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Self-directed Learning Among Children of Ages Nine to Eleven in Tehran: Generating a Persian Version of SDLR-ABE

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SDL (self-directed learning) now is offered as an alternative form for learning and teaching approach. SDL initially has developed in the field of adult learning. The question that may rise is whether SDL is applicable for younger ages. This study intended to generate a reliable and valid translation of a recently released instrument to measure SDL readiness (SDLRS-ABE) among children from nine to 11 years old and explore the quality of SDL among children of Tehran city through the translated instrument. The results indicated that SDL among children is measurable, the translated version of SDLRS-ABE is reliable (Alpha Chronbach estimated as 0.808), the validity of the Persian version was ascertained by the author of original scale, the characteristics are same to adults, children are able to learn on their own and schools' system does not give room to children to actualize their ability to perform learning on their own.

Keywords: SDL (self-directed learning), children, scale, Persian

Introduction

SDL (self-directed learning) initially has developed in the field of adult learning. Therefore, most of researches have performed with adults. According to Merriam and Caffarella (1999), SDL and informal learning imply same things which are an "independent pursuit of learning with which supported institutionally or not" (p. 33).

The question that may rise is whether SDL is applicable for younger ages. Merriam and Caffarella (1999) indicated that Houle (1972, p. 397) "maintains that the process of learning is fundamentally same for adults as for children". Indeed, Knowles himself later changed his mind about Andragogy as a model of learning for adults (vs. pedagogy which is developed for children). He has indicated that there is a "continuum ranging from teacher-directed learning to student-directed learning and that both approaches are appropriate with children and adults" (Merriam & Caffarella, 1999, p. 275). Merriam and Caffarella (1999) have adopted from Knowles (1984, p. 275) that "Children who are naturally curious and who are 'very self-directing in their learning outside of school… could also be more self-directed in school'". Therefore, it seems that there is no barrier to conduct SDL among children. Despite of this fact, there is minority, if any, research in this area among children.

This study intended to: (1) generate a reliable and valid translation of a recently released instrument that is devoted to measure SDL readiness (SDLRS-ABE) among children from nine to 11 years old; (2) explore the quality of SDL among children of Tehran city through the translated instrument; and (3) examine the characteristics of SDL within children of these ages of Tehran city.

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Significance of this study rests upon its implications for education. Need for improvement in education system always has been a priority. The blames from orthodox education systems spread. Maslow (1971, p. 164) described his contemporary education system as follow: “Our conventional education looks mighty sick”. Also today, scholars do not describe a favorite context from education system. For example, Zimmerman (2002) said “Our current education system fails to address self-actualization needs and need-fulfillment skills. As a result, it fails to fully culturalize [*sic*] its students” (Para. 1). Sufean and Jamaludddin (2004) stated that, “Schools don’t help to promote the development of self-esteem, creative talent, and innovative thinking of students” (p. 1).

As SDL now is offered as an alternative form for learning and teaching approach (Brockett & Hiemstra, 1991), it is fruitful to develop new approaches in education. This study tried to assist this goal through exploring SDL among children and generating SDLRS-ABE in a new language in order to promote research in more cultures.

Background

SDL is a concept within which several educational streams meet together, such as adult learning, co-operative learning, open education, democratic education, humanistic education and critical pedagogy. According to Brookfield (1986), the first definition for SDL was developed by Knowles who established this concept originally for adult learning. This definition quoted by Brookfield (1986, p. 40) is “A process in which individuals take the initiative in designing learning experiences, diagnosing needs, locating resources, and evaluating learning”.

One of the most important developments in SDL is concerning the age of individuals that SDL is compatible. Recent researches showed that there is not any limitation in SDL with regard to the age (Gibbons, n. d., Para. 1; Merriam & Caffarella, 1999; Brockett & Hiemstra, 1991, p. 20).

Conditions, such as self-concept, readiness to learn and internal motivation that is suggested for SDL in adults, are later criticized by that these conditions are more compatible to children and some adults’ specifications, such as socially constructed nature of the self and knowledge, may limit their capacity for SDL (Merriam & Caffarella, 1999). The other assumption that is offered (Merriam & Caffarella, 1999) for adults was “An adult accumulates a growing reservoir of experiences, which is a rich resource for learning” (p. 272), which is also rejected by claiming that “Certain life experiences can function as barriers to learning” (p. 274).

First effort to measure SDL has been conducted by Guglielmino in 1977. The scale developed has been mentioned as SDLRS (self-directed learning readiness scale). She tried to measure SDL through the psychological quality that prepares individuals to undertake SDL. She called this quality as SDLR (self-directed learning readiness). Readiness “implies an internal state of psychological readiness to undertake self-directed learning” (Merriam & Caffarella, 1999, p. 316). Based on 14 experts’ consensus, she identified the psychological qualities involved in readiness for SDL. These psychological qualities are presented in Table 1.

Guglielmino (1977) obtained eight independent factors through running factor analysis. As quoted by Brockett and Hiemstra (1991, pp. 56-57), these factors are shown in Table 2.

Since 1977, the SDLRS has developed by Guglielmino, and at the moment, some versions of that have been released. SDLRS, with 27 years’ history of usage, is now offered in 17 languages. LPA (Learning Preferences Assessment) “is a form of SDLRS that can be used for workshop format” (Guglielmino, 2008, p. 2), DLRA (Distance Learning Readiness Assessment) is designed especially for measuring the readiness for e-learning (Guglielmino, 2008), and SDLRS-E, a short form of SDLRS-ABE, has very newly designed for

children of grade three and above (Guglielmino, personal communication, May 30, 2008).

Table 1

The Eight Components That Experts Have Introduced for SDLR

No.	Components
1	Initiative, independence and persistence in learning
2	Acceptance of responsibility for one's own learning
3	Self-discipline
4	A high degree of curiosity
5	A strong ability to learn independently
6	Enjoyment of learning
7	A tendency to be goal-oriented
8	A tendency to view problems as challenges rather than obstacles

Note. This table is retrieved from Merriam and Caffarella (1999, p. 307).

Table 2

The Eight Factors That Have Been Found Through Factor Analysis From Administration of SDLRS by Guglielmino

No.	Factors
1	Openness to learning opportunities
2	Self-concept as an effective learner
3	Initiative and independence in learning
4	Informed acceptance of responsibility for one's own learning
5	Love of learning
6	Creativity
7	Future orientation
8	Ability to use basic study skills and problem solving skills

Last part of this section will be devoted to studies on SDLR and other variables. Litzinger, Wise, Lee, Simpson, and Joshi (2001, p. 8) showed that the SDLRS scores have "no correlation with GPA as a measure of academic success. This result is consistent with the literature, which suggests that traditional pedagogical approaches do not enhance self-directed learning skills". Sabbaghian (1980; as cited in Brockett & Hiemstra, 1991, p. 59) deduced that while age and gender were not significantly related to either self-directed readiness or self-concept, there was a significant positive correlation between self-directed readiness and self-concept. Indeed, self-concept was found to be related to all factors of the SDLR except for "acceptance of responsibility for one's own learning". Brockett and Hiemstra (1991) reported that Skaggs also found that SDLR negatively related to influence by powerful others, such as supervisors.

Gibbons (2004, Para. 22) offered that students in self-direction "often learn with other students in partnerships, groups, teams, seminars and advisories; they often learn with adults in the community as well as in the school; and they learn from extended travel and work together in the field". He also stated that students with high self-esteem are more self-direct and achievement could be used to increase self-esteem so as to promote SDLR. Grolnick and Ryan (1987) have found that "Both the non-directed and the non-controlling directed-learning sets resulted in greater interest and conceptual learning compared with the controlling set" (from abstract).

Gibbons and Phillips (1982; as cited in Brockett & Hiemstra, 1991) offered an informal situation—outside

of formal situation—for self-education. They maintained that although self-education "can be simulated, but self-education can only truly occur when people are not compelled to learn… when a person chooses to learn what he can also decide not to learn" (p. 69).

Methodology

The instrument of this study is a short form of SDLRS-E. To run this study in Tehran, Iran, it was needed to generate a valid and reliable translation of this instrument which is the first goal of this study. The procedure was supervised by the author of SDLRS-E. An agreement was signed between the author of this study and Guglielmino (Guglielmino, personal communication, May 30, 2008). She sent a translation guideline.

Procedure of Translation

Based on the guideline, three fully fluent individuals in English were translated by the instrument separately. They were cautioned to use the simplest possible language to convey the concepts, attempting to keep the reading level as low as possible without losing the meaning. The only copy that has been purchased has been photocopied and submitted to the following persons:

(1) Ms. Shirin Motamedzade, hp/no: +989122364104, e-mail: shirin.motamedzadeh@gmail.com, address: lot 9- Bahar jonubi- Sadr – Tehran, Iran;

(2) Mr. Yadolla Saeednia, hp/no: +989121354069, e-mail: ysaeednia@gmail.com, address: unit 199, lot 101, Akbari Blvd., Azadi St., Tehran, Iran;

(3) Mrs. Mitra Jannati Far, hp/no: 00989192067469, e-mail: kiomit2000@yahoo.com, address: lot 24-4th keyha, Asia Blvd., Kashani, Tehran, Iran.

The translated copies have been discussed in a session. Using Delphi techniques, a consensus has been achieved. Two fluent individuals in English who were not aware of the original instrument have been chosen and the final translated copy of SDLRS-E was emailed to them. The copyright statement has been published down of every page of the translated copy.

Same to the first stage, they also were instructed to use the simplest language as they could and try to convey the meaning. The work was going on slowly. After a while and pursuing, the back-translations were received. The two versions have been merged. The merged version was checked by two back-translators via phone. Some corrections were applied and the final version has been produced. The back translators were as follow:

(1) Mrs. Leyla Jannati Far, hp/no: +989126959960, e-mail: javad_jafari59@yahoo.com, address: Lot 3-Balooch, Hekmat St., gheytarie, Tehran, Iran;

(2) Mr. Seyyed Mohammad Hashemi, hp/no: +989124340813, e-mail: hashemi.m61@gmail.com, address: lot 15-36 St., usefabaad, Tehran, Iran.

During the above process, it was noticed that the Persian version has to be field test to 25 subjects. This action started that, however, it finished after achieving the last final version of back-translated. Therefore, based on the comments that have been gathered from subjects, a new round started.

The problems that arose were more than expectation. The subjects were third grade. It is notable that it was the beginning of school year which meant that the subjects were at the lowest permitted level. Some issues were:

(1) It seemed that the items of the test were very difficult for them. It could be either because the subjects of third grade are not enough skillful for reading this test or the translation was not flow enough;

(2) The quantity of items apparently was very much so that the subjects got tired and most of them left it uncompleted;

(3) Some items perhaps did not make sense for children. It could be a result of originally different way of talking in different culture. For instance, items 8, 14, 36 and 57 are among these items.

To come to a conclusion, an e-mail has been sent to Guglielmino to ask for giving some ideas regarding the problems (Guglielmino, personal communication, Monday, October 13, 2008, 06: 52). The respond was useful.

A few subjects of fourth grade have been chosen and the test has been administrated. In this administration, the test was filling up individually and the subject was asked to explain items one by one. Their explanations made useful points to modify the phrases. The result was satisfactory. Based on the comments from Guglielmino and the last field test, an effort has been begun towards producing the final version. For some items, such as sixth, seventh, 12th grades, more than 15 choices were provided and the translators discussed to come to a consensus. Thus, this form of test may be suggested for fourth to eighth grade of Iranian children.

The last part of the efforts was a session with a 20-year experienced primary teacher. This part has been added, though it was not a requirement based on the agreement, to reach a better result. The teacher—Mr. Soltani—was asked to verify the adjustability of the words and phrases with the reading and comprehension skill of the children aged nine and older. The correspondence address of Mr. Soltani is: Mr. Kiomars Soltani, hp/no: +989128027713, e-mail: kiomit2000@yahoo.com, address: Lot 9, nikbakht, Sadr, Tehran, Iran.

The corrections have been applied into Persian version and the back translators were asked to revise the merged version based on last corrections that have been made. Many corrections have been distinguished in the final English back-translated version as well.

In brief, three versions for translation to Persian and two versions for back translation to English have been produced. The last versions were sent to Guglielmino (personal communication, Sunday, October 19, 2008, 13:51).

Based on the pilot that has been run during the translation procedure, it was cleared that the 58 SDLR-E items is very complicated for children, in addition, the size is very long and makes the subjects tired. Therefore, she was asked for a solution. She claimed that a brief version of SDLRS-E is also provided—SDLRS-ABE, however, it is not standardized. It was preferred to use this version in this study which is a 34-item selected test from SDLRS-E.

The final authorization to copy 300 of the SDLRS-ABE for this study was received after the translation procedure and the translated version in Persian has been accepted by the supervisor (Guglielmino, personal communication, Sunday, January 4, 2009, 08:29).

Procedure of Administrating SDLRS-ABE

The sample was not chosen randomly, still it was tried to diversify the Ss as most as possible. To make the sample more valid as a representative of the population, the instrument was administrated to 540 Ss. Then, after removing unusable ones, 300 were selected randomly from 457 ones. A total of 34 statements (SDLRS-ABE) was ranked by subjects from one to five. A total of 170 marks were available for every subject. SPSS 16.00 was employed to analyze the data.

Findings

The demography of Ss is shown in Table 3.

Data, after converting the negative items, were entered to SPSS 16.00 which showed that two extreme values exist. These outliers has been removed, therefore, the effective number of Ss reduced to 298.

The symmetry of the sample distribution (Skewness) was estimated at -0.375 and the spread of the data

distribution (Kurtosis) was estimated at -0.290. According to Kumar's (2008) suggestion, data is eligible to apply in parametric statistics.

Table 3

Quantitative Sample Demography

Sex		Stand			School				Brother-sister			
M	F	3	4	5	M	V	N	I	1	2	3	4
155	145	74	120	104	106	49	87	58	37	109	112	42

Notes. M: Male; F: Female; M: Mizan School; V: Velayat School; N: Noora School; I: Isar School. The number in brother-sister section means: 1: No brother or sister; 2: Only brother; 3: Only sister; 4: Both brother and sister.

Komogorov-Smirnov coefficient was not significance at the level of 0.01. This indicated that the distribution was normal. However, the Shapiro-Wilk coefficient was at the significance level of 0.01, therefore, the normality distribution condition was not completely met. To find whether the data have been come from a normal distribution, the One-Sample Komogorov-Smirnov Test was run. The Komogorov-Smirnov Z coefficient estimated at 0.921 and the significance level was 0.364. Thus, the test distribution was normal.

Descriptive statistics of SDLR are presented in Table 4.

Table 4

Statistics of SDLR-ABE Data

Affordable	Max	Min	Range	*SD*	Mean
170	170	98	72	15.00	136.82

T-test did not present any significant difference in SDLR scores within genders (t = 0.074, significance = 0.941, df = 296).

One-way ANOVA presented no significant differences within stands (F = 0.973, significance = 0.379, df = 297).

However, this procedure resulted in a relatively significant difference within schools. The results are appeared in Table 5.

Table 5

One-Way ANOVA for SDL Scores by School Groups

Source	*df*	Sum of squares	Mean of squares	*F*	*Sig.*
Between groups	3	1,622.48	540.83	2.439	0.065
Within groups	294	6,5179.87	221.70		
Total	297	6,6802.35			

Notes. df: Degree of freedom; Sig.: Significance.

Although group's differences were not statistically different, Post-Hoc was run because the amount of sig. was small. The result presented that Noora school's score in SDL is significantly more than Velayt school (significance = 0.44) and more than Isar School (significance = 0.14).

The surprising part is the significant difference at 0.001 within groups of having brother/sister. The details are presented in Table 6.

Post-Hoc analysis revealed that single kids score more than other groups, especially from group of kids with brother (significance = 0.048) and those with brother and sister (significance = 0.000).

Table 6

One-Way ANOVA for SDL Scores by Having Brother/Sister Groups

Source	*df*	Sum of squares	Mean of squares	*F*	Sig.
Between groups	3	3,910.04	1,303.35	6.093	0.000
Within groups	294	6,2892.32	213.92		
Total	297	6,6802.35			

Notes. df: Degree of freedom; Sig.: Significance.

In addition, the kids with brother score more than those with brother and sister (significance = 0.002) and the kids with only sister score more than those with brother and sister (significance = 0.001).

These results indicated that readiness for SDL decreases with increasing quantity of kids in family.

Reliability and Validity of SDLRS-ABE

Reliability was estimated by Cronbach Alpha coefficient at 0.768 before missing values replaced (valid numbers: 218). The Alpha was increased to 0.787 after replacing missing values (valid numbers: 298) which is substantial. If the items are standardized, the Alpha will increase to 0.808 (valid numbers: 298).

All correlations between total score and its items were positive and significance at the level of 0.01. The least correlation was 0.172 for item 5 and the maximum was 0.515 for item 8.

The validity of the origin SDLRS-ABE is approved by Guglielmino (2008). The validity of the translated version was also ascertained due to translation process that was, done and the author has confirmed the process.

Factor Analysis of SDLRS

Using factor analysis might investigate to prove the appropriateness.

According to Ferguson (1981), to run the factor analysis, the least numbers of subjects should be five times of items. Since the items of the instrument are 34 and numbers of subjects are 298, factor analysis could be employed for this study.

R-matrix—matrix of correlations between the items of SDLRS-ABE, which was produced by factor analysis, presented that correlations were fair and no correlation coefficient more than 0.8 was found, which indicated that there was no singularity to affect the study (Field, 2005). The absolute least inter-item correlation coefficient was 0.001 which was between items 1 and 11 as well as items 1 and 22. While majority of correlations were lower than 0.2, which was suitable in factor analysis, the maximum correlation between items 34 and 32 was estimated at 0.446.

To avoid extreme multi co-linearity, determinant of *R*-matrix should be greater than 0.00001 (Field, 2005). The determinant was estimated at 0.002 which satisfied the requirement. The significance of Bartlett's Test of Sphericity estimation was at $p < 0.0001$, which rejected the null hypothesis that the *R*-matrix was an identity matrix. The coefficient of Kaiser-Meyer-Olkin was estimated at 0.765 which was categorized as "good" (Field, 2005) and indicated that factor analysis was appropriate for this study.

After ascertaining the appropriateness of factor analysis, the question of types of rotation that may use is arisen. Independent factors are assumed due to assumption of SDLRS's generator who is Guglielmino (1977).

According to Field's (2005) suggestion, it is appropriate to employ the Scree plot to determine the number of factors, because the number of variables in SDLRS-ABE was 34 (more than 30) and the communalities after extraction were not greater than 0.7. Beside, although the size of sample is 300 (exceed 250), the average

communality is 0.585 (not greater than 0.6). Therefore, the Scree plot was used to determine the number of factors to be extracted. Figure 1 shows the Scree plot generated by SPSS 16.00.

Figure 1 shows that five or six points dropped before inflexion point. The six factors assumption was examined and compared with five factors. The results for five factors made more sense. Therefore, five factors assumed and inserted in SPSS to get the results. Principal component analysis was run. Table 7 presents the extracted factors. The items of SDLRS-ABE were written for next step, which is to deduce the themes. It is also mentioned that whether the item is the reversed one.

Five factors of SDLR-ABE and the items with more loading are presented in Tables 8 to 12, in which the concept that has been intended is explained. The items with most loading include the infrastructure of the factor. Guglielmino (1977, p. 61) stated that "According to child, the largest loading values give the 'flavor' of the factor". Thus, the items that are under a factor, however, have strong loading with other factors and are not included in interpreting the factor. The theme of every factor is emerged from the most loading items and mentioned in the title of the table.

Therefore, the components of SDL emerged from this study are: (1) Initiative and persistence in learning; (2) Challenge and creative orientation; (3) Self-directedness in learning; (4) Strong desire to learn; and (5) Life-orientation learning.

These components are homogenate to those found by Guglielmino (1977) from factor analysis as well as from experts' consensus.

Table 13 provides the items that include first and last percentile of means distribution. It is specified as well that the item belongs to which founded factors (see Table 7).

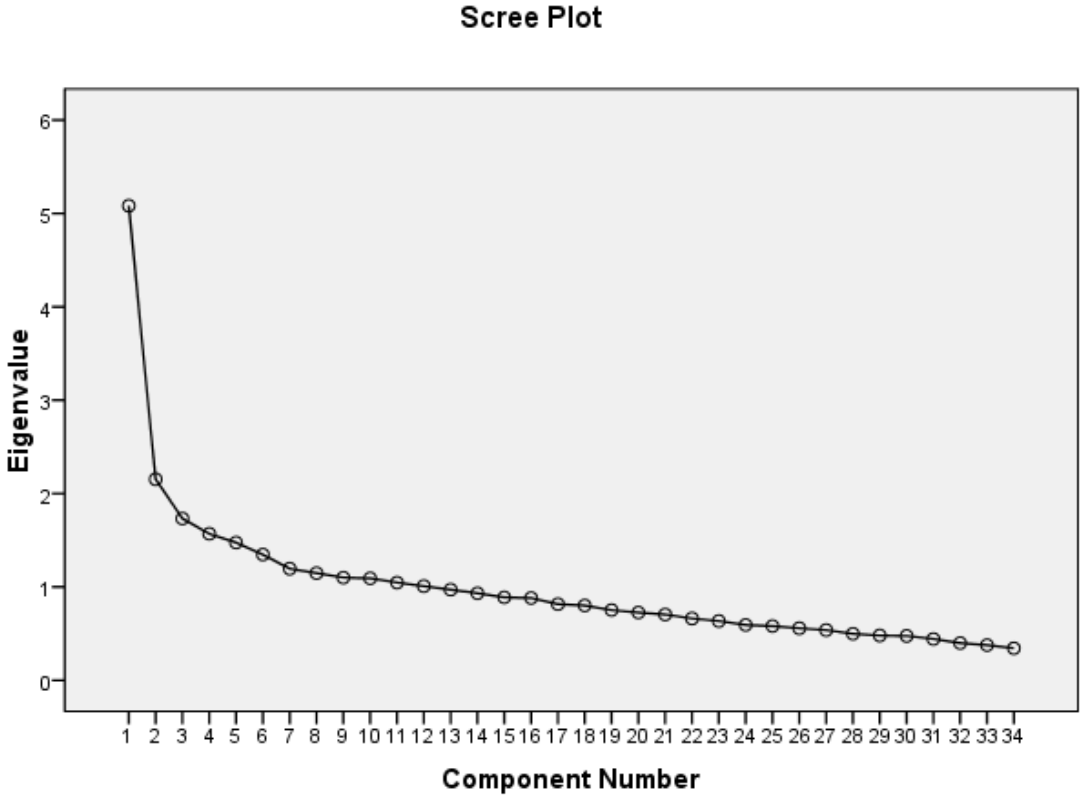

Figure 1. Scree plot of SDLR data generated by SPSS 16.00.

Table 7

Extracted Independent Factors of SDL With Their Items and Loading Coefficients

	Type	Factors				
		1	2	3	4	5
18. When I decide to find out something, I do it.	No	0.681				
23. I can make myself do what I think I should.	No	0.486				
8. If there is something I have decided to learn, I can find time for it, no matter how busy I am.	No	0.466				
12. I can think of many different ways to learn about something new.	No	0.465				
10. I know when I need to learn more about something.	No	0.448		0.331		
15. I have a lot of questions about things.	No	0.380				
22. A hard problem does not stop me.	No	0.367				
34. I like to see if I can solve hard problems.	No		0.642			
26. I like talking about ideas.	No		0.540			
29. When I learn more, the world becomes more exciting.	No		0.456			0.452
31. I learn many new things on my own each year.	No		0.442			
32. I am a good learner in the classroom and on my own.	No	0.305	0.436	0.294		
19. I like to try new things, even if I am not sure how they will turn out.	No	0.365	0.419			
33. People who keep learning are leaders, because they know what is happening.	No		0.396			
30. It is really my job to learn—The school and the teachers can not do it for me.	No		0.386			
28. I really want to learn new things.	No		0.376			0.335
6. I know where to go to get information when I need it.	No			0.638		
7. I can learn things by myself better than most people my age.	No	0.330		0.636		
1. I know what I want to learn.	No			0.567		
24. I am really good at solving problems.	No		0.341	0.499		
20. I am good at thinking a new ways to do things.	No	0.309		0.420		
25. I become a leader in learning groups.	No		0.291	0.410		
3. If there is something I want to learn, I can find a way to learn it.	No	0.319		0.378		0.357
2. When I see something that I do not understand, I stay away from it.	Yes				0.591	
9. Understanding what I read is a problem for me.	Yes				0.573	
11. I think books are boring.	Yes				0.551	
17. I am not as interested in learning as some other people seem to be.	Yes				0.545	
27. I do not like learning things that are hard.	Yes				0.537	
16. I will be glad when I'm finished learning.	Yes				0.502	
13. I try to think about how the things I am learning will fit in with my plans I have for myself.	No					0.639
5. I believe that a big part of my education should be thinking about what kind of person I am and what kinds of things I want to do with my life.	No					0.552
21. I like to think about future.	No					0.476
14. I really enjoy looking for the answer to a hard question.	No	0.320				0.428
4. I love to learn.	No					0.353

Table 8

Items Loading on Factor 1: Initiative and Persistence in Learning

Persistence in learning
Self-perception of being self-management
Tendency to prefer learning
Ability to find ways of learning
Ability to know the learning needs
A sense of high curiosity
Interest to challenge

Table 9

Items Loading on Factor 2: Challenge and Creative Orientation

Interest to be a good learner
Tendency to be involved in learning situations
Learning on one's own
Admiration for the good learners
Acceptance the responsibility for one's learning

Table 10

Items Loading on Factor 3: Self-directedness in Learning

Knowledge about the learning sources
Knowledge about own learning desires
Self-perception of being creative
Perceive of ability to be a leader for learning
Self-perceive as being better self-learner than others
Confidence in the ability to solve problems

Table 11

Items Loading on Factor 4: Strong Desire to Learn

Interest to face the problems rather stay away
Ability to read comprehensively
Interest to sources of learning
Self-perception to be interested in learning more than other
Interest to face hard problems
Interest to continue learning

Table 12

Items Loading on Factor 5: Life-Orientation Learning

Tendency to relate learning to the life
Tendency to incorporate learning to life's goal
Future orientation
Challenge enjoyment

Table 13

Items With Maximum and Minimum Means Within SDLR-ABE

Level	Item	Mean	Statement	Factor
Max				
	29	4.62	When I learn more, the world becomes more exciting.	2
	28	4.59	I really want to learn new things.	2
	34	4.56	I like to see if I can solve hard problems.	2
	4	4.43	I love to learn.	5
Min				
	25	3.06	I become a leader in learning groups.	3
	7	3.51	I can learn things by myself better than most people my age.	3
	9	3.54	Understanding what I read is a problem for me.	5
	30	3.58	It is really my job to learn-the school and the teachers cannot do it for me.	4

Table 13 indicates that the most component SDL that exist in children of Tehran is learning exploration. In contrast, the weakest component is probably the ability to learn on one's own.

Conclusions

Although SDLRS-ABE is known as reliable and valid, the high reliability of it (0.808) within the Tehran context presents and insists the measurability of SDL among children.

Item 5 which is "I believe that a big part of my education should be thinking about what kind of person I am and what kinds of things I want to do with my life" has the least correlation with SDLRS-ABE. This item is very long, complicated in meaning, and it was a challenge when the translation was doing. In fact, many times the translation of it reviewed, changed and revised. It seems that it is not appropriate for children. In addition, it is not clear that what is intended to be measured by this item. This item appears in factor 5, the last factor in factor analysis.

In contrast, item 8 have the most correlation with total test. This item is "If there is something I have decided to learn, I can find time for it, no matter how busy I am". This item appears in factor 1 of factor analysis. Thus, the most representative item for SDL among children of Tehran is their interests and insistences to learn.

The data of SDLRS-ABE met strongly the requirement to apply factor analysis. Therefore, the results of factor analysis could be accepted. In fact, the factors that emerged were very clear and surprisingly very consistent to other factors that have been emerged for adults.

These factors are the most important component that appears in SDL definitions (Brookfield, 1986, p. 40; Hiemstra, 1994, Para. 1).

Comparison among factors that are found in this study showed that almost all the factors found in this study are included in these eight factors which Guglielmino (1977) has found.

Table 13 shows the items with max and min means within items. The first three items of max means are appeared in factor 2, which is tagged by "Challenge and creative orientation". The four max items include: (1) excitement of learning; (2) demand to learn new things; (3) interest to challenge with problems; and (4) love to learn. These items indicate that children of Tehran city possess strong desire to learn.

In contrast, the items with min mean include: (1) perceive of one to be good learner by own; (2) skill to

understand what is red; and (3) the acceptance of the responsibly for learning. These items indicate that children of Tehran city possess weak perceive of themselves as learning by own.

Although the item 25 has the least mean, it does not mentioned above, because the researcher believes that this item is not correlated conceptually with the total scale and translation could not make sense for Ss.

Generally speaking, SDL among children aged nine to 11 is measurable, the characteristics are same to adults, children are able to learn on their own and schools and educational system do not give room to children to actualize their abilities to perform learning on their own.

No gender differences were found in SDL and no difference between stands was observed. This is reinforcing Sabbaghian's (1980; as cited in Brockett & Hiemstra, 1991) finding which reported that age and gender were not significantly related to self-directed readiness. Noora School scored more than two other schools but not from Mizan. Considering that Mizan School gives more freedom to children, this finding is surprising. Noora School had a lot of co-curriculum activities. This study suggests that the kids from smaller families possess more readiness for SDL, that is, the fewer kids, the more self-directed learning readiness.

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