

## **Building a Psychological Scale of Adaptation Skills for Mosul University Students**

**Esraa Sahir Salim, Prof. Dr. Nada Fattah Al-Abaji**

College of Education, University of Mosul, Iraq.

College of Education for Humanities, Mosul University, Iraq.

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### **Abstract**

The current research aimed at building a scale of adaptation skills for Mosul University students. The sample of the research consisted of (400) male and female students from the scientific and humanities departments at Mosul University. The researcher prepared (48) items preliminarily and the apparent validity was used. One item was deleted and the total number of the items became (47) items and then the apparent validity, construction validity, auto validity and the logical validity were determined. Also, the discrimination and the relationship of the item with the total score were calculated. In addition to that, invariability was calculated using the retesting and Alpha-Cronbach methods. The study reached to building a scale that is characterized with validity, invariability and discrimination.

**Keywords:** a scale, adaptation, skills,

### **The research problem**

The problem of the research is that the human in his nature is a social being, who could be influenced and adapt with the society and determines his behavior in accordance with certain social criteria as the view of an individual to himself and his notion about himself and accepting it is considered the basis on which his personality pivots and the essence of his personal and social concurrence (Zahran, 1977, 13).

Adaptation play a great and important role in the human's life and it is, even, considered the more important factor in this life as it is inevitable to exist and continue as long as the human is in a process of reaction with the environment and the society in which he lives. Therefore, an individual should make a balance between himself and the reality and its changes. This makes us tend to what is familiar in the environment and the society and accept it and with time our response and our behavior become part of this reality (Khoori, 1999, 196).

As there is no scale that measures the adaptation skills, the researchers will build one.

### **The importance**

Life is a series of infinite and unclear situations and therefore it is sharply different from the content of the curricula that have specified and clear situations that can be resolved using previously memorized rules. Based on this, it is observed that some individuals with super capacities @@@ to deal with life, nevertheless they make mistakes in terms of his reaction with the daily situations in the simplest matters and doesn't know the mistake he made or its cause and he analyzes the weakest incidents in the narrowest premises or take the famous and common proverbs and sayings for granted as means to deal with life using them and demand the others to commit to them. Human, through his ability to think, and teach could create the civilization, combatted the diseases and encountered the problems. Through the thinking, ability to learn and realizing the importance of the successful interaction in the daily life situations, on the personal or the social level, he can resume his success in the extended journey of humanity. So, supporting the individual with the sound science, which is associated with acquiring the necessary skills to get along with life is a matter to be considered because the spontaneous behavior which rests on the intrinsic thinking might drag the individual to a series of endless mistakes as this individual measures the things mistakenly. From the other hand, the identification, which is based on a sound scientific basis could assist the individual to get to the right. So, one should learn the scientific bases and the fundamental skills that are required to life the special life and many situations that individuals face in their daily life entails thinking skills that are more profound than the ones in their innate thinking and also require scientific skills that are higher than the ones an individual might possess (Umran et al., 101:2001).

The current research derives its importance from several considerations, most prominent of which are:

- 1- It tackles one of the relatively modern concepts, namely; the adaptation skills.
- 2- The small number of studies that were conducted, which deal with adaptation skills.
- 3- The importance of the research is because it develops a tool (adaptation skills scale), so that researchers can use it in their studies.

### **Objective of the research**

The research aim at building a scale of adaptation skills of the students of Mosul University.

### **Defining the terminologies**

#### **Adaptation skills**

Masoud defined adaptation skills as: The capacity of the individual to conduct a positive adaptive behavior and made him/her deals with the daily life requirements and challenges (Masoud, 2000: 50).

Ibrahim defined it as: The ability to perform a certain process with a certain degree of speed and proficiency and economy in the effort made (Ibrahim, without a date: 825).

The United Nations Development Fund (UNDP) defined it as: The skills that should be acquainted by young people that make them capable to involve in a certain business (UNDP, 2006: 32).

### **Previous study**

- 1- Manshawi Study (Noha Farah, Menshawi, 2007) "The relationship of the behavioral and functional problems with the adaptation skills for the mentally disabled persons."

This study endeavored to reveal the relationship of the behavioral and functional problems like self-harming and the typical movements with the adaptation skills, for the persons who suffer from mental disabilities. The sample of the study included (74) individuals; (51) of them are male who represent (68.9%) of the sample and (23) are females who represent (31.1%) of the sample. Ages ranged between 18 – 30 years old. The Problem Behavior Index (PBI) and the @@ Adapting Behavior Scale (VABS) were used. Results showed that there was an inverse relationship between the behavior problems and the adaptation skills; i.e. the more the behavioral problems are for the persons suffering from mental disabilities, the less the capacity to adaptation skills is. Moreover, results demonstrated that the persons who suffer from movement disabilities only have a higher level of ability for the skills of adaptation (Manshawi, 2007: @ ).

- 2- Marton study (P. Marton, 2005) "The relationship of the personality functions and adaptation skills with self-esteem in the early adolescence stage."

The sample of the study involved (63) under thirteen years old adolescents. The researcher used the random medical-psychological interview and the verbal and written psychological measurement battery@ to measure the adaptation skills as well as the comprehensive self-esteem scale. Results showed that the positive self-esteem is tightly related to the personality functions and the adaptation skills. Moreover, the study showed that the positive self-esteem is tightly related to the personality functions and the adaptation skills with the same degree (Marton, 2005: 393-410)

### **Population of the research**

It represents all the individuals, objects or the persons who constitute the subject of the research problem and it is all the elements that are relevant to the study problem the researcher attempts to generalize the results of the study on it. therefore, the researcher seeks to involve all the subjects of the population who are (44028) male and female students.

### **The building sample**

The building sample consists of (400) male and female individuals and it was chosen to conduct the test of validity, discrimination and building as shown in table (4):

**Table (4): The distribution of the discrimination sample**

College	Second grade	fourth grade	Total
Pharmacology	30	30	60
Biology	40	40	80
Administration and Economics	20	20	40
Fine Arts	40	40	80
Kindergarten	25	25	50
Law	45	45	90
Total	200	200	400

### The research tools

The steps of building a scale of the adaptation skills.

As no scale that measures the adaptation skills is available, the researchers built a scale for the adaptation skills per the following steps:

1. Literature review concerning the adaptation skills as in table (2)

**Table (2): Studies that involve a scale of adaptation skills the researchers reviewed**

Study	Researcher	Year	Sample	Items	Most prominent findings
Skills of adaptation and their relationship with the tendency towards risk, Baghdad University, College of Education for Girls, Dept. of Kindergarten, 2017.	Azhar Ali	2017	630 students	62	<ul style="list-style-type: none"> <li>- There are no differences between the male and female children in the variable of adaptation skills and tending to risk and assertive behavior.</li> <li>- There are between the father's job (private sector, public sector) in the variable of adaptation skills and tendency to risk and assertive behavior.</li> <li>- There is a direct relation between the adaptation skills and tendency to risk.</li> </ul>
Orientation towards modernism and its relation with the adaptation for the University students, 2013, Deyala University.	Qabeela Ibrahim Hasan	2013	630 students	62	<ul style="list-style-type: none"> <li>- there's a positive relationship between the tendency to modernism and adaptation skills.</li> <li>- There is a statistically significant correlation between the tendency to modernism and adaptation skills.</li> </ul>
The adaptation skill and their relation with the two patterns of personality, College of Education for Girls, Tikrit University, 2022 A-B.	Sara Faris Ahmed	2022	3758 students	40	<ul style="list-style-type: none"> <li>- There is a positive relationship between the adaptation skills and the total two patterns of personality.</li> <li>- There is a statistically significant difference between the males and females in favor of the females.</li> </ul>

2. Reviewing the theories that dealt with the adaptation skills, as shown in table (3):

**Table (3): The theories reviewed by the researchers**

No.	Theory
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1	Theory of psychological analysis (1974)
2	Theory of social learning (2010)
3	Skills training theory (1855)
4	Erickson theory (1994-1902)
5	The symbolic interaction theory (2000)

- 1- The domains from which the scale is consisted of were identified according to the theories and previous studies and four domains were identified, which are: (personal and social relationships, the domain of technology, the domain of environment and the domain of health).
- 2- The items in their preliminary form were arranged and collected and they were (48) items.
- 3- Responses alternatives were selected (five answers) and they involved (applies to me very greatly, applies to me greatly, applies to me moderately, applies to me a little and applies to me very little). The two researchers performed the following procedures to verify the validity of the scale:

A- The validity of adaptation scale:

Validity is considered one of the psychometric characteristics that should be available in the psychological scale before applying it and it indicates the ability of the scale to measure what it was designed to measure (AlZawba'ee et al., 1981: 39).

Validity is considered the most important concepts in the field of psychological measurement as it is deemed as the basic feature that should be available in the tool of measurement in general (Ismael, 2004: 48). Therefore, the two researchers employed the following methods to determine the validity of the adaptation skills scale:

There are various types of validity and the researchers used the following:

### 1. The apparent validity

Anastasi confirmed that the apparent validity should be fulfilled in the scale so that the scale can be more effective in the scientific situations and to make sure of the cooperation of the individuals tested (Michael, 2006: 186). In this respect (Abu Huwajj, 2002), argued that the apparent validity represents the general form or the external form of a test in terms of the quality of its items, how to formulate them and the clarity of these items. It also deals with the test instructions, its preciseness and objectivity (Abu Huwajj et al., 2002: 134). In the light of this, the researchers made sure of the apparent validity by submitting the scale to a group of experts and arbitrators (appendix 2), who are (20) experts and arbitrators to verify the validity of the test and the alternatives in appendix (5) are all shown. After taking their remarks and opinions into consideration, the items that have an agreement of (80%) were accepted. Bloom indicates that we feel comfortable and deem the scale as valid and measures what it was made for if the agreement percentage was (80%) or more (Bloom, 1983: 126). One item only was omitted because the agreement was less than (80%).

### 2- The logical validity

The logical validity aims at judging the representation of the test to the field it measures, i.e. the idea of the validity of the content in its essence rests on selecting the questions in the class method or the random class method that represents the measurement domain in a correct statistical way (Shahata, 2012: 126).

Therefore, this type of validity depends on the sound identification of the feature to be measured (Mahasnah, 2013: 151).

The two researchers fulfilled this type of validity through developing a definition of the adaptation skills and identifying and defining its domains and submitting it to the experts (appendix 2). This type of validity was verified.

### 3- Validity of the construction

The calculation of the building validity is considered one of the types of suitable validity for the scales especially when the scale is prepared in light of a certain theory. Cronland indicates that the validity of the psychological scale requires identifying the theoretical assumptions on which the researcher rest when he builds

the scale and should verify them experimentally to identify the degree of the experimental scores correspondence with the theoretical hypotheses because the validity of a scale depends primarily on the domain of measurement in the scale scores for a certain hypothesized entity. It becomes clear if the experimental scores correspond with the theoretical hypotheses as this means that the scale will measure the characteristic it was designed for measuring it. The evidences of the scale building validity involve evidences of content validity and the validity related to the criterion and so the building validity is regarded as the complete framework that includes all the indicators of validity (Allam, B, 2000: 229).

#### **The validity of construction is measured with two methods:**

##### **1- The discrimination of the items of the adaptation skills scale**

**Discrimination:** It means the ability of the scale to discriminate between the individuals who got high scores in the characteristic or the feature to be measured and the individuals who got low scores. The goal of this step is keeping the items with high and good discrimination (Shahata, 2012: 254).

The two researchers conducted the following steps:

##### **A- Item Discrimination index**

The discrimination strength of the items is one of the important psychometric characteristics that should be available in the items of the test (Allam, 2000: 277).

The power of the test to distinguish between the individuals who have high scores in the characteristic or the feature to be measured and the individuals with low scores and the purpose of this step is to keep the high and good discrimination items only (Shahata, 2012: 254).

In order to determine the discrimination power of the adaptation skill scale, the following steps were followed:

1. A random sample, consisting of (400) male and female students, was taken outside of the main sample. This sample included (60) students from the college of Pharmacology, (80) student from the College of Sciences, department of Biology, (40) students from the college of Administration and Economics, (80) students from the college of Fine Arts, (50) students from the college of @@ Kidergarten and (90) students from the college of Law at Mosul University.
2. The adaptation skills scale was applied to the discrimination sample and after that the scale was corrected according to the total score of each student and then the scores were arranged in a descending way. The percentage (27%) of the high scores was determined which stood for (108) male and female students and (27%) of the low scores that represent (108) male and female students.
3. After the high and the low groups were identified, the discrimination power of the items was calculated using T test that was applied to two independent samples my means of using the statistical package of the social sciences (SPSS). It was found that the value of T calculated was (2.891-7.349), which is bigger than the table value (1.960) at a significance level of (0.05) and a degree of freedom of (214). So, all the items were considered as discriminating and the final number of the scale items was (47) items as shown in table (4).

**Table (4)**

Items	Maximum group 108		Minimum group 108		T value
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	
1	2.9537	1.48125	2.3241	1.31012	3.309
2	3.2593	1.29968	2.3519	1.26280	5.204
3	3.3056	1.30031	2.4722	1.21100	4.874
4	3.3241	1.20613	2.1667	1.10648	7.349
5	3.1759	1.39310	2.4444	1.27765	4.022
6	3.2315	1.39831	2.0833	1.23897	6.387
7	3.2963	1.32029	2.4259	1.34792	4.794
8	3.2778	1.33839	2.1296	1.17682	6.695

9	3.3889	1.32435	2.3241	1.26660	6.039
10	3.2315	1.31566	2.3241	1.28127	5.135
11	3.1574	1.36143	2.2685	1.21214	5.068
12	3.1019	1.40053	2.2870	1.23084	4.542
13	2.9815	1.35330	2.2593	1.11381	4.282
14	3.2222	1.27765	2.2963	1.26239	5.357
15	3.1296	1.42798	2.4074	1.29728	3.890
16	3.0741	1.25827	2.3241	1.25920	4.378
17	3.3333	1.26047	2.2407	1.25951	6.372
18	3.2778	1.41971	2.6111	1.29581	3.604
19	3.1019	1.49103	2.5185	1.27141	3.094
20	3.2222	1.21003	2.3704	1.27955	5.027
21	3.2500	1.22379	2.1944	1.30031	6.143
22	2.9722	1.31461	2.4537	1.32117	2.891
23	2.9815	1.32539	2.5370	1.33554	2.455
24	3.1481	1.39970	2.3611	1.19546	4.443
25	3.1574	1.28370	2.5185	1.33593	3.584
26	2.9722	1.37030	2.0370	1.04054	5.648
27	3.0556	1.38640	2.5000	1.28616	3.053
28	3.0741	1.33748	2.2963	1.32735	4.290
29	3.2870	1.44074	2.6667	1.38078	3.231
30	3.3519	1.33476	2.3981	1.32510	5.270
31	3.2407	1.45891	2.3889	1.25179	4.605
32	3.2870	1.42114	2.2222	1.21003	5.929
33	3.1111	1.34187	2.4537	1.41675	3.501
34	3.0741	1.32343	2.3426	1.31250	4.078
35	3.2315	1.35761	2.1204	1.11672	6.569
36	3.2593	1.32813	2.0556	1.20616	6.972
37	<b>3.2222</b>	1.37626	2.4907	1.28613	4.036
38	<b>3.3056</b>	1.37030	2.4815	1.26404	4.594
39	<b>3.2685</b>	1.36448	2.2407	1.22184	5.832
40	<b>2.9722</b>	1.43037	2.3056	1.22633	3.677
41	<b>3.2963</b>	1.39598	2.3611	1.29310	5.107
42	<b>3.2778</b>	1.36603	2.5556	1.32787	3.940
43	<b>3.2778</b>	1.33138	2.4630	1.32852	4.502
44	3.1481	1.36591	2.4722	1.24899	3.795
45	3.0556	1.22919	2.3889	1.25179	3.949
46	2.9167	1.40177	2.2870	1.20785	3.536
47	2.8981	1.55245	2.1852	1.34058	3.612

**Table T value is 1.960 at (0.05) and (214).**

The table shows that all the items are characterized with good and statistically significant discrimination.

**Determining the internal consistency (the construction validity) of the items of adaptation scale items.**

**2- The internal consistency (the relationship of the item score with the total score).**

The estimation of the test internal consistency represents the harmony of the test items and they reflect the extent to which the responses of an item with the total score of the test (AlNabhan, 2013: 293) as Pearson's

correlation coefficient was used for the responses of the consistency sample (400 male and female students). The correlation coefficient between the item and the total score of the tool was calculated and the correlation between the item and its domain. After that, the correlation coefficient of T test for the significance of the correlation coefficient and it was evident that all the T values calculated are bigger than the table value, which is (1.960) at a significance level of (0.05) and a degree of freedom (398). So all the correlation coefficients are significant as shown in table (5):

**Table (5): The correlations and T values between the score of each item and the total score of the test of adaptation skills**

Domain	Items	Total score coefficient		With its relevant domain	
		Correlation coefficient	T test	Correlation coefficient	T test
Personal and social relationships	1	0.216	4.413	0.513	11.923
	2	0.289	6.023	0.505	11.672
	3	0.287	5.977	0.476	10.798
	4	0.328	6.927	0.512	11.891
	5	0.222	4.542	0.401	8.733
	6	0.29	6.045	0.184	3.735
	7	0.298	6.228	0.539	12.766
	8	0.343	7.285	0.132	2.657
	9	0.316	6.645	0.195	3.966
	10	0.26	5.372	0.497	11.426
	11	0.291	6.068	0.463	10.421
	12	0.274	5.684	0.153	3.089
Adaptation skill with technology	13	0.246	5.063	0.435	9.638
	14	0.272	5.639	0.593	14.692
	15	0.257	5.305	0.601	15.001
	16	0.279	5.796	0.510	11.828
	17	0.338	7.165	0.529	12.436
	18	0.210	4.285	0.610	15.358
	19	0.173	3.504	0.643	16.749
	20	0.243	4.998	0.573	13.948
	21	0.277	5.751	0.403	8.785
	22	0.173	3.504	0.246	5.063
	23	0.149	3.006	0.450	10.053

Items		With the total score		With its relevant domain	
		Correlation coefficient	T test	Correlation coefficient	T test
	24	0.263	5.438	0.496	11.396
	25	0.176	3.567	0.242	4.976
	26	0.255	5.261	0.340	7.213
	27	0.198	4.030	0.450	10.053
Adaptation skills with the environment	28	0.214	4.371	0.470	10.623
	29	0.206	4.200	0.392	8.501
	30	0.297	6.205	0.416	9.126
	31	0.256	5.283	0.592	14.654

	32	0.355	7.576	0.448	9.997
	33	0.243	4.998	0.515	11.986
	34	0.208	4.242	0.418	9.179
	35	0.314	6.598	0.217	4.435
	36	0.338	7.165	0.171	3.462
	37	0.233	4.780	0.199	4.051
	38	0.265	5.483	0.205	4.178
	39	0.303	6.343	0.333	7.045
Adaptation skills with the health	40	0.204	4.157	0.430	9.502
	41	0.271	5.617	0.470	10.623
	42	0.241	4.954	0.296	6.182
	43	0.226	4.628	0.389	8.424
	44	0.196	3.988	0.367	7.871
	45	0.210	4.285	0.202	4.115
	46	0.167	3.379	0.437	9.693
	47	0.247	5.085	0.419	9.206

Table T is (1.960) at a significance level of (0.05) and a freedom degree of 398.

From table (5), it is observed that the T value of the correlation coefficient of the test items was (2.657-16.749) and all these values are bigger than the table T value, which is (1.960) at a significance level (0.05) and a freedom degree of (398) and this denotes the statistical significance of the correlation of each score with the total score of the test.

#### The relation of each item with the domain to which it is affiliated

The two researchers found Pearson' correlation between the score of each item and the total score of its domain as the value ranged between (0.149-0.355) in the application data previously available according to the domains. The T value of the correlation coefficient was (2.657-16.749), give that all T values were higher than table T value (1.960), so the correlation coefficients are statistically significant at a significance level of (0.05) and a freedom degree of (398) as shown in table (5).

#### Fifth: The scale invariability

Invariability is defined as the consistency of the scale in terms of measuring what the tool of the scale measures (Milhem, 2000: 235). It is an important condition of the scale in the psychometric tests and it refers to the harmony of the scale scores in terms of measuring what to be measured uniformly (Dawood and Anwer, 1990: 22). In order to make sure of the strength of the internal consistency of the test the invariability coefficient was determined using two methods, which are:

##### 1. Retest

This method is one of the simplest and easiest methods to identify the test invariability coefficient. It is summarized by applying the test to a group of persons and then reapplying it to the same group after a period of time that ranges between (14) to (21) days. The correlation coefficient between the two application is determined to obtain the invariability coefficient of the test scores (Abdulrahman, 2008: 180). To verify the adaptation skills scale invariability by means of retesting method, the two researchers applied the scale to a sample that consisted of (50) male and female students on Sunday 16/10/2022 and the samples included students of the second grade at the department of History (25) students per a group. Pearson correlation coefficient was calculated between the first application scores and the scores of the second application. The researchers found that the correlation coefficient was (0.76) and this result is considered as an good indicator of the invariability of the students' responses in the scale of adaptation skills and this confirms that the scale is characterized with good



invariability as the invariability coefficient value in the descriptive studies is accepted and considered reliable if its percentage was (70%) or more.

## 2. Alphacronbach method (the internal consistency of the items)

The invariability of the scale items was determined depending on the scores of the previous sample to apply the retest as the researchers used Alphacronbach method to find the invariability of the adaptation skills scale. This methods expresses the degree of internal consistency and harmony of the scale items and the value of the invariability coefficient of this method was (0.82) and this indicates a good invariability and consequently refers that the harmony of the scale.

### Auto validity

This is called the invariability index by some persons and it is determined after calculating the value of the invariability using the retest and it is considered as the validity of the experimental scores for the actual scores resulting from the test. The auto validity can be found by taking the square root of the test invariability index. As the invariability index is (0.76) through the retest method, its auto validity is (0.83), which is considered as a high value that indicates high validity and confirms that the test is valid (AlReemawi, 2016: 110).

### Test correction

In its final form, the scale consisted of (47) items with five alternatives. The weights (1-2-3-4-5) of the alternatives (applies to me very greatly, applies to me greatly, applies to me moderately, applies to me a little and applies to me very little) respectively and the highest score that can be obtained by the respondent is (235) and the lowest score is (47) with a hypothetical average of (141).

The scores of the level of adaptation skills were distributed as follows:

- The high level with scores (188-235).
- The medium level with scores (94-188).
- The low level with scores (47-94).

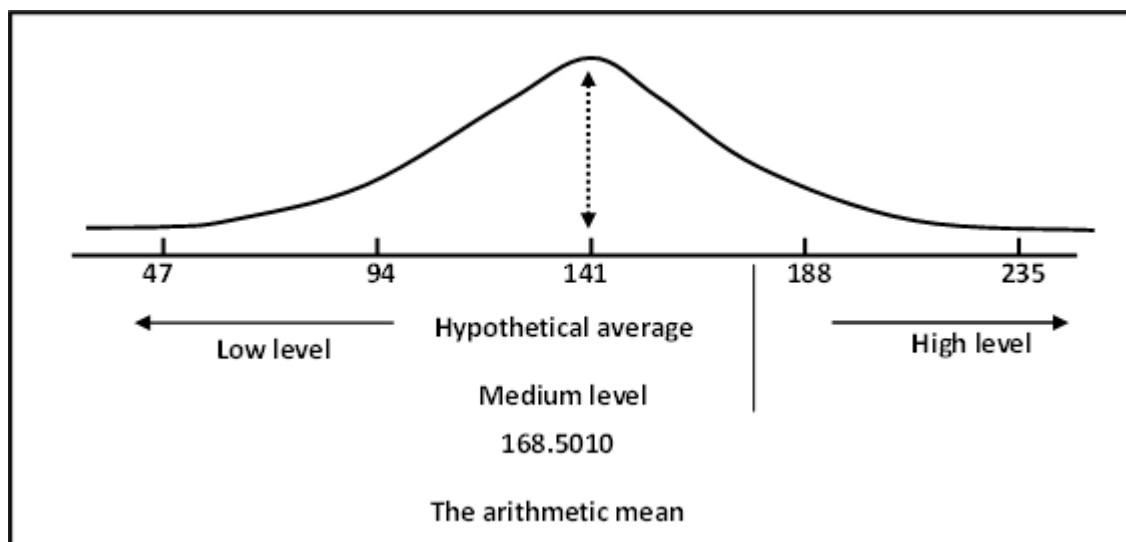


Figure (1)

## Results

The researchers built the scale of adaptation skills, which consists of (47) items that are characterized with validity, invariability and discrimination.

### Recommendations

The researchers recommend to paying a good attention to building the scales in the fields of adaptation skills for other grades like the secondary, intermediate and primary grades.

### Suggestions

The two researchers suggest the following:

- 1- Conducting a study about the adaptation skills and their relationship with the school climate.
- 2- Conducting and experimental study entitled: (The effect of an educational program on developing the adaptation skills).

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