

Inducing Imitation Technique as a skill to acquire English Language Proficiency of Engineering Students

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Abstract—Engineering students are tomorrow's problem solvers. They are going to provide technical and innovative solutions and services to solve societal problems and make life easier. This necessitates today's engineering student to acquire numerous skills to prepare themselves for not only national work front but also international work front. The ever evolving and challenging role of today's engineer makes today's students work on building and updating themselves on the required core technical skills but they fail to work on their English language skills. For many engineering students it has been observed that they have anxieties associated with the English language which in turn hinders their performance. This study is a humble try to induce Imitation Technique as a skill to help engineering students acquire English language Proficiency. Lot of work has already happened on how to improve students English Language skills but this study has an edge over by providing a unique method to not only learn English language but acquire English language without juggling through the tough grammatical rules of the language. The study focuses to strengthen the twelfth Program Outcome of the Engineering Attribute that is "Life Long Learning." The study was conducted on freshman engineering students of a technical University. The study used quantitative research approach. The study investigated what are the apprehensions and anxieties students have towards English language and how Imitation Technique helps them overcome their apprehensions. The Public Speaking Class Anxiety Scale (PSCAS) was used to find out the pre intervention status and post intervention results of the students. The post intervention status shows reduced English language anxiety level and how students have successfully been able to acquire English language through Imitation technique.

Keywords—Engineering students; English language Anxiety; Imitation Technique.

JEET Category—Research paper

I. INTRODUCTION

IN today's globalized economy, the need for English language proficiency has increased predominantly for professionals, specifically in the corporate sector. English as a language not only helps in communicating but opens a horizon of opportunities that can be navigated to excel in modern day work-place. However, when we precisely talk about engineers, who form a major part of the work force in the corporate world face many challenges when it comes to English language proficiency.

Proficiency in the English language is crucial for engineers as the technical jargon, ability to articulate ideas, and conversing with co-workers who hail from different linguistic backgrounds can all pose as impediments. Bairagipatra et al., 2016, assert while the Faculty of Engineering places importance on technical competence and theoretical knowledge of engineering, it is essential to integrate communication skills. Studies on the engineering and business job markets, particularly in reference to the Employability Skills Profile (ESP), highlight the value of communication abilities.

In the light of this problem, researchers across the globe are diligently delving into the solutions to address the language skill gap among engineers. To improve their English language proficiency, a series of initiatives were coined that included language training programs, language exchange initiatives and incorporating learning strategies in the engineering curricula.

Samifanni F (2020) describes how imitation can aid in language learning and in achieving fluency in the target language. A

deductive-axiomatic research design using thematic analysis based on data mining and personal experiences of the researcher revealed that a positive and conducive environment is a key factor in successful language immersion and imitation.

This research paper aims to contribute to this continuing discourse by emphasizing the effectiveness of Imitation technique as a skill to enhance the English language proficiency of engineering students.

“Over the years the focus in the education system has shifted to chemistry, maths, physics, and the focus on the soft skills has reduced. Students may lose out on good job prospects as many companies come to campuses for global positions as well” says, U B Desai, Director of IIT Hyderabad.

“With jobs going global the importance of English has increased many times over, however at the same time it is disappointing to know that 97% engineers cannot speak English fluently and 3 quarters of them are not eligible for job requirements in any knowledge economy” says Co-founder and CEO of Aspiring Minds.

“As per aspiring minds a freshly graduated engineer can easily lose 30 to 50% of the salary in case his English language and soft skills are below expectations.” Ghosh M (2018)

Repetition and imitation are one of the oldest methods used to teach an L2. Since 1631, repetition has been seen as the most effective way to learn an L2 for functional use; ever since then, the most successful methodologies in L2 teaching and learning has included repetition and imitation of words and sentences to a greater or lesser extent. However, repetition and drilling have also been heavily criticized, particularly after the introduction of cognitive approaches, when drilling by repetition was considered mechanical and meaningless.

From this research we are trying to bridge the gap between all the theoretical aspects and hypothetical aspects of teaching the language in traditional method. Lot of research work has happened in order to improve engineering students' English language proficiency but they have come up with temporary solution. This research work concentrates on giving engineering students an option of imbibing English language for the lifetime with this unique technique called “imitation”

II. NEED ANALYSIS

In the contemporary realm of education, English language proficiency holds a pivotal role for engineering students. The field of engineering, marked by its innovation and global interaction, necessitates effective communication that transcends borders. English has emerged as the universal language in academia, research, and industry, facilitating the exchange of ideas, technological advancements, and cross-cultural partnerships. Proficiency in English provides engineering students access to a plethora of resources, from

scholarly articles and technical documents to international conferences and research collaborations.

In addition to academic enrichment, English proficiency equips engineering students with the skills required to thrive in a globally connected industry. It enables clear articulation of complex technical concepts, seamless engagement in interdisciplinary dialogues, and confident presentation of findings. Beyond academia, English fluency enhances employability, as multinational companies seek engineers capable of contributing to diverse teams and communicating effectively with a global audience. English, in the context of engineering education, acts as a conduit that unites technical prowess with international collaboration, fostering innovation and nurturing a holistic skill set indispensable for modern engineers.

English Language anxiety significantly impairs engineering students' performance, hampers effective communication, inhibiting class participation, presentations, and collaborative projects. This heightened anxiety limits comprehension, critical thinking, and knowledge absorption, ultimately diminishing academic achievement. This study tries to give engineering students non-judgmental learning environment to acquire English language using imitation technique. This technique helps in mitigating the adverse impact of English Language anxiety on engineering students' success.

III. LITERATURE REVIEW

As the process of globalization persists, developing proficiency in the English language remains a critical component for individuals seeking to engage communication, collaboration, and success. Since the need of acquiring English proficiency is growing, lot of extensive research and pedagogical exploration have been taking place on this subject. At the backdrop of globalization, the importance of effective communication in English becomes ever more vital, especially within technical disciplines such as engineering.

This section illuminates comprehensively on existing literature, focusing on three main areas;

- (1) What is the importance of English language for today's engineers?
- (2) What are the challenges today's engineer is facing in acquiring English language proficiency?
- (3) What are the researchers around the globe have done to resolve similar problems?

1. The Importance of English Language in Engineering Education:

In the current age of science and technology, the scientific community particularly engineers hold significant importance. Yet there remains an opportunity for enhancing their communication abilities. Engineering students are well equipped with their technical knowledge and skill but they face challenges when it comes to English language proficiency especially in oral communication. The engineering curricula are extensively focused on technical aspects giving a minimal focus on communication skills. Hence students intentionally or unintentionally do neglect the need of acquiring English

proficiency which is crucial for their success in future. In today's interconnected world, proficient English communication skills are indispensable for engineers. Creating technical documents, reports, manuals, and instructions is integral part of the engineering profession. Students possessing proficiency in communication can create accurate technical documentation. With the rise of outsourcing the demand for engineers with English proficiency which meets the global standards are unprecedented. Eventually such students tend to do well in competitive job market by securing international job opportunities with higher salaries.

Studies by Marschan et al., 1997 and Kameda, 2005 show us the significance of English in business world including engineering industry.

Bairagipatra et al., 2016, opine that few decades ago the general notion was that engineers only carryout technical things behind the stage so they don't have to require higher level of English proficiency. But with rise of India as a global economic power and English being the language of global business, companies are focusing on English language skills of employment seeking candidates.

Some universities around the globe are conducting entrance test for aspiring engineering candidates to assess their English proficiency. "In national University of Singapore, students are required to pass Qualifying English Test to assess their proficiency of English language" (Latha K. 2014).

To put it succinctly, in our increasingly interconnected world, engineers greatly benefit from being proficient in the English language. This proficiency enables them to communicate effectively, share ideas, boost employability and gain access to valuable resources and opportunities for personal advancement.

2. Challenges faced by today's engineers in acquiring English Language Proficiency:

Within the domain of educational programs focused on engineering, English proficiency has emerged as a decisive skill. It not only helps in effective communication but also plays an important role in accessing sources globally, effective participation in international projects, conferences etc. But engineering students face certain challenges in acquiring English language proficiency.

The first and foremost challenge faced by engineering students is that of 'Time Constraint'. Engineering curricula throughout the world are very rigorous and they demand lot of time and attention. Students hardly get time to focus on their communication skills. Another major challenge is lack of exposure to English language. Many students studying in Indian engineering institutions hail from rural areas. They get basic education in their regional language hence they do lack required English language knowledge when they enter an engineering institution. Since the classroom discussions take place in English language, rural students hesitate to ask question and voice their opinion. Dr. M. Patil, 2013, is of the view that rural

students should be encouraged to participate in classroom discussions to eliminate their fear as they hesitate thinking that they may commit mistakes.

Lack of vocabulary is one of the major challenges faced by engineering students. Many students, who complete their basic education in English language, think they have a good command over the language. But when it comes to technical jargons, they do lack strong vocabulary. Prof. More, A. 2018, said that students are not serious in improving their vocabulary as it is essential to enhance the English proficiency. Vocabulary knowledge is crucial for academic success also because studies show that lack of vocabulary affects academic performance. For example, one study showed that international civil engineering students from the Middle East, Latin America and Asia tend to do poorly in their academics at an Australian University in comparison to native speakers (Melles, 2009).

Lack of confidence is one more major hindrance to learn the English language. Thakur Shivani, 2013, has expressed that since theory and practical subjects can be learnt in isolation, learning communication needs group participation, engaging with others. Students, who lack confidence in speaking, hesitate to come forward and engage themselves in learning process.

'Aspiring Minds', a leading employability credentialing firm, has revealed that only 18.43% of all engineering graduates are eligible for a software engineer's job in India (Ghosh, M. 2015).

In conclusion, proficiency in English language for engineering students is a key factor to thrive in their profession. To overcome these challenges, it takes a rigorous effort from them.

3. What Researchers Around the World Have Done to Resolve These Problems?

Samifanni F (2020) found out that imitation can aid in language learning and in achieving fluency in the target language. A deductive-axiomatic research design using thematic analysis on data mining revealed that a positive and conducive environment is a key factor in successful language immersion and imitation.

A study by Hamad M. et al., 2019, reveals that using YouTube and Audio Tracks Imitation – YATI is an effective tool in enhancing the speaking skills of students at College of Science & Arts Muhayil, King Khalid University, Saudi Arabia. This study used the qualitative experimental approach to find out the impact of using YouTubes and Audio Tracks imitation (YATI) on improving aural and oral skills focusing on improving speaking skills of EFL learners. The results revealed that there was clear improvement in the speaking skills of students.

"Mimetic is not plagiarism but a creative imitation of learning. Most of the learning is mimetic in nature. Hence, the mimetic approach is effective and relevant for students who need instant solutions. It does not employ critical faculties or much thinking but proper imitation with individual creativity helps to acquire language efficiency" (Makwana, P, 2019).

Shahini G. and Shahamirian F. looked for ways to improve speaking and writing English fluency in their 2021 study. Six English language instructors from Shiraj, Iran, and 11 B.A. and M.A. English language students from Shiraj University participated in the study. 13 of the 17 individuals decided to talk, using imitation of words, phrases, and sentences, dialogues, and singing along to tunes. The study, which used a qualitative research methodology, found that imitation approaches allowed for better attention to contextual word, expression, and idiom usage, leading to more natural and fluent speech as well as higher speech rates.

The goal of the study by Seong, M.H. (2009) was to find efficient methods for increasing the prominence of linguistic elements in English Language Teaching (ELT). It involved 113 college students from Korea who were split into the Higher Group, Intermediate Group, and Lower Group groups according to how well they spoke English. According to the study, imitation and repetition are quite useful for picking up on language forms.

According to a study by Chuyen N.T.H. and Quynh H.T.N.2018, at Thai Nguyen University of Education, imitation approach helps students become more proficient speakers. Twenty second-year TUE students who did not major in English were split into groups A and B for the study. In contrast to group A, group B got teaching using the imitation method. Two speaking tests were administered to both groups both before and after the study. Results from the post-test showed that group B, which used the imitation strategy, significantly improved over group A, which continued to commit the same errors as two months earlier. This demonstrates how the imitation technique works to improve language competency and give pupils the ability to converse more confidently and sound like native speakers.

However, there is a significant dearth in literature available giving life time solution to acquire English language. Most of studies cited above provide temporary solutions and focus on making students learn a language than acquire a language for the life time. This study thus aims at inducing imitation technique as a skill helping engineering students acquiring the English language.

IV. METHODOLOGY

The imitation technique is a strategy for learning a language with a focus on enhancing speaking abilities, particularly in terms of replicating the dialogues, phrases, vocabulary from authentic resources. These authentic resources are nothing but people with target language proficiency, books, audio-visual aids, social media etc. With this method, students actively listen to the phrases or fragments or statements along with the right stress, intonation and pause pattern. After active listening students copy these phrases or fragments or statements with proper SIP pattern while talking. The imitation technique, however, goes beyond linguistic components; it also entails imitating movements and facial expressions in various contexts, which can improve a learner's comfort level when conversing

with people. The imitation technique considerably improves students' learning of English as a second language (L2) or as a foreign language (EFL), according to numerous studies.

The study was divided into three phases.

Phase 1

To find out students who have English Language Anxiety through Pubic Speaking Class Anxiety Scale (PSCAS) from 560 freshman engineering students.

Phase 2

To train and induce Imitation Technique as a skill to the target group of engineering students (with English language anxiety) with a proper pedagogical intervention.

Phase 3

To find out if the students have overcome their English

TABLE I
ITEMS OF PSCAS

Item No	Statements adopted with minor adaptation in wordings
1	I never feel quite sure of myself while I am speaking English
2	I start to panic when I have to speak English without a preparation in advance
3	In a speaking class, I can get so nervous I forget things I know.
4	I feel confident while I am speaking English.
5	I get nervous and confused when I am speaking English.
6	I am afraid that other students will laugh at me while I am speaking English.
7	I get nervous when the English teacher asks me to speak English which I have prepared in advance.
8	I have no fear of speaking English.
9	I can feel my heart pounding when I am going to be called on.
10	I feel relaxed while I am speaking English.
11	It embarrasses me to volunteer to go out first to speak English
12	I face the prospect of speaking English with confidence.
13	Certain parts of my body feel very tense and rigid while I am speaking English.
14	I feel anxious while I am waiting to speak English.
15	I dislike using my voice and body expressively while I am speaking English.
16	I have trouble to coordinate my movements while I am speaking English
17	Even if I am very well prepared, I feel anxious about speaking English.

Language Anxiety levels.

To collect feedback from the students after a month to check if they have imbibed the imitation technique in acquiring English language.

As a part of Phase 1, a google form was sent to all the 560 freshman engineering students to filter from them the ones who have the English Language Anxiety. To check the student's anxiety PSCAS scale was adopted from the study done by Kriangkrai Yaikhong & Siriluck Usaha (2012) to check if revised version of PSCAS (Table I) can be used to check English language Anxiety levels with 17 items to be checked on 5-point Likert scale ranging from 5 "Strongly agree" to 1 "Strongly disagree".

V. DATA ANALYSIS

305 students filled in the google form. The 17 items of the PSCAS were answered on a five-point Likert scale, ranging from 5 "Strongly Agree" to 1 "Strongly Disagree." The total

score of the scale was 85 (17 items* 5). This was subtracted by 17 so scores higher than 68 were categorized as high anxiety, between 68-51 as medium anxiety, and lower than 51 as low anxiety respectively. Out of 305, 98 students that is 32% of the of students were found to have high English language Anxiety as they scored more than 68. 142 students that is 47% students were found to have medium anxiety with the score ranging in between 68 and 51 and 65 students that is 21% students who scored less than 51 were found to have low anxiety as shown in Table II and Figure 1.

TABLE II
PRE – INTERVENTION - ENGLISH LANGUAGE ANXIETY (ELA)

Pre-Intervention Analysis of English Language Anxiety (ELA)		
Ranges	Categories	Student percentage
> 68	High Anxiety	32%
68-51	Medium Anxiety	47%
< 51	Low Anxiety	21%

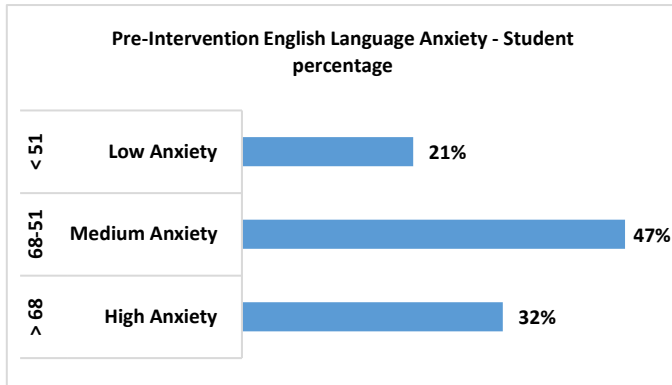


Fig. 1 The graphical representation of the Pre-Intervention Analysis of English language anxiety.

After the pre-intervention analysis of the 305 students, the students were trained on the Imitation Technique using the following structure for a span of eight weeks with four hours per week of intervention. In total 64 hours were engaged as shown in Table III.

TABLE III
ACTION PLAN FOR THE SESSIONS ON IMITATION TECHNIQUE

Week	Imitation Technique - Activity	Hours Engaged
1	Introduction to Imitation Technique and Stress Intonation and Pause Pattern	8
2	Practice Session 1 – Vocabulary (Audio Clips and Reading Assignment)	8
3	Practice Session 2 – Phrases (Audio Clips and Reading Assignment)	8
4	Practice Session 3 – Short Fragments and sentences (Video Clips and Reading Assignment)	8
5	Practice Session 4 – Simple Dialogues (Movie Clips and Reading Assignment)	8
6	Practice Session 7 - Group discussion (YouTube videos and Reading Assignment)	8
7	Practice Session 8 – Vocabulary/Phrases/fragments (English Songs)	8
8	Practice Session 9 – Simple and Compound statements (Podcasts)	8
Total 8 weeks		64 hours

Post intervention the students were exposed to PSCAS again. This time the results were slightly better than the last time. The Table IV shows the results.

Out of 305, 24 students that is 8% of the students were found to have high English language Anxiety as they scored more than 68. 75 students that is 24% students were found to have medium anxiety with the score ranging in between 68 and 51 and 206 students that is 67% students who scored less than 51 were found to have low anxiety as shown in Table IV and Figure 2.

TABLE IV
POST – INTERVENTION - ENGLISH LANGUAGE ANXIETY (ELA)

Pre-Intervention Analysis of English Language Anxiety (ELA)		
Ranges	Categories	Student percentage
> 68	High Anxiety	8%
68-51	Medium Anxiety	24%
< 51	Low Anxiety	67%

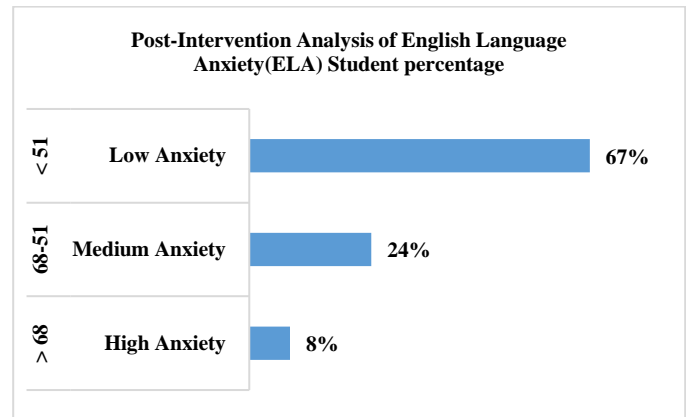


Fig. 2 The graphical representation of the Post-Intervention Analysis of English language anxiety.

The analysis was also carried out by comparing students' performance with the Diagnostic Test on speaking skills with the Internal Semester Assessment II marks which also focused on speaking skills in English language. As shown in the Table V and Fig 3. there is seen improvement in the students' performance in speaking skills in English language. This also strongly indicates that the English Language Anxiety has reduced after Imitation Technique was introduced to students.

TABLE V
COMPARISON
POST – INTERVENTION DIAGNOSTIC TEST AND POST INTERVENTION ISA

Ranges	Pre-Intervention - Diagnostic Test on Speaking Skills	Post-Intervention - Internal Semester Assessment (ISA) on Speaking Skills
16 - 20 (very good)	5%	34%
11-15 (good)	15%	46%
6-10 (average)	52%	10%
0-5 (poor)	28%	9%

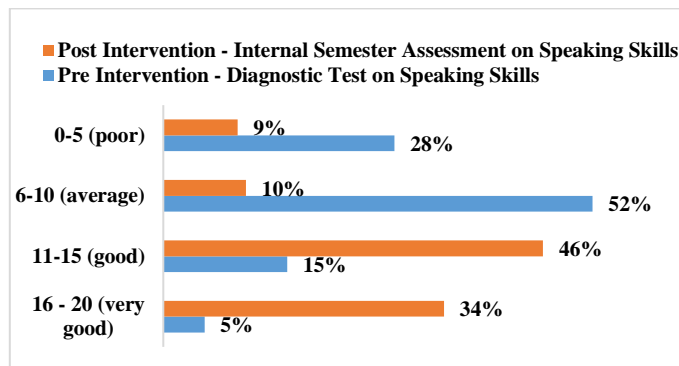


Fig. 3 The graphical representation - Comparison between Pre-Intervention Diagnostic Test and Post- Intervention Internal Semester Assessment of students on speaking skills in English language.

A follow up post intervention analysis on English language Anxiety was done at the tail end of the semester. This was done in order to check if students have induced into themselves the imitation technique to further improve (strengthening Program Outcome 12. Life Long Learning) themselves on speaking skills in English language and in turn reducing their English language Anxiety level.

Out of 305, 12 students that is 4% of the students were found to have high English language Anxiety as they scored more than 68. 45 students that is 15% students were found to have medium anxiety with the score ranging in between 68 and 51 and 248 students that is 81% students who scored less than 51 were found to have low anxiety as shown in Table VI and Figure 4. This clearly indicates that the induced imitation technique was skilled by the students over the time. The improvement seen is exemplary.

TABLE VI
FOLLOW UP
POST – INTERVENTION - ENGLISH LANGUAGE ANXIETY (ELA)

Follow up Pre-Intervention Analysis of English Language Anxiety (ELA)		
Ranges	Categories	Student percentage
> 68	High Anxiety	4%
68-51	Medium Anxiety	15%
< 51	Low Anxiety	81%

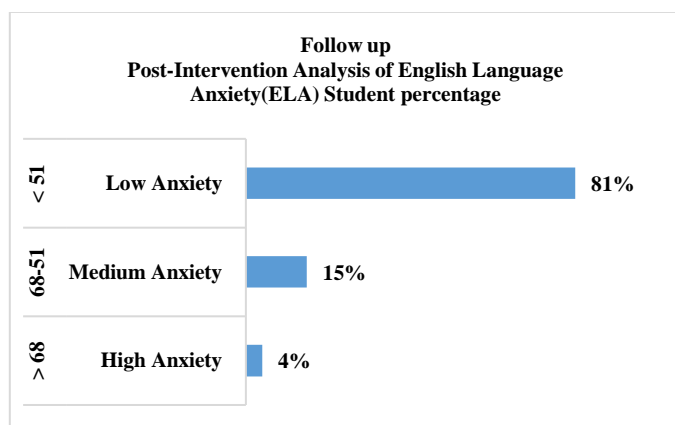


Fig. 4 The graphical representation – Follow up Post-Intervention Analysis of English language anxiety.

VI. RESULTS AND DISCUSSION

Effectiveness of the imitation method for improving English has been proven. Students often place a higher priority on technical subjects than communication abilities, especially in professional programs like engineering. Even if they excel in their technical skills, this could make it difficult for them to successfully communicate their expertise in the professional setting. This emphasizes how important it is to use the imitation technique while teaching languages. Students practice aspects including stress, intonation, pauses, and body language in the English language course. In addition to assisting students in overcoming personal obstacles like shyness and mistake-related dread, this also increases their self-confidence. Students can learn the language in this encouraging classroom setting without feeling self-conscious about their mistakes or weaknesses. The imitation technique can be useful in conjunction with approaches to improve speaking abilities. Language proficiency can be evaluated using the imitation method. However, more research is still required to fully comprehend both its accuracy and its impact on personal performance.

The results of the intervention clearly indicate that there is improvement in students English Language Anxiety levels. With the intervention the anxiety levels have reduced. And by the time the follow up analysis was done students had started using the imitation technique as a skill thus working on self-learning and strengthening the Program Outcome 12. Life Long Learning.

The study was conducted only for a sample size of 305 freshman engineering students but if extended to the entire lot many students who have English language anxiety will be truly benefitted.

The study also propagates and recommends the English language teachers to use Imitation Technique to help students overcome their English language Anxiety levels and help themselves acquire the language without hustle.

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