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Emotional social screening tool for school readiness – Revised: IsiXhosa adaptation

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Background: The need for the adaptation of instruments to other native languages to promote culture-fairness framed this study.

Aim: This article reports on the adaptation of the locally developed Emotional Social Screening Tool for School Readiness (E3SR-R) into isiXhosa.

Setting: This adaptation study was conducted in South Africa.

Methods: The study was executed in five steps based on the Sousa and Rajjanasrirat model. The quality of the processes for translation and establishing linguistic equivalence were evaluated using the Quality of Translation and Linguistic Equivalence Checklist (QTLC).

Results: A high level of inter-rater agreement was reported. A high level of compliance with International Test Commission (ITC) guidelines for translation and linguistic equivalence was achieved. An expert reviewer (ER) concluded that the isiXhosa version of the E3SR-R demonstrated content validity.

Conclusion: The E3SR-R English version was successfully adapted to isiXhosa.

Contribution: The resultant isiXhosa translation extends the availability and utility of the E3SR-R to isiXhosa speakers.

Keywords: adaptation; educators; emotional and social competence; E3SR-R; isiXhosa; school readiness; screening; South Africa.

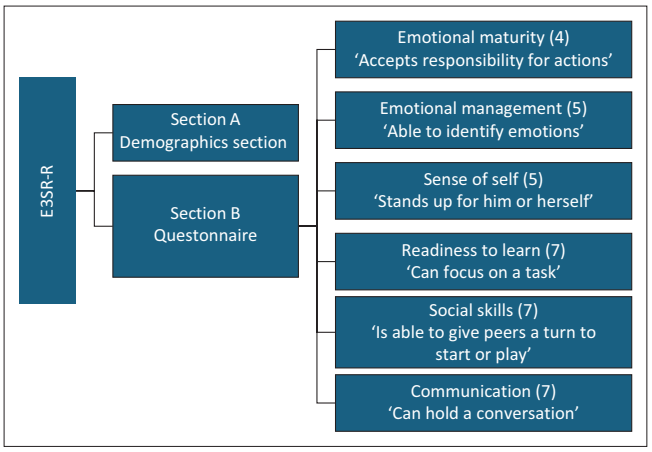
Introduction

Foxcroft and De Kock (2023) underscored the need for culturally and linguistically appropriate measures in South Africa. These authors recommended that indigenous tests that are contextually sensitive must be developed for evaluating cognitive, emotional and social functioning in children. To this end, Munnik (2018) developed the Emotional Social Screening Tool for School Readiness (E3SR). The aim of the E3SR is to assess emotional and social competencies in preschool learners as a domain of school readiness.

Munnik and Smith (2019) established the E3SR-R's psychometric properties. The E3SR was revised and the findings from data reduction analyses supported a reduction to 35 items and six domains (Figure 1).

Munnik, Wagener and Smith (2021) concluded that the revised E3SR (E3SR-R) had good psychometric properties and was contextually relevant. These authors underscored the fact that the E3SR recognised the importance of social and emotional development alongside cognitive abilities when assessing school readiness. To expand the reach and application value of the E3SR, translation into other local languages was recommended in keeping with the recommendation of Foxcroft and de Kock (2023) who advocated for the translation and cultural adaptation of psychological tests (measures) to ensure that they are culture-fair and suitable for diverse populations.

Translation is a feasible and methodologically rigorous means to produce multilingual assessment measures as part of adaptation. Test adaptation encompasses broader modifications to ensure that tests are relevant to the cultural and contextual characteristics of the target population (Pinheiro 2015). Epstein, Santo and Guillemin (2015) defined test adaptation as a process in which the content of an instrument is modified to achieve greater cultural appropriateness and accuracy. Adaptation includes three distinct sub-processes: translation, equivalence and validation (Lakens, Scheel & Isager 2018). Daouk-Öyry and Zeinoun (2017) underscored the fact that the efficacy of an



E3SR, Emotional Social Screening Tool for School Readiness.

FIGURE 1: The Emotional Social Screening Tool for School Readiness.

adaptation is influenced by the quality of translation, biases and inadequate processes for establishing equivalence. Van Der Merwe, De Klerk and Erasmus (2022) recommended the adaption of tests as a means of addressing challenges such as cultural bias and the limited availability of appropriate assessment measures in South Africa.

Adaptation in South Africa

The socio-economic inequalities and linguistic diversity of the South African society present a strong motivation for adaptation studies, especially in the educational context (Golden & Fortuny 2016). Munnik & Smith, 2019 argued that these same factors also complicate adaptation. Translation aids in removing linguistic barriers that can prevent accurate evaluations (Cekiso, Meyiwa & Mashige 2019). Mitchell et al. (2018) argued that failure to adapt measures for linguistic diversity (i.e. by translation) may result in systematic disadvantage to those whose home language differs from the medium of instruction (Chandra & Rai 2022). Translation refers to converting content from a 'source' language to a 'target' language (Pinheiro 2015). The translation of existing measures leverages the established psychometric properties. This is fast becoming a standard practice in adaptation (Dragos et al. 2024). Chandra and Rai (2022) stated that translation enables a more efficient and reliable adaptation process.

In response to the call for translation of measures in South Africa, several authors reported on their attempts to adapt indigenous psychological measures for children. Listed further in the text is an exposition of translation attempts using measures traditionally included in the assessment of children. For example, the Junior South African Intelligence Scale -GIQ8 was translated into isiZulu and Sesotho (Mdluli 2011). The translation of the Junior South African Intelligence Scale (JSAIS) shows progress, but the translation process was not explicitly reported as a methodological consideration. Research was conducted on the new translations favouring exploratory quantitative methods and item analysis (Blake 2011; Ripley-Evans 2011; Teixeira 2011).

Ndlovu (2012) investigated the quality of items on the performance scale of the isiZulu translation. This study reported that the quality of the items of the isiZulu translation was good with a few recommendations for further revisions. Naicker (2013) applied a Rasch analysis on the Numerical Intelligence Quotient Eight (NUM scale) of the isiZulu translation. This exploratory quantitative study reported strong psychometric properties and recommended further studies to establish equivalence. Similarly, Mareana (2014) conducted a Rasch analysis on data from the Sesotho translation of the JSAIS to determine item fit and ability levels. Misfitting and overlapping items were identified for further investigation. The findings suggested that different items might be reflecting a single construct. Thus, conceptual construct clarity and validity were a concern. This study focused on demonstrating the value of the Rasch Model of analysis to evaluate the quality of items empirically. The bias towards statistical approaches was evident even though the findings all point to problems during the translation process and conceptual construct validation. This resulted in recommendations for studies into adaptation and linguistic equivalence.

Moloi (2014) employed a qualitative methodology to explore practitioners' views of the isiZulu translation. The findings suggest that the items require revision or elimination in order to achieve linguistic equivalence. This study used a small sample of four practitioners who were native isiZulu speakers. Their reflections focused on regional and dialectic differences, resulting in a recommendation that expert validation was required using experts from Soweto. The translation of the JSAIS sparked numerous studies that focused on quantitative methods and practitioner perceptions at the expense of addressing the quality of the processes used in translation and for establishing equivalence.

Robins et al. (2014) translated the Modified Checklist for Autism in Toddlers (M-CHAT-R/FTM) into Northern Sotho. This translation demonstrated cultural appropriateness and reliability (Vorster et al. 2021). Daniels (2020) translated the Toronto Alexithymia Scale into isiZulu and reported acceptable psychometric properties. Despite these attempts, the translation of indigenous measures in South Africa remains a research imperative. Moreover, these authors did not report on the methodological decisions taken to operationalise the translation process. This impacted replicability and the ability to evaluate the methodological rigour and coherence of the translation studies.

Translation quality is critical for effective test adaptation. High-quality translations accurately capture the intended meanings, ensure cultural appropriateness and maintain the validity of the adapted measures. Dolmaya (2023) identified that back translation into the original language is a widely accepted practice that enhances the rigour of a translation. Similarly, using experienced, independent translators in the forward and back translations enhances rigour (Dragos et al. 2024).

Good quality translations aim to ensure that the translated version measures the same constructs and retains the original meaning (De Kock, Kanjee & Foxcroft 2013); in other words,

the translated and original versions are considered to be equivalent. Establishing equivalence is crucial for ensuring that translated instruments measure the same constructs and meanings as intended. Preserving both the literal and implied meanings during translation remains pivotal (Dragos et al. 2024). Van De Vijver and Leung (2010) identified four types of equivalence: construct non-equivalence, construct equivalence, measurement unit equivalence and scalar equivalence. Hernández et al. (2020) underscored the fact that attaining equivalence can be hampered by biases and the complexity of cultural contexts, in addition to the quality of the translation.

Biases such as construct bias, item bias and method bias can hinder test equivalence (Van De Vijver & Leung 2010). Construct bias refers to differences in how concepts are understood across cultures (Dragos et al. 2024). Cash and Snider (2014) recommended conducting content analysis of the manifest and latent content of measures. By examining the visible and implicit meanings within the instrument (data), the chances of achieving equivalence increase exponentially (Smith, Adams & Munnik 2022). Item bias arises when test items are not equally relevant across cultures, complicating the translation process and increasing the possibility of differential item functioning (He & Van De Vijver 2012). Method bias highlights varying response styles that can skew results (Dragos et al. 2024). Once equivalence is established, the adapted measure can be tested for validity, ensuring it is suitable for its intended purpose within specific cultural settings (Munnik et al. 2021).

Validity in adaptation involves face, content, construct and criterion validity. Face validity assesses whether a test appears relevant within a new cultural context (Jhangiani et al. 2019). Content validity confirms that the test thoroughly covers the domain, while construct validity ensures that the intended construct is measured (Smith & Munnik 2023). Criterion validity assesses how well test scores align with external standards (Jhangiani et al. 2019). Traditional statistical methods provide a foundation, but may overlook participant interpretations (Smith & Munnik 2023). Conceptual validity provides an alternative to traditional approaches to construct validation by reporting on the conceptual clarity of constructs and its subsequent impact on operationalisation as a prerequisite to data reduction (Smith & Munnik 2023). The use of expert reviewers (ER) may also contribute to face and content validity, while qualitative methods, such as focus groups and interviews, provide deeper insights (Almanasreh, Moles & Chen 2019). Thus, effective translation and adaptation processes are essential for equitable assessments in diverse populations and remain a focus of further research.

Adams (2022) translated the E3SR-R into Afrikaans. This study focused on the conceptualisation of translation and the explicit reporting of methodological decisions. This study was conducted in three phases. Phase One established the conceptual construct validity of the E3SR-R using the Conceptual Construct Validity Appraisal Checklist (CCVAC) developed by Smith and Munnik (2023). This phase concluded that the E3SR-R was conceptually clear and founded on sound theoretical and operational definitions, as well as based on good scalar decisions. The second phase applied the revised guidelines for translation published by the International Test Commission (ITC, 2017) including explicit criteria for recruiting translators, forward and backward translation to produce a draft translation of the E3SR-R. The translation process included a self-constructed decision-making matrix for determining which versions of the translated phrases would be adopted into the draft translation (Adams 2022). Phase Three assessed the quality of the translation and evaluated the process for establishing linguistic equivalence. The Quality of Translation and Linguistic Equivalence (QTLC) developed by Smith et al (2022) was used to provide empirical data for this process. Phase Three concluded that the process followed in the translation was rigorous and attempted to address the shortcomings in translation research. The findings further recommended that the resultant Afrikaans translation of the E3SR-R was linguistically equivalent and recommended its use in ongoing research. Adams also recommended that the E3SR-R be translated into isiXhosa to broaden its applicability in multicultural educational contexts. This manuscript reports on the translation of the E3SR-R into isiXhosa.

The emotional social screening tool for school readiness – Revised

The measure is completed by Grade R educators as the respondent group, based on a minimum of a 3-month observation of the young learners' (aged 5 years–7 years) emotional and social functioning in the educational environment. The screening tool includes demographic and questionnaire sections. The demographic section records learner information (e.g. age, gender) and respondent or educator information (e.g. how long the educator has known the learner). Emotional-social competence was conceptualised as comprising six domains. In the questionnaire, items with Likert-scale responses are included in each domain. As mentioned earlier in the text, the E3SR-R was reported to have good conceptual construct validity and was based on good scalar decisions (Koopman et al. 2024). The instrument was successfully translated into Afrikaans using a rigorous methodological process (Munnik et al. 2025) (Adams 2022).

Conceptual framework

Sousa and Rojjanasrirat's (2011) five-step test adaptation was used. Step 1 focused on forward translation from the source to the target language; Step 2 focused on comparing the different forward-translated versions. Step 3 focused on back translation; Step 4 entailed comparing the back translations to the original (source) version of the measure, and Step 5 focused on quality assurance, including linguistic equivalence and validation.

Aim

This article reports on the adaptation of the E3SR-R (English version) through translation into isiXhosa.

Research methods and design

The study was operationalised using Sousa and Rojjanasrirat's (2011) five steps.

Step one: Forward translation

Translation of the Demographics and Questionnaire sections of the E3SR-R into isiXhosa was done by three independent translators. The criteria for recruiting translators included familiarity with child development or psychology, fluency in isiXhosa, relevant educational exposure and familiarity with constructs as defined in the E3SR-R. Translators were also required to possess qualifications in editing or language studies, and experience in translation. Three translators were recruited to control for potential differences in dialect and colloquial expression. The translators were all clinical psychologists, working in the field of child development. They all had experience in editing and language studies. The inclusion of a third translator allowed for variation and contributed to refinement of the translations which in turn enhanced clarity and linguistic integrity. This step resulted in three translated drafts (TL1, TL2 & TL3).

Step two: Comparison of forward-translated versions

An independent reviewer (R1), a clinical psychologist with isiXhosa as the mother tongue, 5 years of experience in clinical practice and language editing and translation, scrutinised the three translations (TL1, TL2, TL3). Expertise in psychological assessment and familiarity with the constructs measured by the E3SR-R made the reviewer well-suited to engage in the comparison. The comparison of the translations employed a three-category coded system, developed by the authors, which included a qualitative descriptor, an interpretation and an action (Table 1). The comparison was aimed at the identification of linguistic differences and similarities across translations.

The self-developed coding system used in the work of Adams (2022) allowed for a clear understanding of translation accuracy and areas that needed further review. A second independent reviewer (R2), a manager, fluent in isiXhosa and with a background in language studies and translation, was recruited to review the recommendations of R1. Discrepancies were discussed with the research team until a resolution was reached about the versions to be adopted in TL4.

TABLE 1: Comparison of forward translations.

Description of translations	Interpretation	Action
Identical	Infer equivalence	Accept
Similar, but not identical	Infer equivalence	Review phrasings and colloquial expressions to identify most desirable option
Major discrepancies	Infer lack of equivalence	Review and revise

Step three: Back translation

Two different translators from the Western Cape, both primary care professionals with 10 years of experience in clinical practice (mental health) and translation were purposively selected to do the back translations. These translators were provided with a template containing the isiXhosa phrases from the draft isiXhosa translation (TL4) and asked to generate back translations into English (BTL1 and BTL2).

Step four: Comparison of the back translations

The two back translations (BTL1 and BTL2) were compared with the E3SR-R (English version) using the same three-category self-developed coding as in Step 2. Step 5 comprised two operations, described further in the text.

Step five: Linguistic equivalence and content validation

Operation 1: Establishing linguistic equivalence

The first operation entailed evaluating the rigour of the translation process. The QTLC developed by Smith et al. (2022) was used. The QTLC measures compliance with ITC guidelines in two sections. Section One evaluates the quality of the translation process; this section generates two sub-section scores based on the qualifications and experience of the translators and the translation process, respectively. The sub-section scores are summed to generate a section score indicating the level of compliance with ITC guidelines for translation. Section Two addresses linguistic equivalence and contains three sub-sections; these compare the source document to the isiXhosa draft and the back translations. The sub-section scores are summed to produce a section score indicating varying levels of equivalence (Smith et al. 2022).

Two independent raters (R3, R4), both research psychologists with formal training and experience in test adaptation, scored the QTLC. The Kappa statistic was used to establish inter-rater reliability.

Operation 2: Content validation

Content validation of the translated E3SR-R isiXhosa version was conducted by an ER specialising in language education, translation and adaptation. The ER was an educational psychologist with extensive experience in translation, editing and developing educational materials in isiXhosa and with a comprehensive understanding of academic and colloquial isiXhosa. The ER was given three documents as reference documents. This included the English (source) and isiXhosa (translation) version of the E3SR-R, a document outlining the definitions and attributes of domains and subdomains, as well as a document that explained in detail the steps followed in the translation process. The ER evaluated qualitatively the isiXhosa translation of the E3SR-R and the accompanying documents along eight self-constructed criteria that were derived from literature and the ITC guidelines (ITC, 2017). The

first criterion evaluated the efficiency of the translation in measuring emotional-social competencies. The second compared the isiXhosa version to the English version of the E3SR-R for content coverage. The third criterion assessed the accuracy of theoretical definitions, attributes, instructions and demographic items, and made provision for highlighting any concerns. Criterion Four assessed the suitability of the isiXhosa language for preschool educators to use. Criterion Five related to the identification of any translation problems and made provision for suggested amendments for improved clarity and accuracy. The sixth criterion invited general feedback to improve the translation. The seventh criterion addressed the usefulness of the measure being available in isiXhosa. Criterion Eight related to the identification of possible barriers to adoption of the isiXhosa translation. These criteria represented a comprehensive evaluation of the isiXhosa version and whether it was of high quality and appropriate for use with its intended audience of preschool educators. The ER provided a qualitative report that addressed each of the eight criteria.

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of the Western Cape, Humanities and Social Science Research Ethics Committee (reference no: HS23/3/6). Translators and reviewers received electronic invitations, and an information sheet explaining the research purpose, participation requirements and voluntary nature of involvement. They were informed of their right to withdraw at any time without fear of negative consequences. Codes were assigned to ensure anonymity. Consent forms were signed to confirm willingness to partake. Personal data were securely stored in compliance with the *Protection of Personal Information Act* (POPIA) and the University of the Western Cape data storage guidelines.

Results

Step 1: Forward translation

Each translator ($N = 3$) translated the 97 phrases in the E3SR-R. This produced three translations identified as TL1, TL2 and TL3, respectively. The draft translations were populated in a template in preparation for the comparison in Step 2.

Step 2: Comparison of translated versions of the emotional social screening tool for school readiness

The comparison of the translations was implemented in sequential steps. Reviewer 1 (R1) did the initial comparison and marked the phrases that were translated identically for adoption into the prefinal draft. R1 also marked the phrases that were translated similarly, but had differences in expression or phrasing. In this instance, R1 identified the preferred translation for adoption. Lastly, R1 identified the phrases that were translated with major differences. R2 reviewed the categorisation and recommendations made by R1. Where R2 agreed with the recommendation of R1 on items translated identically or on preferred versions of phrases translated with slight differences in expression, items were adopted into the prefinal draft. Items that were translated with major differences were referred to the primary researcher for review. Table 2 summarises the results of the forward translation.

From Table 2, it becomes apparent that only four items were translated identically in the *demographic section* and adopted into the TL4 draft, while 36 phrases were translated with different phrasings and colloquial expressions. R2 endorsed all of the preferred versions chosen by R1 and all 36 items were adopted into the prefinal draft TL4.

A review of the differences revealed three sources of variation. Variations because of spelling and grammatical conventions were identified; for example, the use of 'ingabe' ('is it') versus 'ingaba' ('whether') was noted as a different translation.

The second source of variation related to the comprehensiveness of the translation and the extent to which the translated phrase included all the content in the English source. 'Emotional Social Screening Tool for School Readiness' was translated by one translator as '*Isixhobo Sokuhlola Imivakelo Zentlalo*' and deemed inadequate as it did not capture the 'emotional' phrase in the '*Emotional* Social Screening Tool'. '*Isixhobo Sokuhlola Imvakalelo Yoluntu Ukulungiselela Isikolo*' was chosen as it represented or captured the source phrase most accurately.

The third source of variation related to a lack of references in the target language. The word *demographics* posed a challenge to all three translators. The translated version, 'Icandelo a: izibalo zabantu' was preferred as it was the closest to the source.

Item 26 in the demographic section was translated very differently, revealing challenges in alignment, without losing the intended meaning, between the spoken word and the written word in isiXhosa. All of the translations were deemed acceptable, but none could be used 'as is', as they did not fully

TABLE 2: Results as per review process.

Category	Section		Recommendation		Decision
	Demographic	E3SR-R	Reviewer 1	Reviewer 2	
Identical translations	4	7	Adopt into TL4 draft	Endorsed	Adopted into TL4 draft
Similar with different phrasing or expressions	36	48	Identified most appropriate versions	Endorsed	Recommended version adopted into TL4 draft
Major discrepancies	1	1	Review	Endorsed	Consult with primary researcher to determine most appropriate version
Total	**41**	**56**	-	-	-

TL, translation; E3SR-R, Emotional Social Screening Tool for School Readiness.

capture the source document's meaning. Each translation added or prioritised a different dimension or nuance. In the source version, Item 26 is phrased: 'Is there currently any trauma present in the learner's life or is there a history of trauma?' The item was translated as: 'Ingabe ukhona umonzakalo onawo ngoku umfundi okanye owake wamehlela phambili?' in TL1. This version was a direct translation of the spoken word. Thus, it captured the meaning of the source. The TL2 version translated the item as: 'Kukhona ukonzakala (emphefulweni) ebomini bomfundi ngoku, okanye ngaphambili ebomini bakhe?' This translation was partially suitable, but it did not fully convey the English meaning.

In TL3 the phrase was translated as: 'Ingaba kukhona ukwenzakala ngokusemphemfumlweni nasengqondweni okwakhe kwamehlela umfundi?' TL3 used the colloquial or spoken version, 'ingaba', which in the written form should be 'ingabe'. This translation prioritised comprehension above technical language or grammar rules, which may impact readers differently. The TL3 version also only offered a partially suitable translation that did not fully convey the English meaning.

The ensuing consultation with the primary researcher and the discussion between the reviewers identified that the closest translation for the source item was a combination of elements from the translations provided in TL2 and TL3. The resulting translation was: 'Ingaba kukhona ukonzakala emphemfumlweni ngoku kumfundi, okanye wakhe wonzakala ebomini bakhe?' Together, these phrases aligned more closely with the intended meaning of the source language. In this way, the intended meaning was preserved, while adhering to the cultural and linguistic norms for written isiXhosa.

For the *E3SR-R Questionnaire*, seven items were marked as identical across translations and incorporated into the isiXhosa draft (TL4). Forty-eight items were marked as similar but not identical; R2 endorsed the versions selected as preferred by R1. All 48 items were adopted into the prefinal draft isiXhosa version (TL4). Item 15 was earmarked as a major discrepancy. In the source language, Item 15 read: 'Apologise if he/she did something wrong (e.g. hurt a peer, broke a toy)'. The TL2 translation lacked the examples mentioned in the source item; thus, it was incomplete, while TL3 included only one example. The TL1 version was a default preference because of its completeness. The variation in the phrasing did not relate to content, but was simply incomplete.

The prefinal isiXhosa version (TL4) incorporated the translated demographics and questionnaire sections and became the source in Step three.

Step 3: Back translation

The prefinal isiXhosa version (TL4) was translated into English. The resultant back translations (BT1, BT2) were populated in the template used in Step two. The template was amended to include the original source version of the E3SR-R, BT1 and BT2. The completed template and translations were ready for comparison.

Step 4: Comparison of back-translated versions

The comparison of the back-translated version to the source version followed the same process as in Step 3. Two reviewers executed the comparison in a sequential manner. The results of the review process for the back translations are presented in Table 3.

Demographics

At least one translator provided translations that were identical to the source version for 17 items. For example, 'Intombazana' was consistently back translated as 'girl', which was identical in the original English version. These 17 items in the prefinal isiXhosa version were thus retained for the final isiXhosa version.

R1 identified 21 items that were translated back into English with different phrasing, but meanings similar to the source document. For instance, the phrase 'Emotional Social Screening tool for School readiness' was translated as 'Emotional screening tool in preparation for school', which differed from the source version in expression, but not in meaning. Similarly, the question, 'Was the trauma resolved?' in Item 28, was translated as 'Was the problem resolved?'. The meaning was largely the same, but the phrasing in the back translation lacked the specificity and nuance implied by the term 'trauma'. The reviewers discussed the differences in translation and phrasing and concluded that the essence of the items was captured in the translation into English, suggesting that the isiXhosa item correctly captured the essence of the source version. The difference in the English

TABLE 3: Review of the comparison of back translations.

Category	Section		Recommendation		Decision
	Demographic	E3SR-R	Reviewer 1	Reviewer 2	
At least one identical translation to source	17	9	Adopt into final draft	Endorsed	Retained final draft
Similar but non-identical, with different phrasing or expressions	21	41	Identified most appropriate versions	Endorsed	Recommended version adopted into final draft
Major discrepancies	3	6	Discuss with R2 Review	Endorsed	Consult with primary researcher to determine most appropriate version
Total	**41**	**56**	-	-	-

E3SR-R, Emotional Social Screening Tool for School Readiness.

back translations was attributed to the availability of more expressions in the English language. These 21 items in the prefinal isiXhosa version were thus retained in the final isiXhosa version.

R1 identified three items that were translated differently into English. For example, the term '*Ngokwase nqondweni*' in Item 17 referred to 'psychological' in the original. The back translations read 'mentally' and 'mental'. The discussion revealed that the isiXhosa translation of 'psychological' was descriptive of a broader construct (mental). It was not an equivalent term, but captured the essence of the item without losing meaning. It was the nearest isiXhosa phrasing and was therefore retained. This item was in the demographic section and did not impact scoring.

Emotional social screening tool for school readiness questionnaire

R1 identified nine items that were translated back into English identically to the source version by both translators. R2 endorsed the view of R1. These items in the prefinal isiXhosa version were thus retained in the final isiXhosa version.

R1 identified 41 items that were translated into English with similar meanings, but differences in expression. For example, Item 33 reads as: 'Can focus on a task' in the English source version and was translated as 'Task concentration' and 'Can focus to the tasks given'. The meaning was preserved in both translations, suggesting that the isiXhosa translation, '*Unokugxila kumsebenzi*', was an accurate translation of the original item. The variation in the translation of these 41 items into English was attributed to the increased number of expressions that were possible in the English language without losing the original meaning of the item. Thus, these 41 items in the prefinal isiXhosa version were retained in the final isiXhosa version.

R1 identified six items and phrases that were translated differently. For example, the response option, '*Andinako ukuvavanya*' ['Cannot assess'], was translated as 'Cannot examine' and 'Not at all', which could result in unclear response options. The variation was attributed to the translators' understanding of the response options and still captured the meaning of the original response option. There were no alternative isiXhosa phrasings possible, and the isiXhosa phrasing was retained as it captured the original intent as evidenced by at least one translator accurately capturing the meaning.

Step 5: Operation 1

Inter-rater reliability showed a perfect agreement amongst the raters (Kappa = 1.0). The scores obtained in Section A of the QTLC (27) suggest that suitably and highly qualified translators with relevant experience were employed. Thus, the translation processes had a high level of adherence to the ITC translation guidelines, and the researcher could proceed with establishing linguistic equivalence. The Section B score (39) suggested that the processes followed to compare the original English version with the English back translations were excellent. Thus, the process to establish linguistic equivalence was highly compliant with the ITC guidelines.

Step 5: Operation 2

The ER concluded that the isiXhosa translation had both face and content validity. The ER reported confidence in the isiXhosa version and indicated that there were 'no concerns about the meaning of the constructs'. The ER only identified grammatical errors requiring correction to align with the conventions in written isiXhosa. For example, '*Ukusukelwa ekuzalweni uyofikelwa kwiminyaka emi-2*' ['The 2-year-old will be born'] should be revised to '*Ukusukela ekuzalweni ukuya kwiminyaka emi-2*' ['From birth to age 2']. In the demographic section it was suggested that '*Usuku lokuzalwa*' ['Birthday'] be changed to '*Umhla wokuzalwa*' ['Date of Birth']. These recommendations were considered and adopted as they increased the accuracy of the isiXhosa version. The ER's recommendations were incorporated into the final version of the E3SR-R (isiXhosa) version.

Discussion

Clear methodological decisions that made unambiguous and comprehensive reporting of the process of translation possible were an important element in the execution of the five steps of the study. A comprehensive process to guide translation is seen as essential to enable the evaluation of methodological rigour and coherence (Dragos et al. 2024). The translation process was informed by the ITC guidelines; it included forward and backward translations by three and two translators, respectively, and a comparison of the translated versions by two independent reviewers.

The forward translation was conducted by highly qualified translators who were isiXhosa mother-tongue speakers with expertise in translation and familiarity with psychological constructs. This made the process more rigorous, but also introduced the risk of prioritising academic and written conventions in isiXhosa at the expense of more colloquial expressions that may be more accessible.

The translators came from different regions that introduced some of the variation in the process resulting from dialects. Three translators were used in the forward translation which exceeded the minimum recommendation of two translators. The comparison of the forward translations was conducted in a systematic manner with clear, explicit decision-making matrices. This enhanced the methodological rigour that supported the attainment of linguistic equivalence. The use of two experienced and qualified reviewers was an above-threshold practice that enhanced the resultant prefinal isiXhosa draft (TL3). The self-developed template used to record the comparison assisted in clearly illustrating decision-making, thus enhancing replicability. The sequential application of review facilitated a clear progression from

review to the adoption of items into a draft translation of the E3SR-R into isiXhosa.

Backward translation adhered to the prescribed recommendation of two translators. The continued use of the self-developed templates and tables prepared for the translation process provided a parallel process that made comparison between forward and backward translation feasible and meaningful. The comparison of backward translations followed a process similar to Step 2, providing a clearly defined means to identify and resolve discrepancies between the source and back translations. This step provided a clear and explicit process for decisions about items in the prefinal isiXhosa version and their retention in the final isiXhosa version (TL5).

The quality of the translation process was evaluated by two raters using the QTLC. Perfect inter-rater agreement was recorded. The QTLC scores indicated high compliance with the ITC guidelines for translation and establishing linguistic equivalence. Thus, empirical data were used to support the evaluation of the quality of the process of translation and establishing linguistic equivalence.

Limitations

The primary researcher was not proficient in isiXhosa and was therefore dependent on the input and expertise of reviewers and translators. In addition, isiXhosa has many dialects resulting in variation in expression. Similarly, there are major differences in the conventions used in spoken and written formats of the language; the methodology, however rigorous, could not control for said variation. The resultant isiXhosa version is more aligned with Western Cape dialects, which may limit the ease of use and even adoption of the measure in other regions.

Recommendations

It is recommended that the accessibility of the isiXhosa version for different regions be assessed. Refinement and piloting are recommended to explore whether the isiXhosa version achieved a level of universality or whether regional adaptations are required.

Conclusion

The resulting E3SR-R (isiXhosa) version was linguistically equivalent to the English source. The isiXhosa adaptation of the E3SR-R was done through a rigorous, empirically guided process, attending to translation and confirming linguistic equivalence and content validity. High inter-rater reliability and adherence to ITC guidelines affirm the credibility of the translation and adaptation process.

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Competing interests

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Authors' contributions

P.R. conducted the research as part of the fulfilment of her post graduate degree supervised by E.M. E.M. and M.R.S. partook in the conceptualisation of the article. P.R. provided the first draft. E.M. and M.R.S. developed and refined the draft. E.M. acted as the corresponding author for the submission process.

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Data availability

The data that support the findings of this study are available from the corresponding author, E.M. upon reasonable request.

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