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ABSTRACT

Purpose. The aim was to develop and validate (SLCWAS) so as to provide support for its application among primary school students. It was postulated the following: (1) the (SLCWAS) was developed for application to primary school students in a Saudi Arabian cultural context; and (2) the (SLCWAS) has appropriate psychometric properties.

Methods and Procedure. 190 primary school students were included in this study. CFA was conducted for testing item-factor structure of the scale. The fit indices were...
found to be Chi square = 32.16 (p < .001), degree of freedom = 190 (χ2 = 32.16; df = 190, χ2/df = 3.24), root mean square error of approximation (RMSEA) = .07 (p < .05) standardized root mean- square residual (SRMR) = .05, comparative fit index (CFI) = .93, non-normed fit index (NNFI) = .96, goodness of fit index (GFI) = .96, and adjusted goodness of fit index (AGFI) = .95. These outcomes prove that SLCWAS is a valid and reliable measure.

**Results.** Findings indicate that the empirical ICC curves fit well with the expected ICC curves for all the items. The levels of SLCWAS in primary school students are widely distributed. Higher Logits scores indicated that students have higher levels of SLCWAS. Males and females had the same location in answering SLCWAS items and that there was no DIF for the SLCWAS items with respect to gender.

**Conclusions:** SLCWAS was validated in the Rasch analysis with a sample of primary school students. The preliminary reliability investigation revealed a very high internal consistency for the scale.

**Key words:** second language, writing anxiety, SLCWAS, psychometric properties, Rasch model analysis.

**Introduction**

Mastering language skills is a complex and arduous process, and the main challenge is particularly to learn the two productive language skills, which are writing and speaking. Among these two skills, writing has received great cultural and social interest in the vast majority of contemporary societies (Hafidz & Aditiya, 2019). The researchers’ interest in this skill is due to the belief that the ability to write appropriately has become a requirement for the future of students at the academic and professional levels (Pessoa, Miller & Kaufer, 2014).

Writing is a complex mental process that requires a specific level of linguistic knowledge, written norms, vocabulary and grammar. It is also a challenge recognized by most language learners because it is an emotional and cognitive activity alike. As a result of this complexity, students become anxious when they are asked to write a topic of expression, essay, thought, etc., and feel low confidence in their ability to complete the written tasks (Sağlam & Ali, 2018).

It should be noted that success in the writing process is related to the ability to express oneself, smooth flow of ideas, meet the expectations of the external observer, and the growing confidence and enjoyment of writing, and it is known that students face great challenges...
in dealing with these requirements (Ozen & İlke, 2016). On the other hand, improving students’ writing skills is related to the development of major and necessary cognitive abilities for any language learner, such as analysis, synthesis, inference, and linking, and the ability to acquire these abilities makes writing tasks surrounded by a lot of fear and anxiety (Mostafa, 2018).

Anxiety is defined in general as an unpleasant emotional state experienced by the individual when he feels fear or threat from something that he cannot precisely define, and this fear is usually disproportionate to the threatening situation (Tahoon, 2021). Anxiety is generally associated with nervousness, dread, self-doubt, and fear of failure; which results in poor linguistic performance in general, and students’ lack of pleasure in learning the language. As for writing anxiety, writing anxiety is defined as a general avoidance of tasks and situations that require writing and accompanied by the possibility of evaluation, or an internal tendency to anxiety when the individual performs tasks that require the writing component (Cheng, 2004).

This topic has attracted the attention of many foreign researchers over the past two decades, as writing anxiety affects students' choices regarding written tasks. Students with high levels of writing anxiety tend to avoid these tasks, engage in them weakly, and prefer subjects that require little effort. written tasks (Cheng, 2002), have difficulty generating relevant ideas, using grammar and techniques, may engage in negative self-talk, and alter mental block, which in turn affects information processing in language learning contexts in general, and in The context of learning to write privately (Liu, 2006), score poorly on standardized language tests (Foroutan & Noordin, 2012), and write articles with lower ratings (Lee & Krashen, 2002).

Younas et al. (2014) study have identified several causal factors that could affect the outcome of writing using a foreign language. The causal factors which contribute to the arousal of writing anxiety include (1) fear of negative evaluation; (2) insufficient writing technique practice; (3) poor linguistic knowledge; (4) lack of topical knowledge; (5) pressure for perfection; (6) time limitation; (7) lacking self-confidence. Writers with low anxiety would generally perform better in writing skills compared to writers with high anxiety which in-turn allow them to perform better in written compositions and achieve higher test scores. Low anxiety writers are effective in encoding messages
which leads them to have confidence in writing and satisfaction in writing (Daly & Miller, 2012). While low anxiety writers frequently feel the joy of writing, highly anxious writers would tend to avoid themselves from writing tasks and this reduces their opportunity to practice and receive constructive feedback for the betterment of their writing skills for future success (Daly, 2016).

Lan, Hung, and Hsu (2011) explain that writing is a complex mental process that requires a specific level of linguistic knowledge, written conventions, vocabulary and grammar. Hassan (2001) states that writing is also a challenge recognized by most language learners as it is both an emotional and cognitive activity; as a result of this complexity, students become anxious when they are asked to write a topic of expression, essay, thought, etc., and feel low confidence in their ability to complete the written tasks. Usually, the condition of writing anxiety will get worse when the students are required to write in the language other than their first language. It is because clearly, second language writing is strategically, rhetorically, and linguistically different in important ways from L1 writing (Silva, 1993). The important ways include content, organization, vocabulary, and language use.

Cheng (2004) stated that writing anxiety consists of three dimensions: the first is somatic anxiety, which is related to the increase in physiological arousal during the practice of written tasks. The second is avoidance behavior, which refers to the behavior of avoiding writing or to evade and postpone the performance of written tasks. The third is cognitive anxiety, which is a subjective component that deals with the perception of arousal and in particular anxiety or fear of negative evaluation of written work by teachers, colleagues, and others. Wiltse (2001) sees in his speech about the anxiety of writing in the mother tongue, that this type of anxiety begins at an early age, and becomes a lifelong problem, and it spreads among school students who are weak in writing, and who do not enjoy courses in the mother tongue, compared to students who are good at writing who enjoy these courses.

It should also be noted that the link between writing anxiety and linguistic performance is complex and controversial, as proponents of the Deficit Model believe that learners’ failure in written performance is due to their insufficient development of writing skills, which in turn leads to their feeling of anxiety (Naveh-Benjamin, 1991), and this view is supported by the fact that cognitive linguistic difficulty
leads to weakness in linguistic performance, which leads successively to anxiety (Sparks, Ganschow & Javartsky, 2000). On the other hand, proponents of the Interference Model believe that anxiety hinders learning, and that the deficit model may be true to some extent, but it is not true in all cases, as the poor linguistic performance of anxious learners is the result of difficulties in retrieving and processing information (Zhang, 2011).

There are no specific causes for writing anxiety, and it is believed that the interaction of physical, psychological and environmental factors contributes to the emergence and emergence of this anxiety, and some studies in psychological, neurological and biological research show evidence that abnormally high levels of testosterone are involved in cognitive processes, namely visual, language, attention and memory, it is believed to play a role in cases of learning disorder. Brain injuries in both children and adults can impair these cognitive processes, and may be a factor in this concern (Kusumaningputri, Ningsih & Wisasonko, 2018; Sparks, Ganschow & Javorsky, 2000; Wern & Rahmat, 2021).

It should also be noted that the link between writing anxiety and linguistic performance is complex and controversial, as proponents of the Deficit Model believe that learners’ failure in written performance is due to their insufficient development of writing skills. Which in turn leads to their feeling anxious, and what supports this view is that cognitive linguistic difficulty leads to weakness in linguistic performance, which leads successively to anxiety (Sparks, Ganschow & Javartsky, 2000). On the other hand, supporters of the Interference Model believe that anxiety hinders learning, and that the deficit model may be true to some extent, but it is not true in all cases, as the poor linguistic performance of anxious learners is the result of difficulties in retrieving and processing information. (Horwitz, 2001).

The Rasch Model

Classical test theory methods are practical for mathematical calculations. This theory is regarded as the “true score theory”. Even small samples can be worked on with these models and their required assumptions can easily be met (Güler et al., 2017). The classical theory is considered one of the most important and oldest methods that scientists have found for use in psychometric and educational measurement, as it has been widely used in the development of many
different and varied psychological tests such as intelligence tests, aptitudes and abilities, tendencies, attitudes, personality measures, and many other psychological and educational tests. The classical theory of psychometrics originated theoretically by Spearman (1904), Novick (1966) where they were able to provide the mathematical basis for his theory of intelligence. This was followed by a wide use of classical theory in the fields of psychometric and educational measurement (Impara & Plake, 1998).

This theory is based on a basic hypothesis in constructing psychological and educational tests and measures, according to which individuals’ scores in the trait or characteristic measured by the test take the form of a moderation distribution that is affected by the nature of the characteristics of the sample of individuals and the characteristics of the test items (Güler et al., 2017).

This theory is based on the principle of individual differences, that is, it assumes that there are differences or differences between people in a trait or characteristic, and this principle is the basis of psychometric measurement (Butakor, 2022). The measured characteristic, due to factors called irregular factors or chance factors, so the degree that an individual obtains is called the observed degree or the degree prone to error, and the amount of the measured trait that the individual actually possesses is called the real degree, and that the difference between the observed degree and the real degree is called the degree of error, and that the degree of error sometimes makes the observed degree very high, and sometimes it makes it very low and low, which should analyze the nature of each of the true variance and variance of error and the relationship between them (Bichi, 2016).

The most important criticisms leveled at the classical theory of measurement are its assumption: the normal distribution of scores on the continuum measured by the test, and its assumption that the observed degree (X) is the sum of both the true degree (T), and the measurement error (E), which may take positive or negative values (Bichi, 2016). Negative. In addition to its assumption that the true degree cannot be measured, but it can be estimated through the average observed degree resulting from the application of the test a large number of times. Making the assessment of parameters not dependent on any of the difficult parameters or distinguishing the test items, which do not seem to depend on the characteristics of the group of individuals to whom
that test is applied (Butakor, 2022). Relying on it in building scales or determining its parameters and characteristics is tainted by errors that threaten practical accuracy, and then the researchers saw the need to adopt the theory of latent traits or IRT in the processes of constructing scales, and redefining a parameter New standards for existing metrics of importance (ibid.).

The researchers in psychometrics were interested in achieving the objectivity of measurement for psychological tests and measures, in order to obtain estimates for individuals independent of the impact of the research sample, and to obtain estimates for the vocabulary that are not affected by the test vocabulary and its characteristics and conditions of application, and to achieve high accuracy in measuring the psychometric characteristics of psychological tests and measures so that these characteristics are not affected. The psychometric (reliability and validity) of the sample or the length of the test, and thus the test can be generalized and applied to other groups, and its results are not limited to the sample under study only, as is the case in the traditional measurement theory (Bichi, 2016).

The researchers worked on building test items that helps to accurately measure learning outcomes and obtain objective quantitative estimates of the features involved in students’ responses to those test vocabulary, and this was a reaction to the multiple criticisms directed at the classical theory of measurement, and this helped the emergence of IRT and the multiple models that have emerged from it, the most important and most common of which is the Rasch model (DeVellis, 2003). These models, such as the Rasch Model, allow objective measurement of behavior, and they can be used to confront many theoretical and applied measurement problems that the classical theory failed to confront (Baker, 2001).

While the classical theory of measurement focused on the test as a whole and viewed it as a single unit that cannot be omitted or added to because this affects the reliability and validity (Güler et al., 2017), the modern theory of measurement focuses on the singularity and not on the test or the scale as a whole; this allows adding or deleting vocabulary without affecting the validity and reliability of the test, which means building flexible tests and measures (Bichi, 2016).

The aim was therefore to develop and validate (SLCWAS) so as to provide support for its application among primary school students.
Thus, it was postulated the following: (1) the (SLCWAS) was developed for application to primary school students in a Saudi Arabian cultural context; and (2) the (SLCWAS) has appropriate psychometric properties.

**Method**

**Participants**

Primary school students were selected from six primary school in Makka city as the study population. Inclusion criteria were (1) age between 9 and 12 years; (2) current status of sickness, early retirement, or unemployment; (3) Keep attending school; and (4) voluntary participation in this study. Exclusion criteria were previously participated in a similar study of writing anxiety before. All students were given full information about the study and all signed an informed written consent form. The sample size should be 5–10 times the number of scale items according to the reliability and validity test (Sousa & Rojjanasrirat, 2011). Taking into account the missing sample size and 10% sampling error, 190 primary school students were included in this study.

**Data Collection**

Classroom teachers were kindly participated in 3 hours training in the scale method, content interpretation and scoring criteria. During the application of the scale, the researcher, who was present with the teachers during the application, made sure that the students understood the instructions well. Participants were asked to complete the scale, and not to leave any question without response.

**Measure**

A 10-items scale, assessing the causes of writing anxiety (including fear of teacher’s negative comment, fear of writing tests, insufficient writing practice, insufficient writing technique, problems with topic choice, linguistic difficulties, pressure for perfect work, high frequency of writing assignments, time pressure, and low self confidence in writing) (Rezaei & Jafari, 2014). Each item is scored using a 6 point scale (1 = strongly disagree, 5 = strongly agree). The mean score of all items was used to represents the scale score. The scale has good internal consistency reliability, with Cronbach’s α coefficient of 0.93.
Concurrent Validity
The correlations between SLCWAS and Causes of Writing Anxiety Inventory (CWAI; Rezaei & Jafari, 2014) was significant ($r = .45, p < .01$)

Factorial Structure – CFA
CFA was conducted for testing item-factor structure of the scale. Maximum likelihood estimation through AMOS 24 program was conducted. As a result of the one-factor CFA, the fit indices were found to be Chi square = 32.16 ($p < .001$), degree of freedom = 190 ($\chi^2 = 32.16; \ df = 190, \ \chi^2/df = 3.24$), RMSEA = .07 ($p < .05$) standardized root mean-square residual (SRMR) = .05, comparative fit index (CFI) = .93, non-normed fit index (NNFI) = .96, goodness of fit index (GFI) = .96, and adjusted goodness of fit index (AGFI) = .95. (see Table 1). These outcomes prove that SLCWAS is a valid and reliable measure.

<table>
<thead>
<tr>
<th>Model Fit Indices from Measurement Models of COVID-19-related Distress Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goodness of Fit Indexes</td>
</tr>
<tr>
<td>$\chi^2$, df</td>
</tr>
<tr>
<td>$\chi^2$/df</td>
</tr>
<tr>
<td>CFI</td>
</tr>
<tr>
<td>NNFI</td>
</tr>
<tr>
<td>GFI</td>
</tr>
<tr>
<td>AGFI</td>
</tr>
<tr>
<td>RMSEA</td>
</tr>
<tr>
<td>SRMR</td>
</tr>
</tbody>
</table>

Statistical Analysis
Data item and analysis statistical analysis were performed using IBM SPSS Statistics 18. Descriptive statistics were performed on students demographics and scale results. Rasch analysis and validation of participant responses and survey items were performed using the Winsteps’ partial credit model (Figure 1).
**Data Availability**

The empirical results of our research of Second Language Testing: Assessing the Psychometric Properties Causes of Second Language Writing Anxiety Scale (SLCWAS) Using Rasch Model Analysis were presented in the repository “Mendeley Data” (Alzahrani, 2022).

**Results**

**Descriptive Statistics**

The mean, SD, skewness and kurtosis of all items of SLCWAS are given in Table 2. All items had skewness and kurtosis values of < 2 and < 6, respectively, certifying the univariate normality of the data.

<table>
<thead>
<tr>
<th>Item</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>6</td>
<td>4.21</td>
<td>1.23</td>
<td>0.50</td>
<td>0.78</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>6</td>
<td>4.03</td>
<td>1.43</td>
<td>1.42</td>
<td>1.54</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>6</td>
<td>3.89</td>
<td>1.33</td>
<td>1.34</td>
<td>5.38</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>6</td>
<td>3.92</td>
<td>1.20</td>
<td>0.20</td>
<td>0.72</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>6</td>
<td>4.20</td>
<td>1.08</td>
<td>0.26</td>
<td>0.79</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>6</td>
<td>3.76</td>
<td>1.02</td>
<td>1.23</td>
<td>0.88</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>6</td>
<td>4.00</td>
<td>1.13</td>
<td>1.90</td>
<td>3.10</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>6</td>
<td>4.04</td>
<td>1.26</td>
<td>1.24</td>
<td>0.90</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>6</td>
<td>3.88</td>
<td>1.20</td>
<td>1.09</td>
<td>1.36</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>6</td>
<td>4.00</td>
<td>1.03</td>
<td>1.15</td>
<td>1.73</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>60</td>
<td>41.45</td>
<td>4.22</td>
<td>1.00</td>
<td>1.19</td>
</tr>
</tbody>
</table>

**Unidimensionality and Local Independence**

Rasch model Required that the unidimensionality and local independence requirements should be met. This is what the scale did. The analysis of dimensionality found variance explained by the measure was 73.4%, and eigenvalue of the first contrast was 1.8 with an associated unexplained variance of 6.2%. The residual correlation coefficients for item of the scale ranged from -0.28 to -0.20, and the absolute values were all less than 0.4, so local independence of this scale was established.

**Item Characteristic Curve**

Figure 1 shows the ICC of SLCWAS. The red line is the ICC as expected by the Rasch model and the blue line is the empirical ICC, “X” are the means of the measures and ratings for observations in the interval. When the “X” on the blue line is at or very close to the red line, the test is a good fit to the model. A shown in Fig. 1, the empirical ICC curves fit well with the expected ICC curves for all the items.

**Item-person Map**

IPM of SLCWAS is shown in Fig. 2. The left side of the figure shows anxiety level of the students, with ‘#’ and ‘.’ indicates the location of the distribution of the person measure, with the level of anxiety decreasing in order from top to bottom. The other side depicts the items in order of location level, with the highest location at the top (2) and the lowest location at the bottom (10). As shown in the figure, the levels of SLCWAS in primary school students are widely distributed. However, the location of items were slightly biased towards medium anxious, and there is a lack of items for students with higher and lower levels in this group.
Figure 2

*Item-person Map of RTW-SE Questionnaire*

```plaintext
PERSON - MAP - ITEM
<more>|<rare>

6
*.# +

5
.## +

4
.### +

3
.#### +

2
##### +

1
###### +

0
####### +

-1
.####### +

-2
.#### +

-3
.# +

-4
.

-5
.

-6
.

<less>|<frequ>

EACH "#" IS 3. EACH "." IS 1 TO 2
```
Item Fit

Table 3 shows SLCWAS item location, standard errors (SE), and associated Infit and Outfit statistics. Higher Logits scores indicated that students have higher levels of SLCWAS. The SLCWAS item location was estimated to be between -0.34 and -0.49 logits. The MnSq values of the items were in the range of 0.6–1.1 and fit the Rasch model well. All items of the scale had PT-measure correlations greater than 0.6, indicating that all items functioned in the same direction to predict latent trait. In addition, the standard errors (S.E.) were all 0.06, and the statistics were stable with the model fit.

<table>
<thead>
<tr>
<th>Item</th>
<th>Measure</th>
<th>SE</th>
<th>Infit MnSq</th>
<th>Outfit MnSq</th>
<th>PT-measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>−0.39</td>
<td>0.06</td>
<td>1.10</td>
<td>1.05</td>
<td>0.78</td>
</tr>
<tr>
<td>2</td>
<td>−0.41</td>
<td>0.06</td>
<td>0.64</td>
<td>0.65</td>
<td>0.77</td>
</tr>
<tr>
<td>3</td>
<td>−0.43</td>
<td>0.06</td>
<td>0.64</td>
<td>0.62</td>
<td>0.75</td>
</tr>
<tr>
<td>4</td>
<td>−0.38</td>
<td>0.06</td>
<td>1.11</td>
<td>1.06</td>
<td>0.79</td>
</tr>
<tr>
<td>5</td>
<td>−0.36</td>
<td>0.06</td>
<td>1.13</td>
<td>1.05</td>
<td>0.81</td>
</tr>
<tr>
<td>6</td>
<td>−0.40</td>
<td>0.06</td>
<td>0.65</td>
<td>0.61</td>
<td>0.75</td>
</tr>
<tr>
<td>7</td>
<td>−0.46</td>
<td>0.06</td>
<td>0.62</td>
<td>0.64</td>
<td>0.76</td>
</tr>
<tr>
<td>8</td>
<td>−0.42</td>
<td>0.06</td>
<td>0.65</td>
<td>0.61</td>
<td>0.75</td>
</tr>
<tr>
<td>9</td>
<td>−0.34</td>
<td>0.06</td>
<td>1.16</td>
<td>1.02</td>
<td>0.82</td>
</tr>
<tr>
<td>10</td>
<td>−0.49</td>
<td>0.06</td>
<td>0.61</td>
<td>0.62</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Differential item functioning (DIF)

Analysis of the DIF based on the SLCWAS for gender in study sample showed that M-H size of the uniform DIF item ranged from −0.77 to 0.64 (p > 0.05). This indicates that males and females had the same location in answering SLCWAS items and that there was no DIF for the SLCWAS items with respect to gender.

Discussion

The purpose of this study was therefore to develop and validate (SLCWAS) so as to provide support for its application among primary
school students. Thus, it was postulated the following: (1) the (SLCWAS) was developed for application to primary school students in a Saudi Arabian cultural context; and (2) the (SLCWAS) has appropriate psychometric properties.

The scale has good internal consistency reliability, with Cronbach’s α coefficient of 0.93. As a result of the one-factor CFA, the fit indices were found to be Chi square = 32.16 (p < .001), degree of freedom = 180 (χ squared = 32.16; df = 180, χ2/df = 3.24), root mean square error of approximation (RMSEA) = .07 (p < .05) standardized root mean- square residual (SRMR) = .05, comparative fit index (CFI) = .93, non-normed fit index (NNFI) = .96, goodness of fit index (GFI) = .96, and adjusted goodness of fit index (AGFI) = .95.

All items had skewness and kurtosis values of < 2 and < 6, respectively, certifying the univariate normality of the data. The analysis of dimensionality found variance explained by the measure was 73.4%, and eigenvalue of the first contrast was 1.8 with an associated unexplained variance of 6.2%. The residual correlation coefficients for item of the scale ranged from -0.28 to -0.20, and the absolute values were all less than 0.4, so local independence of this scale was established. The empirical ICC curves fit well with the expected ICC curves for all the items. On the contrary to previous research (e.g. (Lee and Paek, 2014; Leung, 2011; Lozano et al., 2008), The 6-point Likert scale satisfied all criterion for being optimal.

The levels of SLCWAS in primary school students are widely distributed. However, the location of items were slightly biased towards medium anxious, and there is a lack of items for students with higher and lower levels in this group. The SLCWAS item location was estimated to be between -0.34 and -0.49 logits. The MnSq values of the items were in the range of 0.6–1.1 and fit the Rasch model well. All items of the scale had PT-measure correlations greater than 0.6, indicating that all items functioned in the same direction to predict latent trait. In addition, the standard errors (S.E.) were all 0.06, and the statistics were stable with the model fit.

**Conclusion**

It should be noted that success in the writing process is related to the ability to express oneself, smooth the flow of ideas, meet
the expectations of the external observer, and the growing confidence and enjoyment of writing, and it is known that students face great challenges in dealing with these requirements. SLCWAS was validated in the Rasch analysis with a sample of primary school students. The preliminary reliability investigation revealed a very high internal consistency for the scale (alpha = 0.93). The 6-point Likert scale satisfied all criterion for being optimal. This scale could support educators in developing targeted intervention strategies by addressing the levels of SLCWAS among primary school students.

**Limitations**

While the sample of 180 primary school students can be considered sufficiently large for reliable results, generalization to the whole population of Saudi students is risky since the sample can only represent the population from which it was drawn, that is, those of Makka City.

**Acknowledgements**

The author wishes to thank those students who agreed to participate.

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**ADHERENCE TO ETHICAL STANDARDS**

**Ethics Declarations.** There is no ethical committee in the institution in which this study was conducted but the ethical code of UMM Al-Qura University in KSA was followed.

**Funding.** This research received no external funding.

**Informed Consent Statement.** Distributed and signed by parents and students.

**Data Availability Statement.** Data sharing not applicable. The data are not publicly available due to participants’ privacy.

**Conflicts of Interest.** The author declares no conflict of interest.

**Authors Contributions.** The author contributed to each part of the article.

**Consent for Publication.** The authors jointly consent for the manuscript to be published by the journal.

**References**


АНОТАЦІЯ

Мета. Мета дослідження полягала в розробці й перевірці SLCWAS, щоб забезпечити підтримку для його застосування серед учнів початкової школи. З цією метою було розроблено опитувальник (SLCWAS) для використання у початковій школі в культурному контексті Саудівської Аравії, котрий має всі відповідні психометричні властивості.

Методи і процедура. У дослідження були включені 190 учнів початкової школи. Для перевірки елементарно-факторної структури шкали був проведений КФА (Конфірматорний Факторний Аналіз). Показники відповідності складали: хі-квадрат = 32,16 (p < .001), ступень свободи = 190 (χ^2 = 32,16; df = 190, χ^2/df = 3,24), середньоквадратична похибка апроксімації (RMSEA) = .07 (p < .05), стандартизований середньоквадратичний залишок (SRMR) = .05, порівняльний індекс відповідності (CFI) = .93, ненормований індекс відповідності (NNFI) = .96, індекс гарної відповідності (AGFI) = .95. Ці показники доводять, що SLCWAS є валідним і надійним виміром.

Результати. Результати дослідження показали, що емпіричні криві ICC узгоджуються з очікуваними кривими ICC для всіх пунктів. Рівні SLCWAS в учнів початкової школи широко розподілені. Більш високі показники за Logits вказували на те, що в учнів вищий рівень SLCWAS. Хлопчики і дівчатка мали однаковий розподіл при відповіді на питання SLCWAS, і не було виявлено DIF для пунктів SLCWAS залежно від статі.

Висновки. SLCWAS був валідований в аналізі Rasch на вибірці учнів початкової школи. Попереднє дослідження надійності показало дуже високу внутрішню узгодженість шкали.

Ключові слова: друга мова (L2), тривожність при письмі, SLCWAS, психометричні властивості, аналіз моделі Rasch.