains unchanged in these sets of books is that in both groups Verbal/ Linguistic and Spatial/Visual intelligences are the most frequently used types, other intelligences are the less commonly addressed types.

It is worth mentioning that a significant difference is observed in the percentages of the occurrence of Interpersonal, Musical, Bodily/Kinesthetic, and Natural types of intelligence which are totally absent in the workbooks, i.e., only four types of intelligence are represented in workbooks, namely Verbal/Linguistic, Spatial/Visual, Intrapersonal, and Logical/Mathematical; whereas all types of intelligence are reflected in student books. This may be as a result of the limitations of the present study, as not all units of the eight books were analyzed.

The findings of the study support those of Kirkgoz (2010) and Razmjoo and Farmer's (2012) studies. In all these studies Verbal/Linguistic intelligence type was the most dominant intelligence type and Spatial/Visual was the second type in ranking, while Natural type of intelligence was the least addressed type in the course books analyzed in these three studies.

Conclusion, Pedagogical Implications and Suggestions for further Research

This study was an attempt to investigate the representation of multiple intelligences in the Touchstone series course books as represented through variety of activities and tasks in order to find out the extent to which the Touchstone series course books reflect different types of intelligence. The finding of the study indicated that Verbal/Linguistic and Spatial/Visual types of intelligence were the most dominant types in both sets of the Touchstone series (including 4 student books and 4 workbooks) while Musical, Bodily/Kinesthetic, and Natural intelligences were found to be the least represented types in these two groups.

A comparison was also made in order to find out about the possible differences between the student books and their workbooks based on the Theory of Multiple Intelligences. The results revealed that there was a significant difference between the percentages of the occurrence of most types of intelligences.

In this regard, four types of intelligence including Interpersonal, Musical, Bodily/Kinesthetic and Natural types of intelligence were never represented in the four workbooks of the Touchstone series. Consequently, it can be noticed that student books in general, were more representative of multiple intelligences than workbooks.

The results of this study could be used by teachers, researchers, and material developers to take different learners' intelligence profiles and individual differences into account while setting goals or designing course books to meet the individual needs of the students.

Suggestions for further Research

Since one of the limitations of this study was the number of units analyzed as a sample, other researches could be carried out with a greater number of units taken from these course books. It is also possible to compare these course books with other popular ones taught in different institutes

regarding the MI theory. Another possibility could be to analyze the impact of gender on multiple intelligences. An extension to this study can be to investigate EFL teachers' attitudes about EFL course books and language learners' intelligence profile in order to find the extent to which they are compatible to the course books' profile.

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Appendix

List of activities, techniques, materials and descriptions of each intelligence.

Verbal/Linguistic

1. Note taking

2. Riddles

3. Worksheets

4. Listening to lectures

5. Word play games

6. Listening to talking books

7. Reading books

8. Discussions

9. Story telling

10. Journal keeping

11. Debates

12. Memorizing

13. Writing

The ability to use words effectively both orally and in writing. Remembering information, convincing others to help and talking about language.

Logical/mathematical

1. Science demonstrations and experiments

2. Logic puzzles and games

3. Story problems with numbers

4. Logical/sequential presentation of subject matter

5. Logical argumentation

6. Problem solving

The ability to use numbers effectively and reason well. Ability to predict, understand basic properties of numbers and principles of cause and effect. Recognizing abstract patterns, creating codes.

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Spatial/Visual

1. Illustrations

2. Graphs

3. Tables

4. Using charts and grids

5. Videos, slides and movies

6. Using arts

7. Maps

8. Photos

9. Using graphic organizers

10. Imaginative story telling

11. Painting/picture/collage

12. Mind maps

13. Telescope/microscope

14. Visual awareness activities

15. Students' drawings

Bodily/kinesthetic

1. Hands-on activities

2. Field trips

3. Role plays

4. Creative movements

5. Mime

6. Body language

7. Classroom aerobics

8. Cooperative group rotation

9. Cooking and other "mess" activities

The ability to use the body to express ideas and feelings and to solve problems. Skills: coordination, flexibility, speed and balance.

Musical

1. Singing

2. Songs

3. Playing recorded music

4. Playing live music

5. Jazz chants

6. Music appreciation

7. Student made instruments

8. Background music

Sensitivity to rhythm, pitch and melody. Recognizing simple songs and being able to vary speed, tempo and rhythm in simple melodies.

Interpersonal

1. Pair work

2. Peer teaching

3. Board games

4. Group brainstorming

5. Project work

6. Work cooperatively

The ability to understand another person's moods, feeling, motivations and intentions. Skills: responding effectively to other people, problem solving and resolving conflict.

Intrapersonal

1. Activities with a self-evaluation component

2. Interest centers

3. Options for homework.

4. Personal journal keeping

5. Checklist

6. Inventories

7. Individualized projects

8. Doing things by yourself

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The ability to understand yourself, your strength, weaknesses, moods, desires and intentions. Skills: understanding how someone is similar to or different from others, reminding oneself to do something, knowing how to handle one's feelings, knowing about oneself as a language learner.

Naturalistic

The ability to recognize and classify plants, minerals and animals including rocks, glass and all variety of flora and fauna. Classifying and categorizing activities.