

Exploring the Use of AI Tools in Education: A Case Study of EDCAFE for Dynamic Classroom Learning

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doi: <https://doi.org/10.37745/ejells.2013/vol14n33244>

Published September 28, 2026

Citation: Ouda M.H. and Kadhim N.J. (2026) Exploring the Use of AI Tools in Education: A Case Study of EDCAFE for Dynamic Classroom Learning, *European Journal of English Language and Literature Studies*, 14 (3),32-44

Abstract: *The impact of generative artificial intelligence (GenAI) on education is undeniable, as educators are now able to harness this technology to generate teaching content, simplify repetitive work, facilitate formative assessment, and enhance personalized learning experiences. The research analyzes the bounded case of EdCafe AI, a GenAI education tool and considers how it can help with dynamic classroom learning. The qualitative descriptive case-study approach involves triangulating existing documentation on the platform with recent peer-reviewed literature on the use of GenAI in education and international guidance regarding the responsible use of GenAI. Six pedagogical dimensions are explored: Instructional planning and content creation, interactive assessment, personalisation and scaffolding, multimodal learning, learning analytics and feedback, and integration with teachers' workflows. Overall, the analysis suggests that EdCafe's core ecosystem, which encompasses the production of lesson plans, slide creation, the development of quizzes and flashcards, reading activities, personalization of chatbots, assignment grading, AI speech and image tools, and classroom analytics, can enable a new approach to teaching in which content creation, student engagement, feedback and instructional adaptation are done within a single environment. But the effectiveness of learning value is not just a function of the availability of the tools but also a function of the teacher's orchestration. AI inaccuracies or limitations, excessive dependence, privacy/ethical issues, inequitable access, and automated feedback may replace pedagogical judgment. The study suggests that the role of EdCafe is most significant in the context of clearly defined learning outcomes, teacher review, making assessment transparent, and human-centred AI principles. Classroom pedagogical, English-language teaching, teacher professional development and future empirical implications are discussed.*

Keywords: artificial intelligence in education; generative AI; EdCafe AI; dynamic classroom learning; formative assessment; teacher AI literacy; educational technology

INTRODUCTION

AI has become a ubiquitous tool in educational practice, rather than a niche, research-focused field. Ever since the public release of generative AI systems, teachers have been provided with the ability to generate text, images, audio, quizzes, explanations, feedback, lessons, and conversational support, just to mention a few.

This has transformed the role of educational technology, moving beyond simply presenting ready-made digital learning resources to enabling AI-powered systems to create, customize, and tailor educational materials as learning unfolds. Indeed, recent reviews indicate that GenAI is being utilized in various educational settings to aid in teaching support, tutoring, assessment, feedback, writing, language learning, and content development (Lo, 2023; Qian, 2025; Luo et al., 2025).

The promise of education with GenAI is however, contingent. On the one hand, the large language models provide opportunities for personalized learning, instructional support, and new modes of educational engagement, but they also bring with them risks to reliability, bias, overreliance, inequitable access, and assessment integrity, as noted by Kasneci et al. (2023). UNESCO (2023) also highlights the need to integrate GenAI in a human-centred approach, ensuring the safeguarding of human agency, data privacy, inclusion, and pedagogical purpose. The question that will no longer be asked is now “can AI create educational content?” but instead “how can AI tools be used to enhance, not replace, learning, teacher judgement and meaningful classroom interaction?” EdCafe AI offers a valuable case study for exploring this question, as it is developed with educators' workflow and engagement in class in mind, not just in general conversation.

As of this writing, the platform offers publicly accessible functions for creating lesson plans, slide decks, quizzes, YouTube quizzes, flashcards, reading activities, summary notes, teaching resources, custom chatbots, grading assignments, generating images from text, and converting text to speech. It also offers tools to assign assignments for students to interact with and to track their participation, scores, submission, and AI-generated classroom insights (EdCafe AI, n.d.-a). Such capabilities make this platform a comprehensive space covering the entire planning, instruction, practice, assessment and review process.

The research purpose of this study is to explain how an AI-supported platform for teaching and learning, such as EdCafe, can engage in classroom learning that is dynamic. The research question of this study is how an integrated GenAI platform can support dynamic classroom learning. Dynamic classroom learning is referred to as instruction that is responsive, interactive, iterative and based on evidence of student understanding. More technology isn't a sign of a dynamic classroom, it's when teachers modify tasks, explanations, support, and assessment depending on the learners' needs. AI can help with this by reducing the amount of time needed to develop differentiated materials, by providing learners with opportunities for instant practice, and by making learners' responses visible to teachers. However, the value of the platform is to be understood via pedagogical and ethical rather than quantitative lenses.

The study aims to achieve four goals: (1) to outline the main educational roles played by EdCafe AI; (2) to explore the potential of these roles in facilitating dynamic learning in the classroom; (3) to discuss pedagogical opportunities and challenges of using an integrated AI teaching platform in the classroom; and (4) to provide implications for responsible use of AI in the classroom and future studies. This study is not causal study in terms of effects on learning and does not report student outcome data. Rather, it provides a theory-based case analysis with recommendations for further empirical investigation.

LITERATURE REVIEW AND CONCEPTUAL BACKGROUND

Generative AI in Teaching and Learning

The initial wave of research on GenAI has largely centered on ChatGPT's role in academic writing, evaluation, student assistance, and teaching methods. The pilot search of the literature, conducted by Lo (2023), revealed that there were some applications in the various subject areas, and that there were issues already highlighted in the literature around the issues of accuracy, academic integrity, and dependence. As the field developed, a focus was placed on the pedagogical design, such as the way AI is incorporated into learning activities, the role of the teacher, and the ways students engage with the content created by AI.

Recent evidence reveals that artificial intelligence (AI) technologies are most frequently applied to assessment and evaluation, personalized feedback and recommendations, and intelligent tutoring. In a literature review of 63 empirical studies in higher education, Luo et al. (2025) identified a variety of AI modalities and roles being used and different outcomes and design showing different impacts on learning. In another systematic review, Qian (2025) finds that GenAI has been integrated into various teaching and learning activities so far, but purposeful pedagogical integration is essential to make the tool effective rather than simply introducing it.

In a 2025 meta-analysis of 57 studies, Chen and Cheung found that GenAI had a generally positive impact on university student learning outcomes, but there were significant differences across the studies based on context, student characteristics, study design, and measure of learning outcomes. The authors found the effects on language-learning outcomes to be particularly strong; the effects on metacognition were not significant. This is consistent with the findings made before, which suggests that there is a need to separate between what the AI can produce and what the learners can produce on their own.

From Static Digital Resources to Dynamic Learning Environments

Classroom tools such as slides, worksheets, set quizzes, learning-management-system pages, and video are traditional educational technologies that depend on resources that have been created prior to class. The temporal structure is changed due to GenAI, through which teachers can create and update instruction materials quickly depending on the needs at hand. This capability can help in dynamic teaching, particularly if there is an integration between content creation and student interaction and feedback on a single platform.

Dynamic learning is a process of design, enactment, evidence collection and adjustment. For this cycle, the teacher starts with a desired outcome, designs or chooses learning experiences, checks for evidence of learning, and adapts instruction. AI can help speed up any step: write some initial materials, generate differentiated examples, design some practice tasks, sum up student work, and recommend some reteach points. However, the improvement should not be equated with the acceleration. The quality of the learning cycle is related to correctness of generated content, curriculum fit, cognitive challenge, fairness of evaluation, and how the teacher interprets the evidence generated.

Teacher Knowledge, AI Literacy, and Human Agency

The TPACK (Technological Pedagogical Content Knowledge) model offers a valuable tool for assessing AI integration. Technology Use and Learning Activities: The interaction among technological knowledge, pedagogical knowledge, and content knowledge is the key to effective technology use argued by Mishra and Koehler (2006). In the context of GenAI, this translates to a teacher's proficiency in using an AI tool being not enough on its own. The teachers also have to assess if the generated activities reflect the content accurately, reflect appropriate pedagogy and fit the learners and context. This concern is furthered by UNESCO's AI Competency Framework for Teachers which defines the following as essential areas of teacher competence: human-centred mindset, ethics of AI, AI foundations and applications, AI pedagogy and AI for professional learning (Miao & Cukurova, 2024). In particular, it is important for this framework to be relevant to classroom platforms where AI can be used to support instruction, if it is to remain educationally accountable, then teachers must be aware of the capabilities and limitations of the technology. This means human oversight is not an additional protective measure that is subsequently introduced after the implementation process, it is pedagogy.

AI and English-Language Teaching

Language learning needs repeated exposure to the language, interaction with it, feedback, retrieval practice, and opportunities to produce language for meaningful purposes, which is particularly relevant for English-language teaching in relation to AI-enabled classroom platforms. Common EFL/ESL learning tasks can be translated into function-based activities including reading activities, vocabulary flash cards, text-to-speech, conversational chatbots, generation of quizzes, and provision of scaffolded feedback. Synthesis of AI-based learning tools in recent years also points out that language learning is one of the most prominent application areas (Luo et al., 2025).

However, language teachers should be cautious of teaching language as an automatic production of answers. Teacher mediation and authentic communicative practices are needed for fluency, pragmatic competence, intercultural awareness, interactional strategies, and critical literacy. AI can give input and rehearsal, but not be the sole linguistic authority in the classroom.

METHODOLOGY**Research Design**

The research type used in this research is descriptive case study in qualitative approach. The bounded case is EdCafe AI as an education centric GenAI platform and its use in dynamic classroom learning. The selected method of the case study approach is suitable, as the research problem does not just involve the performance of a single facet of an AI tool, but rather how the technological environment, pedagogical functions, and actual classroom implementation relate to one another.

The study is analytical and not experimental. It does not require a student or classroom intervention, or student performance data. The findings do not claim to be evidence of improved learning outcomes, but rather provide insight into the pedagogical affordances, implementation conditions, and risks related to documented platform functionality and current research.

Data Sources

The case analysis is based on the three sources. The first step was to review existing public documentation related to EdCafe to determine platform functions, student-facing activities, teacher workflow and analytics abilities. The official website says that you can create tools for quiz making, flash cards, slide decks, lesson plans, reading activities, custom chatbots, grading of assignments, AI speech, AI image generation, summary notes, searching for teaching resources and creating quizzes from YouTube videos (EdCafe AI, n.d.-a). The analysis of classroom activities and interactive reporting (EdCafe AI, 2026a, 2026b) were also based on product documentation.

Second, peer-reviewed literature published from 2023 to 2025 was utilized to place the educational applications of GenAI and learning tools based on AI into context. Systematic reviews, meta-analyses and well-established theory were given priority. Thirdly, UNESCO orientation was provided to assess responsible implementation, teacher competencies, privacy, human agency and ethical use.

Analytical Framework and Procedure

The platform was examined in relation to six dimensions – where documented EdCafe functions intersected with recurring roles in the AI in education literature – which included (1) instructional planning and content generation, (2) interactive assessment and retrieval practice, (3) personalization and scaffolding, (4) multimodal and accessible learning, (5) feedback, analytics, and instructional decision support, and (6) integration with teacher workflow and professional agency.

The analysis focused on three questions for each dimension: What can the platform do? What is the role of that ability in the classroom? What factors and/or threats limit or enhance the capability's contribution to learning? This separation of technical aspects and pedagogical value is intentional.

Case Findings: EdCafe as an Integrated AI Classroom Platform**Instructional Planning and Content Generation**

EdCafe brings together multiple teacher-preparation activities in a single place. Based on the latest documentation of the platform, teachers can create lessons, presentations, notes, teaching aids, reading activities, AI images, and speech output on a topic or from an uploaded and/or sourced document (EdCafe AI, n.d.-a). The integration can help to reduce the disjointed workflow in which teachers have to switch between different applications to plan, create presentation designs, search for resources, and create activities.

The pedagogical advantage is not just the saving of time. Rapid generation to aid iterative design: teacher can develop first lesson plan, draft a slide deck, build a quiz based on the same topic, and then make revisions based on student feedback. This in principle, establishes a closer link between objectives, instruction, practice and assessment. The platform does not guarantee alignment, however.

The factual accuracy, level of cognition, examples, terminology, appropriateness of culture and correlation to curriculum outcomes need to be checked by the teacher.

Content-generation functions can be useful in English language teaching to create graded reading passages, discussion questions, vocabulary aids, comprehension activities, example dialogues, and differentiated practice. The characteristic of being able to immediately modify the material according to the level of proficiency, the topic, and the objective of the lesson is the principal instructional value.

Interactive Assessment and Retrieval Practice

The platform features quizzes, quizzes on YouTube, flashcards, reading activities, chatbots, and assignment workflows, all of which are accessible to the students. These can take AI from "teacher only" to "student only" use. Quizzes are an activity that can be assigned to a student and allow for immediate feedback, and flashcards are an activity that can be used as self-paced practice that can differentiate between items that the student is familiar with and items the student is still learning (EdCafe AI, n.d.-a; EdCafe AI, 2026b).

The functions from a learning perspective can include formative assessment and retrieval practice. A teacher might use a short quiz prior to teaching to determine what prior knowledge students have, during instruction to determine understanding, or post-instruction to see misconceptions. Flashcards can be used to help with repeated retrieval of vocabulary, concepts, definitions or examples. Using YouTube Quizzes to create a more interactive experience for the viewer. The dynamic component is created when evidence of these activities is used to alter the next steps that will occur in class.

The key threat to the assessment is validity. Questions generated by the computer could be too easy, be vague, include incorrect information, be ill-fitted to the construct, or be overly recall-oriented. So, AI assessment should be used as a preliminary draft, and teachers should review it, particularly if the scores are used for grading or making decisions that have significant consequences.

Personalization, Scaffolding, and Conversational Support

One of the most versatile features of the platform is the custom chatbot. EdCafe classifies them as teacher-programmable assistants capable of assisting students in asking questions and interacting with them on the subject (EdCafe AI, n.d.-a). From a pedagogical point of view, such chatbots can be applied in guided practice, role play, Socratic questioning, revision support, frequently asked questions, language rehearsal and stepwise explanation.

In the context of EFL/ESL, an EFL teacher might create a chatbot that mimics a conversation in a restaurant, a job interview, an academic advising session, or a problem-solving situation. Pupils can be helped to repeat at low level before engaging in peer interaction or speaking tasks assessment. A chatbot can be programmed to give tips instead of full answers, ask questions and limit answers to the content fed to it by the teacher.

Personalization nevertheless raises a pedagogical paradox. The easier it is for AI to provide a response, the more effortless it is to replace the productive struggle that is essential for learning. The more quickly AI can provide an answer, the more easily it can find a way to replace the productive struggle necessary for learning. Scaffolding should thus be planned around prompts, hints, questions, partial feedback, and reflection. The scaffolding should, therefore, be planned around prompts, hints, questions, partial feedback and reflection rather than around free choice of answers.

Multimodal Learning and Accessibility

EdCafe is a mixture of text, visual, audio and interactive. Visualisation and contextualisation can be aided by AI-generated images; creation of slides can incorporate images and text; creation of AI speech can convert text into speech; reading task can structure text engagement; flashcards can include a concept as well as a brief prompt. The modalities align with the more general trend of multimodal AI learning systems found in recent surveys (Luo et al., 2025).

In cases where the learning objective is represented in the same mode, multimodality is especially helpful. In language instruction, text-to-speech technology can be used to assist in listening practice and pronunciation awareness, and pictures can be used to provide context cues for words in language learning. Visuals can aid in explanations and discussion in science and social studies. The challenge of multimodality is also posed by demands for verification: images created may not reflect factual or cultural information and synthetic speech may not reflect the full range of accents, prosody and variation in interaction that learners require.

Feedback, Analytics, and Instructional Decision Support

One key aspect of an integrated classroom platform is the integration of student activity and teacher review. The current site for EdCafe says that teachers can see scores, participation, trends, submissions, and student level activity all in the same place. EdCafe AI (2026a) also released an Analytics Assistant that can summarize information from an interactive file and respond to teacher queries about class performance and engagement as part of a 2026 product update.

This is a potential to reduce the time lag between student outcomes and adjustment of instruction. Reteaching may be identified as the teacher sees patterns develop during the learning process and could choose to reteach or modify the task or content, as well as provide support for students who might benefit from additional assistance during the learning process. This aligns with the overarching value of AI in assessment, offering individualized feedback, and recommendations suggested by Luo et al. (2025).

But analytics aren't self-explanatory. However, participation, scores are not equal to learning, and neither is AI-summary. Teachers should ensure that they have a clear understanding between what is happening on the platforms and the understanding of the concepts, and that AI-generated work is checked against student work before decisions are made with consequences.

Teacher Workflow Integration and Classroom Orchestration

Multiple instructional functions integrated into a common flow is EdCafe's most distinctive strength. The create-assign-learn-review-insights sequence of the platform is an attempt to link instructional design to enactment within the classroom with follow-up. This can help to streamline the workflow of going back and forth between different tools and make it easier to use AI for educators who aren't technically savvy.

A TPACK view of integration suggests that the integration of technology happens when the teacher is in control of content and pedagogy. The platform can create artefacts and can organise evidence, but it cannot independently decide, which is most educationally suitable objective, what are the socio-cultural

needs of a certain class, which task is valid, or what is human meaning of the difficulty of students. Dynamic classroom learning thus relies on the teacher's orchestration: when should the AI create; when should there be interaction between the AI and the students; when should the teacher intervene; and when should other methods be used instead of AI?

Table 1. EdCafe functions and potential pedagogical roles

EdCafe function	Primary educational role	Dynamic classroom use	Key teacher responsibility
Lesson plan / slide deck / summary note	Instructional design and content preparation	Rapidly revise explanations and lesson sequences	Verify accuracy, alignment, and cognitive demand
Quiz / YouTube quiz	Formative assessment	Check understanding and adjust instruction	Review item quality and assessment validity
Flashcards	Retrieval practice	Target concepts or vocabulary requiring further practice	Ensure meaningful selection and avoid isolated memorization
Reading activity	Guided comprehension	Differentiate text-based tasks and follow-up questions	Match text difficulty and objectives
Custom chatbot	Conversational scaffolding / tutoring	Provide guided practice, role-play, or question support	Constrain the chatbot and prevent answer substitution
Assignment grader	Feedback support	Accelerate feedback cycles	Moderate feedback and retain grading accountability
AI speech / AI image	Multimodal representation	Provide auditory or visual support	Check accessibility, accuracy, and cultural appropriateness
Reports / Analytics Assistant	Learning analytics and decision support	Identify patterns for reteaching or targeted support	Validate summaries against student work

DISCUSSION

What Makes the Platform Potentially “Dynamic”?

Case analysis suggests that it is the relationship between the planning, the development of an activity, student participation, feedback, and review that are important for its value in dynamic classroom learning, rather than an individual generator. A lesson may go from teacher planning through to student practice and then to evidence informed adjustment but not necessarily with a different tool at each stage. This aligns with recent studies which emphasize the importance of integrating GenAI tools into educational processes and roles (Qian, 2025).

The platform is thus considered as an educational cycle rather than a set of generators. This interpretation is significant because it shifts the lens of evaluation for an AI feature from "How many AI features are there?" to "How do the AI features help inform learning decisions? Being responsive to evidence is as much a part of a dynamic classroom as being fast at producing content.

Pedagogical Value Versus Automation

There is a consistent message in the literature that suggests that the question of whether or not to simply equate automation with effectiveness in education should not be answered. Kasneci et al. (2023) and UNESCO (2023) highlight that GenAI can be used to enhance education, but also poses new dangers. This tension is evident in the EdCafe case. Lesson planning could be streamlined with automated lesson plans, but if teachers do not plan their lessons well, they could end up with generic lessons for lack of review. Assessment can be undermined by the possibility of response through automated feedback, because students may get authoritative sounding, but incorrect explanations. While analytics can be useful to teachers in identifying patterns, relying too heavily on reduced versions of summaries may limit the teacher's understanding of the qualitative aspects of student learning.

Therefore, the platform should be employed in a human-in-the-loop fashion. Teachers set outcomes, select source materials, check generated content, make decisions about the use of AI tools in student tasks and monitor for the impact of such decisions. The best application of AI is to augment the capacity of teachers and student practice, and to maintain the intellectual aspect of teaching and learning.

Implications for English-Language Teaching

Pedagogy of English is well reflected in the features of EdCafe. Reading activities can be used for comprehension, flashcards can be used for vocabulary, AI speech can be used for listening input, chatbots can be used for structured interaction, quizzes can be used to check understanding of grammatical/lexical structure, slides can be used to create images and to provide prompts for language, and assignment feedback can be used to support revision. These tools can be integrated in a way that can aid teachers to construct a logical progression around a communicative goal.

The lesson could begin with a quick visual cue using AI, then proceed to a teacher-led reading activity, review flashcarding specific words, role play with a limited AI chatbot, and then a short formative quiz. The teacher would then check student responses, discuss language forms that need reteaching, extend the communicative task, and/or provide student differentiation in supporting. In the case of such a model, AI can contribute to the speed and adaptability, while the teacher can contribute to communicative purpose and pedagogical coherence.

Teacher Professional Development

The use of AI is not meant to replace the role of teachers, it is meant to augment their capabilities. UNESCO's teacher competency framework also explicitly includes the competency of AI pedagogy in addition to ethical and human-centred competencies (Miao & Cukurova, 2024). Therefore, for platforms like EdCafe, professional development shouldn't just be about button training. Teachers should have experience in designing prompts, validating their outputs, being valid, differentiating, interpreting the data, and designing tasks that retain student agency while being aware of privacy issues. The school should also establish common guidelines and best practices for the use of AI, documenting its use, checking sources, and evaluating it. Left to their own devices, teachers can employ the same platform in different ways, resulting in differing expectations and risks for students in different classrooms.

Ethical, Practical, and Pedagogical Risks

UNESCO (2023) emphasises human-centred principles for the use of GenAI, including protection of privacy, the use of only age-appropriate tools, ensuring inclusion, transparency, and maintaining human agency. These principles are directly applicable to platforms used in the classroom by teachers, to process teacher-generated content, and can contain teacher activities or submissions as well.

EdCafe claims that its student-facing environment is meant to be used for student education, and it has teacher-facing monitoring features (EdCafe AI, n.d.-a). While these are important factors to take into consideration when choosing a platform, institutions should check out any terms that may apply, data management, permissions, retention policies, and local laws before deployment. Avoid assuming institutional due diligence is being conducted in place of vendor claims.

Pedagogically, the risks are output error, over-scaffolding, automation bias, reduced effort by learners and invalid assessment. A well-refined answer from AI could be perceived as a correct response. Students can also be taught how to get finished work instead of relying on AI to act as a framework. Those risks can be addressed through the design of tasks that ask for explanation, evidence, reflection, comparison, peer interaction, oral defense, revision history, or other such tasks.

Table 2. Key implementation risks and mitigation strategies

Risk	Educational consequence	Recommended mitigation
Inaccurate or fabricated output	Misconceptions and unreliable instructional content	Teacher verification; use trusted source materials; require citation checking
Overreliance on AI	Reduced productive struggle and learner agency	Use hints, questioning, reflection, and delayed assistance
Weak assessment validity	Scores may not represent intended learning outcomes	Teacher review of items, rubrics, and automated feedback
Privacy / governance uncertainty	Institutional and learner data risks	Review vendor terms, local policy, permissions, and data minimization practices
Equity and access	Unequal opportunities to benefit from AI-supported learning	Provide school-supported access and non-AI alternatives where needed
Automation bias in analytics	Teachers may overtrust AI summaries	Inspect underlying student work and use multiple evidence sources
Generic pedagogy	Efficient but decontextualized lessons	Adapt outputs to curriculum, language level, culture, and classroom needs

CONCLUSION

EdCafe is a significant advance in GenAI for education, combining various AI-powered teaching capabilities into a single workflow in the classroom. It currently features tools for planning, presentation, resource discovery, practice, assessment, conversational support, multimodal content, feedback, student work review, and analytics. This expanse provides a potential framework for dynamic classroom learning in which educators can effortlessly shift from design to student engagement and from student work to classroom modification.

However, the focus and education value of the platform is not in automation itself. What can speed up feedback and differentiation can, if misapplied, cause errors, foster dependency, diminish assessment, and limit pedagogical judgment. Thus, from the perspective of human beings, the role of AI in teaching is an augmentative one, yet the teacher is still duty-bound for learning objectives, content validity, teaching decisions, ethical use, and quality of interaction with AI.

The most fruitful direction for educators, including ELL teachers, is not to question if AI should be replacing traditional teaching methods, but how can AI be integrated into them? Integrated platforms like EdCafe can guide teachers to design more responsive, interactive, and adaptive learning environment by reviewing, moderating, and critically interpreting their interactions with students using the AI-generated materials. These propositions need to be tested in empirical studies at all levels of schooling, in all fields of study, and in various cultures.

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