COMPUTER INTEGRATED MODULE ON ACQUISITION OF GRAMMAR SKILLS OF THE CHILDREN WITH LEARNING DIFFICULTIES

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ABSTRACT
The main objective of this experimental study, according to the investigators, was to determine how a computer-integrated module affected the development of grammar abilities in young learners. In this study, 20 students with learning disabilities enrolled in regular 8th grade were given the JC Raven IQ test to determine their level of intellect. The three stages of the research design are sample selection, word selection, accomplishment test creation, and experimentation. Two Group pre-test-post-test was used by researchers. GCIM module was used by the experimenter to introduce the treatment. A t-test and descriptive statistics were used to analyse the data. The outcomes showed that the average achievement scores on the module following the treatment were statistically and significantly high. On the acquisition of the grammatical skill by GCIM, mean score of experimental group was higher than mean score of control group. This approach can be used as assistance by school administrators to help students who struggle with learning grammar.
Keywords: Computer Integrated Module, Learning Difficulties, Grammar skill

Introduction

"Education is a conscious purpose to train children to fulfil adult life responsibilities. Since children have to enter a complicated society when they grow into adults, education gives them training for their adult life"(Kim, 2006). When confronted with urgent issues at home, in their community, or in the wider world, they are better equipped to handle them thanks to the development of their thinking and reasoning abilities. To learn how to lead a moral or orderly life, a person needs to understand how to utilise reason. "True education means training the individual to discriminate between 'good and evil', both on the level of physical responses as well as mental responses" (Schonert, 2007).

The primary distinction between learning a first language and a second language is that the first needs deliberate effort on the part of the student, whereas the second language is learnt naturally. Each person uses a different approach and strategy when performing a given work. The method employed by a learner to complete the task at hand is now referred to as a strategy. Although early research centred on identifying the tactics employed by successful language learners, it gradually moved into more intense research on a number of other LLS-related topics.

"In most schools, colleges, and universities the education is in the English language. For understanding the books, lectures, and assignments it's necessary to learn the English language first. Most of the students want to go to foreign countries to study"(Adil, 2022). In other nations, it is exceedingly challenging to survive without knowing and using the English language. Learning English is therefore crucial for those who desire to pursue further education abroad. English is presently a worldwide used language. "Named after the Angles, one of the Germanic clans that relocated to England, it, at last, gets its name from the Anglia promontory in the Baltic Sea"(Arminus, 2015). English has become the most significant language around the globe which has an effect on each field of work. There are 104 nations where English is communicated in as a first language. More individuals need to gain proficiency with this language to improve their expert and scholastic lives.

Grammar Skill

Carlos (2018) professes that English is to be upheld as the second largest language which people use in the world and it is officially accepted in 70 countries. English is designated as the second language of India, where it is used for all academic purposes. The papers provide insights into English grammar skills and the effectiveness of teaching English grammar. Cerena 2021 emphasizes the importance of grammar in language skills and investigates the effectiveness of an English Grammar Course among B.Ed. student-teachers. Sahid 2019 explores the perceived impact of grammar competence on speaking ability among English literature students. However, Mariati 2019 does not provide specific findings related to English grammar skill optimization, and Fuchs 2012 focuses on the pedagogy and features of a grammar series rather than empirical research on grammar skill development.

At the primary level, the development of essential language acquisition skills—listening, speaking, reading, and writing—should continue. At the upper elementary level, we anticipate that students will create more diverse oral and written discourses. Grammar competence is a part of communicative ability. To build excellent communication skills, learners should concentrate on understanding and applying grammar. Learning English is crucial for anyone looking for work in today's competitive labour market because it is a language that is almost universally spoken in the country. A few grammar-related questions are frequently posed in competitive exams.

T. C. Baruah (2004) in 'The English Teacher's Handbook' mentioned. 'English has been a significant part of our educational system and of national life for almost two centuries. English was a powerful unifying factor in our fight for independence. Leaders from all regions of our large nation could communicate and jot down their shared strategies using this language. Even today, English continues to play a crucial role as the national link language for interstate contact as well as the language of trade and commerce across the nation. Additionally, English has made a significant contribution to India's advancement of knowledge, particularly in the fields of science and technology. It has helped us fully understand the state of the world by bringing it home to us'. Chandra et al. (2001) pointed out that in order to meet the communication needs of the fast-growing world today, more and more people are looking for highly specific, academic and professional alternatives to improve their language skills, where grammar holds a prominent position.

Computer Integrated Module

A computer-integrated module (CIM) is a type of manufacturing system that uses computers to control and coordinate the various components of the manufacturing process. It typically includes a combination of hardware and software components, such as programmable logic controllers, robots, sensors, and computer-aided design and manufacturing software. The goal of a CIM system is to improve efficiency, reduce costs, and increase flexibility in the manufacturing process. Students today are living in a digital world where everything they do depends on the internet, text messaging, social media platforms, and other multimedia tools. Additionally, students use these digital skills in their daily lives away from school, and they anticipate an equivalent level of technology access in their academic life. Presently every country understands the importance of ICT and focuses on mastering the basic skills of ICT along with the core academic subjects, reading, writing and numeracy (Meenakshi, 2013). The digital world makes learning more fun and interesting. Here, technology plays an important role in creating innovation and motivation for the learners (Jayanthi and Kumar, 2016). Moreover, a research finding by Omondi, et al (2014) on, "Embedding ICT in ESL Teachers' Professional Development (TDP)."shown that teachers may function within new and modern educational trends thanks to the integration of ICT into English language TDP procedures at both the personal and institutional levels. On the other hand, a study by Rajeswari (2014) If instructors are given the time and access to relevant training to use computers to facilitate learning, technology has a significant impact on accomplishment.

Because technology has such a big impact on encouraging learners to be innovative and motivated, it is impossible to separate technology from English language teaching (Singhal, 1997). Furthermore, the American Council on the Teaching of Foreign Languages (ACTFL) (2012) recognises the potential of technology as a tool to assist and enhance classroom-based language learning and supports its use. Traditional methods of imparting higher education have become less motivating.

Computer integrated modules can be used to teach English grammar in the following ways:

1. Interactive Grammar Exercises: CIM can be used to create interactive grammar exercises that students can complete online. These exercises can include multiple-choice questions, fill-in-the-blanks, and matching exercises.

2. Grammar Games: CIM can be used to create grammar games that students can play online. These games can be designed to be fun and engaging while also reinforcing grammar concepts.

3. Virtual Grammar Lessons: CIM can be used to create virtual grammar lessons that students can access online. These lessons can include videos, animations, and interactive activities that help students understand and practice grammar concepts.

4. Automated Grammar Checks: CIM can be used to create automated grammar checks that students can use to check their writing for grammar errors. These checks can be integrated into word processing software or online writing platforms.

5. Personalized Grammar Feedback: CIM can be used to provide feedback to students based on their individual writing. This feedback can be generated using natural language processing and machine learning.

Children With Learning Difficulties

A learning difficulty is defined as "any mental condition that prevents a person from acquiring the same amount of knowledge as others in their age group" (ldrfa, 2012). When children begin classroom-based learning in reading and writing during their first two years of school, learning challenges and early indicators of learning disorders are frequently identified. The Learning Disabilities Association of America lists these specific learning difficulties as the following:

- **Dyslexia**

A language-processing condition called dyslexia has an effect on reading, writing, and understanding. Word decoding or phonemic awareness, or the ability to distinguish specific sounds within words, may be problematic for dyslexics.

- **Dysgraphia**

Dysgraphia causes people to have difficulty expressing their ideas through writing or drawing. Dysgraphia is characterised by poor handwriting, however this is by no means the sole sign. People who struggle with writing have trouble with spelling, grammar, vocabulary, critical thinking, or memory.

- **Dyscalculia**

Dyscalculia encompasses learning disabilities related to mathematical calculations. IndiviCalculation-related learning difficulties are referred to as dyscalculia. People with dyscalculia have difficulties with numbers, math, and logic.

- **Auditory processing disorder** (central auditory processing disorder)

Patients with Auditory processing disorder (APD) have trouble processing sounds. People with APD may have trouble distinguishing between various sounds, such as a teacher's voice vs background noise, or they may mistake the order of sounds.

- **Language processing disorder**

Language processing disorder, a subset of auditory processing disorder, develops when a person experiences particular difficulties in understanding spoken language, which affects both receptive and expressive language.

- **Nonverbal learning difficulties**

NVLD patients have difficulty reading nonverbal cues such as body language, tone of voice, and facial expressions.

- **Visual perceptual/visual motor deficit**

When reading, people with visual perceptual/visual motor deficiencies frequently lose their position, have poor hand-eye coordination, and have trouble using pencils, crayons, glue, scissors, and other fine motor skills.

Review Of Related Studies

Abraham et al..(2007) conducted a study on "The effects of Multimedia on second language vocabulary learning and reading comprehension". The present research looked at how 102 students taking intermediate-level Spanish lessons in their third semester used multimedia software to improve their vocabulary development and reading comprehension. The study specifically looked at the effects of annotations in the form of video photos, Study completed two spatial ability tests, an English verbal ability test, a pretest and posttest involving 20 Spanish words noted in the story for which they offered an English translation. Finally, learners in the choice-lookup and forced-lookup groups answered questions about the value of the multimedia annotations for comprehending the plot and acquiring new vocabulary.

Kim et al.. (2008) conducted a study titled “Effects of Text, Audio, and Graphic Aids in Multimedia Instruction for Vocabulary Learning”. This study looks into how a Web-based self-instruction programme might help learners at Myungin Middle School in Seoul, South Korea, learn more English vocabulary. Multimedia elements like visual text, spoken text, and pictures are used. The 78 study included 172 middle school kids (aged 14) from five different courses. Instruction that included "visual text and added graphics" or "visual text, added spoken text, and added graphics" helped participants learn more effectively. The findings suggest that providing images that explain the vocabulary's meaning is an efficient strategy to enhance vocabulary learning in English.

Lubis et al., (2022) in their study entitled on "Incorporating Flipped Learning in Teaching English Grammar for EFL Students Across Proficiency Levels. " According to this study, flipped learning can improve students' English proficiency and study habits. However, there are still some issues, primarily the student's ignorance and demotivation as a result of the increasing workload that must be completed. Furthermore, there was a dearth of empirical data in the EFL context supporting the advantages of flipped learning across skill levels. This study describes how 94 first-semester undergraduate students at a private university in South Jakarta, Indonesia, were taught grammar through flipped learning. Three grammar exams (pre-, mid-, and post-tests) were given using a quantitative and qualitative approach to examine how flipped learning affected the students' grammar across all competency levels. The pupils were then given a survey with both closed- and open-ended questions. The quantitative findings showed that, across all competence levels, the students' grammar abilities improved from the mean pre-test to post-test score. Regardless of the students' level of English grammar ability, the qualitative results supported such a favourable impact because flipped learning might foster learner motivation, autonomy, and awareness. The difficulties of implementing flipped learning in an EFL grammar class were still characterised as limited vocabulary competence, difficulty to manage the time, ignorance, and technical difficulties.

Nutta (2001) carried out a study contrasting teacher-directed grammar training with computer-based grammar instruction.The findings demonstrated that, for all English proficiency levels, computer-based pupils considerably outperformed teacher-directed education on open-ended examinations covering the relevant structural elements. The outcomes show that teaching L2 grammar with computer-based education is a viable option.

Jayakumar et al., (2019) conducted a study on "Teaching English Grammar through Android Application to Teacher Trainees of Chennai District with reference to Verbs An Experimental Study". To enable the learner to understand grammatical aspects and semantic nuances so that he/she was able to make use of the appropriate structure in the appropriate situation or context. The best sample technique was chosen: judgmental sampling. 120 teacher candidates were examined in the verb and its clue categories for the study region, which was based on the Chennai district. They were thought of as representative samples for the investigation. This study, which included a pilot study, a pretest, a teaching intervention, and a posttest, was experimental in nature. Additionally, it has experimental and control group settings. Data were gathered via a questionnaire, which was also employed as a research instrument. This study looks into the mistakes made by the students in their pre-test responses, which also acted as the diagnostic test. The Android application helped with grammatical instruction. Finally, the post-test, which functioned as the accomplishment test, was used to evaluate the impact of the instructional intervention and the performance gap between the experimental group and the control group. The results of the study show that the customised Android app has been a successful pedagogical aid for enhancing the grammar knowledge of the teacher candidates in the Chennai region.

Kennedy et al. (2015) explored the impact of multimedia vocabulary instruction on learning-disabled adolescents. The experimental study's goal was to determine how employing content acquisition podcasts (CAPs) to teach adolescents with and without learning disabilities would affect both groups. 30 urban high school students who had LD in a reading-related area were assigned at random to one of four experimental settings, with training taking place over the course of three weeks at individual computer terminals.

Patel (2009) the following goals when conducting a study named "Development and Implementation of CAI to teach English grammar to standard VIII students in different modes": (i) Create the CAI to teach Standard VIII Gujarat Secondary and Higher Secondary Board (GS&HSEB) students English Grammar in various ways (using only the CAI, using the CAI with repetition, and using the CAI with discussion); (ii) Research the efficiency of the developed CAI in various ways in terms of students' English Grammar achievement. Findings: Students who received English Grammar instruction through CAI had much superior achievement than those who received traditional instruction. The style of teaching through CAI with discussion was shown to be significantly superior in contrast to the other two ways of presenting this CAI.

Scheid (2010) studied the impact of computer-assisted math instruction for learners with impairments. According to the results, math computer-assisted education can be a successful intervention for students with learning disabilities. It must be used wisely and with constant instructor contact in order to be most effective. When paired with other therapies, it is also beneficial. There are conflicting views and insufficient evidence to conclusively prove its efficacy. It is a tool that can help students with learning disabilities, but it is not always the answer to every problem.

Methodology

Objectives

The following are the objectives of the present study.

1. To enhance the English grammar skills of children with learning difficulties by dint of computer integrated module.
2. To make children comprehend the meanings of words and acquire grammar skills.
3. To develop the ability in recalling from visual memory.
4. To improve the ability to express ideas verbally from pictures.

Research design

TYPE	SOURCE
Variables	Dependent Variable - Grammarskill & Decoding Independent Variable - Computer Integrated Module
Tools used	a) JC Raven Test b) Gramcom Tool (Self made tool)
Sample	20 students of standard V of PUS, Alangulam
Validity	The GCIM(Grammar Computer Integrated Module) validated by experts. They made a suggestion, and it was implemented.
Treatment	GCIM Module
Durations of the Experiment	1 Months (1 hours a day)
Descriptive Analysis	t-test

Module Preparation

Based on their mental age, the investigators selected the content. The content is organised by the investigators from simple to complex. Then the subject matter was divided into smaller units and created a lesson plan using a computer-integrated module.

Tool Description

The investigators administered the Module and which consists of 3 Phases.

Phase I: Selection of Content

The investigators selected the content to enhance the grammar skills of children with learning difficulties.

Phase II: Framing the Units

The investigators framed the units in the module and made the scoring key to evaluate the performance of the children.

Phase III: Incorporating and integrating the Module

The investigators edited the module using a variety of editing programmes to integrate and include content with GCIM and synchronise it with an audio track. The reliability of GCIM was examined by specialists. They offered suggestions, and those corrections were made.

Data Collection Procedure

(i) The investigators explained the purpose and details of the research and requested their cooperation in the research; the intelligence test and medical examination for ethical clearance certificate were conducted on the children with learning difficulties.
(ii) The 10 children with learning difficulties received the treatment on Computer Integrated Module for 30 days. The researchers conducted the treatment session for 60 minutes per day.
(iii) The post-test was conducted after 1 month of treatment administered to the children.

Data Analysis

The data were analysed as follows:

(i) Descriptive statistics- t-test.
(ii) Compare the difference of means scores before and after receiving the treatment with GCIM.

Results

i) **PreTest Analysis**

Ho1: There is no significant difference between the pre-test scores of control group and experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 1. Difference between the pre-test scores of control and experimental groups on the acquisition of the grammar skill of primary school children with learning difficulties.

Test	Group	Mean	N	S.D	Calculated t value	Remarks
Pre - Test Grammarskill	Control	15.15	25	4.234	1.864	NS
	Experimental	17.15	25	4.320		

Not Significant at 0.05 Level

It is inferred from the above table (1) that, the t value is not significant at 0.05 level of significance. Hence, the null hypothesis was accepted. It showed that the students of control and experimental groups did not differ significantly at the pre test level.

ii)**Post Test Analysis**

Ho2: There is a significant difference between the post-test scores of control group and experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 2. Difference between the post-test scores of control group and experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Test	Group	Mean	N	S.D	Calculated t value	Remarks
Post - Test Grammarskill	Control	17.58	25	3.201	3.415	S
	Experimental	21.42	25	3.320		

S- Significant at 0.05 level

It is inferred from the above table (2) that, the t value is significant at 0.05 level of significance. Therefore, the null hypothesis was rejected. Hence, it can be said that the students of control and experimental groups differ significantly at the post test level.

ii) Pre Test – Post Test Analysis

Ho3: There is no significant difference between the pre-test and post-test scores of control group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 3. Difference between the mean scores of the Pre-Test and Post-Test scores of control group on the acquisition of the grammar skill of primary school children with learning difficulties.

Group	Test	Mean	N	S.D	Calculated t value	Remarks
Reading Control	Pre-test	15.15	25	4.234	2.755	S
	Post-test	17.50	25	3.301		

S- Significant at 0.05 level

It was inferred from the above table (3) that, the t value is significant at 0.05 level of significance. Therefore the null hypothesis is rejected. Hence it can be said that there is a significant difference between pretest and post test scores of control group students.

Ho4: There is no significant difference between the pre-test and post-test scores of experimental group on the acquisition of the grammar skill of primary school children with learning difficulties.

Table 4. Difference between the mean scores of the Pre-Test and Post-Test scores of experimental group on the acquisition of the grammar skill of primary school children with learning disabilities.

Group	Test	Mean	N	S.D	Calculated t value	Remarks
Reading Experimental	Pre-test	17.15	25	4.320	6.821	S
	Post-test	21.50	25	3.120		

S- Significant at 0.05 level

It was inferred from the above table (4) that, the t value is significant at 0.05 level of significance. Therefore the null hypothesis is rejected. Hence it can be said that there is a significant difference between pretest and post test scores of experimental group students.

Limitations Of This Study

(i) The study focused only on class 5th children with learning difficulties, the sample might not represent other classes.

(ii) The selected computer-integrated modules are limited.

Recommendations

Based on the current search results researcher recommends the Ministry of Education as follows:

- The government can demand educational authorities and give them orders to check to see if all teachers use the lab every day for their innovative teaching.
- NCERT may take sufficient measures to do a study on enhancing each student's English grammar abilities.
- NCTE might demand that Teaching students with learning difficulties requires special basic training for teachers.
- The teachers might consider using GCIM orientation as an alternative to improve the English grammar proficiency of students with learning disabilities.
- The administration of the schools might encourage the instructors who work there to include technology in their lessons.
- The study suggests that grammar instructors acquire the knowledge and skills necessary to use a variety of modern teaching tools, including computers, the internet, overhead projectors, and other audiovisual

equipment. The majority of instructional tools are of this type. To keep the students engaged in the learning process, these tools should be employed when teaching grammar.

- The researcher suggests that grammar instructors avoid grammar teaching in their mother tongues. They should aim to only utilise it in specific circumstances. It is advised that grammar instructors provide their students with plenty of opportunities to learn the language of teaching.
- To help teachers become more aware of current trends in grammar instruction, English departments should provide well-stocked libraries and enhance their access to the internet.
- It is highly recommended that overcrowded classes should be avoided. The schools should build new classes to remove such an obstacle which encounters in teaching at the primary level in general.

Conclusion

Children with learning difficulties benefitted greatly from the use of computer integrated modules to improve their grammatical abilities. Therefore, this study has clearly demonstrated how this computer integrated module may be used to help primary school students with learning disabilities excel in their knowledge of English grammar. The results show how the GCIM helped primary school students with learning disabilities improve their grammar skills between the Pre-test and Post-test. From an academic point of view, Computer Integrated Modules assisted grammar learning would serve as one of the recent areas in ELT (English Language Teaching) research. This study will pave the way for less instruction and more learning in the area of grammar, which will be advantageous for grammar students. The pedagogical suggestions made by this study can also be helpful for textbook and syllabus authors. According to this study, teaching English grammar to students using appropriate Computer Integrated Modules can be successful.

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