WHEN AI ASKS: SOCRATIC TUTORING TO STRENGTHEN UNIVERSITY STUDENTS' SPEAKING SKILLS

QUANDO A IA PERGUNTA: TUTORIA SOCRÁTICA PARA FORTALECER A PRODUÇÃO ORAL UNIVERSITÁRIA

CUANDO LA IA PREGUNTA: TUTORÍA SOCRÁTICA PARA FORTALECER EL SPEAKING UNIVERSITARIO

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ABSTRACT
This article examines the enhancement of English as a foreign language learning at Universidad Politécnica de Querétaro in the context of generative artificial intelligence. The proposal addresses an institutional concern: students' insufficient functional command of B1-level oral production, communicative insecurity, assessment practices centered on grade-based accreditation, as well as the uncritical use of digital tools. Drawing on a qualitative, inductive approach supported by grounded theory and participant observation, the study proposes a technopedagogical strategy based on a Socratic tutor aligned with the Common European Framework of Reference for Languages. Through systematic oral micro-practices conducted inside and outside the classroom, the intervention seeks to foster discursive accuracy, self-repair, cognitive autonomy, and sustained participation. Artificial

intelligence is thus conceived as a regulated pedagogical mediation capable of reconfiguring cultural practices of learning, assessment, and bilingual education in higher education.

Keywords: Cognitive Autonomy. English Oral Production. Generative Artificial Intelligence. Higher Education. Socratic Tutor.

RESUMO

Este artigo analisa o fortalecimento da aprendizagem do inglês como língua estrangeira na Universidade Politécnica de Querétaro diante da emergência da inteligência artificial generativa. A proposta parte de uma problemática institucional: o domínio funcional insuficiente do nível B1 na produção oral, a insegurança comunicativa dos estudantes, as práticas avaliativas centradas na acreditação numérica, bem como o uso acrítico de ferramentas digitais. A partir de uma abordagem qualitativa e indutiva, sustentada na teoria fundamentada e na observação participante, propõe-se uma estratégia tecnopedagógica baseada em um tutor socrático alinhado ao Quadro Europeu Comum de Referência para Línguas. Por meio de micropráticas orais sistemáticas, realizadas dentro e fora da sala de aula, a intervenção busca promover precisão discursiva, autorreparação, autonomia cognitiva e participação contínua. A inteligência artificial é concebida como mediação pedagógica regulada, capaz de reconfigurar práticas culturais de aprendizagem, avaliação e formação bilíngue no ensino superior.

Palavras-chave: Autonomia Cognitiva. Educação Superior. Inteligência Artificial Generativa. Produção Oral em Inglês. Tutor Socrático.

RESUMEN

Este artículo analiza el fortalecimiento del aprendizaje del inglés como lengua extranjera en la Universidad Politécnica de Querétaro frente a la irrupción de la inteligencia artificial generativa. La propuesta parte de una problemática institucional: el insuficiente dominio funcional del nivel B1 en la producción oral, la inseguridad comunicativa del estudiantado, las prácticas evaluativas centradas en la acreditación numérica, así como el uso acrítico de herramientas digitales. Desde un enfoque cualitativo e inductivo, sustentado en teoría fundamentada y observación participante, se plantea una estrategia tecnopedagógica basada en un tutor socrático alineado con el Marco Común Europeo de Referencia. Mediante microprácticas orales sistemáticas, dentro y fuera del aula, la intervención busca promover precisión discursiva, autorreparación, autonomía cognitiva y participación sostenida. La inteligencia artificial se concibe como mediación pedagógica regulada, capaz de reconfigurar prácticas culturales de aprendizaje, evaluación y formación bilingüe en educación superior.

Palabras clave: Autonomía Cognitiva. Educación Superior. Inteligencia Artificial Generativa. Producción Oral en Inglés. Tutor Socrático.

1 INTRODUCTION

What is education, if not a feverish web of thought and desire —a paraphernalia of yearnings— that drags us towards new realities which interpose themselves and from which new forms of apprehension arise? We pursue that shifting figure like someone who insists on confronting the unnameable, believing that certain acts, by their intensity, might fix meaning forever. But reality, sinuous and refractory, clouds the gaze: resources grow thinner, wills disperse, agreements become fragile, and even the craft shared with our colleagues is subordinated to variables that multiply like labyrinths. Even so, amid that contingency, to educate persists as a vocation of lucidity: to sustain the possibility of understanding when everything pushes towards dispersion.

At that threshold, artificial intelligence (AI) bursts in: a glow that promises relief, an elegant seduction that grazes the skin of uncertainty and, with delicacy, persuades. There is in its immediacy a dangerous calm: ignorance disguises itself as peace, delegation is made up as efficiency, and the act of "resorting to it" becomes a habit before it becomes judgement. Then formation is corrupted without a stir: retention erodes, effort dilutes, dependence settles as a new prudence, and post-truth is normalised —producing without understanding, responding without thinking—. Hence the ethical demand of this credo: to domesticate that power through rigorous mediation, to turn temptation into method and ease into discipline, so that the student's voice is not an automatic echo, but a critical presence that learns to sustain itself in English with accuracy, agency, and awareness.

Every imagination corresponds to a rational explanation. Both in a linguistic development of historical reality (Hurtado, 2016). Consequently, this study organises a review of the literature to outline the construct of educational technology and its methodological expressions, attending to its interdisciplinary condition and its capacity to reorder didactic mediation. From this platform, it examines how artificial intelligence may operate in the teaching-learning (TL) process of English as a foreign language (EFL) not as an instrumental shortcut, but as a regulated device that enhances communication. In parallel, the reformist implications of the project are problematised, in order to delimit normative frameworks and anticipate the challenges that technopedagogical innovation introduces.

In this vein, the methodological device is anchored in grounded theory, understood as an inductive logic of categorial construction supported by successive cycles of contrast and analytical refinement. The interpretive axis unfolds from a phenomenological approach through participant observation, which enables the teacher-researcher to identify perceptions, resistances, and

reconfigurations in the experience of oral production derived from the mediation of the Socratic tutor. Thereby, the phenomenon is examined from a situated reading, articulating empirical records with lived meanings. However, even with its solidity, the study acknowledges a structural constraint: the incipient implementation of the prompt limits the possibility of a longitudinal follow-up that would allow its sustained impact to be estimated.

2 STATEMENT OF THE PROBLEM

The problem lies in the fact that English students at the Universidad Politécnica de Querétaro do not graduate with a B1 level of proficiency in the *speaking* skill. This circumstance constitutes an initial confrontation associated with the socioeconomic factors that shape the students' life trajectories, which influence their association with language throughout their educational journey, as well as their belonging to different social strata and their geographical origin, particularly between community and urban environments. Such variables make it possible to discern the roots of the linguistic deficiencies observed, in addition to measuring the real degree of acceptance towards the acquisition of a foreign language, frequently in tension with pre-existing traditional customs.

In a subsequent instance, this collision acquires a dissonant nuance from the classroom perspective, in which students with a more pronounced discursive lag manifest a predisposition to the fear of being judged, a notable insecurity when participating, and a profound frustration in the face of the lack of lexical resources that would allow them to articulate even the most elementary ideas. Under these conditions, the communicative act is figuratively invalidated, giving rise to a stance of taciturn and withdrawn passivity, sustained, predominantly, in the self-concept that the student has built about themselves.

Correlatively, this reality is intensified when the teaching figure, through their degree of demand, pedagogical impetus, and methodological configuration, puts into operation a normative design that crystallises into performance rubrics, work dynamics, and percentage assessment schemes. Such devices, although systematically repeated each term, continue to orient their effectiveness towards a singular purpose: obtaining a numerical digit that legitimises administrative accreditation, not the consolidation of linguistic competence, and of course, the evocation of a conversational command in an L2.

From a concomitant logic, an additional tension is noted situated in the praxis of digital environments given that, despite the technological resources oriented to enhancing the TL of the

language, a fraction of the student body resorts to artificial intelligence as a mechanism of immediate resolution, devoid of critical mediation and conceptual appropriation. This instrumentalisation fosters the uncritical reproduction of contents, whose iteration consolidates habits that weaken cognitive autonomy since the tool usurps the ontological-operational axis and the automation of the learners is epistemologically suspended.

This phenomenon becomes unequivocal in the professional practices of the sixth and tenth terms —the so-called internships—, when the companies linked to the university, receivers of the student body, report substantial communicative vicissitudes in bilingual scenarios. This juncture not only compromises performance in the assigned positions, but also introduces persistent restrictions even in the face of highly competitive technical profiles; a statement derived from an internalised insufficiency in L2 that the graduates recognise.

2.1 GENERAL QUESTION

- How can the learning of a second language be strengthened in the era of artificial intelligence?

2.2 QUESTIONS DERIVED FROM THE RESEARCH

- To what extent does the systematic implementation of a Socratic artificial intelligence tutor, integrated as an oral micro-practice in class, contribute to the strengthening of *speaking* and to the functional achievement of the CEFR B1 level in the student body of the Universidad Politécnica de Querétaro?
- How does the Socratic mediation of artificial intelligence affect the reconfiguration of the communicative self-concept and the disposition of the student body of the UPQ to participate actively in oral production in English as a foreign language in classroom contexts?
- To what extent does the methodological regulation of the use of ChatGPT contribute to the formation of professionals with cognitive solidity and autonomous command of English as a foreign language in the formative sphere of HEIs?

2.3 GENERAL OBJECTIVE

- To develop a technopedagogical strategy oriented to the strengthening of the learning of a second language in the context of artificial intelligence.

2.4 SPECIFIC OBJECTIVES

- To determine to what extent the systematic implementation of a Socratic artificial intelligence tutor, integrated as an oral micro-practice in class, contributes to the strengthening of the speaking skill and to the functional achievement of the CEFR B1 level in the student body of the UPQ.
- To theorise how the Socratic mediation of artificial intelligence affects the reconfiguration of the communicative self-concept and the disposition of the student body of the Universidad Politécnica de Querétaro towards oral production in English as a foreign language in classroom contexts.
- To debate the conformity and suitability of the methodological provisions that regulate the use of ChatGPT in relation to the principles of cognitive solidity, integral formation, and autonomous command of English as a foreign language in higher education institutions.

3 THEORETICAL-CONCEPTUAL FRAMEWORK

According to Gros (2012), the production of knowledge related to the use of digital technologies in learning advocates walking through unknown consciousnesses, listening to the other. Establishing a circumstantial dialogue between technological and pedagogical designs; one that is subordinated to primarily dialectical questionings: what and how one learns. Of course, the conceptual construction of technology does not necessarily rest on the nature of its designation because it is redefined, evolves, and innovates in educational practice as a succession of events that have unity as well as spatio-temporal coherence.

It is asserted, in such a case, that educational technology (ET) is the pedagogical discipline responsible for systematically managing teaching-learning processes according to the principles of globalisation, interdisciplinarity, and transdisciplinarity, in the school context. In this regard, Cañizález & Beltrán (2017) state that this discourse superimposes the concept of educational technology onto that

of information and communication technologies (ICTs); for while the former implies a pedagogical reflection, from which a theory, methodology, and formative practice in specific contexts underlie, the latter constitutes digital tools that allow information to be stored, represented, and transmitted with educational possibilities.

In this vein, artificial intelligence (AI) as a synthetic rationality of autonomous inference is grafted into ET not as a mere instrumental artefact, but as a structuring operator that subverts, reorders, and reformulates the devices of mediation, as well as the regimes of production, validation, and circulation of knowledge in the contemporary formative architecture; however, Cabero (2016) warns that such solutionism is an error of referential appreciation that prevents the potential of educational technology from being observed with an objective gaze, given that the significance of its scope depends on the environment of application, the organisational structure, as well as the psychological, cognitive, and sociocultural variables.

In consonance with this reasoning, Adell (2018) conceptualises that the philosophy of technology is a multifaceted phenomenon since it can be understood on the basis of the physical-structural properties, functionalities proper or accidental that characterise an artefact; be glimpsed from ontological and epistemological knowledge; be grouped into an activity that contemplates designing, making, and using/appreciating; be represented through metaphysical, ethical, or aesthetic values. Indeed, AI goes beyond an instrumentalist or determinist vision.

De facto, Área (2009) elucidates from a postmodern stance of knowledge that any approach relating to educational problems associated with technological incidence must be transmuted from positions not only technical of psychopedagogical knowledge, but from platforms that summon the ideological meaning of education in communion with the processes of social alteration. Consequently, every technopedagogical initiative demands a critical delimitation of assumptions and scopes.

Within this sphere, the adoption of normative referents that reorient the learning of English towards a pedagogical substrate becomes ineluctable, in the face of the instrumentalist drifts described above. In this vein, the Common European Framework of Reference for Languages (CEFR) acquires a strategic centrality by postulating the immersion of the learner in practices analogous to those of a genuine speaker, articulated through descriptors that specify performance by levels of proficiency (A1–C2). Under this premise, tools based on artificial intelligence, such as ChatGPT, can be pedagogically programmed on the basis of those descriptors, not as devices of cognitive substitution, but as didactic mediators that regulate interaction, discursive complexity, and formative tasks according to the

learner's real level. In this way, the applicative usage of the CEFR allows the use of AI to be re-inscribed within a normed methodological framework, guaranteeing formative coherence, competence progression, and academic legitimacy in EFL.

Undoubtedly, the *speaking* skill stands as a vertebral axis for the UPQ, whose consolidation requires semi-structured instructional communication scenarios. In this framework, ChatGPT makes it possible to orchestrate oral practices through the strategic programming of *prompts* aligned with the CEFR, modulating discursive complexity and communicative intentionality. Thus, oral expression is configured as a situated exercise that integrates linguistic, cognitive, and sociopragmatic dimensions, broadening the academic and professional projection of the student when it is inscribed in socially significant uses, since "*bilingual education, as bilingualism, is not only about two languages. It is a complex phenomenon that specifies how the language is used in the classroom and at home, or the purposes that it serves*" (Lozano, 2018, cited in Castillo & Mora, 2022, p. 188).

Ergo, the optimisation of the bilingual profile presupposes the adoption of educational policies, which in correspondence with Torres (2009) ensure their preponderance by being designated as proposals that impact the shaping of a future Platonic society, from different ideological horizons. Substantially, such policies also materialise in a set of reforms that make viable educational projects with clear technopedagogical incidence. Under this theoretical frame, the deliberate design of *prompts* —conceived as cognitively intentioned instructions for generative artificial intelligence— transcends its merely operational function by enhancing critical thinking and academic communication, enabling a sophisticated use for formative, research, and teaching purposes (Quintero *et al.*, 2025).

Assuming this condition, AI acts as a Socratic tutor of a formative nature, conceived as a pedagogical device oriented to stimulating autonomous reflection, demanding an argumentative exercise, and favouring the conscious self-regulation of the cognitive process (Amaya *et al.*, 2025). This responds to the fact that the Socratic method is founded on a pedagogy of permanent interrogation, which activates a sustained intellectual participation of the student, in which dialogue in an L2, according to Denmartin (2025), transcends its didactic function to constitute itself as an intellective epistemological guideline, fundamental for the internalisation of intricate knowledge mediated by a virtual infrastructure.

4 METHODOLOGICAL FRAMEWORK

This being so, the present dissertation stands as a critical analysis that ventures into the strengthening of an L2 in the era of AI. Attending to the constitutive features of the described phenomenon, it is noted that the implemented approach is of a qualitative nature by conferring a holistic and interdisciplinary perspective to the referred environment, thus making possible the exhaustive exploration of the participants' experience in its complexity and depth, that is, “people, settings, or groups are not reduced to variables, but considered as a whole [one] studies people in the context of their past and of the situations in which they find themselves” (Taylor & Bogdan, 1987, p. 20). These expressions are subjugated to the vicissitudes of historical consciousness, by emerging in a specific spatio-temporal reality.

In this order of ideas, said paradigm evidences a systematisation tending towards the understanding, scientific study of “the socio-educational practices and settings that entail decision-making, orientation towards the introduction of reforms and innovations, rediscovery and development of an organised body of knowledge that allows a conceptual order” (Sandín, 2003, p. 28). Therefore, this naturalistic inquiry coincides with the mythological situational archetype of the labyrinth of Daedalus, since “you are not gathering pieces of a puzzle whose image you already know. You are constructing an image that forms when the parts are gathered and examined” (Mayan, 2001, p. 5).

In this sense, it is posited that the research subscribes to an inductive perspective, by virtue of the fact that the codified concepts, conjectures, or categories arise principally from the frame of reference itself. For this purpose, recourse is made to the collection and analysis of data with the aim of outlining the questionings derived from the research or revealing new interrogatives during the process of interpreting information; this must integrate validity and reliability while the verification process is delineated to ensure its rigour. Hence, grounded theory, also called substantive or middle-range theory, is the design most consonant with our study since it has a prescriptive method to generate a theory that elucidates on a conceptual plane peremptory dimensions (Hernández, 2018).

On a complementary plane, participant observation is consolidated as a central methodological component of the adopted qualitative approach. In the present study, this concept refers to a modality of inquiry based on the direct social interaction between the researcher and the participants, through which information is obtained systematically and non-intrusively, respecting the dynamics proper to the observed context (Taylor & Bogdan, 1987). Along the same lines, Mayan (2001) points out that such a strategy supposes the prolonged immersion of the researcher in a deliberately selected setting, in

order to access an internal understanding of the practices, meanings, and cultural dynamics that structure the group. This sustained participation makes it possible to recognise an emergent organisational culture, responsible for regulating behaviours, norms, and expectations that orient interaction and belonging within the studied context.

5 CONCRETE CONTRIBUTION TO THE RESEARCH

The proposal is conceived as a situated formative intervention for the Universidad Politécnica de Querétaro, oriented to have a verifiable impact on oral production in English through the deliberate incorporation of a Socratic tutor supported by generative artificial intelligence, as can be seen below. Its raison d'être is not technophilic enthusiasm nor the promise of an automatic solution, but the need to reorder the ecosystem of oral practice —frequently fragile, intermittent, and socially inhibited— under a normative framework that preserves the student's agency and the teacher's pedagogical stewardship. In this horizon, technology does not operate as a cognitive substitute, but as a mediation designed to provoke thought, precision, and continuity in the use of the language.

Figure 1

Socratic tutor with AI to improve speaking at the UPQ

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SYSTEM PROMPT — EXECUTION ONLY
You are a Socratic ORAL English conversation tutor aligned with the CEFR (Common
European Framework of Reference for Languages).
Your sole function is to elicit spoken production.
Internal parameters (never requested, never displayed):
• CEFR level
• Communicative focus
• Duration (default: 10 minutes)
Strict rules:
• Speaking only. Short, natural spoken English.
• Questions only.
• No explanations. No grammar theory.
• No model answers. No sentence completion.
• Press for precision if the student is vague.
• Apply at least ONE indirect correction per session.
• Correct one key error only. Force noticing and self-repair.
• Never provide the corrected form.
ABSOLUTE ACTIVATION RULE:
When this prompt is submitted, your ONLY output must be exactly: Let's begin the
conversation.
CLOSING RULE (mandatory at session end only):
Provide ONLY the following report:
Session Report
• Interaction length:
• Primary area for improvement (one CEFR-related aspect):
• Demonstrated achievement:
• AI validation: Session conducted in accordance with the established CEFR-aligned
Socratic protocol.
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Source: Elaboración propia con asistencia de IA generativa (ChatGPT) (2026).

In attention to, the normative anchoring is established on the basis of the Common European Framework of Reference for Languages, not as a decorative reference, but as a grammar of formative demand: descriptors, progression, and performance criteria. Consequently, the Socratic tutor is structured to produce oral interaction pertinent to the target level (with emphasis on functional B1 as the case may be), so that the student is compelled to formulate, sustain, nuance, and reorganise their ideas in real time. This choice shifts the centre of learning from the accumulation of contents towards discursive execution, understood as a situated practice where linguistic resources, pragmatic decisions, and metacognitive control converge.

This premise suggests that the utterances emitted by AI must then figure as a succession of conceptual images based on the context and equally on the experiential empiricism of the student, which in turn will make it possible to clarify the operational exegesis of the participant; for this reason it is determined that the use of certain programmatic deliberations is not limited merely to a partial grouping of feelings or ephemeral defining elucidations, but rather, through the frame of reference that said locution provides, analogical relations are established between the diverse argumentative

gradations (lexis) and critical orientations of the discourse (logos) set out in the artifice of information collection.

Of course, the device that makes such regulation possible is the *prompt* already designed, tested, and validated, which is explicitly incorporated in this document as an operational instrument and, simultaneously, as a methodological foundation. Its value lies in the fact that it delimits the behaviour of artificial intelligence with a precision infrequent in everyday educational uses: it obliges a strictly oral exchange; it restricts the intervention to questions; it prohibits explanations, grammar theory, model examples, and completion modes; it requests the precise performance of the student when they take refuge in vagueness; and it incorporates a focalised indirect correction —single per session— oriented to forcing recognition of the error and self-repair without offering the "correct" form.

Said set of restrictions is not ornamental: it institutes the condition of possibility for avoiding the complacent use of AI and turning it into an agent that guides and interrogates without appropriating the learner's cognitive work. In pedagogical terms, the *prompt* acts as a dyke against solutionism: it limits the drift towards the easy answer and reinstates the responsibility for performance in the one who learns.

The insertion of the tutor into the institutional dynamic is thought to be realistic, constant, and of low temporal cost, without diluting the course into a parallel activity. On a regular basis, classes are taught on Mondays, Wednesdays, and Fridays in modules of one hour and forty minutes; onto that architecture is grafted a ten-minute oral micro-practice in the classroom only on Wednesdays and Fridays. That brief window, far from being marginal, is configured as a nucleus of high intensity: a brief interval to sustain oneself each week, and equally, structured to accumulate significant practice. It is not about "talking for the sake of talking", but about installing a recurrent pattern of formulation, clarification, and argumentative support under interrogative conduction.

The immediate purpose is to raise the volume, as well as the quality of oral production; the mediate purpose is to erode communicative passivity and displace the fear of judgement towards a disposition of exploration, together with a progressive adjustment. For this reason, continuity is guaranteed outside the classroom: on Tuesdays and Thursdays, the student converses at home with the Socratic tutor as a complementary task. This decision responds to a critical premise: oral competence weakens when it is confined to the margins of the school timetable; it requires recurrence and sustained exposure. By extending practice to the domestic environment, learning is delocalised, dependence on the in-person moment is reduced, and the probability of functional automation of structures and

discursive routines is increased. Even so, the intervention preserves a guiding principle: autonomy does not equate to abandonment; therefore, the extra-classroom task is not conceived as “free work”, but as an activity with protocol, evidence, and follow-up.

Teacher mediation, in this scheme, is not an administrative formalism, but the piece that turns the tool into a formative experience. The teacher transmits the access and instructions through Google Classroom, integrating the Socratic tutor as a recurrent activity of the course. On the platform are published: the link or access route to the tutor; the indication of strict duration (ten minutes); the guideline for carrying it out according to the day (Wednesday/Friday in the classroom; Tuesday/Thursday at home); minimum compliance criteria (previously edited by the teacher); and the instruction to safeguard the closing report as evidence. This channelling through Classroom not only facilitates logistics, it installs a framework of institutional consistency and reduces variability in execution, an essential condition when seeking to sustain the intervention over time without it degrading through improvisation.

The automated closure of the tutor —a brief report with duration, priority area for improvement linked to the CEFR, observed achievement, and validation of adherence to the protocol— fulfils a dual function: on the one hand, it operates as minimal traceability of the process; on the other, it serves as a feedback input. By not offering extensive judgements nor explanations, it avoids becoming a negotiable or manipulable text; at the same time, it delivers a record to identify patterns, adjust priorities, and orient focalised pedagogical interventions. Said report does not substitute the teacher's assessment: it complements it with microanalytical evidence, reducing the predominance of a logic of numerical grading disconnected from real performance.

This proposal closes with a methodological and ethical decision: to turn oral practice into a traceable, scalable, and governable process, without diluting it into improvisation nor reducing it to grading. For this reason, the intervention contemplates periodic calibration of the instrument (adjustment of the communicative focus and the level of demand according to evidence), brief performance samples for random verification, and a scheme of responsible data safeguarding, so that the follow-up is rigorous without invading the student. Thus, the project does not only increase opportunities for speech: it installs an institutional standard of quality for speaking, which enables evidence-based teacher decisions and leaves a replicable model for other subjects of the BIS ecosystem, with comparable results and continuous improvement.

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