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Development and Validation of an English Language Achievement Test Based on Educational Objectives for Higher Secondary Students

Arti Singh

Research Scholar

Faculty of Education

Integral University, Lucknow, Uttar Pradesh, India

E-mail : artisingh@student.iul.ac.in

Dr. Vivek Rogers

Assistant Professor

Faculty of Education

Integral University, Lucknow, Uttar Pradesh, India

ABSTRACT

This paper presents the development, validation, and implementation of a researcher-constructed English Achievement Test to assess Higher Secondary Students' proficiency in the subject of English. The test is designed in alignment with Bloom's taxonomy, focusing on three key cognitive domains: knowledge, comprehension and application. It spans twelve crucial areas of English grammar and functional language use, including reading comprehension, articles, noun, pronouns, verbs, prepositions, adjectives, sentence structure, direct and indirect speech, tenses, and voice. The tool aims to produce reliable and valid data that contribute to understanding the relationship between students' Personal and Institutional variables and their achievement in the subject of English. This paper details the systematic process of test construction, including blueprint formulation, expert validation, pilot testing, item analysis, and reliability assessment. The finalized instrument was administered to a stratified sample of higher secondary students' to investigate language achievement trends in relation to Personal (e.g., gender, socio-economic status) and Institutional (e.g., types of school, medium of instruction) variables.

Keywords: English achievement test, Educational objectives, Higher Secondary Students, Tool construction, Language proficiency

INTRODUCTION

In educational research, particularly at the higher secondary level, the assessment of students' Achievement in language subjects such as English requires the use of well-constructed tools, Language proficiency is multidimensional and encompasses grammatical knowledge, comprehension ability, and the application of language in practical contexts. Therefore, an assessment tool that reflects these dimensions is necessary to ensure the validity and reliability of the results. The present paper elaborates on the process and rationale behind the construction of an English Achievement Test, which serves as the core measurement tool for the study titled "A Study of Relationship of Higher Secondary Students' Personal and Institutional Variables with their Achievement in the Subject of English."

In today's educational climate, measuring achievement solely through traditional school examinations may fail to capture the nuanced understanding and applied skills that students' acquire. Hence, the need for a standardized and objective assessment tool rooted in pedagogical theory becomes evident. The present test was developed with a dual purpose: first, to objectively assess students' knowledge and abilities in English based on defined cognitive levels; and second, to enable empirical exploration of factors influencing achievement across diverse educational settings.

OBJECTIVES OF THE TOOL CONSTRUCTION

The primary objectives behind the construction of English Achievement Test were as follows:

1. To develop a standardized and objective test based on specific English language topics taught at higher secondary level.
2. To structure the test around the three cognitive domains of educational objectives: knowledge, comprehension, and application.
3. To ensure the tool is reliable, valid and practically useful for large scale educational research.
4. To support the broader research objective of investigating the impact of personal and institutional variables on students' English language achievement.

TOOL BLUEPRINT AND DIMENSIONS:

A blueprint was developed before test construction to ensure balanced representation of both content areas and cognitive levels. The blueprint served as a guiding framework, mapping specific topics in English against the intended cognitive objectives.

CONTENT AREAS/TOPICS:

- Reading Comprehension
- Articles
- Noun
- Pronouns
- Verbs
- Prepositions
- Adjectives sentence structure

- Direct and Indirect Speech
- Tenses
- Voice

ROLE OF COGNITIVE OBJECTIVES IN TEST DESIGN

Cognitive objectives are central to any well-grounded assessment framework, serving as a guiding philosophy in both curriculum development and the construction of reliable educational measurement tools. In the context of the English Achievement Test developed for this study, cognitive objectives were employed not just as a classification tool for question types but as an essential mechanism to ensure alignment between instructional goals, assessment strategies, and expected student outcomes. By integrating Blooms taxonomy into the test design, the tool ensures a layered assessment of learners' mental processes, ranging from surface level recall to deep understanding and critical application.

UNDERSTANDING BLOOM'S TAXONOMY AND ITS RELEVANCE

Developed by Benjamin Bloom and colleagues in 1956 and later revised by Anderson and Krathwohl (2001), Bloom's taxonomy provides a structured approach for classifying cognitive learning objectives. The taxonomy divides cognitive development into six hierarchical levels: remembering, understanding, applying, analysing, evaluating, and creating. These levels move from basic to complex, requiring progressively deeper cognitive engagement.

For the purpose of the present study and the level of higher secondary students, the test focused on the foundational levels that best reflect students' capabilities and curriculum expectations:

1. Knowledge (Remembering)
2. Comprehension (Understanding)
3. Application (Applying)

These three levels align well with the academic scope of higher secondary English syllabi across various boards and were most suitable for assessing learners' command over grammar, usage, and comprehension skills. Let us examine each of these domains in greater detail.

1. Knowledge Domain

The knowledge level represents the most basic level of cognitive processing. It refers to the ability of students to recall previously learned information such as rules, definitions, and grammatical structures. This includes rote memorization and recognition of correct grammatical forms.

In the English Achievement Test, this domain encompasses items that assess students' memory-based proficiency in essential topics such as:

- Identifying correct articles used in a sentence
- Recognizing different forms of nouns, pronouns, verbs, prepositions, and adjectives

- Recalling basic syntactical structures, such as sentence construction or tense formation
- Choosing the correct grammatical rule in isolated instances

These questions were designed as direct recall tasks, in the form of multiple-choice. For example, an item might ask, "Choose the correct preposition: He is good ___ mathematics," with four options. Such items test not only memory but also pattern recognition in grammar usage.

By incorporating these items, the test ensures that the foundational layer of language learning is thoroughly evaluated, providing a base-level diagnostic of student achievement. Students weak in this area are often those lacking exposure or engagement in structured language learning environments, and thus this level also indirectly reflects broader institutional and personal factors affecting academic performance.

2. Comprehension Domain

The comprehension level represents students' ability to grasp the meaning of information. It involves understanding language in context, interpreting meanings, and explaining ideas. This domain transitions learners from memorization to meaningful internalization of knowledge.

In this test, comprehension-based items are used to:

- Evaluate reading comprehension passages, requiring students to extract implied meanings, draw inferences, and identify main ideas.
- Assess understanding of grammar usage in context, such as recognizing why a specific verb tense or voice is used in a given sentence.
- Examine the ability to explain or paraphrase content, especially within sentence transformation exercises or identification of subject-verb agreement in practical contexts.

For example, a comprehension-level question might include a passage followed by questions such as: "What is the main idea of the second paragraph?" or "Which sentence best describes the author's attitude toward the subject?"

These questions require students not just to recall language rules but to demonstrate their understanding by interacting meaningfully with the text. In doing so, the test reflects an essential objective of English language education: enabling students to not just know English, but to understand and use it appropriately and contextually.

The inclusion of comprehension objectives also makes the test more reflective of real-life language use, where interpretation, inference, and synthesis are far more common than direct recall. It is especially vital for assessing students' preparation for higher academic and professional demands.

3. Application Domain

The application level assesses the student's ability to use learned knowledge and understanding in new or unfamiliar situations. It requires the transfer of concepts, grammatical rules, and reading strategies to novel contexts. This is the level at which students begin to demonstrate their ability to use English practically and creatively.

In the English Achievement Test, application items are designed to:

- Require transformation of sentences from active to passive voice, or from direct to indirect speech
- Encourage students to apply grammar rules while editing paragraphs for errors
- Assess the application of correct verb forms or tenses in situational writing
- Test the appropriate use of vocabulary or sentence structures in context-based scenarios

These items represent a significant cognitive leap from merely understanding grammar to actively producing grammatically correct language under dynamic conditions. For example, a question may provide a short paragraph with grammatical errors and ask students to correct them, or it might present a real-world scenario and require students to choose the most appropriate grammatical construction.

This level of testing is particularly crucial for preparing students for real-life language use, whether in writing formal letters, essays, or participating in discussions. Moreover, from a pedagogical standpoint, application-based assessment supports curriculum goals that emphasize skill transfer, critical thinking, and language adaptability.

SIGNIFICANCE OF COGNITIVE OBJECTIVES IN LANGUAGE ASSESSMENT

Integrating cognitive objectives into the test design offers multiple educational and research benefits:

1. **Holistic Assessment:** By covering knowledge, comprehension, and application, the test avoids bias toward rote learners and instead evaluates a full spectrum of language proficiency.
2. **Curriculum Alignment:** The test mirrors educational frameworks and English language standards practiced across national boards such as CBSE, ICSE, and state boards, ensuring academic relevance.
3. **Data for Differentiated Instruction:** The breakdown of scores by cognitive domain can inform teachers where interventions are needed for example, if students score well in knowledge but poorly in application, teaching strategies may need to shift.
4. **Research Reliability:** When studying the relationship between student variables and academic achievement, a tool grounded in cognitive theory ensures that the measurement is robust, objective, and theoretically valid.

Cognitive Load and Student Readiness

Another important consideration in designing a cognitive-based test is the management of cognitive load. Test items must be challenging but not overwhelming. To address this:

- The test gradually increases in complexity, starting with knowledge-level items and progressing to application-based tasks.
- Instructions are clearly worded, and examples are provided where necessary.
- Items are contextually appropriate for the maturity and cognitive development level of higher secondary students.

This scaffolding approach helps reduce test anxiety and encourages students to approach complex tasks with greater confidence.

DEVELOPMENT PROCEDURE:

1. **Item Construction:** An initial pool of 100 questions was drafted, encompassing of tick the correct mark. Each question consist of one mark and was aligned with a specific content area and cognitive domain. Simplicity, clarity, and grade-appropriateness were prioritized during item writing.

The dimensions which were focused in the questionnaire were:

- **Knowledge**
 - **Comprehension and**
 - **Application**
2. **Content Validation:** The first draft of the tool was constructed, the item pool was reviewed by a panel of experts, who assessed the questions for accuracy, clarity, and alignment with the higher secondary curriculum. A Content Validity was computed.
 3. **Pilot Testing:** the initial draft was administered on 200 high school students of UP board and ICSE board students from different schools. This stage aimed to evaluate question difficulty, ambiguity, and test administration logistics. Students' responses were collected and scoring is done.
 4. **Item Analysis:** After pilot testing was done, scoring to the items were given and data sheet is prepared for item analysis. After item analysis final draft of the questionnaire was prepared.
 5. **Scoring and Interpretation:** Each correct answer was awarded one mark, with no negative marking for incorrect responses. The total raw score represented the student's overall achievement level. Sub-scores were computed for each cognitive domain to enable fine-grained analysis of student performance.

The interpretation of scores involved categorizing students into achievement levels such as high, medium, and low achievers. Further statistics were implied on types of school (Private and Government school), medium of instructions (English, Bilingual), and gender (Male and female).

Findings suggests the importance of structured English language exposure in academic success. Bilingual schools, policymakers, and educators may benefits from implementing Targeted strategies to provide students in bilingual settings with similar levels of English exposure, helping bridge the language proficiency gap and ensuring that all students have access to high quality English language instructions.

For researchers, the test offers a validated instrument to examine achievement disparities, policy impacts, and the efficacy of language instruction programs. By linking test results with student backgrounds and institutional features, the tool supports data-driven decisions in curriculum design, teacher training, and educational planning.

Furthermore, the alignment of the test with Bloom's taxonomy ensures that it addresses not just rote learning, but also higher-order thinking skills—critical for meaningful language acquisition in the 21st century.

CONCLUSION

The development of the English Achievement Test marks a significant advancement in educational assessment by integrating pedagogical theory with empirical rigor. Anchored in Bloom's taxonomy, the tool systematically incorporates the cognitive objectives of knowledge, comprehension, and application—transforming it from a simple language proficiency measure into a multidimensional, research-driven instrument. By covering a broad spectrum of English language topics and cognitive levels, the test moves beyond rote memorization to evaluate students' abilities to understand, interpret, and apply language in meaningful contexts. Its comprehensive structure not only ensures alignment with curricular standards but also enhances its relevance for diverse educational settings. The tool's successful validation and application in the main study affirm its reliability, objectivity, and practical utility in assessing the relationship between personal and institutional variables and English achievement among higher secondary students.

This cognitive framework strengthens the test's ability to support data-driven insights, enabling educators, researchers, and policymakers to make informed decisions regarding curriculum planning, instructional strategies, and student interventions. Future research could benefit from longitudinal deployment of the tool, cross-regional comparative studies, or digital adaptations for personalized learning environments.

Ultimately, this English Achievement Test exemplifies how a theory-grounded and meticulously constructed assessment can contribute meaningfully to the enhancement of language education, inform targeted interventions, and support equitable learning outcomes at the secondary level.

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