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A Study of Effectiveness of MALL for Teaching English Grammar to Standard Eleventh Students

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Abstract:

This study examines the effectiveness of mobile-assisted language learning (MALL) in comparison with traditional teaching methods for improving English grammar among higher secondary-level students. The experimental group received instruction through a mobile application, while the control group was taught using conventional classroom methods. A total of 100 students were equally divided between the two groups. The researcher employed a two-equivalent group post-test experimental design for the study. Data were analyzed using statistical tools such as mean, mean difference, standard error of difference (SED), and *t*-values, with results presented through tables. The findings showed no significant difference between the groups in learning verbs and sentence types. However, a significant difference was observed in the acquisition of nouns, suggesting that mobile applications may be particularly beneficial for certain aspects of grammar learning. Although the experimental group achieved slightly higher mean scores, not all results were statistically significant. The study concludes that MALL holds potential as a supplementary approach to language learning, with its impact varying across grammatical components. Implications for educators, classroom integration strategies, and directions for future research are also discussed.

Keywords: *Mobile-assisted language learning (MALL), English grammar, experimental study, mobile applications, traditional instruction*

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Introduction:

Globalization has created an urgent demand for English as a global medium of communication. English has become a language of necessity across professional, academic, and social domains. Grammar, as the structural foundation of language, holds a central role in ensuring clarity and meaning in both spoken and written communication. Proper grammar enables effective sentence construction and comprehension, making it an indispensable aspect of language learning. The importance of grammar, as the backbone of language, lies in its ability to ensure clarity, accuracy, and effectiveness in both spoken and written communication. With the rapid advancement of technology, particularly the emergence of mobile applications, educational resources have become more accessible, widely used, and user-friendly. These digital tools provide flexible learning opportunities, cater to diverse learning abilities, and support interactive classroom transactions. Hence, the integration of English learning with mobile apps and other ICT-based platforms not only addresses the changing needs of learners but also highlights the growing importance of technology-enabled education in today's knowledge-driven society. Thus, the researcher here tries to study the effectiveness of learning grammar through mobile application learning of standard eleventh.

As per the Oxford Learner's Dictionary study means "The activity of learning or gaining knowledge either from books or by examining things in the world." Effectiveness means "The degree to which something is successful in producing a desired result; success". MALL stands for Mobile Application Learning, tends the principles of CALL by using mobile devices smartphones, tablets, handheld devices as the primary medium for language learning. Unlike traditional CALL, which is computer-based, MALL provides flexibility, portability, and real-time communication**.** The key features of MALL include anywhere and anytime learning, Apps and Tools – mobile apps for vocabulary, pronunciation, listening, and speaking practice, communication like instant messaging, social media, and mobile platforms for peer interaction, Integration with Multimedia – use of text, audio, video, and interactive exercises via mobile devices. According to Kukulska-Hulme, "Mobile-assisted language learning (MALL) is language

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learning that is assisted or enhanced through the use of a handheld mobile device. MALL is a subset of both Mobile Learning (m-learning) and computer-assisted language learning (CALL)." Grammar means the study or use of the rules about how words change their form and combine with other words to express meaning.

Review of Related Literature:

Mobile-Assisted Language Learning (MALL) extends Computer-Assisted Language Learning (CALL) by leveraging mobile technologies such as smartphones and tablets to provide flexible and ubiquitous access to learning resources. Research shows that MALL enhances learner autonomy and facilitates situated learning, as learners can practice language skills beyond the classroom (Kukulska-Hulme, 2015; Stockwell, 2007). Studies indicate positive effects on vocabulary acquisition, listening comprehension, and learner motivation, particularly through apps and mobile-based interaction tools (Burston, 2013; Viberg & Grönlund, 2012). Recent developments have shifted toward app-based learning, gamification, and adaptive platforms. Mobile apps like Duolingo, Busuu, and Memrise have demonstrated wide adoption, providing learners with gamified experiences and instant feedback **(**Godwin-Jones, 2017). In summary, the literature indicates that MALL has transformed language learning by offering mobility, flexibility, and personalization.

Objectives:

The present research has been done with the following objectives:

1. To measure and compare the level of achievement of the experimental group and controlled group in noun exercise.
2. To measure and compare the level of achievement of the experimental group and controlled group in types of sentences.
3. To measure and compare the level of achievement of the experimental group and controlled group.

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Hypothesis:

The following hypothesis is formulated for the study:

Ho_1 There is no significant difference between the mean score of post-test of verb exercise of experimental and controlled group students of Std. XI.

Ho_2 There is no significant difference between the mean score of post-test of noun exercise of experimental and controlled group students of Std. XI.

Ho_3 There is no significant difference between the mean score of post-test of types of sentences exercise of experimental and controlled group students of Std. XI

Ho_4 There is no significant difference between the mean score of post-test of experimental and controlled group students of Std. XI.

Variables:

Variables involved in the study were as following:

Independent Variable: It had two levels: (1) Mobile Assisted Language Learning and (2) Traditional teaching. Dependent Variable, in the present research students' educational achievement on teacher made unit test was considered as dependent variable. It was expressed in terms of mean scores of post-test.

Tools:

The researcher has prepared self- made tool for the study. The tool included exercise on Verb, Noun and types of sentences with grammar practice – interactive exercises, rules explained with examples. Total 10 exercises were included with quiz prepared at the end. The achievement scores were obtained on test of fifty marks.

Sample:

Sample of the study were students of Gujarati medium Std. XI Gujarat Board of Abhijat Vidhyavihar, Ahmedabad. There were total 100 students divided into two equivalent groups – experimental group and control group. The students were divided on the basis of their scores achieved in the exam of standard XI.

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Research Method: The researcher has selected two equivalent post-test experimental design. The researcher has used post-test experimental design.

Data Collection:

The researcher collected the necessary data in the experiment stage. The researcher thereafter conducted the experiment on both equivalent groups. Both groups were provided same tests. Thereafter follows interpretations and graphical presentations.

Method of Data analysis

The data were analyzed using statistical tools such as mean, mean difference, standard error of difference (SED), and t-value with the assistance of Microsoft Excel. Additionally, graphs were prepared to visually represent the results of the analysis.

Interpretation of the Data:

Ho_1 There would be no significant difference between mean achievement scores of verb in post test of experimental group and controlled group.

Table 1 Mean achievement scores, standard deviation and t-value of groups during experimental stage of Verb:

Groups	Number	Mean	Var	SED	MD	t	Remarks
Experimental	50	9.84	4.586	0.44	1	2.332	Not Significant
Control	50	8.84	5.443				

From the above table it is evident that t calculated is 2.33 which is less than table value. The t tab 0.01 = 2.59 values hence the hypothesis that there will be no significant difference between the mean scores of verb in post test of experimental group and controlled group which will be rejected at 0.05 level of significance. It means that there is no significant differences between the achievements mean scores of verb in post test of experimental group and controlled group. The mean value of post-test of experimental group was 9.84 and the mean value of control group was 8.84. It is clear that the students of the experimental group scored significantly higher than that of the control group. Thus, MALL tool developed for teaching of 'Verb' was found effective in the experimentation to increase the students' achievement.

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Ho_2 There would be no significant difference between mean achievement scores of noun in post test of experimental group and controlled group.

Groups	Number	Mean	Var	SED	MD	t	Remarks
Experimental	50	18.78	14.215	0.81	2.96	3.62	Significant
Control	50	15.82	19.171				

It is clear from the above that *t* calculated is 3.62 which is more than *t* table value 0.01 = 2.59 hence there will be significant difference between the mean scores of noun in post test of experimental group and controlled group which will not be rejected at 0.01 level of significance. Thus the obtained t-value was significant at both 0.01 and 0.05 levels. It means that there is significant difference between the achievements mean scores of noun in post test of experimental group and controlled group. The value of mean score of experimental group was 18.28 and control group was 15.82. It is clear that the students of the experimental group studied through mobile app scored significantly higher than that of the control group i.e. traditional teaching group Thus, the tool developed for teaching of Noun was found effective in the experimentation to increase the students' achievement.

Ho_3 There would be no significant difference between mean achievement scores of Types of Sentences in post test of experimental group and controlled group.

Table 3 Mean achievement scores, standard deviation and t-value of groups during experimental stage of Types of Sentences.

Groups	Number	Mean	Var	SED	MD	t	Remarks
Experimental	50	7.46	5.35	0.51	0.68	1.32	Not Significant
Control	50	6.78	7.72				

It is apparent from the given table that mean achievement on post-test of experimental group was 7.46 and value of Var was 5.35. The mean achievement score of control group was 6.78 and Var 7.72. The SED was 0.51 and the mean difference between these was 0.68. It is clear that *t* = 1.33 which is less than the t tab 0.05 = 1.97. Hence the hypothesis that there will no significant difference between the mean scores of experimental group and control group

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which will be rejected at 0.05 level of significance. It means that there is no significant difference between the achievement score of experimental group and control group. The value of the mean score of experimental group is 7.46 and control group is 6.78. The level of the experimental group is better than control group. Thus, mobile app developed for teaching of 'types of sentences' and traditional teaching method were same. Although the experimental group scored higher than the control group, the difference was not statistically significant. Therefore, both groups performed at a comparable level.

H_{o4} There would be no significant difference between mean achievement scores of post test of experimental group and control group

Table 4 Mean achievement scores, standard deviation and t-value of groups during experimental stage.

Groups	Number	Mean	Var	SED	MD	t	Remarks
Experimental	50	36.08	36.76	1.33	4.64	3.47	Not Significant
Control	50	31.44	52.41				

It is apparent from the table 4, the mean achievement on post-test of experimental group was 36.08 and value of Var was 36.76. The mean achievement score of control group was 31.44 and Var 52.41. The SED was 1.33 and the mean difference between these was 4.64. It is clear that t = 3.47 which is more than 0.05 = 1.97 and 0.01 = 2.59 value thus indicates that the difference is significant at both the levels. Therefore, the hypothesis will not be rejected at both levels. The mean score of experimental group is 36.08 and control group is 31.44. The statistical analysis presented in the table indicates that the experimental group achieved a higher level of performance compared to the control group. Thus, Mobile application developed for teaching was found effective in the experimentation to increase the students' achievement.

Findings of the Study:

From the result analysis the researcher obtained the given finding:

1. There is no significant difference between the experimental group and control group in verb.

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2. There is significant difference between the experimental group and control group in noun.

3. There is no significant difference between experimental group and control group in types of sentences.

4. There is significant difference between experimental group and control group.

Summary:

In this study, the experimental group was taught using a mobile application, while the control group was taught through the traditional method of instruction. These findings suggest that mobile application–based learning can be more effective than traditional teaching methods, particularly in enhancing certain aspects of language learning such as nouns. The results highlight the potential of mobile-assisted language learning (MALL) to improve learner engagement and achievement.

Implications and Recommendations

- Teachers may integrate mobile applications alongside traditional methods to reinforce specific language components, especially vocabulary learning.
- Since no significant improvement was found in verbs and sentence types, mobile applications could be further developed or customized to strengthen these areas.
- Mobile apps can support self-paced learning, encouraging students to practice beyond the classroom.
- Further studies can be conducted with larger samples, different language skills, and across varied educational contexts to validate and expand these findings.
- Designing interactive and adaptive app-based activities may enhance learner motivation and lead to greater gains in all areas of language learning.

Limitation of the Study:

The following are the limitations of the present study:

1. The researcher has delimited to verb, noun and types of sentences only

2. The researcher has delimited to Gujarati medium school only.

3. This study has been delimited to Ahmedabad city.

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Suggestions for further research:

- Some lessons of prose in the relevant textbooks like stories, dialogues, descriptions of places etc. may also attract students.
- In other language teaching like Sanskrit, Hindi or even mother tongue such material may give rise to higher achievement on the part of the students.
- Similar material may be developed in any other subject of teaching at school level.
- Such other material, which might be used for group learning and individualized learning, may be developed.
- Future researchers may also think of developing such material for the fast learners and slow learners.
- In combination with such other variables like teaching aids, technologies and methods may be applied and their joint and individual effectiveness on either gender or in general may be found out and compared.

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