

Current Theories Driving Communicative EFL Education

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In the field of foreign language education—and specifically for the purposes of this paper, English as a foreign language (EFL)—teachers and instructors have explored the use of computers and technology in the classroom for decades. Computer-assisted language learning (CALL) and its recent offshoot, mobile-assisted language learning (MALL), have become normalized as a part of the educational process (Bax). There are multiple theories related to the use of CALL and MALL methods in foreign language instruction; this paper will review current literature in the fields of EFL and MALL to highlight three educational theories found to have an important role: the cognitive theory of multimedia learning, situated learning theory, and the sociocultural learning theory. These theories will be explained, compared and contrasted with a discussion of current research which supports them. Then, a specific focus on the sociocultural learning theory and its use in recent language learning research will be provided with a critical appraisal of its merits and controversies. Finally, the paper will summarize these theories and suggest areas for future research into how the theories support current foreign language methodologies and practices.

1. Learning Theories

In reviewing recent literature regarding EFL language learning using mobile technology, there were several learning theories that were demonstrated to have a peripheral or collaborative connection with mobile language learning. Keskin and Metcalf provided a comprehensive chart which outlined the learning theories related to mobile language learning

and how they apply to current practices and methodologies. The learning theories Keskin and Metcalf found to relate to mobile learning include behaviorism, cognitivism, constructivism, situated learning, problem-based learning, context awareness learning, socio-cultural theory, student-centered learning, collaborative learning, conversational learning, lifelong learning, informal learning, activity theory, connectivism, navigationism, and location-based learning (203). While Keskin and Metcalf's list is broad and encompasses many learning theories which could relate to mobile learning, there are three learning theories which have a strong connection to, and influence on mobile language learning: the cognitive theory of multimedia learning (Mayer), Lave's situated learning theory, and Vygotsky's sociocultural learning theory.

1.1 Cognitive theory of multimedia learning

The cognitive theory of multimedia learning states that there are two channels of information being processed by the learner's brain during instruction: auditory and visual (Mayer). According to Mayer, the brain processes input through both the eyes and ears and integrates it with existing knowledge to understand the information being presented, as depicted in Figure 1. Technology allows teachers to take full advantage of both channels—visual data on the screens and auditory information through the speakers or headphones—when sharing information with their students both inside and outside of the classroom (Li; Rouhi and Mohebbi). Further, the cognitive theory of multimedia learning incorporates a measure of sifting through incoming data and filtering out the extraneous sights and sounds—this is a valuable skill for learners in today's data-heavy digital world.

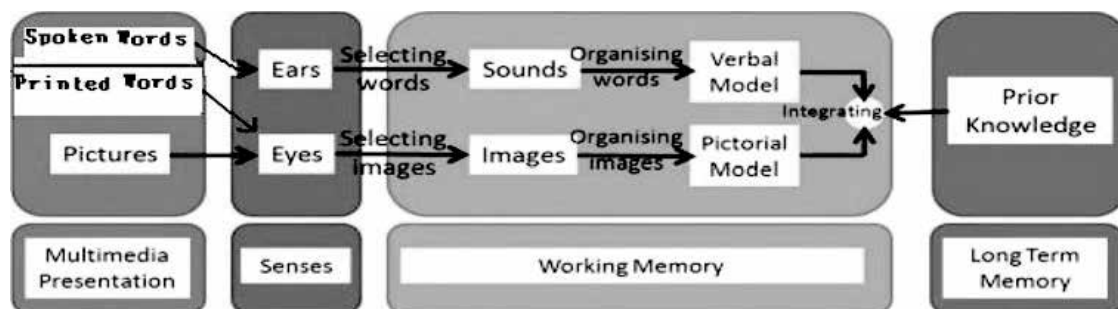


Figure 1. A pictorial representation of how both aural and visual input are processed under the cognitive theory of multimedia learning (Li 194).

1.2 Situated learning theory

The situated learning theory proposes that learning occurs in realistic or authentic settings whenever an educational situation presents itself (Lave). Situated learning theory suggests that educators should work to create situations in the classroom in which learning can occur naturally for the students, and students should be empowered to seize upon every opportunity they encounter to expand their knowledge. Arnseth compared situated learning and action learning, finding that situated learning provides the opportunity for practical application of knowledge learned on the go. Therefore, users of mobile phones have access to educational and language support materials they can use whenever necessary, allowing learning situations to occur in a wide variety of places and times (Yang). For educators interested in making the best use of mobile educational technology, situated learning theory supports the creation of authentic activities which allow students to learn new things at their convenience and as necessary.

1.3 Sociocultural learning theory

The sociocultural learning theory (Vygotsky) states that learning—including language learning—is a social process in which instruction and interaction combine to allow learners to develop through engagement with others who are more proficient in the given task or skill. Sociocultural learning theory's application in second language

instruction was first developed by language teachers Frawley and Lantolf who applied Vygotsky's theories to the language classroom in exploring student interactions. In a second language acquisition (SLA) context, the language learner does not simply copy the actions or words of their more-proficient partners, they interpret the inputs they receive and apply them to their own skills. Then attempt to employ the new information as a means of developing toward the same level as their partners (Turuk). Because this development is conducted in a social situation, the process being conducted is often a negotiation of meaning between the more proficient speaker and the learner who is attempting to obtain new information.

Arguably the most important aspect of sociocultural learning theory which Vygotsky posited is the Zone of Proximal Development (ZPD)—the area in which a learner's actual development and potential development are bridged to enable the learner to advance (Frawley and Lantolf; Turuk). The growth from the actual developmental level to the level of potential development is enabled through the use of scaffolding and mediation. Scaffolding, in terms of second language acquisition and sociocultural learning theory, involves the creation of a social learning situation in which a more proficient language learner or teacher can create an environment for beginner learners to develop step by step through using language

and educational tools (Donato; Turuk). For example, when two students are working on an activity in their second language (L2), the more proficient student does not simply tell the less-proficient learner the answers, they use words and other means of negotiating meaning in order to allow the less-proficient learner to gradually grow in their linguistic capabilities. Within the sociocultural learning context, learners and teachers are enabled to create scaffolding situations for other learners through the process of mediation of settings, language, and other tools employed to enable the learners to grow (Jang and Jimenez; Turuk). For example, in a small group situation, more proficient learners may use their native language, L2, textbooks, handouts, and nonverbal communications to negotiate meanings in the L2, so that the less-proficient students can notice their own language gaps and learn what is needed to fill the gaps. Van Lier highlighted the fact that teachers must mediate their students' development by using realistic, meaningful contexts with goal-oriented tasks when creating learning environments so that the learning which occurs in these situations is lasting and worthwhile to the students.

While many learning theories are relevant to mobile language learning, three theories that have a direct connection to effective mobile-assisted language learning are the cognitive theory of multimedia learning (Mayer), Lave's situated learning theory, and the sociocultural learning theory (Vygotsky). As shown above, these theories continue to be applied to current foreign language instruction and research.

2. Learning Theories Applied to Current Research

CALL and mobile technology enable more effective foreign language learning through improved access to language learning materials and the native language culture. Students can get the information they need on demand. This

aligns with Lave's situated learning theory. Yang showed how mobile technology enables better communications between students and their teachers, as well as among students. The students find themselves in a situation where they need knowledge and they are able to get the information from someone more-experienced, demonstrating the sociocultural learning aspect of mobile technology as Vygotsky suggested. Arnseth showed that situated learning applies to foreign language practice as well, and reinforces the students' learning because they are learning the language in realistic context.

When students are learning in context, mobile devices also provide a medium which supports learning within the cognitive theory of multimedia learning (Mayer). When students are engaged in an activity and are learning in a given situation, they can look up new information—vocabulary, phrases, grammar—as needed. The fact that they are receiving input visually—seeing the situation and seeing the information displayed on their devices—as well as aurally—hearing the word or phrase—leads to greater retention of the newly acquired knowledge by the learner (Mayer and Moreno). Li, as well as Rouhi and Mohebbi also supported Mayer's theory by demonstrating that using technology to present information using both aural and visual input enabled students to retain more of the information presented. This perspective strongly supports allowing learners to use their mobile devices when completing activities because having the resources needed readily accessible in the given situation will lead to increased language learning, and eventually to greater proficiency thanks to having learned knowledge in a contextual situation.

Further, integrating mobile technology into language learning supports Vygotsky's sociocultural learning theory by enabling language learners to access their peers or teachers more easily for guidance outside of the classroom. Yang

reported that students who had regular interactions with other students and instructors via social media platforms significantly improved their language skills. Several researchers have demonstrated the positive effects on students' language learning through interaction and collaboration using technology—continuing to reinforce Vygotsky's findings on the benefits of sociocultural learning (Chun; Nielsen; Paunesku et al.; Tanaka-Ellis). These researchers' work will be discussed in-depth below.

In alignment with the sociocultural learning theory, technology and situated learning provide an opportunity for scaffolding of the language learning which enables students to grow through their ZPD (Vygotsky). Teachers and more proficient peers mediate—enable and assist—the learners' growth using technology to continue the learning beyond the classroom. McNeil showed how teachers can be taught how to mediate learning using sociocultural learning theory as well as situated learning theory in their teacher training programs. Also, Yang explored how online situated learning environments can mediate students' sociocultural engagement and learning. Additionally, such interactions with instructors and peers include aspects of the cognitive theory of multimedia learning because the guidance given typically includes both aural and visual modes of communication. Therefore, all of these theories work in tandem to help ensure students' progress and success in language learning.

3. Comparison and Contrast of Current Language Learning Theories

In the field of educational technology and its inclusion in foreign language education, the three theories highlighted above—situational learning theory (Lave), cognitive theory of multimedia learning (Mayer), and sociocultural learning theory (Vygotsky)—often work in tandem to support the educational process. Through an

extensive review of the literature, no instances of theoretical conflict among these theories was found. On the contrary, these theories often complement one another in enabling effective language learning. While technology is not needed for situated learning to occur, it does aid in the learning when present. Also, technology is not the only medium for the cognitive theory of multimedia learning: this theory covers teachers using other visual aids to support their instruction as well. Further, learners do not need technology to interact socially in keeping with sociocultural learning theory, but technology does allow for easier access to communications with native speakers in distant locations. These three theories impact instruction individually but they become more powerful when combined through the incorporation of technology in the language learning process.

Technology enables students to reach out for assistance in handling whatever situation they are in, and the aid they receive helps them learn and grow to be able to respond to the given situation in the future. Students can use technology to facilitate their own situational learning. The help they receive from either technology or from a peer or instructor often comes in the form of both aural and visual modes of communication, thereby aligning with Mayer's cognitive theory of multimedia learning. Also, the real-life language situations which students find themselves in, and the assistance they receive from peers or teachers, occur in social settings where the learners can develop through sociocultural interactions, as suggested by the collaboration of Lave's situated learning theory and Vygotsky's sociocultural learning theory. These three theories support different aspects of the language learning process but work together to enable students and teachers to effectively manage foreign language education. They are equally important in learning a foreign language and, in the case of these three theories,

do not conflict with one another.

4. Sociocultural Learning Theory in Current Research

Sociocultural learning theory (Vygotsky) has a strong influence on how foreign languages are taught, especially in the use of communicative language learning methodologies. The following sections will explicitly explore how Vygotsky's theory guides interactions among learners using technology to mediate their learning, and adds to the understanding of foreign language education. Peer-to-peer interactions, the use of social networks, and online intercultural collaborations will be explored from the standpoint of how they align with sociocultural learning theory. Finally, controversies and unanswered questions regarding the theory will be discussed, and suggestions for future research will be presented.

4.1 Peer-to-peer interactions

Much research has been conducted into the social aspects of language learning which include methods aligned with Vygotsky's sociocultural learning theory. Some studies look into peer-to-peer interactions such as Hirotani and Lyddon's exploration of how Japanese students improve their self-introduction skills using computer-mediated language exchanges, and Kimura's investigation of group interactions in online collaborative forums. Also, Koh and Lim researched the use of technology to foster group collaboration, while Prokofieva looked at the types of interactions which occurred among learners in online collaborations. Additionally, Chun found that language learners are able to develop pragmatic competence in their second language through the use of online exchanges. The general revelations of these studies demonstrated that language learners can use technology to effectively communicate and collaborate with one another, supporting the peer-to-peer level application of Vygotsky's sociocultural

learning theory in language learning.

4.2 Social networks as a medium

In connection with exploring the area of student interaction with their peers in language learning with technology, other researchers have delved into studies of the use of social networks in mediating language learning. Kimura, as well as Mondahl and Razmerita, investigated how language learners engage and collaborate on assignments using social networking platforms. Other researchers have looked at students' interactions within online virtual learning environments such as Blackboard (Brooke) and SecondLife (Knutzen and Kennedy). Additionally, Chu et al. and Prokofieva explored learners' experiences with using wiki platforms for collaborative learning, and Nielsen studied how students learned through the use of online writing discussion boards. These studies demonstrated that social networking platforms are an excellent platform for the mediation of scaffolded learning in a sociocultural context—they provide an environment through which teachers and learners can interact and grow through the accomplishment of assigned tasks that increase in difficulty as the students progress through their ZPD.

4.3 Intercultural collaborations

Current research of sociocultural learning theory in the field of foreign language learning through technology also focuses on intercultural exchanges and collaborations. Chun found that language learners can increase their intercultural communicative competence through online collaborations. Chun's findings were reinforced by other studies which revealed that online intercultural collaborations are an effective means of enabling language learners to deepen their knowledge of their foreign language's culture through interacting with natives of that country (Schenker; Wang et al.). Through the medium of online intercultural collaborations using a variety of platforms, language learners

develop their understanding of other cultures through social interactions with native speakers or those more proficient than themselves. This supports Vygotsky's theory that learning is a sociocultural phenomenon which best occurs in interactions with more-proficient peers who assist the learner in developing through their ZPD—specifically in the aforementioned cases by mediating the growth via technological resources.

4.3.1 Controversies and unanswered questions for further exploration

The body of literature does not seem to reveal any controversies over the efficacy of Vygotsky's sociocultural learning theory within the spheres of CALL and MALL. One possible limiting factor for sociocultural learning via CALL and MALL is the rudimentary technological ability of some of today's students (Lockley). This limitation has the potential to inhibit full realization of the potential of Vygotsky's theory in language learning through technology, but the degree of its impact remains unclear and should be explored further. There are two additional areas which merit exploration: students' perceptions of using their mobile technology as a medium for sociocultural learning, and whether language learners are actually socially interacting through such activities on the same level as they would in a face-to-face situation. Even though CALL methods have been used in foreign language learning for decades, there seems to have been a recent surge in exploring how the students feel about using such tools in their language learning (Chu et al.; Cinkara and Bagceci; Jung, Kudo, and Choi; Miyazoe and Anderson; Nielsen; Wang et al.). These studies explored the students' perceptions of using computer or Internet-based collaborative tools in their language learning activities, but the research did not include a focus on mobile technology. As mobile devices become more normalized in the language

classroom, it will be important to continue the exploration of how students feel about using these tools to interact socially with others as part of their language studies, especially as instructors rely on the use of the students' own mobile devices.

Finally, as online intercultural collaborations become more common in foreign language programs, it is important to investigate whether participants are truly interacting on the same level that they would in a face-to-face social setting. Tanaka-Ellis found that, while language learners demonstrate an accumulation of knowledge through online social interactions, their discussions are often not complete and questions regularly go unanswered. This brings into question whether such technology-mediated sociocultural learning environments are as effective as they could be, since language learners are often not interacting synchronously and therefore, do not complete conversations and learn social conventions of their target language culture. Further research into the efficacy of online intercultural social interactions is needed to determine the extent of learning occurring beyond the exchange of rudimentary cultural information and basic interpersonal communications.

5. Conclusion

There are many theories related to the learning of foreign languages, three of which are highlighted in recent literature: Lave's situated learning theory, Mayer's cognitive theory of multimedia learning, and Vygotsky's sociocultural learning theory. These theories work in collaboration to support CALL and MALL-enabled language learning practices. Yang and Arnseth demonstrated how technology enables students to practice and learn in realistic contexts with native speakers, providing an opportunity for situated learning for language students. Li and Rouhi and Mohebbi supported

Mayer's cognitive theory of multimedia learning by showing that using technology to present information using both aural and visual input enabled students to retain more of the information presented. Many researchers have investigated the sociocultural aspects of language learning, and have supported Vygotsky's sociocultural learning theory (Chun; Hirotani and Lyddon; Nielsen; Paunesku et al.; Tanaka-Ellis; Yang). The studies discussed above showed how these three theories combine to more fully support language learners' efforts to improve their abilities.

In comparing and contrasting these three theories, they were found to align well, working in tandem to support language learning. Sociocultural learning theory has specifically had an impact on foreign language education using technology. Following Vygotsky's suggestions, teachers have successfully used technology to facilitate peer-to-peer interactions, collaborations using social networks, and intercultural communications using Internet technologies. Several areas remain for future research, including the degree to which learners' technological abilities impact the effectiveness of sociocultural interactions, the question of how much learners are actually communicating in these interactions, and how students perceive the use of technology in their language learning process. Sociocultural learning theory in foreign language education is a vibrant and growing field with successful, practical applications of the theory, as well as a variety of topics for future research. So long as Vygotsky's theory remains a mainstay of second language acquisition processes, language learners will achieve fluency.

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