



# Translation, Face and Content Validity of the Persian Version of School Function Assessment

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## Abstract

**Background:** School function assessment (SFA) is a criterion-referenced assessment that uses functional tasks to determine the level of participation and performance of students. The purpose of this study is to assess the face and the content validity of the Persian version of SFA for normal Iranian 6 – 12-year-old children.

**Methods:** This study has a methodological and psychometric design. We used a standard protocol, international quality of life assessment (IQOLA), for translating the SFA test. This protocol includes translation to Persian and backward-translation to English as well; both of these translation qualities are estimated. In order to ensure content validity, 20 occupational therapists, who are experts in the field of pediatrics, completed the content validity index (CVI) and the content validity ratio (CVR) forms through 11 sessions using the IQOLA scale. Twenty elementary school teachers completed these forms as well.

**Results:** The results of face validity showed that all the terms were clear and simple, and all the terms except one were higher than 1.5 in the impact score. The content validity results showed that five item's score was lower than the acceptable score ( $< 0.7$ ). Finally, in the expert panel, all the CVI and the CVR items achieved an acceptable score. In this panel, the experts negotiated about the clarity, the simplicity, and the necessity of all the items. Therefore, the Persian version of SFA can evaluate the school function of Iranian children.

**Conclusions:** The Persian version of the SFA achieved a good match in terms of cultural and face validity. Agreements above 80% in the results of face validity confirm that the Persian version of SFA is clear, simple, and understandable for its target population. The content validity results indicate different cultural perceptions for certain items. To determine and construct the validity and the reliability of the Persian version of SFA, other studies are required.

**Keywords:** Translations, Validity, Iran, Schools, Occupational Therapy, Child

## 1. Background

School function is the ability to perform activities that support or empower students to participate in the academic and the social aspects of educational programs (1). School function is necessary for students to learn basic and new skills (2). These functional activities refer to the non-academic aspects of the school program that are completely different from academic activities. Academic activities refer to classroom and homework assignments whose main purpose is to improve science skills. In order to participate and perform all the activities in the curriculum, a student needs a baseline performance of functional skills such as manipulating books and tools (1). Fortunately, improvement in homework skills affects a student's interests, self-confidence, and reduces their abnormal behaviors (2). As active participation in school activities is a crit-

ical factor in social and cognitive development, the child's school function should be assessed (3). Occupational therapists assess the student function by formal and informal tests based on three basic structures; these include: developmental, functional, and health-related assessments (3). Teachers and other school professionals believe that good school performance depends on a student's ability to perform functional tasks (1, 4). The school function assessment (SFA) was developed in 1998 by Wendy Coster and her colleagues in the United States in order to measure the function and the participation of students in school (1). This test consists of three main parts and 320 scales that assess the student's participation in school-related tasks. The results of this test provide useful information for school professionals and occupational therapists to enhance the student's educational goals and plan (1, 5, 6). SFA has been designed for both normal children (in the age of 6 – 12

years) and students with disabilities, and can measure the impact of educational programs and other services on the performance of the special needs of students (5). The results of SFA validity are reportedly excellent (1, 3, 5, 7-10). SFA helps school professionals who are involved with student issues, such as occupational therapists, physiotherapists, speech therapist, psychologist, teachers, and school assistants, to share information by using a common language with other professionals by observing the student's actual performance in different school environments (1, 11). So far, this test has been extensively used by occupational therapists and physical therapists (4, 12). SFA has been applied to a wide range of disorders such as Down syndrome, developmental coordination disorder, writing disorders, Fragile X Syndrome, developmental delay, traumatic brain injury, and cerebral palsy in many surveys (11-19). Today, norm-referenced tests, such as academic skill tests, and intellectual and adaptive behavioral measurements, are used to assess students in Iran. These tests were, however, not designed to evaluate students with special needs. In addition, they do not address a student's special skills; they are, therefore, not practical for planning a treatment (1, 9). To date, there has been no functional test to measure the performance of elementary school children in Iran; the aim of this study was to assess the validity of SFA.

## 2. Methods

The method of this study contains three parts:

### 2.1. Translation and Cultural Adaptation:

Translation and cultural adaptation for the Iranian population were conducted based on the international quality of life assessment (IQOLA) standard protocols, which include the steps of translation, evaluation of translation quality, backward-translation, and the comparison between backward-translation to English and the original English version (20, 21). The process of translation and backward-translation was as follows. First, the test was translated into Persian by four researchers (possessing the qualified expertise of a PhD in occupational therapy, a Master's degree in occupational therapy, and a PhD in neuroscience), 2 interpreters, and 2 specialists (with PhDs in occupational therapy, well-informed in the field of school and with more than five years of experience in the evaluation and treatment of children) during 11 sessions with the panel of experts. Then, the Persian translation was back-translated to English by two other translators. Finally, this English version was compared to the original test so that the same concept, between the original version and this

version, matched. After these steps, a final Persian version of the SFA was provided, which had the appropriate quality of translation and the agreement of all the participants involved in this process.

### 2.2. Face Validity Evaluation:

According to the opinion of various experts in the study of test validation, the number of participants in face validity tests is usually less than 20 people (22). In this study, the number of samples for face validity was 20 teachers. After receiving consent from the department of education, 10 schools from four areas of Tehran were selected. The samples covered three groups of literacy rate: Diploma, Bachelor of Science, and Master of Science (Table 1). To measure the importance of these items, impact score was used. If the impact score of an item was more than 1.5, the item was diagnosed as suitable for subsequent analysis and it was preserved (22).

### 2.3. Content Validity Evaluation:

For calculating the content validity of the test, the content validity index (CVI) and the content validity ratio (CVR) were estimated (23, 24).

#### 2.3.1. Content Validity Index (CVI):

For this estimation, this test was given to 20 occupational therapy experts (with PhDs and Master's degrees), who had at least five-years of experience in assessment and clinical interventions in the field of pediatrics.

#### 2.3.2. Content Validity Ratio (CVR):

To review the necessity of each item, CVR based on the Lawshe scale was used. According to the Lawshe scale, the minimum number of participants to measure content validity ratio is supposed to be five people (25). In this study, we had more than five participants for all the parts of the test (20 occupational therapists). If the result of each item, which is calculated in the CVR for the experts of sample group (20 persons), is greater than the score of the Lawshe table (0/42), the existence of the item is acceptable and it is known as an essential item (25).

## 3. Results

### 3.1. Translation and cultural adaptation:

During the translation of the SFA, the unsuitable items for Iranian culture were replaced or removed (Table 2).

**Table 1.** Demographic Characteristics of the Participants in Determining SFA Face Validity<sup>a</sup>

Characteristics	No. (%)
<b>Gender</b>	
Female	18 (90)
Male	2 (10)
<b>School type</b>	
Girl's school	11 (55)
Boy's school	9 (45)
<b>literacy rate</b>	
Diploma	1 (5)
Bachelor of science	16 (80)
Master of science	3 (15)
<b>Age</b>	
20 - 30	3 (15)
30 - 40	2 (10)
40 - 50	14 (70)
50 - 60	1 (5)
<b>Experience of Teaching</b>	
1 - 10, y	4 (20)
10 - 20, y	3 (15)
20 - 30, y	13 (65)

<sup>a</sup>Values are expressed as No. (%).

### 3.2. Face Validity Results:

Impact scores greater than 1.5 were obtained, except for one item: make a complete sentence on the computer. In addition, more than 80% of the teachers reached an agreement on the simplicity and the clarity of all the items.

### 3.3. Content Validity Results

#### 3.3.1. The Results of the Content Validity Index:

Items with unacceptable CVI score have been listed in [Table 3](#). These statements were discussed by the researchers and the specialists during the frequent panel meetings; some changes were applied. Clearer, simpler, and more expressive phrases replaced more difficult and ambiguous phrases. Finally, the experts reached a consensus about the revised terms and the phrases approved by the specialists.

#### 3.3.2. The Results of the Content Validity Ratio:

The content validity ratio for the 23 items was obtained as slightly less than 0.42. Certain items were accepted after the negotiations of the experts and some of them were approved after little changes. Finally, the specialists agreed

on the necessity of all the 23 items and all the items were approved.

## 4. Discussion

Tests used for elementary school children in Iran often measure the level of academic achievement, child's intelligence and personality. While the school function must be set of physical and cognitive-behavioral activities. In Iran, the only available test related to school function considered both physical and behavioral aspects is school performance questionnaire. Rezai and her colleagues developed this questionnaire with 60 items in an attempt to measure the performance of normal Iranian 7 - 12-year-old children (26). Functional elements were not used for measuring children in this questionnaire. This questionnaire has provided a few items for assessing the level of child's abilities. Therefore is not appropriate to evaluate the effect of therapeutic interventions. In comparison to this research, the SFA is completely comprehensive and citable because it has 320 physical and cognitive-behavioral items, it uses functional components, it has the possibility for employment in the evaluation of both normal and children with special

**Table 2.** List of Removed or Replaced Cases in Translation and Cultural Adaptation Process

Item Section	Removed/Alternated Expressions
<b>School type<sup>a</sup></b>	
Public special needs collaborative	removed
Hospital school	removed
Independent	removed
<b>Part 1: Participation</b>	
“Bathroom”/Toileting <sup>b</sup>	changed into “lavatory”
Physical acts of getting to/from the “bathroom” <sup>b</sup>	bathroom changed into “lavatory”
Eating occurs in the “cafeteria” <sup>c</sup>	cafeteria changed into dining area
<b>Part 2: Task Support/Physical Tasks</b>	
<b>Recreational Movement</b>	
Playing “kickball” <sup>d</sup>	changed into children’s soccer
<b>Setup and Cleanup</b>	
Classroom “containers” <sup>e</sup>	container changed into class tools
<b>Computer and Equipment</b>	
Removing “tape or diskettes” <sup>f</sup>	flash or CD
<b>Part 3: Activity Performance /Physical Tasks</b>	
<b>a) Recreational movement</b>	
Runs at least 20 feet <sup>g</sup>	20 foot changed to 6 meter
Play (“dodge ball ,baseball”) <sup>h</sup>	vasati <sup>i</sup> and ball games were replaced
<b>b) Hygiene</b>	
Plashes handle to toilet <sup>j</sup>	drag flushing toilet
<b>c) Written Work</b>	
Works from “left to right” <sup>k</sup>	from right to left
<b>d) Safety</b>	
Responds to emergency signal by initiating established routine <sup>l</sup>	(like earthquake maneuver)

<sup>a</sup> School type in Iran is different with the United States. In Persian version of SFA, Iranian schools were replaced. “Independent school” means non-governmental school; but Iranian schools are under the Iran’s education law.

<sup>b</sup> Iranian schools do not have “bathroom” for students, so the “bathroom” word has been changed.

<sup>c</sup> In public schools of Iran “cafeteria” is not established and non-governmental schools have “Dining area”.

<sup>d</sup> Plays types according to Iranian culture are replaced.

<sup>e</sup> In Iranian schools “Container” does not exist.

<sup>f</sup> Use of tape or diskettes is largely obsolete in Iran.

<sup>g</sup> The unit of measurement changed from feet to meters.

<sup>h</sup> Iran’s usual games were replaced. This means that instead of Dodge ball, Vasati and Instead of baseball, ball games were replaced.

<sup>i</sup> Refers to any game where players try to beat other players with ball and other players prevented from hitting the ball.

<sup>j</sup> Due to the difference Iranian Lavatory, The term of “Plush” replaced.

<sup>k</sup> Direction of writing in Persian is from right to left.

<sup>l</sup> According to professional’s offer, examples mentioned at the end of phrases, to better understand this issue.

needs. And the validity of SFA in the US, China, and Iceland have been assessed and approved (1, 3, 5). Yet, this is the first time that a functional test has been carried out, validating the results for students in Iran.

#### 4.1. Content Validity

The results of the content validity process indicated that different cultural perceptions of certain terms exist.

There was a lack of common perspective regarding the definition of the term “school function” and an expert consensus with respect to the necessity of its components was missing. Certain sessions were, therefore, planned to resolve such ambiguous and unclear terms, as the experts had requested. It has been suggested that different cultural perceptions for the same items could be secondary to

**Table 3.** Items that Did Not Achieve Acceptable CVI Score

Part	Item	CVI score
Part 2: Task support (cognitive-behavioral tasks)	Task behavior/completion	0.65 simplicity
Part 3: Activity performance-written work-6	Keeps place on worksheet with multiple items; dose not omit items	0.60 clarity
Part 3: Activity performance-functional communication-13	Communicates complex (3 step) directions to other	0.55 clarity; 0.46 simplicity
Part 3: Activity performance - positive interaction-14	Makes positive comments to peers(e.g., on successful performance)	0.65 simplicity
Part 3: Activity performance(cognitive-behavioral tasks)-behavior regulation-2	Accepts unexpected changes in routine	0.60 simplicity

the short history of the development of school-based occupational therapy in Iran. Though occupational therapists, in general, previously had a developmental perspective to the school-related skills, the real concept of the school function has only been recently considered and has now entered into the professional terminology of the majority. It is thus inevitable that Iranian occupational therapists and researchers still have uncertainties and doubts regarding the aforementioned issue.

#### 4.2. Face Validity

In the impact score, one item was rated less than 1.5; the referential phrase of this item was “make a complete sentence on the computer”. This was the fifth item under the category of “Use of computers and equipment”, which was related to the physical-activity performance portion of the test. The reason behind the low Impact score for this item was because computer skills do not constitute the main domain of learning in the public schools of Iran, whereas these skills are highly required in schools in the United States. Most public schools in Iran are not equipped with computers; therefore, teachers rate this scale less important than the others.

#### 4.3. Limitations of the Study

SFA examines the physical and the cognitive-behavioral tasks in 3 parts and 320 items. Despite being a comprehensive test, these high volumes of SFA items have certain limitations for this study. Increasing the number of translation and validity panels to 11 sessions, thereby providing enough time for the experts to derive more detailed answers during their participation in the content validity process; the process of the study was, therefore, elongated and lasted for about 18 months.

#### 4.4. Conclusion:

After determining the results of CVI, questionable items were resolved in collective discussions and an ultimate agreement was reached. This agreement showed that

all phrases in the Persian version of SFA are simple, meaningful, and clear. More than 80% of the group of teachers reached an agreement on all the items in face validity; this reveals that the Persian version of the test is clear, understandable, and simple enough for Iranian children. Therefore Persian version of School Function Assessment tool is a valid instrument to evaluate the level of participation and performance of Iranian students.

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