

Unveiling hidden opportunities: a case study on the perception of affordances in informal english learning activities mediated by technology in a fl teacher-training program



Desentrañando oportunidades ocultas: un estudio de caso en la percepción de affordances en actividades informales de aprendizaje del inglés mediadas por tecnología en un programa de formación de profesores de lengua extranjera

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Abstract

This qualitative single-case study explored the perceived affordances of informal activity systems mediated by online technologies for promoting English language learning among 115 FL teachers-in-training at UNAD. The study employed a word-based questionnaire administered to the entire sample, followed by small focus group interviews with 20 purposively selected participants, (Morgan & Hoffman, 2018). The resulting data were analyzed using a dynamic and fluid 2-cycle coding procedure. The findings show that learners' ability to perceive and engage with technological, social, metacognitive, and language learning affordances significantly influences their engagement with technology-mediated activities and their level of success in acquiring a foreign language. Notably, perceiving physical affordances serves as a prerequisite for perceiving more complex affordances, such as educational and social ones. This research significantly contributes to the advancement of knowledge regarding informal English learning mediated by online technologies, with a particular focus on distance education models. The study highlights the importance of fostering learners' autonomous learning skills, given that most of the language learning in such models occurs in informal settings, and it discusses the need to leverage online resources to maximize language FL affordances for FL teachers-in-training, ultimately enhancing their language learning outcomes.

Keywords: *affordance, informal learning, online technology, activity system, activity theory.*

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Resumen

En este estudio de caso cualitativo, se exploraron las “Affordances” percibidas en las actividades informales mediadas por tecnologías en línea para el aprendizaje del inglés entre 115 profesores en formación de lenguas extranjeras en la UNAD. Se utilizó un cuestionario seguido de entrevistas en grupos focales, y los datos se analizaron mediante un procedimiento de codificación en dos ciclos (Morgan & Hoffman, 2018). Los resultados revelaron que la capacidad de los alumnos para percibir y aprovechar las “Affordances” tecnológicas, sociales, metacognitivas y de aprendizaje de idiomas tiene un impacto significativo en el éxito de las actividades mediadas por la tecnología y en la adquisición del idioma extranjero. Se encontró que la percepción de “Affordances” físicas es fundamental para percibir las más complejas, como las educativas y sociales. Esta investigación avanza en el conocimiento sobre el aprendizaje informal del inglés mediado por tecnologías en línea, destacando la importancia de fomentar las habilidades de aprendizaje autónomo, ya que gran parte del aprendizaje en estos modelos ocurre en entornos informales. Asimismo, se resalta la necesidad de aprovechar los recursos en línea para maximizar las “Affordances” de aprendizaje de idiomas para los profesores en formación, mejorando en última instancia su nivel de competencia en el idioma extranjero.

Palabras clave: “affordances”, aprendizaje informal, tecnología en línea, sistema de actividades, teoría de la actividad.

Introduction

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Language learners increasingly rely on online multimedia and communication technologies for informal language learning activities (Lee & Lee, 2019). These technologies provide opportunities to practice language skills, engage with authentic resources, and connect with fellow learners. This reliance is particularly evident among distance learning students, such as those in UNAD’s bachelor’s degree in foreign languages with an emphasis on English (LILEI in Spanish), where online technologies play a crucial role in facilitating learning experiences. UNAD’s curriculum emphasizes e-learning and a social constructivist approach (UNAD, 2016), recognizing the value of online resources in constructivist learning (Franklin & Van Harmelen, 2007). However, there is a lack of empirical evidence on the learning attributes, capabilities, or limitations of these activities, known as affordances (Lantolf & Thorne, 2006).

This research aimed to explore the perceived affordances of online technology-mediated informal activities among English learners, identifying specific attributes, capabilities, or limitations that facilitate language learning outside formal instruction. Informal language use differs from formal contexts as it involves unstructured practices and fosters authentic language production (McCarthy & Wash, 2003). Therefore, informal activity systems mediated by online technologies in the LILEI program must offer learning affordances that effectively support informal language learning.

Investigating the affordances of information and communication technologies (ICT) and their impact on learners’ educational experiences is widely recognized in the field of education (Arenas, 2015). In the context of language learning, scholars like Lantolf & Thorne (2006) define affordances as the capacity of online multimedia resources to facilitate language learning, referring to the potential and opportunities they offer for effective language learning activities. These affordances, however, are not inherent properties of the technologies themselves but emerge from the interactions between learners, the technological resources they engage with, and the sociocultural context in which learning takes place (Nocchi, 2017).

Gibson (1979) emphasizes the importance of analyzing affordances by considering the meaning and value that objects have in relation to individuals' goals and intentions. In the context of language learning, learners must perceive and utilize the affordances of online multimedia resources based on their specific learning objectives. Therefore, this study attempted to address the following questions 1) What are the perceived affordances of students from the LILEI program at UNAD in the informal English learning activities mediated by online technologies that they perform to complement their formal English instruction? and 2) What online-technological resources are involved in the informal English learning activities that these learners perform to complement their formal instruction? By understanding the affordances of these resources, learners can make informed decisions about how to effectively utilize them to enhance their language learning experiences.

The study employed Activity Theory as a framework to analyze and interpret perceived affordances. Activity Theory offers a comprehensive approach to examining the dynamic interactions between learners, tools, and the sociocultural context in language learning. By drawing on Van Lier's (2000) ideas, the study recognizes the subjective and context-dependent nature of affordances, influenced by learners' objectives, intentions, and influences. Through the application of Activity Theory, the research aimed to explore the complex relationships among learners, online technology-mediated activities, and the sociocultural context, thus enhancing the understanding of perceived affordances in these activities.

Literature review

Sociocultural theory, rooted in Russian/Soviet psychology, emphasizes learning and individual development through social interactions and collaboration. It comprises two levels of development: inter-psychological (social interactions) and intra-psychological (individual processes) (Engeström, 2001; Vygotsky, 1978; 1986). Four principles within the theory provide insights into the learning process. Mediation highlights the role of tools and artifacts in facilitating interaction with the world (Lantolf & Pavlenko, 2001). Context plays a crucial role in influencing the learning process (Barab & Duffy, 2000). Individual goals contribute to development and learning, while participating in community practices fosters growth (Gedera & Williams, 2016).

Artifacts mediate human activities and shape cognition, playing a crucial role in sociocultural theory (Lantolf & Thorne, 2006; Vygotsky, 1978; 1987). These artifacts, both physical and symbolic, mediate goal-driven actions across various domains (Lantolf & Thorne, 2006). Individuals' relationships with others, the material world, and their inner world are mediated by artifacts, which can offer learning attributes when perceived as such (Swain et al., 2015). Online resources are recognized as socially constructed artifacts that mediate language learners' engagement with knowledge in sociocultural contexts (Rückriem, 2009). Activity theory, rooted in Vygotsky's work and developed by Leont'ev and Engeström, provides a framework to understand the interplay between human activities, cognition, and mediation (Swain et al., 2015).

Activity Theory: Vygotsky's project – Leont'ev's and Engeström's models

Activity theory, rooted in Vygotsky's work, explores the dynamic interactions between human cognition and motivated activities (Swain et al., 2015). Leont'ev (1978) and Engeström (1987;1999) further developed this theory. Leont'ev emphasized the individual-society relationship, defining

activity as a sociocultural process that fulfills needs (Swain et al., 2015). Leont'ev introduced the concepts of activity, action, and operation, considering variables like objects, goals, and conditions (Kaptelinin & Nardi, 2006). In this study, the activity of using online resources is driven by the motive of supporting formal English instruction. This motive leads to goal-driven actions, such as watching a TED Talk on YouTube to improve listening skills, under specific conditions that reveal the learner's automatic and unconscious operations.

Engeström (1987; 2016) extended Vygotsky's and Leont'ev's models, emphasizing the sociocultural context and cultural mediation in activity. His model includes mediational artifacts, rules, community, and division of labor as integral components of activity systems. These goal-driven systems are motivated by needs (Engeström, 2009). The use of online technologies in foreign language learning follows loose conventions (rules), involves participation in a learning community, and assumes different learner roles (Ibrahim & Rahimah, 2013).

The concept of Affordance in Online Multimedia Technology-mediated Language Learning grounded on activity theory frameworks

"Affordance" was coined by Gibson (1977; 1979) and refers to the perception of an object's properties in the environment that lead to fulfilling organisms' needs (Nocchi, 2017). Learners' perception of affordances depends on their abilities to act on them (Young, 2001). Affordances are potential actions and opportunities that emerge through learners' interactions with the environment (Van Lier, 2004). In language learning, online resources offer affordances for meaningful and interactive language use (Richards, 2015). Affordances are connected to social interactions and are perceived within contextualized processes (Tudor, 2003). From an activity theory perspective, affordances are reconceptualized within sociocultural-constructed contexts and the sociocultural dimension of learning (Albrechtsen et al., 2001; Baerentsen & Trettvik, 2002).

Activity theory is widely used in studies investigating technological and online resources as mediational tools for learning (Basharina, 2007; Blin, 2010; 2012; Engeström et al., 2016; Guldberg, 2010; Gutiérrez, 2009; Ibrahim & Rahimah, 2013; Issroff & Scanlon, 2002; Lantolf & Pavlenko, 2001; Nocchi, 2017; Roebuck, 2000). It provides a holistic understanding of activity systems and their sociocultural dimensions (Hedegaard, 2012; Lantolf & Thorne, 2006), focusing on the dynamic interactions among subjects, mediational artifacts, objects, goals, roles, and communities (Nocchi, 2018).

Method

Context and participants

This study employed Activity Theory (A.T.) as an analytical framework, emphasizing the importance of studying human activities in real contexts and utilizing qualitative methods (Nimehchisalem, 2018; Patton, 2014; Ramanair, 2016). The research followed a single-case study approach within the interpretive paradigm, using qualitative data collection methods (Hernandez-Sampieri et al., 2014; Li, 2016). The case study adopted a naturalistic interpretative approach, focusing on participants' experiences and perceptions (Gagnon, 2010; Yin, 2018). Activity Theory provided a well-defined framework for examining goal-driven activities mediated by objects within sociocul-

tural contexts, with seven components defining the activity system (Engeström, 2001; Gedera & Williams, 2016).

This research focused on English students in the LILEI program at UNAD in Colombia, the largest foreign language teacher training program in the country. The sample consisted of 115 students in the advanced stages of the program for the first phase and 20 learners for the second phase, selected purposively based on their engagement in informal English learning activities mediated by online technologies. The sample represented a diverse population in terms of various characteristics. The purposive sampling method ensured that participants had relevant experiences, guided by the seven components of an activity system framework.

Data collection

Data collection in this study involved two phases: a questionnaire and a focus group interview. The questionnaire gathered open-ended responses from 115 LILEI program students at UNAD, focusing on their usage and types of online-technological resources in informal English learning activities. The collected data were coded and categorized using Saldaña's coding cycles (2016). Based on the first phase data, minor adjustments were made to the focus group interview script. In the second phase, a purposive sample of twenty participants was divided into four focus groups to explore their perceived affordances of technology-mediated informal language learning activities. The collected data were revised, organized, categorized, and prepared for analysis.

The sequential data collection approach yielded rich and complementary data. The questionnaire and focus group interview, both designed with Activity Theory frameworks and the construct of affordance in mind, provided additional insights and supported the elaboration, illustration, enhancement, and clarification of the results (Ary et al., 2018; Creswell, 2005). While the study did not include a pedagogical intervention or the design of pedagogical materials, contextualization and clarification of terms were provided to participants during data collection. This involved explaining key terminology, such as “informal and formal instruction”, “online and technological resources”, and “learning affordances”, in both the questionnaire and focus group interview. To ensure a systematic and ethical data collection process involving multiple individuals, specific steps and procedures were followed, including writing invitation letters, obtaining informed consent, contextualizing course directors, accessing the second phase sample, and ensuring ethical compliance.

Data analysis

A descriptive hybrid approach using Saldaña's (2016) coding procedure was used to analyze the data from the questionnaire and group interviews. This approach combines data-driven and theory-driven coding to define core categories or themes (Xu & Zammit, 2020). The coding process involved two cycles. In the first cycle, the researcher transcribed the interviews and organized the data in coding matrices. Line-by-line coding was conducted, assigning initial codes to capture the essence of each line or represent patterns. This process employed both inductive and deductive analysis, allowing codes to emerge from the data and aligning them with the theoretical framework. The initial coding remained open to various interpretations and theoretical pathways, serving as a starting point for further analysis.

In the second coding cycle, the researcher refined and reanalyzed the already-coded data, aiming to create a more organized and structured framework. Codes from the first cycle were reviewed,

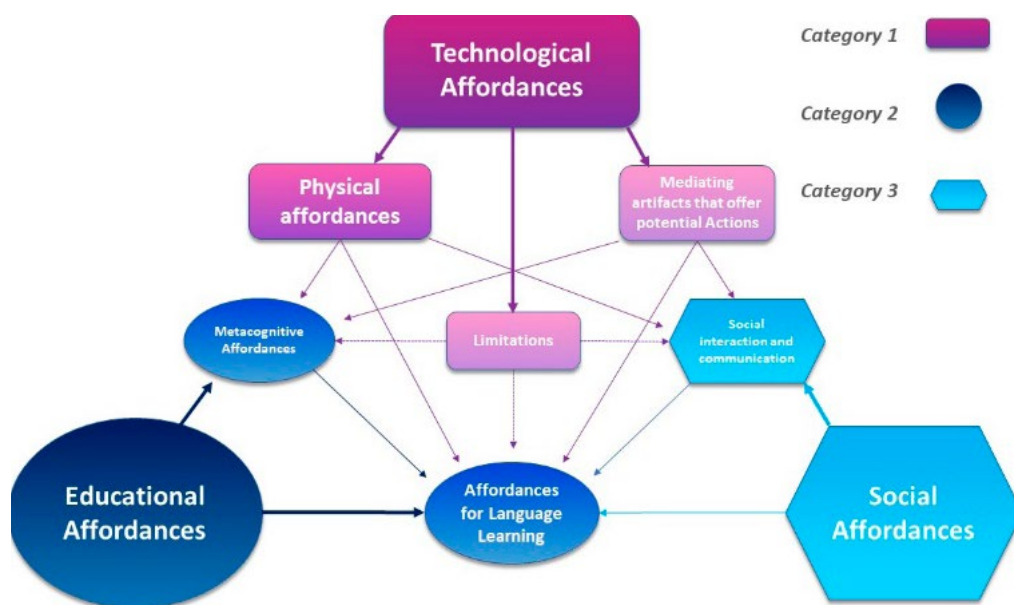
rearranged, merged, renamed, or eliminated for clarity and coherence. The resulting twenty-five codes represented specific aspects of the data, which were then grouped into final categories and subcategories using axial coding. This process involved describing and synthesizing the dimensions and properties of the categories and exploring their relationships.

Findings

The data analysis involved a systematic and organized approach guided by the research objectives, resulting in the formulation of six initial categories. These categories were further rearranged into three core categories and six subcategories using a superordinate-subordinate and network arrangement (Saldaña, 2016). The core categories that emerged from the analysis were technological affordances, educational affordances, and social affordances. Additionally, several subcategories were identified, including physical affordances, mediational artifacts offering potential actions, limitations, metacognitive affordances, social interaction and communication, and affordances for language learning. Figure 1 offers an overview of the core categories and their corresponding subcategories.

Figure 1

Overall Category Mapping.



Note. The figure shows how the categories, and the sub-categories interact and interplay in a network, demonstrating that they are not linearly connected, but rather exhibit active and varied relationships. Fountain: adapted from Saldaña, (2016), *The Coding Manual for Qualitative Research*, SAGE.

Technological affordances

The category of technological affordances encompasses learners' perception of potential actions provided by online resources based on their technical and physical attributes (Nocchi, 2018). Participants acknowledged that these affordances played a significant role in their selection of

mediating artifacts, with their perception influenced by previous knowledge and experience. The perception of technological affordances served as a foundation for the subsequent perception of educational and social affordances.

Three subcategories were identified within this category. The first subcategory, physical affordances, focuses on the tangible qualities and characteristics of mediating artifacts. Participants emphasized how perceiving physical affordances influenced their choices of online resources for informal English learning activities. Factors such as productivity, ease of use, and accessibility guided their decision-making process. They valued resources that offered flexibility in accessing learning materials anytime and from any location, enabling them to optimize their time and productivity (Hartson, 2003). Examples cited by participants included adjustable video captions and high-quality audio and video features.

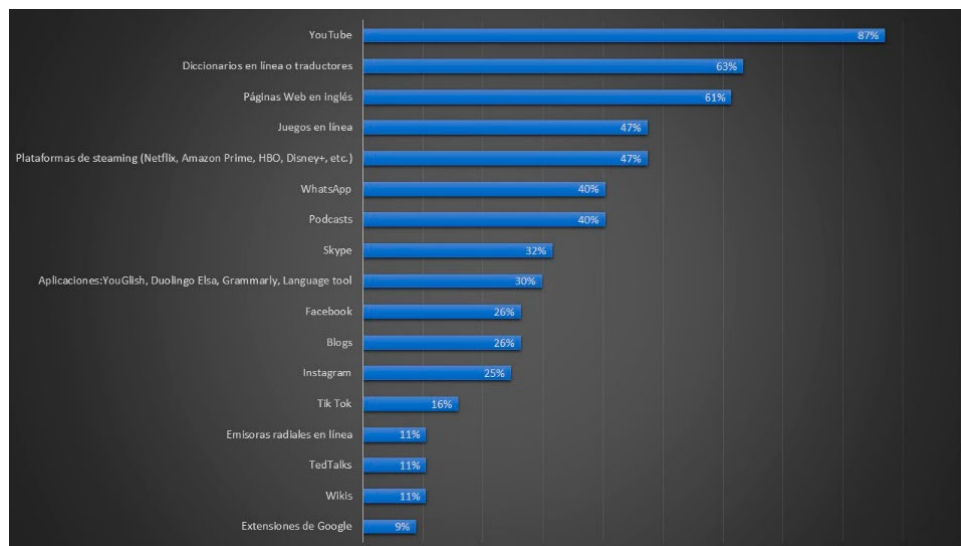
“...Netflix, for example, allows you to put the movie in English with English subtitles, or disable subtitles. It is also important that the audio or image is of quality...” (Excerpt from Focus Group # 2, S-9).

“...time is used to the best advantage in my case. It allows me to make the most of my time without leaving other activities aside. While I’m on the bus or waiting in line, in such matters, I make the most of my time...” (Excerpt from Focus Group # 1, S3).

Mediating artifacts that offer potential actions also emerged as a subcategory from the data analysis. This subcategory aimed to identify the online technological resources commonly used by the participants for informal English learning activities. The data were collected through a questionnaire administered to the entire sample and focus group interviews with selected participants. Figure 2 illustrates the most common online technological resources used by 115 students from the LILEI program at UNAD.

Figure 2

Most Common Online Technological Resources.



Note. The figure shows that from 115 participants, around 100 (87 %) students use YouTube to mediate informal English learning activities and only 10 (9 %) use Google extensions.

Lastly, the study identified **limitations** as a subcategory within technological affordances. These limitations include cost constraints, technical constraints, and security factors. Participants expressed frustration over the cost of accessing premium content and difficulties in using certain technological resources. These limitations not only hindered activities but also decreased motivation, social interaction, and authentic language practice. The perception of limitations varied among participants based on individual abilities and concerns. These limitations affected learners' perception of educational and social affordances, limiting their ability to perceive potential actions for learning and interaction.

Educational affordances

This category focuses on the potential actions and possibilities between learners and mediating artifacts that facilitate educational processes (Nocchi, 2018). It includes two subcategories: Metacognitive Affordances and Language Learning Affordances. Metacognitive Affordances pertain to the potential actions offered by online resources for developing metacognitive skills, such as planning, selecting, and using strategies, monitoring, orchestrating strategies, and evaluating progress (Anderson, 2008). Participants reported perceiving affordances for metacognition, such as using YouTube videos for shadowing and utilizing applications for pronunciation correction and self-recording.

“...tools like YouTube or videos on the BBC allow me to do shadowing, what I do is pause the videos many times, I try to learn what they say and imitate it until it is perfect. To do this, I also use at the same time other applications or pages that allow me to correct British or American pronunciation and another that allows me to record myself to see if I did it right, you can do this for free on YouTube, and you can find videos for all levels...” (Excerpt from Focus Group # 1, S-1).

Language Learning Affordances refer to the potential actions and possibilities that enable language learning. Participants engaged in informal English learning activities to improve their communicative skills and support their formal English learning at the university. Online resources, such as YouTube, were perceived as valuable teachers, providing exposure to authentic language expressions, idioms, communication styles, and accents (Nocchi, 2018). Participants viewed these affordances as complementary to their university education and a means to reinforce topics and clear doubts.

“...and I think that, although at university I have learned a lot, I feel that YouTube has been my teacher, obviously being autonomous in my learning, but I have learned a lot on YouTube about authentic English expressions, idioms, forms of communication and the accent as such, something I have not learned at university...” (Excerpt from Focus Group # 1, S-1).

The perception of these affordances was influenced by learners' experiences, knowledge, and ability to recognize the qualities and opportunities offered by technological resources. Some affordances were discovered through repeated engagement in activities, highlighting the significance of continuous exploration and discovery. The ability to perceive language learning affordances was shaped by the perception of physical, metacognitive, and social affordances (Van Lier, 2004).

Social affordances

This third category encompasses actions in potential that facilitate social interaction and cultural development in technology-mediated language learning activities (Nocchi, 2018). Within this category, the subcategory of **Social Interaction and Communication** focuses specifically on the affordances related to interacting with others and forming a community of English learners. Participants expressed a strong desire to engage in authentic and meaningful communication in English, viewing it as the ultimate goal of their language e-learning journey. They recognized the importance of social interaction and networking in their English learning process, as well as the opportunities for real communication provided by online resources (Ibrahim & Rahimah, 2013). For example, one participant mentioned using social networking platforms like Instagram or Facebook to connect with British individuals and practice English.

“...Since I have a great interest in the British accent, I decided to work on it through tools and YouTube. Then, I said to myself - no, no, no! What I need to do is to interact with someone, I need to be able to communicate with a real person. So, I decided to use social networks like Instagram or Facebook to send friend requests to British people and I started greeting them - indeed I made two very good friends a year ago who have helped me a lot with my pronunciation and accent...” (Excerpt from Focus Group # 1, S-2).

However, the data also revealed that some participants struggled to perceive important social affordances and often faced limitations in the mediating artifacts or their ability to recognize technological affordances. For instance, some participants expressed difficulty finding tools that allowed them to communicate with English speakers or connect with others in online games.

“...The truth is that I have not been able to find any tool that allows me to communicate with people who speak English, ... for example, I like to play online, I use games in English, and I have learned from them, but I don't know how to connect with other people, people who speak English...” (Excerpt from Focus Group # 3, S-14).

Other participants mentioned that certain applications for social interaction required payment or registration or were primarily used for purposes other than language learning.

“... There are some applications that allow you to talk to other people, interact and learn in context, but they are not free, or you have to register to access them, or the people who are there are looking for other things...” (Excerpt from Focus Group # 3, S-12).

It is important to note that social affordances are intertwined with other types of affordances and are influenced by the perception of technological affordances and limitations. The data suggest that while participants recognized the importance of social affordances, they were not always able to fully perceive or act on them.

Discussion

The study highlights that students in the LILEI program actively engage in online technology-mediated informal activities to support their formal English instruction. The learners' ability to perceive affordances from both the technologies and activities is crucial for their success and language

development. Recognizing physical affordances inherent in online resources is vital within technology-mediated activity systems as it enables learners to perceive metacognitive, social, and language learning affordances. However, the inability to perceive simple physical affordances can limit learners' recognition of educational and social affordances that enhance language learning.

This aligns with Hammond's (2010) concept of affordances as possibilities of actions relative to something. Language learning affordances are relative to learners' ability to perceive other affordances, particularly technological affordances, which are also relative and influenced by factors such as cost, accessibility, and the learner's experience with the artifact. Furthermore, previous studies (Ibrahim & Rahimah, 2013; Morgan, 2007; Nocchi, 2018) suggest that technological affordances are relative to learners' sociocultural context and past experiences, as emphasized by Engeström's (1987; 2015) notion of historical context.

Educational affordances, influenced by Engeström's (1987; 2015) activity system, rely on learners' perception of physical affordances, enabling the development of metacognitive and communicative skills in English. These findings build upon existing research (Hammond, 2010; Ibrahim & Rahimah, 2013; Morgan, 2007; Nocchi, 2018; Van Lier, 2004), indicating that affordances encompass both the properties of an object and potential actions that materialize based on the learner's ability to perceive and act upon them within their social, cultural, and personal context. This expands on Gibson's (1977; 1979) initial definition of affordances, which was limited to the actual properties of an object. The findings also emphasize the social, cultural, and historical aspects of activity theory (A.T.) and Van Lier's (2004) view on language learning affordances as context-driven interactions. While previous studies highlight the significance of social interaction and global communication, this study reveals that LILEI students, despite recognizing their importance, face challenges in consistently perceiving and utilizing these affordances.

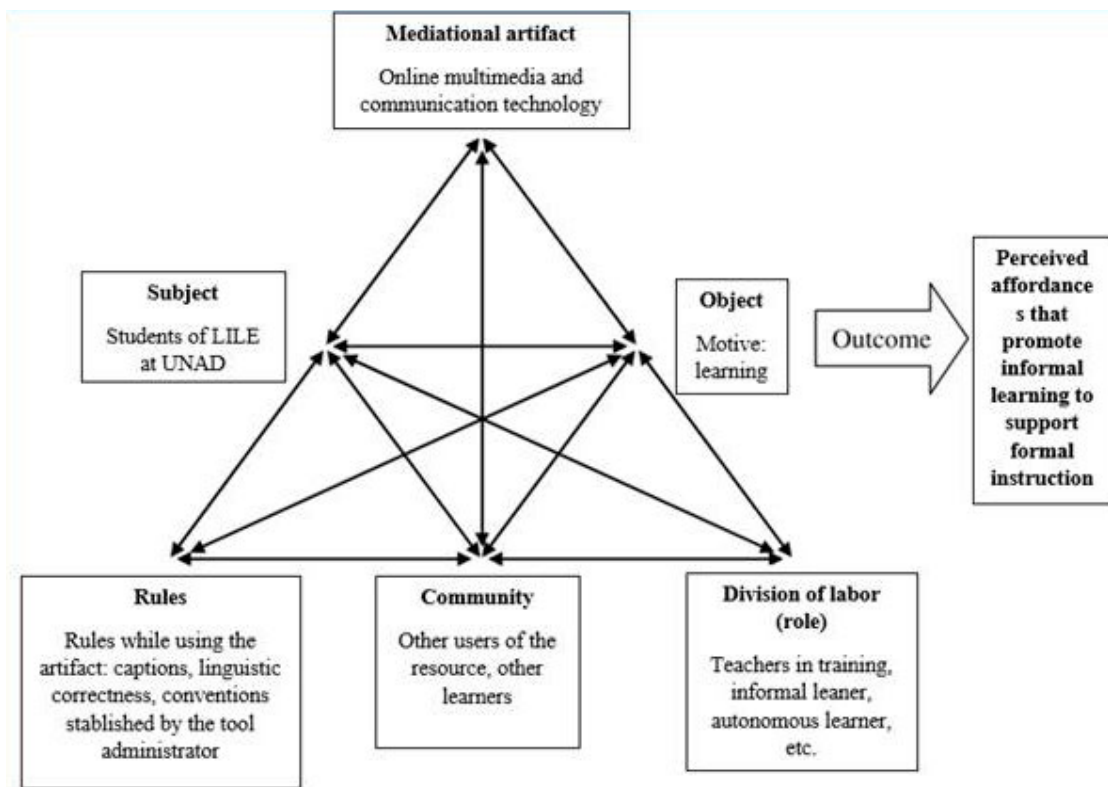
Figure 3 visually illustrates the theoretical and analytical construct that depicts the interconnectedness and interdependence of the different components within the activity system, emphasizing the dynamic nature of the learning process. The figure showcases how learners engage with mediational artifacts to achieve their specific learning goals, supported by the roles they assume within the learning community.

By adopting this holistic perspective, the study aims to bridge the gap between theoretical concepts and empirical findings. It provides a framework for understanding the complex interactions that shape language learning experiences in technology-mediated contexts. This theoretical and analytical construct allows for a deeper exploration of the affordances that emerge from these interactions and their influence on language learning outcomes.

The study has important pedagogical implications for course designers, students, and administrators in the LILEI program. It sheds light on how students learn English, the role of informal instruction, and the use of technology to support formal English instruction. The awareness of affordances and the ability to perceive them empower learners to make informed decisions about their informal language learning activities and the technologies they use. Additionally, this research contributes to the understanding of informal language learning and the evolving concept of affordances in technology-mediated language learning, using a theoretical framework based on Activity Theory. The study's design and methods provide a coherent framework that can be applied in small-scale research studies in the Colombian context, serving as a foundation for future large-scale longitudinal studies.

Figure 3

Activity system: Informal EFL learning mediated by online multimedia and communication technologies.



Note. Figure 3 is adapted from Engeström's Activity System model. The triangle represents an informal English learning activity system mediated by a multimedia artifact where the subject performing the activity is a learner from the LILEI program at UNAD.

However, the study faced several challenges and limitations that need to be acknowledged. Firstly, the selection of participants was challenging due to the difficulty in finding individuals who fully met the criteria set by Activity Theory (A.T). This highlighted the struggle of LILEI students in choosing, designing, and executing activities that encompassed all elements of A.T. Secondly, the nature of the study relied on data collected based on participants' perceptions and beliefs, which may have introduced a potential mismatch between what was reported and what the participants intended to convey. To mitigate this, the researcher took measures to ensure reliability and validity, including using two data collection methods and conducting a pilot focus group interview.

Conclusions

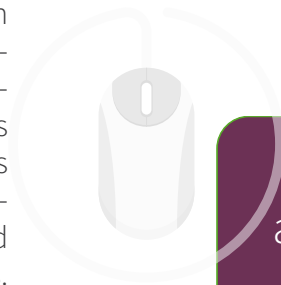
This study contributes to the growing trend of research on informal language learning mediated by technology, emphasizing the importance of expanding knowledge in this area, particularly for distance education models. Learners in these scenarios engage in informal activities mediated by technology to supplement formal English learning. It is crucial to conduct extensive research to gain a clearer understanding of how individuals acquire communicative competencies through informal language learning activities mediated by technology.

The study identifies various types of affordances, including physical, metacognitive, social, and language learning affordances, which can facilitate language learning if perceived and acted upon. However, limitations related to cost, accessibility, and learners' social, cultural, and historical experiences were encountered. These affordances are interconnected, with the perception of one leading to the discovery of others. Understanding these affordances, their functioning, perception, and limitations is vital for the learners' language learning process.

Perceiving physical affordances is particularly relevant for success in informal English learning activities mediated by technology. Difficulties in perceiving simple physical affordances may hinder the perception of more complex affordances. Additionally, while social affordances have been emphasized in previous studies, evidence suggests that students from the LILEI program may struggle to act upon them effectively. Exploiting social affordances and guiding their perception and utilization can positively impact students' communicative skills and social development. It is important to note that the small sample size limits the generalizability of the findings.

For future research, it is recommended to conduct a larger longitudinal study using a mixed-methods design and involving a larger population.

This would enable a comprehensive exploration of perceived learning affordances in distance education, encompassing both informal activities mediated by online technology and formal English learning activities within the LILEI program. Additionally, researching the technological affordances of virtual learning objects and virtual instructional objects used in courses is advised to understand learners' perceptions and their pedagogical implications. Further studies should aim to better understand the role of informal English learning and its connection to formal instruction in distance learning models, particularly in distance learning models.



Perceiving physical affordances is particularly relevant for success in informal English learning activities mediated by technology. Difficulties in perceiving simple physical affordances.

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