
USING URDU-ENGLISH CODE-SWITCHING IN THE TRANSLATION OF SLOSSON INTELLIGENCE TEST

Rabia Jaffar

Ph.D. Scholar,
Institute of Clinical Psychology, University of Karachi,
Sindh, Pakistan
Email: jaffar.rabia89@gmail.com

Amena Zehra Ali

Associate Professor,
Department of Psychology, University of Karachi,
Sindh, Pakistan
Email: amenazehraali@gmail.com

ABSTRACT

Most of the Pakistani population uses Urdu-English code-switching in daily discourse. It is also the mode of instruction in educational institutions where explanations are given in Urdu while retaining key-terms in English. Translating the items completely in either one language compromises functional equivalence for most of the population. The purpose of this study was to translate the items of Slosson Intelligence Test- third edition (SIT-R3) for the Pakistani population, in a way that mitigates effects of any language proficiency. This article calls attention to the fact that functional equivalence is more important than literal translation. Therefore, whilst translating items of SIT-R3, mainstream communication patterns were replicated and Urdu-English code-switching was used. It was seen that this aided ease of understanding on part of the test-taker and reduced need for any explanations, thus expediting the testing process. A reliability study conducted on 219 school going children shows strong internal consistency ($KR-20 = 0.98$) and strong (odd/even) split-half reliability (0.98).

KEYWORDS

Intelligence test, translation, functional equivalence, code-switching

INTRODUCTION

Language is the basic ingredient of an intelligence test. The verbal intelligence of an individual is determined by the scores they receive on a set of tasks involving spoken language. Even their scores on performance tasks are dependent to some degree on language, in terms of understanding the instructions (Dawson, 2013).

When translating and adapting tests or scales, ‘functional equivalence’ is more important than the literal translation. This implies that the translated item conveys the same message as is intended by the item in the source language (Rojas, 2014). Functional equivalence does not merely refer to the language, but to the response it elicits. A functionally equivalent item would be one that gets the closest possible response from the receptor of target language as from the receptor of the source language and is not misunderstood (Nida & Taber, 1969).

Most of the verbal (and at times written) discourse in Pakistan is bilingual or a hybrid of English and Urdu. The national language is Urdu, however the laws, education, science and technology remain dominated by English (Khalid, 2016). This has caused the language spoken by the majority for mainstream communication to become a mix of English and Urdu. Linguists use the term “code-switching” to describe this. It refers to the use to two languages in a single sentence or conversation (Iqbal, 2011). Code-switching has been found to be fairly common amongst bilinguals in various cultures. Researchers say that this switching may be used by bilinguals to highlight information-rich material that they want the other person to pay attention to (Myslín & Roger, 2015). This may be due to lack of technical terms in one language, or the fact that one language might express the message better than the other (Hegde, 2011; Chughtai et.al, 2016). Moreover, code-switching usage patterns have been found to be conforming to the cultural norms (Martínez et.al, 2020). Urdu-English code-switching can be observed all around in Pakistan. From speeches on the floor of the parliament to the advertisements, from television to radio shows, from pre-school to universities (Jabeen, 2018; Iqbal, 2011).

Proficiency in English is considered as a marker for success by most Pakistanis. Thus, it is the mode of instruction in most schools, even when the teachers are not as skilled with the language (Mustafa, 2012). Therefore, in practice, code-switching is used—where the important terms and phrases are retained in English and the general explanation is given in Urdu (Ahmed et.al, 2015; Chughtai et.al, 2016; Coleman, 2010; Mustafa, 2010; PEELI report, 2009). This is true not only for verbal explanations in classrooms but also obvious in written text (Jabeen, 2018). Consider for example this question from the examination paper of the 12th grade: “Science ko systematic aur objective muta’ala kyun kaha gaya hai?” In an otherwise Urdu question, the important (underlined) terms were written in English (Board of Intermediate Education Karachi, 2019). This method, is detrimental to the development of speaking and listening skills in any one language (Nawab, 2012).

LITERATURE REVIEW

Deficiency of linguistic skills may negatively impact the performance of individuals, especially children on measures of aptitude or intelligence. In 1998, Phyllis Tempest

found that children who were proficient in English perform better on verbal tests compared to children who are only functional in English (Tempest, 1998). Studies conducted by Barke and Williams in South Wales compared intelligence of children from bilingual and monolingual schools. Results showed that the bilinguals lagged behind their monolingual counterparts in vocabulary (in both languages). They were also not completely proficient in either language (Barke, 1933; Barke & Williams, 1938). Most verbal tests strictly follow one language. However, Urdu translations of certain measures do contain English words for ease of understanding and to maintain the difficulty level of the item. For example the Urdu translation of the Wechsler Intelligence Scale for Children-IV contains words like 'government' and 'calligraphy'. While the Urdu word for calligraphy is mentioned, the English word was also mentioned (WISC, 2015). This may have been done as the difficulty level for English and Urdu terms is different. As cited by Ambreen (2014), when Tareen (1982) conducted the translation of WISC-R from English to Urdu, they had to make changes in the order of administration of items as the Urdu translation altered the difficulty level of the items.

There are also instances when an instrument has been translated completely in Urdu; however while administration, certain words have to be explained in English. According to Zia (2019) whilst verbal administration of the items of the Urdu translation of their measures, they had to explain certain words and phrases in English to the participants (ages 12 to 18 years old). Same rings true for English tests and measures where certain words and phrases have to be explained in Urdu. While this falls within the limits of testing, an instrument standardized in the language easily understood by most of the population, would mitigate any inter-rater bias.

However, translating a test inadvertently involves making culturally appropriate modifications. To attain functional equivalence we need to see beyond literal translations and make changes in concepts, words and phrases that are culturally appropriate. Adaptation and translation is a common trend in Pakistani researches, as measures constructed in the West are of little use here, given the contextual and linguistic dissimilarities. Also, given lack of resources, adaptation of existing foreign tests is preferred over development of new ones. However, few have carried out adaptation of cognitive or intelligence tests. Of those who have, few have followed proper procedures (Ambreen, 2014).

The widely used intelligence tests in Pakistan include Raven's Progressive Matrices, Wechsler Intelligence Scales and Cattell's Cultural Fair Intelligence Test (Aziz & Ahmad, 1993). Raven's Matrices are non-verbal tests of abstract reasoning. Whereas, the Wechsler tests include both verbal and non-verbal tasks. They are comprehensive and require much time and energy.

Slosson Intelligence Test Revised- third edition (SIT-R3) is a verbal test for measuring intelligence of individuals 4 to 64 years of age. It is used as a screening tool to estimate cognitive abilities, where a comprehensive analysis is not required. Such as screening exceptional children in schools or for tentative diagnosis in clinical settings. It does not require highly specialised training and can be used by many professionals including psychologists, counsellors and teachers. An advantage of SIT-R3 is that the scoring consists of dichotomous items which allows for the administration and scoring to occur simultaneously and the test to be completed quickly. Moreover, as it does not rely heavily on visually loaded items, it can also be used with the visually impaired population (Slosson, 2002).

RESEARCH OBJECTIVES

1. To determine the need for using Urdu-English code-switching when translating measures for the Pakistani population.
2. To translate the items of SIT-R3 using Urdu-English code-switching.
3. To field test the measure translated using code-switching and to determine its reliability.

RESEARCH METHODOLOGY

The process of adaptation and standardisation is extensive and is beyond the scope of a single article. Since this paper is focused on the need for using Urdu-English code-switching in translation, we have tried to limit the methodology to the relevant steps. However, this was not independent of the adaptation process, and some aspects of the overall process may find their way in here.

The purpose of intelligence testing is to determine the general cognitive ability of an individual. This distinguishes it from achievement testing, where the focus is to assess learning outcomes. However, sometimes there may be an overlap. Vocabulary for instance is influenced by both, the understanding and also exposure to a wide range of words. An assumption of intelligence tests maybe that all those being tested have had similar opportunities of learning (Dang et.al, 2012). This poses a challenge for a country like ours, which has a varied education system. There is no uniform curriculum and we have as many as 34 different educational boards operating around the country. It is an accepted fact that not all systems provide equal learning opportunities for the constituents and the superiority (or inferiority) of each system is continuously under debate. (Chawla, 2017).

The items of SIT, primarily fall within Catell's crystallised domain of intelligence which reflects one's achievement within the culture and is an amalgamation of both ability and experience (Slosson, 2002). Considering this, four boards of education functioning in Karachi, the largest city of Pakistan were identified; namely: Aga Khan

University Education Board (AKUEB), Board of Secondary Education, Karachi (BSEK), Cambridge Assessment International Examination (CAIE), and Federal Board of Intermediate and Secondary Education (FBISE). To avoid influence of one particular board or system, students from all four systems were involved at each step of the study from pilot studies to the reliability study.

The study was conducted in the following three phases, using both, quantitative and qualitative methods:

1. Identifying the need for translation.
2. Translation.
3. Reliability Study.

Phase 1: Identifying the need for translation

Review and Modifications

A panel of four psychologists (one professor, one associate professor and two assistant professors) was formed to review the SIT-R3 for culturally biased items. They were asked to point out items, words or phrases that in their opinion may be difficult to understand for the target population.

Culturally biased items were modified according to suggestions from experts (but retained in English at this point), in combination with a review of the curriculums of schools.

Pilot Study (A)

Next, a pilot study (A) was conducted with the modified items to assess the efficacy of the changes and the level of comprehensibility of the items for the target population. A major goal of this pilot study was to investigate how many participants would be able to perform adequately when items were administered in English entirely and how many required explanations in Urdu.

Sample

20 participants, 5 - 17 years old, attending different schools in Karachi were recruited for this purpose. The sample was equally distributed between males (n=10) and females (n=10). The distribution of the sample according to the four main educational boards was as follows: AKUEB= 1, BSEK= 5, CAIE= 9, FBISE= 5.

Procedure

The test was administered according to standard procedure given in the manual for SIT-R3. The participants were given explanations (in Urdu or otherwise) when needed and were asked to indicate words or phrases they had trouble comprehending. Detailed notes regarding this were made by the examiner.

Results

The pilot study revealed that n=15 participants asked for explanations in Urdu to appropriately understand and respond to the items. While only n=5 participants did not.

Phase 2: Translation

Lack of proficiency of students in either one language (English for Urdu) was already highlighted by a review of the literature. The pilot (A) made it clear that an instrument with bilingual questions, or using Urdu-English code-switching would cater to a wider portion of the population. Hence, all items were translated keeping in view the mainstream discourse:

- The explanations/instructions were translated to Urdu, while the key terms were retained in English.
- Those words/phrases that are commonly spoken in English even during an Urdu discourse, were retained in English.

Review

A panel consisting of two clinical psychology Ph.D. fellows reviewed the translation. They were chosen as they administer IQ tests often in their clinical practice and have an experience of administering earlier versions of the Slosson Intelligence Test on the local population. The panelists were asked to review the items based on ease of understanding of those taking the test and efficiency of administration. Minor changes were made according to the panel's feedback.

Pilot Study (B)

A second pilot study (B) was then conducted to assess the efficacy and comprehensibility of the translation.

Sample

17 school going children representative of the population were recruited through purposive sampling. The sample consisted of n=11 males & n=6 females. Distribution according to the four educational boards was as follows: AKUEB= 4, BSEK= 8 CAIE= 4, FBISE= 1.

Procedure

The test was administered according to standard procedure given in the manual for SIT-R3. The participants were given explanations when needed and were asked to indicate words or phrases they had trouble comprehending. Detailed notes were maintained here as well.

Results

The pilot study (B) showed that with bilingual items, using Urdu-English code-switching; explanations were rarely required during test administration.

Phase 3: Reliability Study

Reliability of an instrument is the consistency of scores it provides for subjects in similar circumstances. This study was conducted to assess if a measure translated in this unconventional manner would yield reliable results.

Sample

A sample of 219 students was recruited (101 males, 118 females). These were students 5 to 17 years of age, studying in different schools of Karachi. Out of these, n=25 were students studying in a school for children with special needs; these participants had been diagnosed with Intellectual Disability (mild to moderate) according to a standardised intelligence test. The remaining sample (n=194) was stratified according to the four main educational boards: BSEK (78), CAIE (47), AKUEB (34), and FBISE (35). The schools were chosen through purposive sampling and ranged from large private schools to small trust based schools. The students from within the school were then chosen through simple random sampling. Refer to Table 1(in results section) for a detailed breakup of sample demographics.

Procedure

After consent was obtained from parents, participants were seated in a distraction free environment (one participant at a time). They were explained the procedure and once they agreed to participate, instructions were given. The translated SIT-R3 was administered according to standard procedure given by SIT-R3.

The scores were then tabulated and analysed using SPSS (version 26.0).

Statistical Analysis

The Kuder-Richardson Formula 20 (KR-20) was used to determine the internal consistency. KR-20 is an estimate of co-efficient alpha for dichotomous items.

Moreover, Spearman-Brown correction and Guttman Split-Half coefficient were used to calculate the odd-even split-half reliabilities.

Ethical Considerations

Permission was obtained from the author and publisher of SIT-R3 before beginning the process of translation.

Informed consent was obtained from the school principal and the parents of the children selected for the study (parents only in case of pilot study). They were informed about the aim of the study, their right to withdraw at any stage, and it was assured that all information would be kept confidential and anonymous. It was also informed that

as the measure is under construction, it will not be possible to provide an IQ score for the child.

Verbal assent was taken from each child before beginning test administration. They were told that the examiner would be asking those questions regarding things they usually learn in school and some general knowledge questions. They would also be asked to repeat some statements or numbers. The older children were informed that this is an intelligence test that the examiner is trying to modify according to the Pakistani population and needs the participant's help in doing so. They were all informed that they were chosen randomly based on their roll numbers. It was assured that they were not expected to get perfect scores and their mistakes and errors would not be reported back to their teachers or parents. They were further informed that they had the choice to withdraw any point, without any repercussions if they do not wish to participate.

DATA ANALYSIS AND RESULTS

Table 1: Summary of Demographic Characteristics of Sample (N=219)

GENDER	n	(%)
Male	101	46.1
Female	118	53.9
EDUCATION SYSTEM		
Aga Khan University Examination Board (AKUEB)	34	15.5
Board of Secondary Education, Karachi (BSEK)	78	35.6
Cambridge Assessment International Education (CAIE)	47	21.4
Federal Board of Intermediate and Secondary Education (FBISE)	35	16.0
School for children with special needs	25	11.4
AGE (Years)		
5	2	0.9
6	9	4.1
7	16	7.3
8	29	13.3

9	21	9.6
10	19	8.7
11	23	10.6
12	28	12.8
13	17	7.8
14	20	9.2
15	19	8.7
16	13	6.0
17	2	0.9

Table 1 shows the distribution of sample across gender, age, and educational boards. 11.4% of the participants were those diagnosed with (mild to moderate) Intellectual Disability, based on another standardised test and study in a school for children with special needs.

Table 2: *Descriptive Statistics*

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error</i>
Total	219	14	138	74.12	27.44	1.85
Students from mainstream schools	194	31	138	78.76	25.24	1.81
Students diagnosed with Intellectual Disability	25	14	61	38.16	14.03	2.8

Results in table 2 show means and standard deviations of (raw) scores. The mean score for participants attending regular schools is 79, SD 25 (n=194). While the mean for those participants diagnosed with Intellectual Disability was found to be 38, SD 14 (n=25).

Table 3: *Reliability Analysis: Internal consistency and split-half reliability*

Kuder Richardson-20	Part 1	Value	0.961
		N of Items	94a
	Part 2	Value	0.962
		N of Items	93b
	Total N of Items	187	
	Value	0.98	
Correlation Between Forms	0.975		
Spearman- Brown Coefficient	Equal Length	0.987	
	Unequal Length	0.987	
Guttman Split- Half Coefficient	0.987		

a. all odd items 1-187

b. all even items 2-186

Table 3 exhibits results of the Reliability analysis. A value of 0.98 was obtained for internal consistency, using KR-20. Odd-even split half-reliabilities were also generated using Spearman-Brown Correction and Guttman Split-half co-efficient. Both yielded a value of 0.98 showing that the measure has a strong reliability.

CONCLUSIONS

Results show that translating SIT-R3 using Urdu-English code-switching is helpful in aiding understanding for most of the Pakistani population and is able to provide reliable results.

DISCUSSION

The purpose of this study was to emphasise that functional equivalence is more important than literal translations when conducting cross-cultural modifications of verbal instruments. In case of Pakistani students this meant translating items using

Urdu-English code-switching.

It was established by a thorough review of the literature that discourse between most of the population is based on this code-switching. Even those who are not skilled in English language, insert words and phrases from English in daily conversations (Iqbal, 2011). Moreover, most educational institutions use it as the mode of instruction. Establishing an instrument completely in either one language compromises functional equivalence for most of the population. This was reflected in pilot study (A) where most students asked for certain words and phrases to be explained in Urdu, to adequately understand and answer the question. Pilot study (B) showed that when items using code-switching were administered, this process was greatly expedited. This also eliminates any effects of inter-rater bias on scores when doing on- spot translations or explanations.

However, it is an unconventional way of translation. Cognitive measures recently adapted in Pakistan, including: Colombia Mental Maturity Scale (Aziz & Ahmed, 1993); Weschler Intelligence Scale for Children- fourth edition (Ambreen, 2014); and Weschler Memory Scale- third edition (Noor & Najam, 2009) have all been translated using Urdu. In practice however, words and phrases from English have found their way in, to aid understanding (WISC IV, 2015).

With enough evidence backing it, the items were translated using Urdu-English code-switching. To check if a tool in this form would give reliable results, a reliability study was conducted on a cross-section of the population. The sample was distributed across gender, age, and educational boards (table 1).

The results are proof that this method of translation can provide reliable scores. A tool translated in this manner helps mitigate the effects of any language proficiency. It is similar to the everyday discourse of individuals in the Pakistani society and mode of instruction in educational settings, thus there is less need for explanations, thus saving time and effort. Moreover, functional equivalence is easier to attain, without altering the difficulty level of the original items.

Though it is unfortunate that students (or citizens in general) lack proficiency in either language, constructing tools in this manner would solve a general problem. That is the need to explain and translate on-spot when administering tools constructed either purely in English or in Urdu. A limitation of this study or this translation, however is that it is based on a sample from Karachi only. Even though Karachi is a metropolitan city with people from all areas of the country, it may not be as suited for people from those areas of Pakistan where Urdu is not as commonly spoken and understood.

RECOMMENDATIONS

This study shows that translating measures reflecting the mainstream verbal discourse-Urdu-English code-switching in case of the Pakistani population- can mitigate many issues. It aids understanding, making the test-taker or the participant comfortable. If measures are translated using language that is less formal, it may help elicit truer responses. Moreover, it expedites the process when there is less need for explanations to be given by the examiners or the researchers. Thus, researchers may consider translating measures in this manner.

REFERENCES

- Ahmad, R.I, Ahmed, R.S, Rauf, M.A & Seemab, G.M. (2015). Concept Of The Code Switching And Code Mixing As Facilitators In Urdu Efl Class. *Journal of Policy Research*, 1(2), 62-66.
- Ambreen, S. (2014). Wechsler Intelligence Scale for Children- Fourth edition (WISC-IV): Adaptation, Translation and Standardization in Pakistan. [Doctoral Thesis, National Institute of Psychology, Quaid-e-Azam University, Islamabad] retrieved from : http://pr.hec.gov.pk/jspui/bitstream/123456789/7136/1/Saima_Ambreen_Psychology_20015_QAU_ISD.pdf
- Amna Khalid. (2016). A Study of the Attitudes and Motivational Orientations of Pakistani Learners Toward the Learning of English as a Second Language. *Sage Open*, 6(3).
- Aziz S. & Ahmed I. (1993). Adaptation of Columbia Mental Maturity Scale in Pakistan. *Pakistan Journal of Psychological Research*, 8(1-2), 31-41.
- Barke, E. (1933). A study of the comparative intelligence of children in certain bilingual and monoglot schools in South Wales. *British Journal of Educational Psychology*, 3, 237-250.
- Barke, E. & Williams, D. (1938). A further study of the comparative intelligence of children in certain bilingual and monoglot schools in South Wales. *British Journal of Educational Psychology*, 8, 63-77.
- Board of Intermediate Education Karachi. (2019). Psychology Paper I, Humanities Group (regular), b(6). Board of Intermediate Education, Karachi.
- Chawla, M. (2017, Jan 22). One board to rule them all. *Sunday Magazine*, Dawn. <https://www.dawn.com/news/1310015>
- Chughtai, I.A., Khan, M.A. & Khan, M.R. (2016). Reasons and Contexts to Switch and Mix English Code by Pakistani Young Learners in their Native Speech: A Sociolinguistic Study. *International Journal of Language and Linguistics*, 3(1), 85-94.
- Coleman, Hywel. (2010). Teaching and Learning in Pakistan: The Role of Language in Education. British Council, Pakistan. https://www.researchgate.net/publication/265186454_Teaching_and_Learning_in_Pakistan_The_Role_of_Language_in_Education
- Dang, H. M., Weiss, B., Pollach, A., & Nguyen, M. C. (2012). Adaptation of the Wechsler Intelligence Scale for Children-IV (WISC-IV) for Vietnam. *Psychological studies*, 56(4), 387-392.

-
- Dawson M. (2013) Verbal Intelligence. In: Volkmar F.R. (eds) Encyclopedia of Autism Spectrum Disorders. Springer, New York, NY. [https://doi.org/10.1007/978-1-4419-1698-](https://doi.org/10.1007/978-1-4419-1698-1698-)
- Hegde, M., Alva, D., Oommen, G.S. & Bhat, S. (2011) Discourse Functions of Code-Switching Among Normal Kannada-English and Malayalam-English Bilinguals—A Pilot Study, *Asia Pacific Journal of Speech, Language and Hearing*, 14:4, 211-216, DOI: [10.1179/jslh.2011.14.4.211](https://doi.org/10.1179/jslh.2011.14.4.211)
- Iqbal, L. (2011). Linguistic Features of Code-Switching: A Study of Urdu/English Bilingual Teachers' Classroom Interactions. *International Journal of Humanities and Social Science*, 1, 7-14.
- Jabeen, S. (2018) Code-Mixing, Code Switching And Borrowing In Urdu And Pakistani English Language In Media And Daily Life Conversations. *International Journal Of Advanced Research*, 6, 805-811.
- Khalid, A. (2016). A Study of the Attitudes and Motivational Orientations of Pakistani Learners Toward the Learning of English as a Second Language. *SAGE Open* 6(3). <https://doi.org/10.1177/2158244016665887>
- Martínez, A.L., Torres, C. A., Dussias P. E.(2020). Codeswitching: A Bilingual Toolkit for Opportunistic Speech Planning. *Frontiers in Psychology*, 11, 1699. <https://www.frontiersin.org/article/10.3389/fpsyg.2020.01699>
- Mustafa, Z. (2012, Jan 10). Pakistan ruined by language myth. *The Guardian*. <https://www.theguardian.com/education/2012/jan/10/pakistan-language-crisis>
- Myslín, M. & Levy, R. (2015). Codeswitching and predictability of meaning in discourse. *Language*. 91(4), 871-905.
- Nawab, Ali. (2012). Is it the way to teach language the way we teach language? English language teaching in rural Pakistan. *Academic Research International*, 2, 696-705.
- Nida, E. & Taber, C. (1969) *The Theory and Practice of Translation*. E. J. Brill, Leiden, Netherlands.
- Noor, A., & Najam, N. (2009). Comparative Study of memory deficits in Younger and Older Adults. *Pakistan Journal of Psychological Research*, 24(3-4), 145-158.
- PEELI Report. (2013). Can English medium education work in Pakistan: Lessons from Punjab. British Council, Pakistan. https://www.britishcouncil.pk/sites/default/files/can_english_medium_education_work_in_pakistan_-_british_council_2013.pdf
- Rojas, D. Z. (2014). A procedure to prevent differences in translated survey items using SQP. (Working paper no. 38). Research and Expertise Centre for Survey Methodology, Barcelona, Spain.
- Slosson, R. (2002). *Slosson Intelligence Test Revised*, third edition. Slosson Educational Publications, New York.
- Tempest, P. (1998). Local Navajo norms for the Wechsler Intelligence Scale for Children-Third Edition. *Journal of American Indian Education*, 37(3), 140-151.
- Wechsler. (2015). *Wechsler Intelligence Scale for Children- Pakistan edition (WISC-pak)*. Pearson Assessments.
- Zia, A. (2019). Perceived parental and peer attachment and depression in children of people with substance use disorder. [Doctoral Thesis, Institute of Clinical Psychology , University of Karachi]
-