CHALLENGES AND EFFECTIVENESS OF NOVICE TEACHER'S TECHNOLOGY INTEGRATION IN AN ISLAMIC SECONDARY SCHOOL IN NORTH BALI

[#1]**I Komang Adiartha Negara,** [*2]**Made Aprilia Ayu Adnyani,** [*3]**Made Hery Santosa,** [*4]**Gde Arys Bayu Rewa**

[#1]English Student, Faculty of Language and Art, Ganesha University of Education, Indonesia
[*2]English Student, Faculty of Language and Art, Ganesha University of Education, Indonesia
[*3]English Lecturer, Faculty of Language and Art, Ganesha University of Education, Indonesia
[*4]English Lecturer, Faculty of Language and Art, Ganesha University of Education, Indonesia

Corresponding Author Email: adiartha@student.undiksha.ac.id

A B S T R A C T S

Technology integration has become an important aspect of English language teaching, especially in private Islamic schools. Although novice teachers are familiar with technology, there is a gap between the potential of technology and its integration in achieving learning objectives, and little intensity of previous studies discussing challenges faced by novice teachers' technology integration in English language teaching in an Islamic private secondary school. This study aimed to evaluate the effectiveness and identify challenges of technology integration by a novice teacher in grade 11 at an Islamic private secondary school in North Bali. It was a case study designed under a qualitative approach, combining structured observations using the Triple E framework rubric and semi-structured interviews with a single novice teacher. The Triple E framework showed a score of 9 out of 18, which means technology integration has a moderate level of effectiveness, showing a partial connection between learning objectives and technological tools. The semi-structured interview results exposed several challenges, including technological limitations, workload, school policies regarding mobile phone use, and low student participation. This study highlights the need for institutional support, strategic training, and more flexible policies to maximize the potential of technology in English language teaching. This study is expected to provide new insights into the effectiveness and challenges faced by novice teachers in integrating technology for English language teaching in an Islamic private school context.

INTRODUCTION

In the 21st century, technology integration has significantly changed education in the field of English Language Teaching (ELT) (Hossain, 2023; Santosa, Senawati & Dang, 2022;) As facilitators, teachers need to improve digital competencies to support the achievement of learning objectives (Rokhyati & Ramadhani, 2022; Santosa, Surya & Pratiwi 2024). Schools encourage technology integration to enhance learning across subjects, including in Islamic private schools (Assalihee & Bonsuk, 2023). The integration of technology in teaching is often

referred to as Information and Communication Technology (ICT) (Assalihee & Bonsuk, 2023; Sasabila Putri & Zega, 2023). The internet, computers, telephones, LCD projectors, and other forms of Information and Communication Technology can all be used to support the learning process. This integration includes tools for illustrating learning concepts and materials (Sasabila Putri & Zega, 2023). Thus, novice teachers need to improve their digital skills to make an effective technology integration and help students achieve learning objectives effectively (Ajani, 2024; Fraile, Peñalva-Vélez & Lacambra, 2018).

Novice teachers are teachers who have just completed their teacher education program and started their teaching career (Webb & Baumgartner, 2023). They usually have less than three years of experience (Awang & Shaari, 2021; Webb & Baumgartner, 2023). Although novice teachers lack teaching experience, they are more familiar with using digital devices and integrating them into teaching compared to their senior colleagues (Galip Zorba, 2022; Sun & Zhang, 2022). Novice teachers show greater ease and familiarity in using digital devices in the classroom, whereas senior teachers tend to rely on traditional teaching methods using textbooks and blackboards (Kalimullina, Tarman & Stepanova, 2021; Rokhyati & Ramadhani, 2022). The integration of technology in English language teaching must be effective and not merely a replacement for outdated teaching (Muhammad, Garba & Mustapha, 2021). The effectiveness of technology integration in the context of English language teaching relates to how technology supports learning objectives to actively engage students, enhance the learning experience, and expand access to resources beyond traditional boundaries (Ghavifekr & Rosdy, 2015; Iswantara et al., 2023). However, novice teachers in Islamic private schools face challenges that hinder the full effectiveness of technology integration in achieving learning objectives due to various challenges faced in its integration (Muhammad, Garba & Mustapha, 2021). Hence, it is necessary to evaluate its effectiveness.

The effectiveness of technology integration can be evaluated by using the Triple E framework developed by Professor Liz Kolb in 2011 (Gaer & Reyes, 2022). The Triple E framework is used to propagate the use of technology across three domains: Engagement, Enhancement, and Extension to measure how effectively technology aligns with learning objectives and supports teaching outcomes (Gaer & Reyes, 2022; Pratama, 2022). This framework focuses on the role as a key evaluative tool to explore novice teachers' use of technology in ELT, assessing their digital literacy and their ability to adapt to students' learning needs through digital integration (Ferri et al., 2020; Gogo, 2024).

Previous studies have reported on the intensity of effectiveness of technology integration (Fajri, 2023; Cukur, 2023). Technology integration, such as PowerPoint presentations that organize text, images, audio, and video, supports classroom interaction and improves the efficiency of English language learning (Fajri, 2023). In line with that, the provision of up-to-date content and digital material creation opportunities through continuous training in developing technology skills for novice teachers prepares them for future challenges, thus emphasizing the importance of continuous training in developing technology skills for novice teachers (Cukur, 2023). Furthermore, the use of ICT tools and resources aids effective teaching at the secondary school level. The advent of Internet facilities has allowed novice teachers to easily use YouTube and other social media in English language teaching, making teachers efficient communicators and facilitating the collection and dissemination of learning information to students (Bakht, Shahzad & Ali 2019). This indicates that technology has been effectively integrated into English language teaching as seen from the benefits gained by both experienced and novice teachers although there are still challenges to be faced to optimize its integration.

Some of the findings that highlighted the challenges of technology integration by novice teachers were caused by external factors. Novice teachers in English language teaching face an additional workload and lack of administrative support. This situation causes teachers to be

unable to maximize their teaching process including the integration of technology in teaching to achieve learning goals (Saidin, Shafli & Veloo, 2020). In addition, other findings emphasize that limited technological facilities, such as internet access and hardware and software shortages are challenges in technology-based learning. Novice teachers' skills are still inadequate as a result of the lack of technology training programs and mentoring from educational institutions (Ada & Altay, 2022).

In the context of technology integration in English language teaching in Islamic-based schools, some studies have identified challenges faced, but they have not focused on novice teachers as subjects. Teachers experience time constraints and administrative burdens that cause teachers to use technology only to copy information directly from the internet without further exploration and adaptation, resulting in ineffective English teaching in the classroom (Akmal, Fitriah & Fadhilah, 2022). Other findings reported difficulties faced by teachers in integrating technology into English language teaching in the form of a lack of self-confidence as a result of inadequate skills in adopting technology (Pratama, 2023).

Based on previous research, there are contradictory findings in the effectiveness of technology integration by novice teachers in English language teaching. Technology integration is perceived to provide benefits in the English teaching process through interactive lesson materials from YouTube, PowerPoint, and social media and helps communication in the delivery of information and class discussions. On the other hand, novice teachers experience challenges in technology-based teaching such as lack of confidence, limited technology facilities, and copying learning information without further exploration as a result of lack of technology use skills. These challenges indicate the ineffectiveness of technology integration by novice teachers in English language teaching. In addition, there is limited prior research that discusses the integration of technology by novice teachers in English language teaching in Islamic-based schools. Previous research discusses the same thing, but without specific intention on novice teachers as subjects. Therefore, it is necessary to conduct this research to fill the gap. This study is a novelty because it discusses the effectiveness of technology integration by novice teachers in the context of English language teaching in Islamic-based private schools. This study aims to measure the effectiveness of an English novice teacher in integrating technology and what are the challenges faced in integrating technology into English language teaching in an Islamic private secondary school. In addition, the study is also expected to provide specific insights related to how technology is integrated into English language teaching in Islamic-based schools, including the development of learning strategies, material development, and training on the use of technology for teachers.

RESEARCH METHOD
Research Design

This study used a case study research design under qualitative study. This research is categorized as a case study because it focuses on an in-depth exploration of a specific phenomenon in a real context, in this case, the experience of novice EFL teachers in integrating learning technology. Qualitative data is related to the effectiveness and challenges faced by the novice teacher in integrating technology into English language teaching in an Islamic private secondary school. A case study focuses on an in-depth examination of a single subject or phenomenon. Data in case study research can usually be collected using various methods such as interviews, observation, and document analysis (Creswell & Creswell, 2017). The phenomenon of the English novice teacher is a unique case that is studied and explained in depth. A variety of sources were used to collect data triangulation, including classroom observations, semi-structured interviews with novice teachers, and analysis of teaching materials and lesson plans. This approach was taken to ensure data reliability and reduce the risk of misinterpretation. In addition, the Triple E rubric framework provides structured

observations with guiding questions to ensure consistency in data collection. Before data collection, the researcher obtained consent from school leaders and a single novice teacher, thereby ensuring voluntary participation. The novice teacher was informed about the purpose and benefits of participating in the research. Subsequently, observations were conducted once a week for a total of three times from October to November 2024. Following the final observation, in-depth interviews were conducted with the novice teachers to ascertain their experiences and challenges in integrating technology.

Subject

This study was conducted in a grade 11 Islamic private secondary school in North Bali because it provided one of the basic technologies, namely projectors and laptops. Electronic devices such as laptops and projectors can be used in technology integration in language teaching (Pasaribu, Daulay & Saragih, 2023). The subject in this study used a single novice teacher who had not yet completed a Bachelor's degree from one of the state universities in North Bali and who had taught at this school for less than 1 year. The use of one novice teacher is a single subject because the school only has one novice teacher who teaches English while integrating technology into the teaching process. The selection of the subject in this study is based on several justifications. First, the novice teacher who teaches English at the Islamic Private Secondary School. Second, the novice teacher has less than three years of teaching experience and has not yet completed a Bachelor's degree. Third, the novice teacher consistently integrates technology into their teaching by utilizing a laptop, PowerPoint presentations, online quizzes, and speakers. Last, volunteer to be asked for data.

Instruments

The data collection used structured observation and semi-structured interview methods, using the Triple E framework rubric and interview guide as the instruments. The researchers used a structured observation method to find the data about the effectiveness of novice English teachers integrating technology in English language teaching in an Islamic private school context by using the Triple E framework rubric. The 3E framework rubric was adopted from https://www.tripleeframework.com. The triple E rubric framework is used by the researcher because it emphasizes the pedagogical benefits of technology rather than its mere existence and focuses on the technicalities of use. Triple E places learning at the center of evaluation, making it suitable for this study which focuses on teachers' experiences of using technology meaningfully in English language teaching. The researchers used the semi-structured interview method to obtain richer data about the challenges faced by a single novice teacher in integrating technology into English language teaching. This method allows researchers to ask the participant a consistent set of questions, while still discussing for deeper exploration of topics that arose during the interview. In the context of this study, semi-structured interviews allow for an exploration of the challenges faced by the novice teacher in integrating technology into English language teaching while ensuring that key questions are addressed. The interview guide adopted from (Molina, 2021). The interview guide in question had been through a validation and reliability process in a previous study. The researcher elected to employ it directly, bypassing further testing. In the context of qualitative research, the validity of the interview guide is often contingent on the researcher's sensitivity and reflectivity during the interview process (Merriam & Tisdell, 2019). Therefore, the researcher actively adjusted the approach during the interview to ensure the questions were well understood by the participants.

Data Analysis

The researchers collected data through structured observation and semi-structured interview methods with instruments a Triple E evaluation rubric and an interview guide. The data related to the effectiveness of technology integration obtained from structured observation

was analyzed using the Triple E rubric score which measures three aspects namely engagement, enhancement, and extension. The total score is 18, and the number of scores obtained has a certain meaning related to how effective the integration of technology by English the novice teacher in teaching English. Meanwhile, the data related to the challenges faced by the novice teacher in integrating technology into English language teaching at grade 11 Islamic private secondary school were analyzed using thematic analysis. Thematic analysis is a method of analyzing qualitative data in many disciplines and fields aimed at developing patterns of meaning or themes across data sets that answer research questions (Braun & Clarke, 2015). This analysis ensures that the challenges are identified and contextualized, strengthening the relevance of the findings to the research objective.

In this thematic analysis, the researcher first read and reviewed the interview transcripts to understand the data thoroughly. Secondly, the researcher identified keywords such as technology limitations, and time management challenges, and gave each relevant piece of data an initial code. Third, these codes were grouped into broader themes, for example, limited technology access which included limitations of devices or facilities provided by the school, and 'workload challenges' about difficulties in managing time and additional tasks. Fourth, the researcher double-checked whether the themes identified truly reflected the data. Fifth, each theme was given a clear name to make it easier to understand, such as limited technology and resources, and workload and time management. Finally, the analysis was organized into an informative report on the English novice teacher challenge in integrating technology into English language teaching.

RESEARCH FINDINGS AND DISCUSSION
Research Findings
1. Effectiveness of Technology Integration by the Novice Teacher (Results From the Triple E Rubric Framework)

The Triple E framework proved important and helpful while analyzing the data on the effectiveness of beginning the teacher's technology integration. The data collected could be immediately grouped into the categories established by the framework, namely: 1) an exceptional connection between learning goals and learning tools, 2) some connection between learning goals and learning tools, and 3) a low connection between learning goals and learning tools. Each category is supported by the total score obtained by considering engagement, enhancement, and extension aspects.

The exceptional connection category indicated that the technology tools have been used to their full potential, allowing the learning objectives to be achieved, although there are still other positive potentials that may be overlooked. Conversely, the moderately close relationship category indicates that the technological tools have been well integrated, but have not fully reached their optimal potential due to some obstacles or problems. On the other hand, if the technological tools are not maximally integrated, or even not used at all even though they are available, then the category will fall into a low relationship.

Observations were conducted three times from October to November 2024 of a single novice teacher in grade 11 of an Islamic Private Secondary School found the technology used included a laptop, LCD projector, and speakers. However, all students did not bring smartphones and laptops during the observation. This showed a high dissimilarity in teachers' and students' viewpoints regarding the availability of technological devices used in English language teaching.

Table 1
Results of Triple E Evaluation Rubric

13-18 Points	Exceptional connection between learning goals and tool
7-12 Points	Some connection between learning goals and tool
6 Points	The low connection between learning goals and tool

The table illustrates the meaning of the effectiveness of novice teachers' technology integration based on the number of points obtained using the 3E evaluation rubric. The Triple E Evaluation Rubric is used to assess the effectiveness of technology integration by measuring three main aspects, namely engagement, enhancement, and extension. A score of 13-18 indicates an outstanding relationship between learning objectives and technology integration, then 7-12 reflects a moderate relationship, and 0-6 signifies low alignment. From the evaluation results, the novice teachers scored 9 out of a total of 18 scores derived from 4 points in engagement, 5 points in enhancement, and 0 points in extension. This total score of 9 indicates some connection between the learning goals and the tools. Teachers with some connection between learning goals and tools integrate technology quite well during classroom learning. In the classroom, the novice teacher can increase student engagement and enhancement. However, there are no technology integration activities that could be observed after class, allowing students to continue learning at home. There, teachers and students seemed to focus on the integration and utilization of technological devices only in the classroom, albeit for only a few hours. Taking this weakness into account, it seems that when the novice teacher can optimize the activities after the class ends, the novice teacher might achieve a higher score to be categorized into the technology integration of teachers with outstanding connections.

2. Challenges Faced by the Novice Teacher (Thematic Analysis of Semi-Structured Interview)

Thematic analysis of interviews with the novice teacher exposed several challenges faced in integrating technology into English teaching in grade 11 Islamic private secondary school. These challenges are categorized into four themes, including limitations in technology and resources, workload and time, school policies on smartphones, and low student participation.

1. Limited Technology and Resources

The novice teacher often relies on basic technology such as PowerPoint, laptops, and LCD projectors in the process of teaching English. However, further development is limited due to a lack of access to other technological resources. Teachers state that without the integration of LCD projectors, teaching feels less optimal, making this technology an important element in supporting the effectiveness of English teaching at the school.

> "I only use PPT, a laptop, speakers, and an LCD projector. For further technological development, so far there has been none. Teaching English without an LCD projector and PowerPoint becomes less than perfect, so I need them as a guide in teaching." (T)

2. Workload and Time Management

The novice teacher has a high workload, which becomes a challenge, especially when the schedule for thesis guidance clashes with lesson preparation. This situation requires the novice teacher to balance their teaching responsibilities as educators with other professional responsibilities and time management. One way to alleviate the situation is to delegate tasks to students through the duty teacher.

> "I usually prepare the PowerPoint material five days before the teaching starts. But if it clashes with my final project guidance schedule, it becomes

a difficulty, so I have to hand over the task to the duty teacher for the students." (T)

3. School Policy on Smartphones

The school policy on smartphone use in the classroom creates a challenge for the novice teacher. The novice teacher noted that this policy hinders the effectiveness of technology integration in English language teaching because it limits students' ability to engage with digital learning tools.

"Students need smartphones to complete assignments, but the school's policy does not fully allow using smartphones in the classroom." (T)

4. Low Student Participation

Although the learning materials have been provided through WhatsApp groups, many students do not take advantage of this. Students are even unaware of the content of the materials, which leads to a lack of student engagement in the learning process.

"I once sent materials to the students' WhatsApp group, but the students didn't open them. They hadn't even read them when I asked in class, and they weren't actively involved in the learning." (T)

Discussion

Based on the results of observations on the integration of technology by the novice teacher in teaching English at the Islamic private secondary school using laptops, LCD projectors, and speakers, it is quite effective in increasing student engagement in the classroom. However, the absence of students' personal devices creates a gap in the learning process, in line with previous studies on resource limitations in Islamic private secondary schools (Akmal, Fitriah & Fadhilah, 2022). This challenge underscores the significance of equitable access to personal digital tools in fostering independent learning. The lack of such access limits students' ability to explore and reinforce learning materials autonomously.

The score of 9 on the Triple E rubric obtained by the novice teacher in technology integration indicates a connection between learning objectives and technological tools, but the lack of learning activities outside the classroom indicates that the extension dimension is not yet optimal. The connection is reflected in the development of understanding related to how technology can be aligned with specific pedagogical goals through the dimensions of engagement and enhancement that captivate interest and enrich students' learning experiences. However, the absence of continuous learning activities indicates a missed opportunity to leverage the expansion dimension in technology integration. The integration of technology in education remains predominantly constrained to structured classroom settings. There has been minimal exploration of the potential offered by digital platforms or interactive tools, such as the allocation of technology-based projects, including presentations or the utilization of social media. Consequently, students are deprived of the opportunity to participate in the digital learning ecosystem led by the novice teacher. This is in line with the studies that report novice teachers often face challenges in creating sustainable learning through technology (Gaer & Reyes, 2022; Sun & Zhang, 2022). However, the suboptimal results of the extension dimension contrast with the effectiveness of technology in the context of English language teaching, which should be able to expand access to resources beyond traditional boundaries (Ghavifekr & Rosdy, 2015; Iswantara et al., 2023).

The extension of limited dimensions of learning activities raises questions about the depth of digital literacy among novice teachers. Although novice teachers are familiar with digital devices, technology integration does not guarantee effective results. The ability to integrate technology effectively and creatively requires technical skills and an interactive teaching approach. The novice teacher should also be equipped with the ability to critically select,

implement, and evaluate digital tools and digitally accessed materials in order to adapt them to instructional and student needs to support the teaching process. Therefore, a continuous professional development program, which focuses not only on tool integration but also on pedagogical strategies for sustainable learning, enables teachers to critically evaluate their technology integration and adapt their approaches based on feedback and outcomes (Gogo, 2024).

The findings underscore the challenges faced by the novice teacher in integrating technology into English language teaching at the Islamic private secondary school. In general, the limitations of available technology are a major challenge. The limited access to more advanced technological resources, such as interactive learning applications or other educational software, creates barriers to teachers' creativity in designing engaging teaching materials. In line with previous research, limited access to technological devices has been a barrier to achieving effective technology integration (Rokhyati & Ramadhani, 2022). However, a focus on advanced technology does not necessarily translate into effective integration and so it is worth considering shifting attention to the potential use of simpler technologies that are more relevant to students. Novice teachers can utilize social media platforms that students are already familiar with, such as Instagram, TikTok and YouTube to traditional learning media in their teaching to create engaging and interactive learning content. Despite limited technological resources including the absence of internet access, pedagogical skills can alleviate this challenge by planning and preparing engaging strategies and related and relevant learning media to support the teaching process. This is supported by previous research on the integration of technology in English language teaching should be more than a substitute for traditional methods; these tools should be able to support student engagement and enhance their understanding (Muhammad, Garba & Mustapha, 2021).

In addition, workload and time constraints due to academic demands as final-year students pose a challenge for the novice teacher, who often has to balance teaching schedules and student responsibilities. These demands have been shown to adversely affect the quality of material preparation of the novice teacher, resulting in suboptimal teaching practices. This underscores the critical need for effective managerial support to assist the novice teacher in more effective time management. These challenges align with the findings of studies that discuss the ineffective integration of technology in teaching to achieve learning objectives (Saidin, Shafli & Veloo, 2020) and the reduction of teachers' opportunities to further explore and adapt learning materials accessed on the internet (Akmal, Fitriah & Fadhilah, 2022). In the context of time management and workload delegation, it is imperative to prioritize adherence to teaching instructions outlined in lesson plans and related learning media, ensuring the direction of teaching remains consistent. Additionally, effective communication between novice and senior teachers within the educational institution is crucial for facilitating mutual support and assistance in managing classes taught by the novice teacher.

A further challenge related to school policies on restricting smartphone use also needs to be re-evaluated. The policy of restricting smartphone use has the unintended consequence of hindering students' active involvement in the learning process. Students require these devices to access materials and complete assignments. School policies regarding smartphone use often reflect concerns about the potential for distraction and misuse in learning. However, it is crucial to consider the potential benefits of smartphones as learning tools, including their ability to access online resources, collaborate with classmates, create interactive learning content, and minimize teacher-centered learning. Additionally, familiarizing students with technology helps develop students' digital literacy, which is an important skill in the digital age. Consequently, educational institutions must formulate more adaptable and empirically substantiated policies that strike a balance between maintaining order and leveraging technology for educational purposes. A potential approach involves permitting students to utilize smartphones during

group activities, with a maximum of two smartphones allocated per group. It is necessary for a novice teacher to establish clear rules for their use in order to create a productive learning environment in which students can use smartphones responsibly to support their learning. In contrast with previous studies that emphasized the presence of technological facilities can facilitate the collection and dissemination of learning information to students (Bakht, Shahzad & Ali, 2019).

Furthermore, low student participation in receiving and responding to materials from technology integration hinders the integration of technology in English language teaching. Although materials have been provided through WhatsApp groups, many students still do not utilize this resource. This shows that the current teaching approach is less relevant to students' interests and needs. Novice teachers need to create a more personal and contextual learning experience, with technological integrity that can connect learning materials to students' daily lives. For example, using specific case studies that are relevant to students as material and discussion materials. On the other side, learning materials through WhatsApp groups show that students have access to smartphones at home, but schools also need to consider other factors that influence student participation, such as uneven internet access and students' perspectives on novice teacher instructions. The novice teachers need to ensure that the instructions given are clear, and interesting materials encourage students' interest in participating. Variations of learning information transmitted via WhatsApp, such as infographics, movies, debates, and quizzes using the polling function, may be used to create engaging materials. Therefore, schools need to evaluate, adjust policies, and provide training for novice teachers so that they can overcome existing challenges and create a more effective language teaching environment. In line with previous research that emphasized that novice teachers' skills are still inadequate, so they need to get technology training programs and mentoring from educational institutions (Ada & Altay, 2022).

CONCLUSION

The integration of technology in language teaching by the novice teacher in the 11th grade of an Islamic private secondary school shows moderate effectiveness with a Triple-E score of 9, which represents that there are some connections between learning objectives and technological devices. Several challenges faced by the novice teacher in technology integration in this study namely:

1. Limited technologies and resources, as well as the absence of personal devices for students, hinder independent learning. Schools need to provide access to more shared digital tools or implement bring your own device policy.
2. The workload and time constraints of the novice teacher necessitate mentoring programs and time management training to help them optimize their learning planning.
3. The policy of prohibiting the use of smartphones in the classroom also hinders student access to digital learning resources, requiring a more controlled smartphone use policy with clear usage rules.
4. Low student participation in responding to instructions using technology via WhatsApp, the novice teacher needs to use more interactive digital content, such as quizzes, discussions, videos, and case studies, to make learning more relevant.

All of these challenges require training programs for the novice teacher in integrating technology to design interactive teaching and increase student learning engagement. This study was limited to a single novice teacher in an Islamic school context, without considering the student's perspective directly for a short-term study. Therefore, further research needs to explore multiple novice teachers in different school settings for long-term study and consider students' perspectives to provide broader insights into the challenges and best practices in technology integration.

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