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RESEARCH PAPER

The Urdu Reading Test (URT): Precise and Valuable Tool for the Assessment of Urdu Reading Skills of Hearing Impaired Students

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ABSTRACT

Major objective of this study is to develop a precise and valuable Urdu Reading Test (URT) to judge the Urdu reading abilities of hearing impaired students of grade third. These students suffer from such Urdu reading problems of which they lag behind hearing children. These difficulties lead towards the low comprehension of the text for these students. Descriptive research design of quantitative research paradigms was used to conduct this study. The Urdu Reading Test (URT) was developed by the researchers to know the Urdu reading abilities of students who are hearing disabled. The tool was validated from field experts and piloted to 104 hearing impaired students of grade 3rd to check the reliability which was noted α=.94. Data was analyzed to check the frequencies on the basis of different variables. Item analysis of the URT was done to judge the item discrimination index, item difficulty index as well as distractor effect. The final URT is much supportive for the assessment of Urdu reading skill of hearing impaired students.

Keywords: Assessment, Students with Hearing Impairment, Urdu Reading Skills, Urdu Reading Test

Introduction

This is in spite of the nicely documented reality that the majority of Deaf and Hard of Hearing (D/HH) when enter the kindergarten class, they are behind their peers who are hearing on the basis of code as well as meaning in literacy skills. According to UNICEF (2019) education strategy 2019–2030 that every child has the right to go to school and learn, regardless of who he/she is, where live or how much money their family has. Quality education requires a safe, friendly environment, qualified and motivated teachers, and instruction in languages students can understand. UNESCO empowers that Education is a basic human right that serves to lift men and women out of poverty, level inequality and ensure sustainable development. Children who are deaf or hard of hearing are also an integral part of this society and education is their fundamental right. According to WHO (2023) currently there are 1.5 million people with hearing loss worldwide and this number may increase to 2.5 million in 2050 and 700 million people will need hearing rehabilitation at that time. Being a developing country, Pakistan is striving to meet the global goals of empowering children with disabilities. Since Pakistan came into existence in 1947, many policies and laws have been made on education, in which the education of special children was also taken care of to some extent, but despite all this, Govt. of Pakistan could not take any significant benefit in education domain especially for persons with disabilities. Government of Pakistan census (2017) reported almost 1 million (0.48%) disabled population and Punjab Multiple Indicator Cluster Survey (2018), Government of the Punjab indicated 17.9% of population between age 5-17 years who have any type of disability (Punjab Special Education Policy, 2019).

Literature Review

Children with hearing impairment face troubles in different academic areas and reading ability of these children is one of the problematic academic areas. Sustainable Development Goals (2015) proposed that reading is also a most key element of quality education. According to UN Convention on the Rights of the Child (1989) the children of deaf community is also the part of population who have the right to get education free and fair with equal access. When examining the characteristics of individuals who require special education services, it is exposed that their desires and features are quite dissimilar (Cavkaytar, 2008).

A study conducted by Hameed &Manzoor (2014), it is estimated 96% of disabled children in Pakistan are out of school. Whereas Pakistan Economic Survey (2019) reported the rate of literacy in Pakistan is upgraded just 2% which was noted 60% in the year 2018-19 as compare to 2015-2016 which was 58% on that time (The News, 2020). Afzaal et al. (2022) stated, as per data given by Govt. of Pakistan about education of disabled person that 447 institutions of special education are working to provide better education as well as rehabilitation services to disabled persons in all over the Pakistan. It is also noted that in developing countries, hearing impaired children are receiving school education rarely. Bano (2007) conducted a study in Pakistan context and made a test to assess the reading and writings skills of hearing impaired students and she proposed that they face problems in phonological development of language and this deficiency affect their reading abilities. It is also pointed that reading is a tough job which has long attaining impact on educational, social and vocational development of any humans.

According to Mullis and Martin (2015), Reading Literacy is the ability to understand and use the forms of written language that are required by society or valued by the individual and the readers can extract meaning from text in different ways. They also mentioned that readers read to learn, to participate in a community of readers in school and everyday life, to enjoy. Reading subtitles is clearly a different process from reading the published text because it needs similar procedure of multiple causes of knowledge that are outside the control of reader: subtitles, soundtrack and on-screen action (Krejtz, Szarkowska&Logińska, 2016). Hughes (1989) said that macro skills, such as scanning text to find specific information and micro skills, such as using context to infer the meaning of unfamiliar words, both are important for assessing reading skills. As cited in Dammeyer (2014) that Lederberg et al. (2019) stated, the skills about literacy of D/HH students are regularly gritty by standardized research tests or teacher ratings. Children with bilateral hearing impairment may lack the knowledge of the alphabet (Cupples et al., 2014; Kyle & Harris, 2011). There are a lot of parallels to literacy development in hearing children, as well as a few elements particular to students with hearing impairment or deaf (Rottenberg, 2001). Herman, Roy & Kyle (2017) proposed that reading is continuously a challenge for hearing impaired students. According to Perfetti&Sandak (2000) that deaf students don't have the facility about phonological awareness; they have incomplete or zero excess to verbal language; which make effect on their reading skills (see Thakur, Jayakumar& Pant, 2020). A study conducted by Krejtz, Szarkowska&Logińska (2016) where they said, various researches (Trybus&Karchmer, 1977; Gaustad, 2000; Wauters, van Bon, &Tellings, 2006; Moeller et al., 2007; Waters &Doehring, 1990; Traxler, 2000) recommended that deafness can be a major forecaster of poor reading skills and low text processing efficiency, especially word decoding, which can lead to low levels of learning and success.

Assessment is a mandatory part of quality education. IDEA (2004) emphasized that assessment and evaluation are essential features those directives the educational rights of children with or without disabilities. In general, common testing methods have done little to illuminate the nature or extent of deaf students' reading difficulties and valid and authentic measures of reading abilities are essential for making appropriate instructional and programmatic decisions (Luft, 2018). Under the umbrella of Individuals with

Disabilities Education Act (IDEA, 1975), the diagnostic category of deafness does not include people with limited hearing. Individuals with hearing impaired are classified as hearing impaired under the IDEA. Michigan Test of English Language Proficiency (MTELP) was the first time administered to hearing impaired students in the area of assessment in a series of researches conducted by Bochner (1976, 1977) and 20 items of this were based on reading comprehension (see Joseph, Bochner, Gerard & Walter, 2005). No Child Left Behind Act (2001) and Individuals with Disabilities Education Improvement Act (2004), focused on the large-scale academic assessment. These laws proposed that large scale on academic assessment are applied to determine the educational achievement of such students who are relative to State academic content as well as State student educational achievement values. As cited in Qi & Mitchell (2012) that assessment programs on large scale started in 1960s for the systematic inclusion as well monitoring of hearing impaired or deaf students, with the Metropolitan Achievement Tests (MAT) and Stanford Achievement Test (SAT), before the present period of test-based responsibility, he also alerted that development of reliable and valid assessment instruments to quantity the attainment levels of DHH students is an continuing project.

Holt and Allen (1989) said, it is observed that D/HH students attending programs or schools with specialties may have a curriculum that varies as compare to regular curriculum, that is probably to remain right at least for little period. After the Individuals with Disabilities Education Act Amendments (1997) mandated general curriculum for disabled students. It has also been noted that most hearing impaired students receive their education through sign language (ASL) or some other visual method (Mitchell, 2004; Mitchell &Karchmer, 2005). A lot of studies (Emmorey, Bellugi, Frederici, & Horn, 1995; Bosso, Johnson & Mitchell, 2008; Kelly &Barac-Cikoja, 2007; Jones et al., 2008; Morford& Mayberry, 2000) not recommended English as a prime language for educational perspective for these students. Therefore, the English language testing may prevent the capability of DHH students to fully precise what they have a knowledge (Qi & Mitchell, 2012). The possible resolution for interpreting standardized tests into ASL has not been extensively accepted for large scale testing because of psychometric studies (Allen &Sligar, 1994).

Considering the facts of these researches, it is quite clear that the primary language of D/HH students living in Pakistan is also sign language and they are also unable to give full answers in Urdu reading or writing in the way they know. There is also a dire need that all their tests should be converted into Pakistan Sign Language or converted to video which has been done in this study. Therefore, it is significant to recognize whether hearing impaired students have early literacy skills that are age appropriate, which may be helpful in achieving future reading.

Material and Methods

Descriptive research design of quantitative research paradigms was used to conduct this study. A research design is a plan for answering your research question using empirical data. Factors behind creating a research design include deciding on your overall research objectives and approach, keeping in mind whether you will rely on primary research or secondary. Population of this study was carried out students with hearing impairment of class 3 who were studying in the Government special education schools and centers of the Punjab province. Sample of the study was comprised on 104 hearing impaired students of grade 3 which was chosen through simple random sampling technique. Sample was selected from 8 districts (Bahawalpur, Bahawalnagar, Kasur, Sahiwal, Chiniot, Gujrat, Hafizabad and Lahore) out of 36 of Punjab province. In the first phase each district was assigned a number on odd and even basis so that each district had an equal chance of being selected and then 8 districts out of 36 were selected. However, 104 students with hearing impairment were selected randomly from Govt. special education schools and centers of each district.

An Urdu Reading Test (URT) was developed by the researchers to check the current level of Urdu reading skills of students with deafness. This test was comprised on Urdu text book of class 3 which was printed by Punjab Curriculum and Textbook Board, Lahore. This test was based on different questions formats i.e. fill in the blanks, MCQs, column matching, true & false, complete the whole word, word breakdown, sentence order, and reading comprehension. On the basis of above mentioned questions, total 80 items were formulated but after calculating item discrimination index and item difficulty index, 72 items were finalized. To check the validity of the instrument, it was presented to 5 field experts and some changes were made as per their opinions. Cronbach's Alpha value of this test was noted α=.94 through SPSS whereas total number of respondents was 104. With the prior permission from Govt. Special Education Department, URT was administered to the hearing impaired students of class III under the supervision of researchers in the Government Special Education Centers and Schools. All necessary instructions were told to the students by the researchers to conduct a URT and time was allocated 1 hour and 30 minutes.

Results and Discussion

After conducting the URT, the data were analyzed and the frequency distribution of the various variables was observed. Item analysis of the URT was also done to quantity the item difficulty index as well item discrimination index and distractor effect.

Table 1
Frequency and Percentage of Sample Distribution for Pilot Testing on the Basis of Institutions, Gender and Age

Name of Institutes	Respondents		Male		female		Age 9		Age 10		Age 11	
	F	%	f	%	f	%	f	%	f	%	f	%
Govt. Special Education School	50	48	40	38	10	10	15	14	19	18	16	15
Govt. Special Education Centers	54	52	30	29	24	23	30	25	15	14	9	9
Total	104	100	70	67	34	33	45	43	34	33	25	24

Table 1 shows the sample distribution for pilot testing on the basis of institutions, gender and age. It indicates that the majority (52%) of the respondents belonged to Govt. Special Education Centers and (48%) were belonged to Govt. Special Education Schools. The male respondents from schools and centers were (67%) and female respondents from both institutes were (33%). This table also revealed the sample distribution on the basis of age interval. Therefore about 9 years age group (14%) respondents from schools and (25%) from centers, as per 10 years age group (18%) of the respondents from schools and (14%) from centers and the 11 years age group (15%) of the respondents from schools and (9%) from centers.

Table 2
Frequency and Percentage of the Sample for Pilot Testing on the Basis of Districts

Districts	Frequency	Percent	Cumulative Percent
Lahore	15	14.4	14.4
Bahawalnagar	14	13.5	27.9
Sahiwal	12	11.5	39.4
Gujrat	16	15.4	54.8
Kasur	16	15.4	70.2
Chiniote	8	7.7	77.9
Bahawalpur	14	13.5	91.3
Hafizabad	9	8.7	100.0
Total	104	100.0	-

Table 2 indicates the frequency and percentage of sample size on district base. It is noted that 15 (14.4%) respondents were from Lahore district, 14 (13.5%) from Bahwalnagar, 12 (11.5%) from Sahiwal, 16 (15.4%) form Gujrat, 16 (15.4%) from Kasur, 8

(7.7%) from Chiniot, 14 (13.5%) from Bahawalpur and 9 (8.7%) of the respondents belong to district Hafizabad. So, majority (15.4%) respondents belonged to Gujrat and Kasur respectively.

Item Difficulty Index

Forrester (2021) wrote that the first thing we look at in terms of item analysis is the difficulty of the item. According to Dixon (1994) that the highest quality range is 20–80% a low index may additionally suggest that scholars are trying the object but have become it wrong and a too high index may additionally suggest that regardless of negative or true students are able to get it accurate. However, according to the 20% and 80% thumb rule, too easy and difficult items were revised or removed from the questionnaire. Booparthiraj and Chellamani (2013) said that in general, items of moderate difficulty are preferred over easier or more difficult items and the subsequent method is used by them to find out difficulty level of an item.

DL= Ru+Rl/Nu+Nl
Ru = number of students in the upper group who responded correctly
Rl = number of students in the lower group who responded correctly
Nu= Number of students in the upper group
Nl= Number of students in the lower group

The above mentioned formula was used to see the item difficulty index and some items were discarded or revised according to below mentioned ranges.

Item Difficulty Index= 0.0 to 1.00

>85%=	Very easy item (Rejected)
70% - 84%=	Easy item (Revised)
30% - 70%=	Good item (Moderator difficult to moderator easy)
20% - 30%	Difficult (Revised)
<20%=	Very Difficult (Rejected)

Item Discrimination Index

Item total correlation values indicate that item discrimination differs between -1 and 1, as do Pearson product moment correlation coefficients (Brown, 1988). A negative item discrimination value indicates opposite discrimination between individuals with low and high ability on the measured trait. Negatively discriminating means that high trait individuals score low on the item, but low trait individuals score high (Kilic&Uysal, 2022). Increasing discrimination of an item with a positive value indicates that individuals with low and high trait levels are effectively distinguished (Macdonald &Paunonen, 2002). As cited in Ndung'u (2015) that item discrimination is a calculation to discriminate between the results of students in high score group and those in the low score group. Kelley (1939) described that the upper and lower distribution area of scores are within the upper and lower 27% of distribution of the scores and Wiersma&Jurse (1990) proposed that selection of 27% provides sufficient numbers of the cases for data analysis and also helpful in maximizing the distribution differences. Those items having range below 0.20 should be improved or deleted and the items with the range if 0.00 should be discarded (Ebel&Frisbie, 1986). Booparthiraj&Chellamani (2013) used the following formula to find out the discrimination index and gave some steps to process this method.

Discrimination power = RU-RL/NU(or)NL

Item discrimination index was checked according to given above formula and some items were rejected or revised as per ranges given below.

Item Discrimination Index= -1.0 to 1.0

>0.40= Very good item
0.30 to 0.39= Reasonable good item
0.20 to 0.29= Marginalized item
0.00 to 0.19= Poor item (Revised)
<0.00= Very poor item (Discard)

Reliability of the Test

According to Frost (2022), Cronbach's Alpha is a method of measuring the internal consistency as well as reliability of the items of a survey. The Cronbach's Alpha value of the pilot test was noted **α**=.94 through SPSS and the total number of respondents were (N=104).

Table 3
Item Analysis: Number of Respondents=104 and Reliability=.94

Item No.	Difficulty Index	Discrimination Index	Decision	Item No.	Difficulty Index	Discrimination Index	Decision
1	0.52	0.68	Selected	41	0.86	0.86	Rejected
2	0.32	0.29	Selected	42	0.09	0.18	Rejected
3	0.16	0.18	Rejected	43	0.38	0.68	Selected
4	0.34	0.32	Selected	44	0.64	0.43	Selected
5	0.48	0.68	Selected	45	0.23	0.32	Selected
6	0.64	0.36	Selected	46	0.48	0.54	Selected
7	0.25	-0.07	Rejected	47	0.34	0.25	Selected
8	0.36	0.50	Selected	48	0.34	0.61	Selected
9	0.41	0.04	Rejected	49	0.21	0.36	Selected
10	0.73	0.39	Selected	50	0.45	0.39	Selected
11	0.68	0.57	Selected	51	0.61	0.50	Selected
12	0.66	0.61	Selected	52	0.48	0.82	Selected
13	0.57	0.57	Selected	53	0.52	0.89	Selected
14	0.63	0.68	Selected	54	0.59	0.46	Selected
15	0.79	0.36	Selected	55	0.54	0.71	Selected
16	0.82	0.21	Revised	56	0.75	0.43	Selected
17	0.73	0.39	Selected	57	0.71	0.50	Selected
18	0.63	0.04	Rejected	58	0.63	0.61	Selected
19	0.71	0.50	Selected	59	0.63	0.46	Selected
20	0.61	0.71	Selected	60	0.63	0.46	Selected
21	0.59	0.75	Selected	61	0.59	0.68	Selected
22	0.64	0.64	Selected	62	0.66	0.61	Selected
23	0.75	0.43	Selected	63	0.82	0.36	Revised
24	0.75	0.36	Selected	64	0.75	0.36	Selected
25	0.54	0.71	Selected	65	0.73	0.46	Selected
26	0.50	0.64	Selected	66	0.80	0.39	Selected
27	0.63	0.54	Selected	67	0.70	0.61	Selected
28	0.52	0.68	Selected	68	0.61	0.71	Selected
29	0.55	0.68	Selected	69	0.71	0.57	Selected
30	0.66	0.68	Selected	70	0.59	0.75	Selected
31	0.80	0.39	Selected	71	0.61	0.64	Selected
32	0.86	0.29	Rejected	72	0.82	0.36	Selected
33	0.79	0.43	Selected	73	0.71	0.50	Selected
34	0.84	0.32	Revised	74	0.64	0.43	Selected
35	0.82	0.21	Revised	75	0.86	0.07	Rejected
36	0.71	0.43	Selected	76	0.63	0.68	Selected
37	0.82	0.29	Revised	77	0.55	0.89	Selected
38	0.80	0.39	Selected	78	0.45	0.82	Selected
39	0.73	0.46	Selected	79	0.48	0.89	Selected
40	0.79	0.36	Selected	80	0.50	0.86	Selected

Table 3 shows the ranges of all item regarding item difficulty and item discrimination. As per above mentioned thumb rule about item difficulty and item discrimination some item revised and some items were discarded. So, item No. 3, 32, 41, 42,

and 75 were rejected because these items do not meet the required range of item difficulty index and the item No. 7, 9 and 18 were deleted these items do not meet required ranges of item discrimination index. Item No. 16, 34, 35, 37 and 63 were revised because these items were slightly more or slightly less than the limits of both ranges of items difficulty and item discrimination indexes.

Distractor Effect

As cited by Shin, Guo&Gierl (2019) that incorrect options are called distractors because they are considered "disturbing" to students with partial knowledge because of their inability to get the correct option and the purpose of distractors is to distinguish between students who have not yet acquired the knowledge necessary to correctly answer the item from those who understand the content. Puthiaparampil& Rahman (2021) described various studies (Abdulghani et al., 2014, Ware &Vik, 2009; Tarrant & Ware, 2010) that a distractor is considered active or functional if at least 5% of examinees choose it as a response.

Table 4
Distractor Effect of Item No. 11-20 and 56-65 of the Instrument

Item No.	Distractor (i)	Distractor (ii)	Distractor (iii)	Distractor (iv)
11	70%*	15%	6%	9%
12	14%	66%*	12%	8%
13	14%	14%	58%*	14%
14	14%	12%	60%*	14%
15	8%	68%*	10%	14%
16	74%*	11%	10%	5%
17	14%	70%*	8%	8%
18	16%	11%	14%	59%*
19	73%*	12%	5%	10%
20	16%	57%*	16%	11%
56	74%*	11%	9%	6%
57	9%	74%*	11%	6%
58	6%	17%	66%*	11%
59	8%	34%	5%	53%*
60	6%	22%	8%	64%*
61	6%	64%*	18%	12%
62	14%	68%*	9%	9%
63	10%	76%*	7%	7%
64	8%	75%*	11%	6%
65	14%	66%*	11%	9%

*=maximum responses

Table 4 shows the percentage of all respondents who have chosen each option of question number 11-20 and 56-65. As per above mentioned thumb rule, no any distractor founded <5% which was chosen by the respondents. So, no any distractor was founded to change or revised.

Discussion

Forrester (2021) wrote that the first thing we look at in terms of item analysis is the difficulty of the item. The third objective of this research was to find out the item discrimination to measure the authenticity of this test. Item total correlation values indicate that item discrimination differs between -1 and 1, as do Pearson product moment correlation coefficients (Brown, 1988). The final aim of this study was to identify the effect of distractors present in the MCQs portion of URT and how much they are causing the

students to be confused in correct answering. Puthiaparampil& Rahman (2021) described various studies (Abdulghani et al., 2014; Ware &Vik, 2009; Tarrant & Ware, 2010) that a distractor is considered active or functional if at least 5% of examinees choose it as a response.

Conclusions

An Urdu Reading Test (URT) was developed by the researchers to provide a practical tool to evaluate the Urdu reading skills of students with hearing impairment. This URT initially designed and assigned to the field experts for its validity and to ensure the reliability of this test, it was passed through the process of analysis. Keeping in mind the first purpose of this study, a reliable URT was developed to judge the Urdu reading skills of students with hearing impairment of grade 3rd. The item difficulty index of this test was determined in order to eliminate excessively difficult and easy items. It is concluded that this study describes the development and initial evaluation of URT for the assessment of Urdu reading skills of D/HH students. The content of this test was taken from Urdu textbook of grade 3rd which was published by the Punjab Curriculum and Textbook Board Lahore. This URT was applied to D/HH students of grade 3rd and found to have a good reliability which is an indication to a very good and valuable Urdu reading test. After conduction of URT, item analysis was formulated to check the item difficulty and discrimination index and distracter effect was also processed. After item analysis, out of 80 items of this test, 72 items were selected while 8 items were removed due to not meeting the range of item analysis.

Recommendations

This Urtdu Reading Test (URT) can be used to know the current level of Urdu reading abilities of hearing impaired students of grade three. It will also provide a baseline for developing further URT to know the high and low level of Urdu reading abilities of hearing impaired students of other grade levels. It will be a most beneficial for all stackholders of hearing impaired students in their academic perspectives.

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