



RESEARCH PAPER

Development and Validation of Urdu Reading Comprehension Test (URCT) for 3rd Grade Students

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ABSTRACT

Reading comprehension is one of the most desired skills for today's generation to succeed academically and professionally. It is how we comprehend the written words that we read. It is the reason why reading is important, why we teach it, and why we value it. Additionally, it is necessary for effective text-based learning. Reading comprehension helps students to excel in learning and writing. The foremost objective of this study was to develop and validate a test to measure Reading comprehension of 3rd grade students. Urdu Reading Comprehension Test (URCT) with three sub-levels of comprehension: Literal, Re-organization and Inferential. This study was done in five (5) steps (development and validation of test, findings, conclusion and recommendations). Initially, the test was comprised of 8 passages and 40 items are inductive and every passage contained 5 items. Validity and reliability was ensured by using MS Excel 2021. The results of the test affirmed that it is a valid and reliable; reduced to Thirty-four (34) items out of which twelve (12) items retained for the literal level, fourteen (14) items for re-organization level and eight (08) items retained for inference level. The results consequently provided evidence to use Urdu Reading Comprehension Test (URCT) to identify and measure reading comprehension among 3rd grade students.

Keywords: 3rd grade Students, Inference level, Literal Level, Reading Comprehension, Re-organization Level

Background

Reading comprehension has become a complex issue which implicates learners' prior knowledge, various strategies and the factor related to environment during the process (Dangin, 2016; Meneghetti, Carretti, & De Beni, 2006). Prior knowledge means what the students have previously known about the new topics on which they are being worked. It helps the students to forecast or interconnect the previous experience with the text that is being read. It is also affected by students' capability in establishing several strategies they use when they need. Rumerlhart (2013) noted that Reading comprehension is a compound of mental processes. It is discovered by the different researchers with its several elements, procedures, and factors included in several settings to find better approaches to develop it in the students. Theoretically, it is a process of interaction that derives meaning from writing. This claim is supported by Trehearne and Doctorow (2005), saying that it is a collaboration of multiple variables, i.e. (student, text, and situation) in social and cultural contexts. It is viewed by Hermosa (2002) as a composite set of mental activities including different skills, for example, words' perception; clear understanding of meanings, concentration and integration.

The assessment of reading comprehension has evolved over the 20th century in terms of both the skills that are tested and the test formats that are employed (Pearson & Hamm, 2005). Reading comprehension assessment is still a contentious issue in academia after years of research and test-repeats. A survey of the existing literature on comprehension

assessment demonstrates that there are numerous unresolved challenges with regard to the efficient evaluation of pupils in schools, including psychometric issues and concerns about the usefulness of assessments in the classroom (Sweet, 2005).

Researchers and educators have been trying to figure out the best approach to assess a student's reading comprehension for years (Guerreiro, Barker, & Johnson, 2022). Urdu Reading Assessment Scale (URAS) was developed by Dilawar & Islam (2019) to assess 5th graders' reading fluency. Another reading scale was developed by Andleeb & Islam (2021) to measure attitude of teacher towards teaching reading at early grade level called Teachers' Attitude Scale in Teaching English Reading (TAS-TER). Moreover, Reading comprehension scale was developed by Velasco & Villanueva (2022) and this tool comprised of some statements. But, the development of a rigorous reading comprehension test is still a problem that hasn't been adequately addressed in the literature. There are many differences in assessment design, usability, and content that represent different aspects of reading comprehension. Some assessments also lack sound psychometric features. Similarly, despite evidence demonstrating the importance of reading comprehension's metacognitive and cognitive skills, there is still no reading comprehension exam that incorporates the evaluation of this identifiable metacognitive knowledge (Gebhardt, 2013).

Objective

The main objective of the study was to construct an instrument for measuring different levels of reading comprehension. The instrument referred to as the Urdu Reading Comprehension Test (URCT) may be beneficial to use it as a test for classroom use. The instrument used in this study has been developed on reading passages and MCQs developed by the researchers after rigorous review of the Single National Curriculum (2021) of 3rd grade. The test was developed on the 2nd level of Bloom taxonomy (comprehension) and it is divided by further three levels: literal, reorganization and inference (DaCosta & Gutierrez, 2020). This test was comprised of these three levels and ensured its validity and reliability. This test was named as the Urdu Reading Comprehension Test (URCT) and was used to measure the Reading Comprehension of 3rd grade students.

Literature Review

Reading comprehension is a complex mental cycle (Meniado, 2016; Azhar et. al., 2015). It is one of the most fundamental ability (Klingner et.al, 2007) that ought to be created and sustained in a learner at home as well as in school (Dorn & Soffos, 2005) since it is a key to achieve success in educational life as well as personal life (Meniado, 2016; Wikandari, 2020). The capacity to read for different intentions is a predecessor of an effective learning in educational institutions (Noursi, 2014; Wikandari, 2020). In addition, it is an ability to survive in the 21st century might it be for learners or experts (Wikandari, 2020). On the other hand, Dagget and Hasselbring (2007, p. 1) considered reading as 'the important empowering agent of learning for educational capability'. Henceforth, not having the option to foster powerful reading can affect learning adversely across the educational plan, inspiration to read, mentalities toward life, and achievements in the working environment (Wikandari, 2020).

Meniado (2016) stated that it is investigated by different researchers with its multi-layered elements, cycles, and factors associated with various settings fully intent on seeing as better strategies to creating it among students. Hypothetically, reading comprehension is an intelligent course of determining implications from a passage (Meniado, 2016). This statement is supported by Trehearne and Doctorow (2005); they said that it is a communication of various factors (reader, passage, and climate) in a sociocultural setting. Hermosa (2002) stated that it is observed as a complex set of mental exercises including numerous abilities and aspects, for example, 'the words perception, clear understanding of meaning, smart response, and integration'.

Reading comprehension (Ahmadi & Pourhosein, 2012) is a supportive intellectual exercise between a student's verbal knowledge (word's understanding) and information related to a given theme. Reading comprehension is a collaborating practice in which students interrelate with the passage for example their contextual information is activated. Reading comprehension is described in form of level to acknowledge a text/passage. This acknowledgement originates from the collaboration between the words which are printed and by what means they stimulate information outside the passage. It based on the capability to comprehend the words quickly. If word comprehension is tough, students utilize excessive processing skills to read different words that affect their capacity to understand what is read (Rahmani & Sadeghi, 2011). Moreover, they stated that students need to figure out how to examine a passage for understanding even previously they can read it all alone and comprehension guidance (Rahmani & Sadeghi, 2011).

Levels of Reading Comprehension

DaCosta and Gutierrez (2020) have found the six levels of comprehension which are valuable in facilitating the learners to become collaborative readers. Particularly the research of Nuttall (1996) has had an impact on the classification.

Literal: Literal comprehension is the ability to comprehend the text's direct meaning, including facts, language, times, events, and places. Answers to questions about literal comprehension might be drawn explicitly and immediately from the passage. To ensure that their learners have acquired the fundamental or external meaning of the material, initially teachers frequently ask literal questions (DaCosta & Gutierrez, 2020).

Re-organization: DaCosta and Gutierrez (2020) stated Reorganization is the 2nd level of comprehension that involves learners must use information from different areas of the passage and combine it for deeper knowledge during reorganization because it depends on a literal understanding of the content. For instance, we might learn in the introduction of a passage that Quaid e Azam was born in 1876 and subsequently at the conclusion that they passed away in 1948. What was the age of Quaid-e-Azam at the time of his death? The learners have to combine two parts of information to answer this question (DaCosta & Gutierrez, 2020).

Inference: A literal comprehension is only one part of drawing inferences. The answers to inference questions are based on information that is in the passage but not clearly expressed, students may first struggle to provide accurate responses. Students have to combine their literal interpretation of the passage with prior information and intuitions in order to draw an inference (DaCosta & Gutierrez, 2020).

Prediction: DaCosta and Gutierrez (2020) describe prediction is the fourth level of comprehension that asks students to forecast what will happen next or after a tale has ended by systematically applying both their comprehension of the text as well as their personal knowledge of the topic.

Evaluation: The learner must make a general or complete judgment about a particular feature of the passage at the fifth level of understanding, evaluation. How will the knowledge in this passage be beneficial to you? is an example of a comprehension question that requires the individual to provide evaluative judgment of this content. Students must use both a literal reading of the passage and their understanding of the material and associated issues to answer this kind of question (DaCosta & Gutierrez, 2020).

Personal response: Personal response is a six level that involve readers to express how the text and subject have affected them personally. The reader is the only source of the answers; none are contained in the text. Neither one's personal opinions are wrong nor cannot be unjustified; they must be relevant to the text's content and show a literal comprehension of the subject (DaCosta & Gutierrez, 2020).

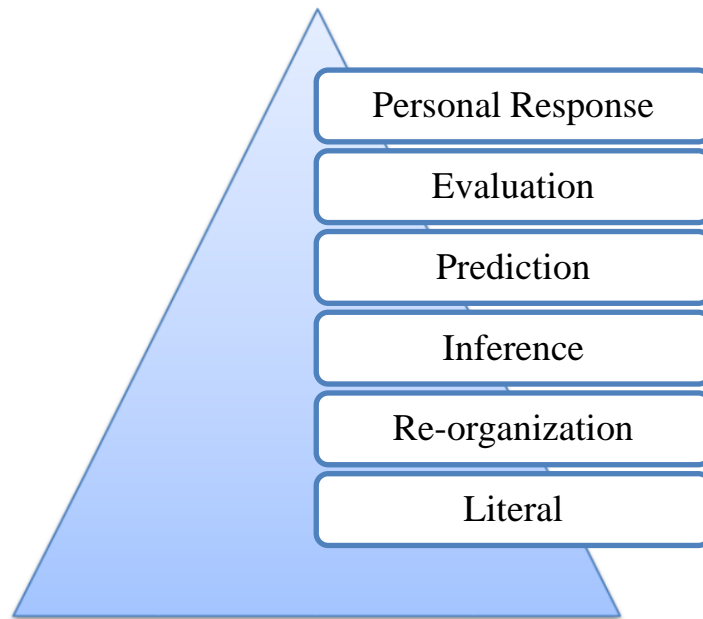


Figure 1: Levels of Comprehension

Conceptual framework

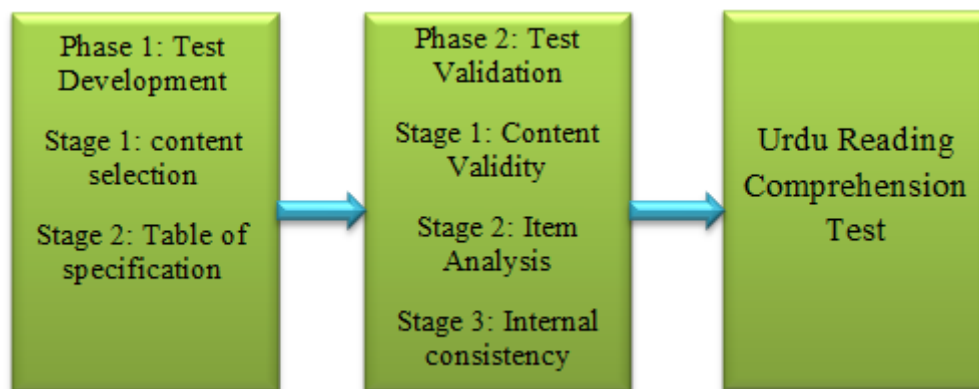


Figure 2: Conceptual framework

This study intended to develop and validate a reading comprehension test for Pakistani students of Grade 3. The study's conceptual framework is shown in Figure 2. The paradigm, as demonstrated, lays out the actions taken to arrive at the study's conclusion. Content selection for the test was the first step in determining the right content and made the table of specification on the 2nd level, which is comprehension, of Bloom Taxonomy then, assessed the content validity in order to determine whether the items were able to accurately measure the domain of interest. Item analysis is used to narrow the set of items to see the test's significance, and internal consistency method (KR-21) was used to assess the reliability of test. Lastly, In order to determine whether the researcher's test was valid, the test was evaluated by the 3rd grade students.

Methodology

Development Stage

The content for the Urdu Reading Comprehension MCQs test was selected from the curriculum that is based on the Single National Curriculum (2021) Pakistan. The title of the book is Text Book of Urdu 3rd grade studied in the province, Punjab. There are three sections of the content and 22 lessons (6 poems and 16 lessons); 50% of the content (8 lessons) was selected. First 8 lessons were chosen since research treatment was executed at the beginning of the academic year and adhered to the academic calendar. Forty (40) students' learning outcomes were developed on the basis of 8 selected lessons of the content (SNC, 2021). Detail description of the lessons and student learning outcomes is given in Table 1.

Table 1
Content of Urdu Reading Comprehension Test

Lessons	Description of lessons	Students learning outcomes (SLOs)					Lesson wise
		Levels of Comprehension				Total	
		Total SLOs	Literal	Re-organization	Inference		
1	بے مثال بے ذات رسول کریم ﷺ کی	8	3	2	2	7	18%
2	اگر میں نہ ہوں تو	10	2	3	1	6	15%
3	سب ہیں خاص	7	1	2	1	4	10%
4	ہم کیوں بھول جاتے ہیں	9	2	3	1	6	15%
5	اللہ تعالیٰ کا انعام	8	1	3	1	5	12%
6	جس کا خواب تھا دلکش	8	1	2	1	4	10%
7	چار انوکھے دوست	9	1	2	1	4	10%
8	حضرت خدیجہ الکبریٰ رضی اللہ عنها	8	1	2	1	4	10%
Total SLOs		67	12	19	9	40	100%

Table of Specification

The researcher constructed MCQs test to assess comprehension (literal, reorganization, and inference) of the 3rd grade students. The teacher must employ graded assessments for this purpose, supported by established scoring techniques or a table of specifications. Table of specification given in the table 2 was used as the Urdu Reading Comprehension test (URCT) standard.

Table 2
Table of Specification for Urdu Reading Comprehension Test

Lessons	Description of lessons	Students learning outcomes (SLOs)				Lesson wise
		Levels of Comprehension			Total Comprehension SLOs	
		Literal	Re-organization	Inference		
1	بے مثال بے ذات رسول کریم ﷺ کی	3	2	2	7	18%
	In RCT test	1	2	1	4	9%
2	اگر میں نہ ہوں تو	2	3	1	6	15%
	In RCT test	1	2	1	3	10%
3	سب ہیں خاص	1	2	1	4	10%
	In RCT test	1	1	1	3	7%
4	ہم کیوں بھول جاتے ہیں	2	3	1	6	15%
	In RCT test	1	2	1	4	10%
5	اللہ تعالیٰ کا انعام	1	3	1	5	12%
	In RCT test	1	1	1	3	7%

6	جس کا خواب تھا دلکش	1	2	1	4	10%
	In RCT test	1	1	1	3	7%
7	چار انوکھے دوست	1	2	1	4	10%
	In RCT test	1	1	1	3	7%
8	حضرت خدیجہ الکبری رضی اللہ عنها	1	2	1	4	10%
	In RCT test	1	1	1	3	7%
Total	Total SLOs	12	19	9	40	100%
	Total in RCT test	8	11	8	27	65%

Table 2 demonstrates the specifications (TOS) for the Urdu Reading Comprehension test. The test comprised of 8 comprehension passages and 40 MCQs. These MCQs contains three levels of comprehension: literal, reorganization, and inference. Items were made on these three levels of Comprehension. The details of the Urdu content for the Urdu Reading Comprehension test were defined in this table.

Figure-3 indicates that a similar proportion of marks are allocated for each lesson of content.

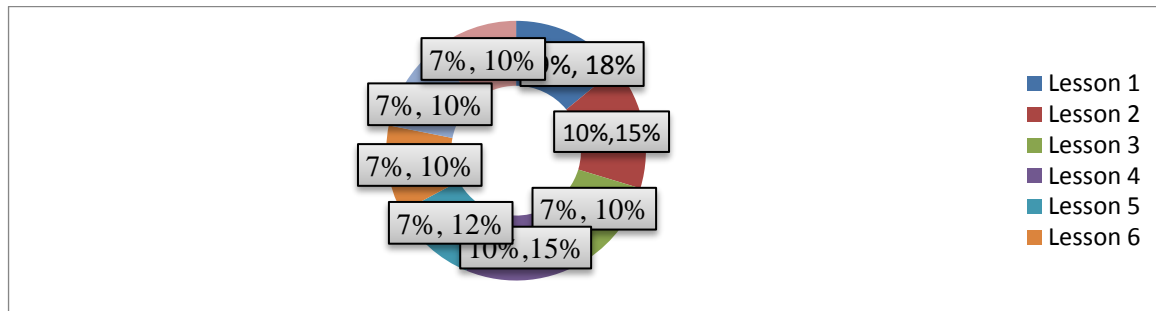


Figure 3: Marks Allocated for Each Lesson

Figure 3 displays the details of the marks assigned to the 3rd grade Urdu textbook lessons in accordance with a table of specifications made for Urdu Reading Comprehension test. Lesson No.1 has 8%, lesson no. 2 has 10%, lesson no. 3 has 6%, lesson no. 4 has 10%, lesson no. 5 has 6%, lesson no.6 has 8%, lesson no. 7 has 7% and lesson no. 8 has 7% of the total marks.

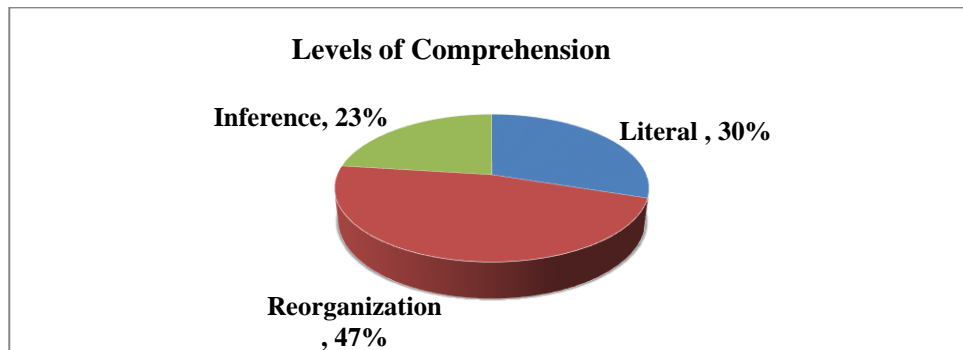


Figure 4: Marks assigned for Levels of Comprehension

Figure 4 displays the marks detail assigned to the three levels of comprehension. It states that the literal level of comprehension has 30% marks, reorganization level has 47%, and inference level has 23% marks.

Validation Stage

A multiple choice format was employed to assess Urdu reading comprehension. Moreover, three subject experts of Urdu subject of public sector schools collaborated to select 8 paragraphs that shifted from smaller to bigger; constructed forty (40) multiple-choice questions related to those paragraphs, every paragraph contained 5 MCQs and associated answer keys for the Urdu Reading Comprehension Test (URCT). The first draft of the test was deliberated with the supervisor and PhD scholars for the refinement. Items of test were also deliberated with Urdu language experts to verify the item's clarity of expression, accuracy of grammar, and stem-and-distracter formation. If we use a test without establishing the validity, it produces inappropriate outcomes. Table 3 describes the techniques for assessing the fundamentals of validity in Urdu Reading Comprehension test (URCT).

Table 3
Categories of Validity

Components	Technique
Content Validity	CVR and CVI based on Expert Reviews assigning SLOs and book material in the proper proportions
Face Validity	Review by Professional assigning SLOs and book material in the proper proportions
Construct Validity	Item Analysis.
Criterion Predictive Validity	Discriminant Analysis

(Viswanathan, 2005 & Netemeyer et al., 2003)

Therefore, item analysis was used to verify construct validity of Urdu reading comprehension test (URCT). Item discriminant analysis was used to establish the predictive validity of the criteria. Similarly, by allocating an appropriate amount to SLOs and textbook material, content validity as well as face validity was established. Additionally, by seeking the value judgments of Subject Matter Experts (SMEs), this approach was confirmed. They presented their opinions on each MCQ of URCT in the categories like "Essential," "Necessary," and "Un-necessary." In this manner, the Content Validity Ratio (CVR) besides Content Validity Index (CVI) was therefore taken into consideration. All of the MCQs of Urdu Reading Comprehension Test (URCT) have content validity ratio (CVR), the range of values are 0.57 to 1.00. According to Lawshe (1975), a CVR value of above than 0.51 is appropriate for fifteen (14) experts. Therefore, 2 items out of 40 (8 and 24) were eliminated. Similarly, the overall validity of URCT is 0.86, that is higher than 0.7 and it is preferable value. In this manner content as well as face validity was assured by subject specialists.

Pilot Testing

MCQs, was conducted with 260 students of 3rd grade. M.S. Excel, 2021 was used to calculate difficulty index, discrimination index and reliability of MCQs (Aulia et al., 2014) of the test. Alpha value was also calculated by using KR-21 formula to ensure reliability of the test. The standard statistics of Urdu Reading Comprehension Test (URCT) for all MCQs are presented in Table 4.

Table 4
Urdu Reading Comprehension Test (URCT) item statistics
Status of Items

Item No.	Level of difficulty (p)	Disc. Index	Based on p-value	Based on DI	Results
1	0.57	0.43	Moderate	Good	Accepted
2	0.64	0.45	Moderate	Good	Accepted
3	0.62	0.37	Moderate	Satisfactory	Accepted
4	0.39	0.59	Moderate	Good	Accepted
5	0.37	0.41	Moderate	Good	Accepted
6	0.51	0.35	Moderate	Satisfactory	Accepted
7	0.61	0.71	Moderate	Excellent	Accepted
8	0.73	0.39	Easy	Satisfactory	Accepted
9	0.64	0.37	Moderate	Satisfactory	Accepted
10	0.62	0.33	Moderate	Satisfactory	Accepted
11	0.54	0.64	Moderate	Good	Accepted
12	0.67	0.64	Moderate	Good	Accepted
13	0.53	0.67	Moderate	Good	Accepted
14	0.62	0.70	Moderate	Excellent	Accepted
15	0.08	0.10	Very difficult	Poor	Rejected
16	0.76	0.69	Easy	Good	Accepted
17	0.48	0.56	Moderate	Good	Accepted
18	0.68	0.54	Moderate	Good	Accepted
19	0.66	0.39	Moderate	Satisfactory	Accepted
20	0.64	0.33	Moderate	Satisfactory	Accepted
21	0.53	0.72	Moderate	Excellent	Accepted
22	0.57	0.39	Moderate	Satisfactory	Accepted
23	0.72	0.37	Easy	Satisfactory	Accepted
24	0.95	0.10	Very Easy	Poor	Rejected
25	0.52	0.37	Moderate	Satisfactory	Accepted
26	0.51	0.35	Moderate	Satisfactory	Accepted
27	0.76	0.43	Easy	Good	Accepted
28	0.66	0.37	Moderate	Satisfactory	Accepted
29	0.60	0.79	Moderate	Excellent	Accepted
30	0.27	0.14	Difficult	Poor	Rejected
31	0.65	0.56	Moderate	Good	Accepted
32	0.65	0.31	Moderate	Satisfactory	Accepted
33	0.60	0.51	Moderate	Good	Accepted
34	0.72	0.52	Easy	Good	Accepted
35	0.51	0.81	Moderate	Excellent	Accepted
36	0.60	0.54	Moderate	Good	Accepted
37	0.91	0.15	Very easy	Poor	Rejected
38	0.55	0.39	Moderate	Satisfactory	Accepted

Findings

The appropriate value of four (4) questions of the Urdu reading comprehension test (URCT) remained below average. Therefore, the items No. 15, 24, 30, and 37 from the final reading comprehension test were deleted.

Figure-4 exemplifies the retention items of Urdu reading comprehension test (URCT) after ensuring their validity and reliability.

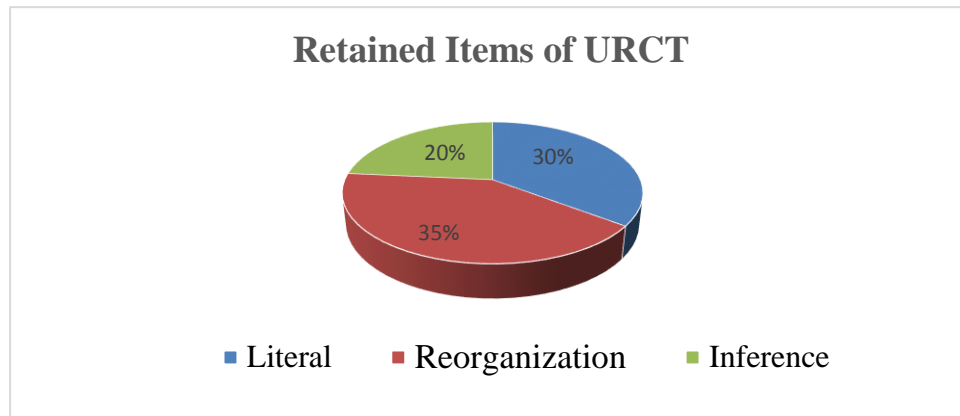


Figure 5: Retained Items

Figure 5 indicates the retention of MCQs of Urdu Reading Comprehension test (URCT). Four items (15%) had to be removed. It demonstrates that 85 percent of the reading comprehension multiple-choice questions (URCT) were retained. Each MCQ of the URCT was rated for difficulty on the basis of Prop. Correct values.

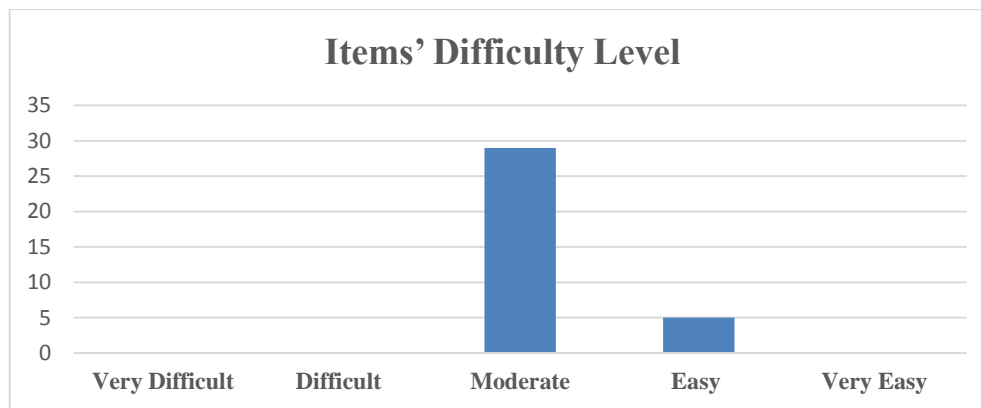


Figure 6: Items' Difficulty Level

Figure 6 indicates that five (05) MCQs were "easy"; twenty-nine (29) were "moderate" of Urdu Reading comprehension test (URCT) and no MCQ of the test was "very difficult", "difficult", and "very simple".

The Discrimination Index values were used to demonstrate the effectiveness of the multiple-choice questions in the Urdu reading comprehension test (URCT).

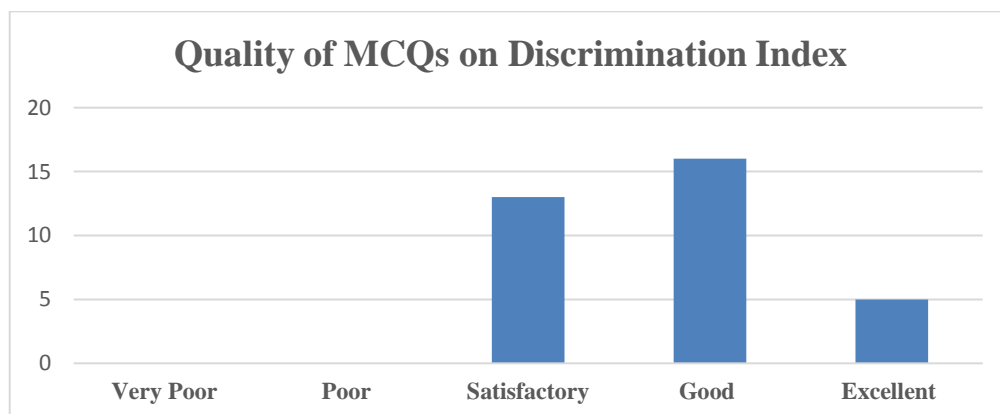


Figure 7: Discrimination Index

Figure 7 indicates the quality of MCQs on the Discrimination Index. 5% reading comprehension test MCQs were excellent, 16% good, 13 % satisfactory, and 0% poor MCQs.

Final Urdu Reading Comprehension Test (URCT)

By employing the aforementioned standard procedure, low performance MCQs were eliminated from Urdu reading comprehension test (URCT). Table 3.22 displays that MCQ no. 15, 24, 30, 37 were eliminated due their below average values. After item analysis, only thirty-four (34) Multiple Choice Questions (MCQs) were determined to be retained.

After eliminating weak MCQs, The Kuder-Richardson (KR-21) formula was used to calculate the reliability of URCT and the value of reliability coefficient 0.866 was found that is above than 0.70 (the value of reliability advised by Frankle, et al., 2012). Thus, Urdu reading comprehension test was greatly reliable. This test was finalized and employed in the research project as a pretest as well as posttest. Final reading comprehension test statistics comprises of thirty-four (34) MCQs.

Table 5
Urdu Reading Comprehension Test (RCT) item statistics (Final)

Item No.	Level of difficulty (p)	Disc. Index	Status of Items		
			Based on p-value	Based on DI	Results
1	0.57	0.43	Moderate	Good	Accepted
2	0.64	0.45	Moderate	Good	Accepted
3	0.62	0.37	Moderate	Satisfactory	Accepted
4	0.39	0.59	Moderate	Good	Accepted
5	0.37	0.41	Moderate	Good	Accepted
6	0.51	0.35	Moderate	Satisfactory	Accepted
7	0.61	0.71	Moderate	Excellent	Accepted
8	0.73	0.39	Easy	Satisfactory	Accepted
9	0.64	0.37	Moderate	Satisfactory	Accepted
10	0.62	0.33	Moderate	Satisfactory	Accepted
11	0.54	0.64	Moderate	Good	Accepted
12	0.67	0.64	Moderate	Good	Accepted
13	0.53	0.67	Moderate	Good	Accepted
14	0.62	0.70	Moderate	Excellent	Accepted
15	0.76	0.69	Easy	Good	Accepted
16	0.48	0.56	Moderate	Good	Accepted
17	0.68	0.54	Moderate	Good	Accepted
18	0.66	0.39	Moderate	Satisfactory	Accepted
19	0.64	0.33	Moderate	Satisfactory	Accepted
20	0.53	0.72	Moderate	Excellent	Accepted
21	0.57	0.39	Moderate	Satisfactory	Accepted
22	0.72	0.37	Easy	Satisfactory	Accepted
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27	0.60	0.79	Moderate	Excellent	Accepted
28	0.65	0.56	Moderate	Good	Accepted
29	0.65	0.31	Moderate	Satisfactory	Accepted
30	0.60	0.51	Moderate	Good	Accepted
31	0.72	0.52	Easy	Good	Accepted
32	0.51	0.81	Moderate	Excellent	Accepted

33	0.60	0.54	Moderate	Good	Accepted
34	0.55	0.39	Moderate	Satisfactory	Accepted

The retained items (thirty-four (34)) are listed in Table 3.19. The following MCQs were kept from the reading comprehension test (RCT): MCQ Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, and MCQ No. 38.

Conclusion

According to all the statistics of test, the Urdu Reading Comprehension test (URCT) performed well and achieved its main objective. Urdu Reading Comprehension test can measure 3rd grade students' reading comprehension. The value of Content validity ratio of each item was greater than 0.50, which directs that each item was statistically significant and usable in practical context. Estimated values of item difficulty ranged from 3.00 to 7.00 which indicate that items were neither too easy nor too difficult and fulfill the criteria of item standardization. Discrimination index of items ranged from 0.20 to 0.1 that indicates that items were good and excellent by the aspect of item discrimination. The reliability value was up to the standard which indicates that Urdu Reading Comprehension test was reliable.

Recommendations

The following recommendations are made in light of the above-mentioned observations and conclusions: reading comprehension test developers should constantly adhere to a specific standard and practice to ensure the quality of the test; Furthermore, reading comprehension test developers ought to adhere to a validation procedure to evaluate the reliability of the instrument. In addition, teachers may also utilize the developed test to determine which category a student falls into for reading comprehension and this test also has the ability to measure higher order thinking ability of students which is necessary for conceptual understanding of students. Moreover, other researchers may take this study as a starting point for the same issue and/or may incorporate other themes that are not restricted to those that were gained from participants' responses.

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