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**An Empirical Study of The Grammatical Competence of Professional Students and The Impact of AI (Artificial Intelligence) Assisted Technical Tools in Enriching the Language Competency of The Students.**

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**Abstract:**

The study determined the grammatical competence of professional students studying in the third B.Tech with mechanical engineering stream. This descriptive study depicts the grammatical competence of 64 students and their perceptions of learning English grammar. The research shows the students' scores in two different tests on various topics of English grammar, conducted in two schedules. The study also suggests certain techniques for the students to enhance their grammatical competence. Students' performance is really poor, though they are from an English-medium background, and their parents are educated and able to use the language. This research paper also gives information about the students' reluctance to learn grammar, which is helpful for their communication as well as competitive exams.

**Keywords:**Grammatical competence; techniques; performance; reluctance; competitive

### **Introduction**

Grammar is the backbone of any language. It plays an important role to communicate effectively. The communicative competence of any English speaker depends on grammatical knowledge and its application either in speaking or writing. Though there are multiple opinions on the teaching methods of grammar in communicative English classes, it is highly essential for professional students who are getting ready for the many competitive exams as well as campus recruitment drives by many MNC companies. According to the information given by the recruitment HR managers, many students are not able to speak or write in English, which is a necessary skill for the employees of the company, either to negotiate with foreign clients or with colleagues.

This study deals with the identification of the students' lack of communicative competence due to a lack of grammatical knowledge, which has necessary components like structures, punctuation, and vocabulary. This study tries to find out certain facts behind students' inability to write and speak skills by conducting sample surveys among 60 students in third-year B.Tech, which are primarily tested in the recruitment process. This research also highlights the students' attitude towards learning grammar, which can be useful for their communication skills.

### **Literature review**

Additionally, according to Ur (2009), grammar is the way that words are combined in a language to produce specific types of meaning, some of which cannot be fully expressed by vocabulary alone. They include the way concepts are organized and linked together, as well as the intentions behind utterances like statements, questions, requests, etc. In addition to expressing time relationships, singular/plural differences, and many other aspects of meaning, grammar can also be used. A proficient speaker of the language will be able to use these rules to transmit his or her chosen meaning effectively and acceptably. These rules control how words must be manipulated and ordered to express these meanings.

Using interviews, questionnaires, and observational methods, Hui (2013) examined the individual differences that affect FL learners' acquisition of grammar and improvement of grammatical competence. Four college students majoring in English took part in the study. This paper develops an FL learners' grammatical competence training model based on the study of individual differences in grammar learning and the integration between explicit grammatical knowledge and implicit grammatical competence in grammar acquisition to reduce the gap between top students and average students' grammatical competence in non-native context and the gap between top students and ordinary students' grammatical competence in native context. The outcomes will, to some extent, help to raise the standard of FL grammar instruction. For the benefit of pupils, Weatherford (1997) favored employing a contextualized approach to teaching grammar. Many other studies (Willoughby, 1993) advocated contextual instruction of English grammar. In these investigations, the researchers backed the contextual method as being superior to other approaches for teaching English grammar to SSC-level students. It has been noted that our current secondary testing system is built using a contextualized approach.

This study is limited to only 60 students of third-year mechanical engineering

studying in a professional college and their grammatical competence in English. The field of study is also limited to testing only limited topics of English grammar, which are useful for their communication to some extent. Hence, there is a lot of scope for further research in this area by increasing the number of participants from 60 to any number; some other topics like sentence transformation and parts of speech can also be taken for the test. Instead of a professional college, the researcher may take some other institution for his study.

The research problem of this study is to know the grammatical knowledge of professional students studying in professional colleges and to find out the various reasons for their lack of grammatical knowledge, which leads to the implementation of AI-based assistance in progressing their knowledge because AI (Artificial Intelligence) is in trend which can also be used to develop once knowledge in the language. The significance of the study is to find out the lapses in the learning of English grammar and to use AI to develop their grammar with the help of artificial intelligence, which is of special significance to this study. All the previous studies show that they used various techniques, methods, and technological tools to develop the grammatical knowledge of the learners, whereas this study focuses more on the usage of AI.

### **Materials and Methods**

The methodology of this research is the combination of both the empirical and experimental to study the grammatical knowledge of the students by conducting tests as well as using AI in their learning for better progress. For this study, a section of students studying in a professional college would be taken.

### **Research tools**

Research tools used for this study are tests, observations, and interviews with 64 engineering students, which were taken, as well as a small interactive survey. The most important research tool is AI, and how it works in the learning process of grammar will also be keenly studied and analyzed in the end.

### **Analytical Study**

We have conducted a grammatical language test for the mechanical-A section to know the students' interest in the Grammatical English Language. Inactivity: out of 63 students, only 31 students participated in the test. The results are shown in Tables 1 and 2.

**Table 1: Grammatical language test -1**

<b>S.NO</b>	<b>NameoftheStudent</b>	<b>Result</b>
<b>1</b>	Challasarathchandra	20.00/20
<b>2</b>	DJagadeesh	20.00/20
<b>3</b>	Badagala Yerrannaaidu	10.00/20
<b>4</b>	Gudla. Sri Krishna	5.00/ 20
<b>5</b>	Ch.lokeswararao	4.00/ 20
<b>6</b>	Chandrasekhar	6.00/ 20
<b>7</b>	Mallarpunaveenkumar	17.00/20
<b>8</b>	PaidiRameshKumar	8.00/ 20

<b>9</b>	BAGGUSAISANTHA RAO	15.00/20
<b>10</b>	MVaraprasad	18.00/20
<b>11</b>	GudlaJagadeesh	8.00/ 20
<b>12</b>	PittaSrihari	10.00/20
<b>13</b>	EllaTeja	12.00/20
<b>14</b>	PaidiRameshKumar	17.00/20
<b>15</b>	Gondumanikanta	3.00/ 20
<b>16</b>	PonnanaRamanaMurthy	14.00/20
<b>17</b>	PAIDIMANOJKUMAR	17.00/20
<b>18</b>	PraveenTamada	8.00/ 20
<b>19</b>	Challakantharao	14.00/20
<b>20</b>	Panapanasuneel	13.00/20
<b>21</b>	KVaraprasad	9.00/ 20
<b>22</b>	Jogilokeswararao	6.00/ 20
<b>23</b>	Vamseemammula	13.00/20
<b>24</b>	V.Harshavardhan	12.00/20
<b>25</b>	Anakapalliprasanthkumar	13.00/20
<b>26</b>	YeduruJitendra	18.00/20
<b>27</b>	K Dileep Kumar	13.00/20
<b>28</b>	IppiliJaswant	0.00/ 20
<b>29</b>	BadanaSuresh	13.00/20
<b>30</b>	AdireddiLokesh	12.00/20
<b>31</b>	AKKURADASANTOSH	15.00/20

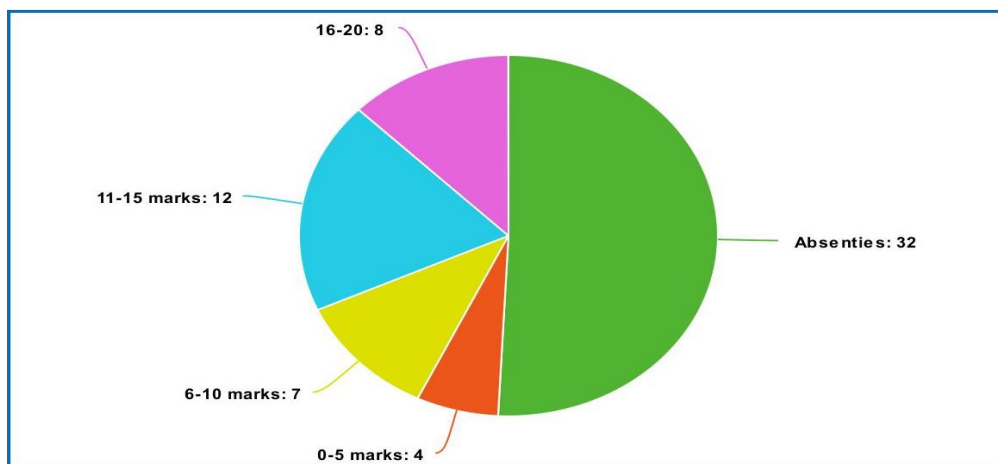
**Table 2:** Grammatical language test -2

<b>S.NO</b>	<b>Name of the student</b>	<b>Result</b>
1	challasarathchandra	20.00/20
2	GudlaJagadeesh	6.00/20
3	MajjisaiLakshman	2.00/20
4	AmbatiRamesh	4.00/20
5	manikanta	5.00/20
6	KolaVaraprasad	13.00/20
7	Challakantharao	5.00/20
8	Chandrasedkhar	6.00/20
9	DharmanaJagadeesh	5.00/20
10	MohantyVikramKumar	19.00/20
11	Mallarpunaveenkumar	19.00/20
12	Saikrishna	7.00/20
13	s.bhavaniSankar	18.00/20
14	BadagalaYerrannaidu	16.00/20
15	K.Sriharshavardhan	20.00/20
16	L.Vamsi	20.00/20
17	S.Suresh	19.00/20
18	J.Lokeswarrao	11.00/20
19	BadaSuresh	20.00/20
20	V.HarshaVardhan	14.00/20
21	P.RamanaMurthi	13.00/20

## Results and Discussion

Figure 1 shows the students' grammatical competence in the first test. This test was conducted in a class of sixty-three. Only 31 students took the exam, and the marks they gained are mentioned in the chart above. Four students' marks were between 0-5, 7 students' marks were between 6-10, 12 students gained marks between 11-15, whereas the remaining eight students obtained between 16-20, which is the highest score. On seeing the scores of all the students, it is understood that only 12 students got 50% marks in the exam, whereas eight students scored more than 60% percent marks in the test, which indicates the students have moderate knowledge of English grammar whereas 11 students out of 31 participants scored very poor scores which indicates their poor knowledge of English grammar. Surprisingly, more than 50 percent of the students did not show any kind of interest in taking the test, which shows that they may be confident in their grammatical knowledge or accepting beforehand their poor knowledge of English grammar without taking the test. After a deep analysis of the scores on the test, it is understood that students' overall performance in the exam is moderate and that it has to be improved because grammar is the backbone for either communication or competitive exams.

Pie chart representation activity-1



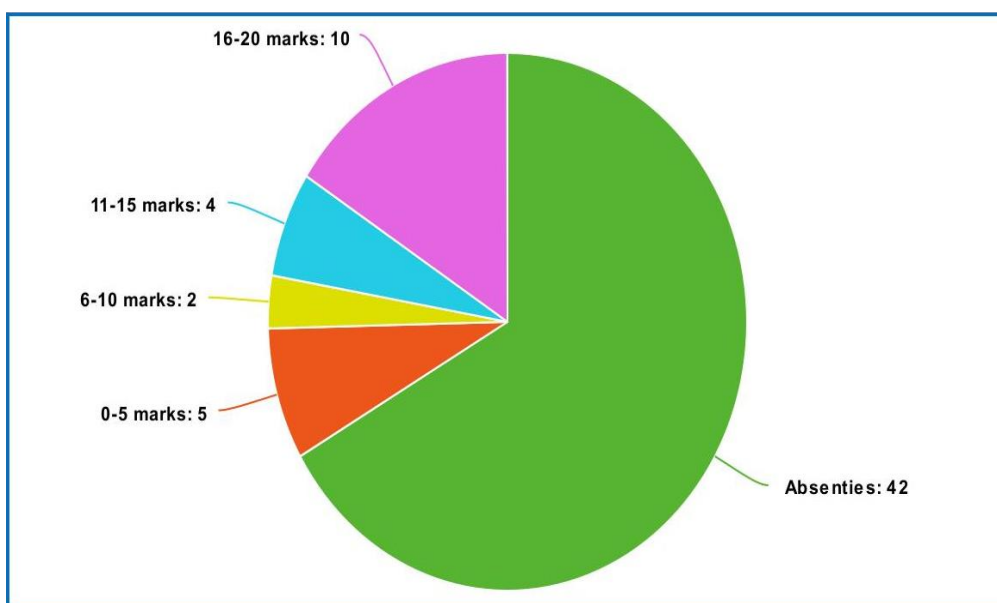
■ Absentees   
 ■ 0-5 marks   
 ■ 6-10 marks   
 ■ 11-15 marks   
 ■ 16-20

**Figure 1** The students' grammatical competence in the first test.

The pie chart above shows the scores of the students on the second grammar test. This was conducted at the end of the semester to study and find out the interests of the students in English grammar, which could be very important for their campus recruitment drives of all the MNC companies. In this test, around ten students scored between 16-20 marks;

four students scored between 11-15 marks, two students gained between 6-10 marks, whereas only five students scored between 0-5 marks, respectively. With these scores, it is understood that the participants' number in the exam declined from the first test to the second test, and significantly more than 50 percent of the students scored higher marks out of all the 21 participants, and fewer students had poor scores in the exam. Again, more than 42 students didn't show any interest in taking this exam. However, observing the scores of the students from the first test to the second test showed a drastic improvement in the highest scores.

pie chart representation of activity-2

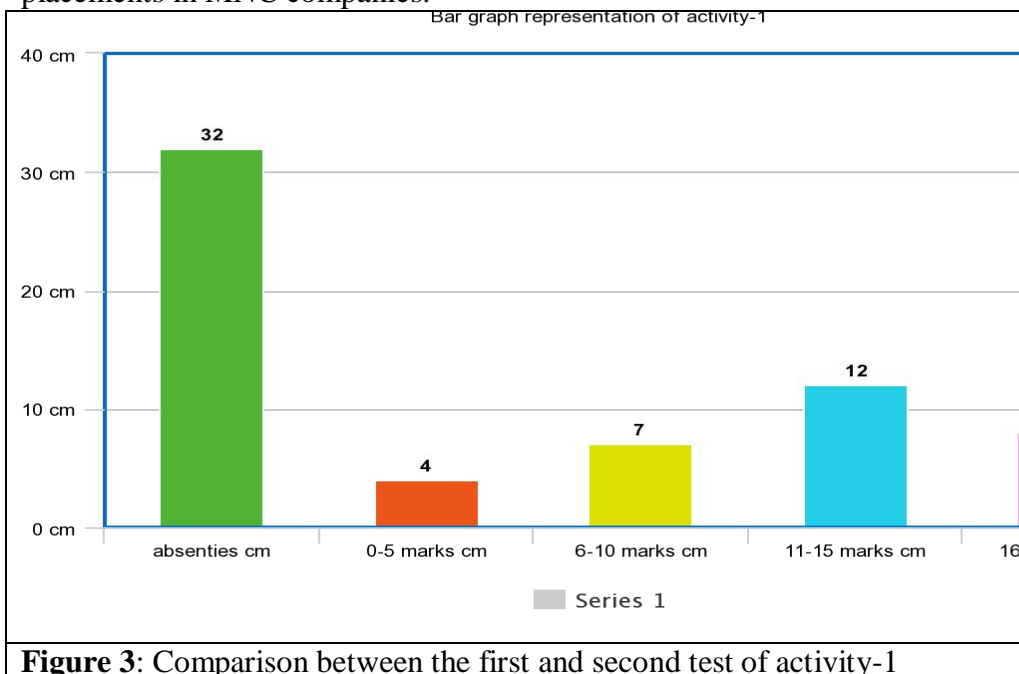


■ Absenties ■ 0-5 marks ■ 6-10 marks ■ 11-15 marks ■ 16-20 marks

**Figure 2:** The students' grammatical competence in the second test

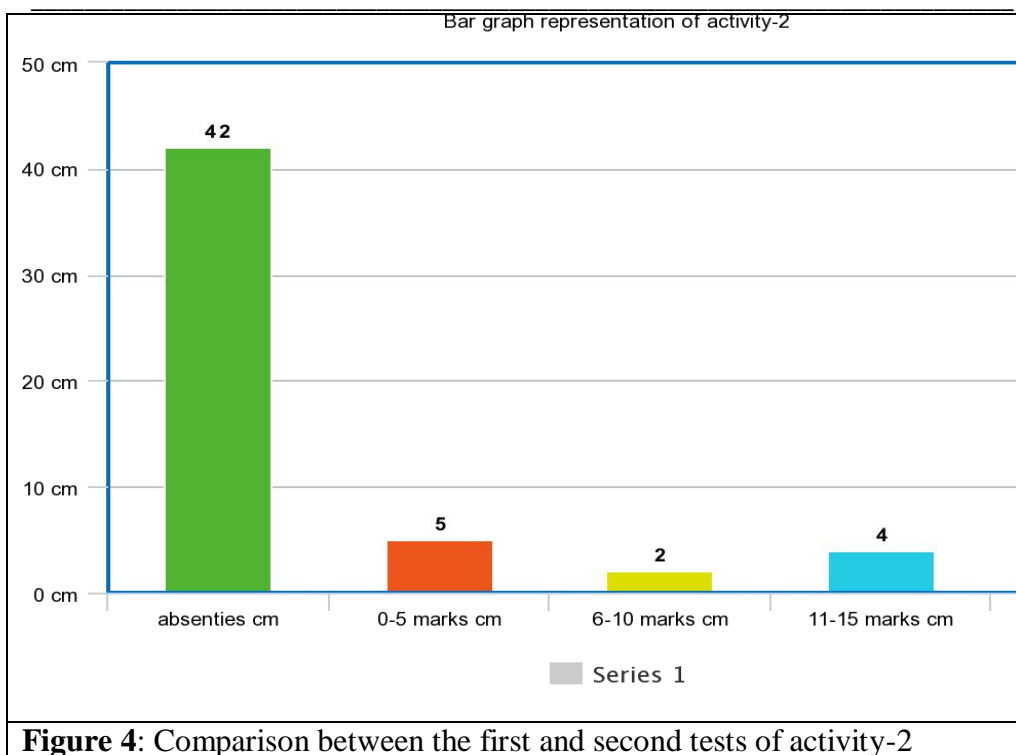
When we compare the scores of the students in both tests, it is analyzed that the number of participants from the first test to the second test decreased to 21, whereas 34 students took the exam, which shows the students' lack of interest in taking the exam. There is a significant change in the highest-scored students from the first test to the second test. Only eight students scored between 16-20 in the first test, whereas ten students scored between 16-20 in the second test despite the decline in participation. However, the number of moderate score holders came down drastically from 12 to 4, which shows complete disinterest in testing their grammatical knowledge. Another important point is that the number has increased from 32 to 42 from the first test to the second test. After analyzing the data in

detail, the researcher suggested they use some AI-based technical tools to improve their grammatical knowledge, which can also be useful for improving their writing and speaking skills. It has also been proved that a few students scored more from the first test to the second test only after using the AI-based technical tools for learning grammar, and they expressed their confidence also to use their grammatical knowledge to improve their communicative competence, which could be highly essential for their placements in MNC companies.



**Figure 3:** Comparison between the first and second test of activity-1





### **Suggested AI-based tools:**

#### **ChatGPT**

Since its November 2022 launch, ChatGPT—a free, all-purpose AI chatbot—has grown incredibly popular. It offers applications for language acquisition in addition to providing conversation and assistance with text authoring. Text may usually be accurately translated into any language by asking ChatGPT to do so.

#### **Rosetta Stone**

The Rosetta Stone name first appeared in the early 1990s and helped to establish the field of language instruction software. The most recent version of the software, the Rosetta Stone app, combines augmented reality, real-time translation, and machine learning. The program lets users scan objects using a camera, offers its speech recognition system, and translates text into a variety of languages.

#### **Mondly**

Mondly uses a lot of graphics and provides courses in over 40 different languages. Users can relate their learning experience to real-world issues by incorporating augmented reality and virtual reality.

### **Babbel**

German app and e-learning platform Babbel Babbel uses speech recognition, personalized evaluations, and grading algorithms while providing courses in 14 different languages. Based on the idea of spaced repetition, the app also includes a feature that serves as a word and phrase reminder for users.

### **Busuu**

The Spanish app Busuu teaches users a selection of 12 languages using AI and one-on-one teaching. Busuu recently released a VR app that interfaces with Google Assistant to enable live discussions.

### **Memrise**

The British language learning software Memrise uses a custom object recognition algorithm to recognize pictures taken with the user's camera and label objects in the selected language. Additionally, it uses clever chatbots that converse with users in 23 different languages.

### **Duolingo**

The most widely used language learning software in the world is called Duolingo, but how does Duolingo employ AI? The AI chatbots on Duolingo speak 38 different languages and use machine learning to recognize the user's voice and speech/text patterns. Due to this, the program may generate reading, writing, and speaking examinations for users that are automatically graded and categorized according to Duolingo proficiency.

### **Conclusion**

We've focused so much on the intricate details of grammar and language in this section, and now it's time to step back and look at the big picture once again. It's easy to get lost in the weeds of exactly what each rule means and how it works. It helps to remember that language is a practice of patterns. Some patterns you know and use well; others you may not know and need to practice further with. In our project, we noticed that the mechanical A section is not interested in learning Grammatical Language, so they are not interested in participating in both activities.

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