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Abstract

This entry explores the emotional and motivational dimensions of digital game-based language learning and teaching. The analysis underscores the pivotal role of play in human learning and the significance of enjoyment in language acquisition. A review of studies examining various affective and motivational aspects in language learning and teaching revealed three key findings. First, digital game-based language learning enhances intrinsic and extrinsic motivation, enriching the learning experience. This heightened motivation improves engagement and outcomes within digital learning environments. Second, digital game-based language learning positively affects learners' enjoyment, a critical factor in sustaining engagement and interest in language learning tasks. Third, digital game-based language learning fosters collaboration and cooperation among learners, thereby enhancing teamwork skills and promoting positive attitudes through completing in-game tasks. In conclusion, future research should investigate the interplay between positive and negative emotions and the features and mechanics of educational digital games. Such exploration will elucidate the affordances of these games in enhancing the efficacy of language learning and teaching.

Keywords: Digital game-based language learning, Affect, Emotion, Motivation

The Role of Play in Human Learning

Learning through play is deeply ingrained in human psychology, serving as a fundamental mechanism through which we develop social, cognitive, and sensi-motor skills (Piaget, 1951; Vygotsky, 1978). Play allows us to engage in learning activities eagerly, willingly, and joyfully,

leading to highly engaging and enjoyable learning experiences (Pellegrini, 2009; Hirsh-Pasek et al., 2009). Our natural inclination to learn through play provides a robust framework for educational strategies, particularly in language learning. As a structured form of play, games leverage this intrinsic motivation and present an effective means to facilitate learning (Gee, 2003). By tapping into the inherent enjoyment, excitement and engagement that play provides, games can offer a unique opportunity to enhance the learning process and make it more effective and enjoyable. This connection between play and learning shapes the basis for the growing interest in integrating games into educational contexts, particularly for second language acquisition (Gee, 2003).

Digital Game-Based Language Learning and Teaching

The advent of Web 2.0 tools and digital technology has led to the proliferation of educational or 'serious' games, which gave rise to a distinct area of research known as Digital Game-Based Language Learning and Teaching (DGBLLT) (Reinhardt & Sykes, 2014; see DGBLLT). This research area focuses on using digital games specifically designed for educational purposes (e.g., *Scrabble*) to facilitate language learning. Reinhardt and Sykes (2014) differentiated DGBLLT from two frequently conflated concepts within the existing literature: game-enhanced and game-informed language learning and teaching. In digital game-enhanced language learning, commercial off-the-shelf (COTS) or 'vernacular' digital games, which are primarily designed for entertainment (e.g., *World of Warcraft*), are repurposed for educational purposes (e.g., see Jabbari & Eslami, 2019 for review; see also DGBLLT and Entertainment Games). Game-informed language learning, on the other hand, involves applying game and play principles in both digital and non-digital contexts outside game boundaries, a practice also

referred to as ‘gamification’ (Kapp, 2012) or ‘gamefulness’ (McGonigal, 2013) (see Gamification and LLT). This entry provides a brief overview of DGBLLT, specifically focusing on the emotional and motivational aspects of this innovative approach in language learning and teaching.

Digital games for educational purposes leverage their engaging, interactive, and immersive nature to create effective language learning experiences (Mayer, 2014, 2019). These games incorporate elements such as fun, narrative, interaction, adventure, challenge, and instant feedback to provide a dynamic and stimulating learning environment (Dickey, 2011). Engaging learners with meaningful and goal-oriented language use that is highly contextualised, DGBLLT aligns with language acquisition theories emphasising the importance of context and interaction in learning (Krashen, 1985; Swain, 2000). The playful environment of digital games enhances language learning by making the experience enjoyable and engaging, thereby supporting the development of language skills (e.g., Allen et al., 2014). Therefore, alongside the cognitive and sociocultural dimensions, the motivational and affective aspects of DGBLLT are essential for comprehending its effectiveness. Motivational factors, in conjunction with a diverse array of learning-relevant emotions—such as enjoyment, hope, pride, anxiety, anger, frustration, shame, and boredom (Pekrun & Perry, 2014)—are widely recognised by scholars in second language acquisition as significant factors in the language acquisition process. Various researchers in the field support this understanding (Dörnyei, 2001; Horwitz, 2001; Deci & Ryan, 2000; Gardner, 1985; MacIntyre, 1999). This entry explores how motivational and affective dimensions enhance learning experiences and outcomes in digital game-based language learning. We will review current literature on these factors, highlight effective strategies, identify research gaps, and suggest future study directions.

Empirical Research on Motivation and Affect in DGBLLT

Sociocultural, cognitive, affective, and motivational factors of learning are intricately interwoven and are mutually influential. With that in mind, it is critical to cast some lights on the emotional aspects of DGBLL, considering their impacts on the cognitive aspects of language learning through gaming. Research has shown that DGBLL profoundly impacts the emotional and motivational dimensions of language acquisition (e.g., Allen et al., 2014; Qiao et al., 2022). By creating an emotionally engaging and motivating learning environment, DGBLLT can harness the power of affective factors to facilitate language learning. The interactive and immersive nature of digital games can capture learners' attention and sustain their interest, the two critical components of effective language learning. Moreover, the immediate feedback and rewards systems embedded in games help to build learners' confidence and reduce anxiety, which, in turn, culminates in creating a positive learning atmosphere (deHaan et al., 2010; see Feedback in DGBLLT). Digital games also foster a sense of achievement and progression through incremental challenges and milestones designed in the game setting, which can significantly boost learners' intrinsic motivation to explore and achieve more (e.g., Tsai et al., 2017). Research by Plass et al. (2015) highlighted that learners' emotional engagement and enjoyment derived from game-based learning can lead to higher levels of motivation and persistence in language learning tasks.

Our analysis of 21 empirical studies on motivation and affect in DGBLLT indicates that this approach can generate several positive outcomes for language learners. Here, we present an overview of these findings. The first key finding is that DGBLLT can stimulate both intrinsic and extrinsic motivation among learners (Iaremenko, 2017; Khalilian et al., 2021; Rajendran et al., 2019; Setiawan & Wiedarti, 2020; Sun & Hsieh, 2018; Tsai et al., 2017; Wichadee &

Pattanapichet, 2018). This heightened motivation can, in turn, positively influence language learning outcomes (Berns et al., 2016; Liu & Chu, 2010). For example, Berns et al. (2016) demonstrated that using *VocabTrainerA1*, a hybrid game-based mobile application, significantly improved students' grammar and vocabulary scores. They contended that integrating individual learning tasks with engaging collaborative activities, which require students to use the target language for real-world negotiations, effectively motivated students and met their needs more efficiently than traditional learning approaches, positively impacting their learning outcomes.

Drawing on Self-Determination Theory (Ryan & Deci, 2017), Qiao et al. (2022) found that game-based learning environments can enhance intrinsic motivation by satisfying learners' basic psychological needs for competence, autonomy, and relatedness. The need for competence involves feeling effective and capable in one's activities. The need for autonomy refers to experiencing control and volition in one's actions and decisions. The need for relatedness pertains to feeling connected to others, belonging, and experiencing caring relationships within one's community. Anisa et al. (2020) reported that using *Kahoot* boosted the learners' intrinsic motivation by promoting a sense of competence in them. They argued that *Kahoot* featured three critical factors related to perceived competence, according to Deci and Ryan (1985): optimally challenging in-game tasks, immediate feedback, and feedback that serves as informational input for students. According to Anisa et al. (2020), *Kahoot* offered these critical elements by providing a challenging game, giving immediate feedback, and informing learners if their responses were correct. Furthermore, Anisa and her colleagues discovered that using *Kahoot* significantly enhanced learners' sense of autonomy, as it empowered them to choose the games they wished to play, determine the challenges they aimed to tackle and set their own goals. The researchers further highlighted that applying *Kahoot* increased students' sense of relatedness and

willingness to socialise, as they interacted with their friends more frequently and worked together on similar tasks and towards common goals. Huang and Huang (2015) also reported that utilising their handheld sensor-based vocabulary game increased low-achieving learners' motivation through the scaffolding mechanism implemented within the game, which helped the students tackle the challenges.

Research also indicates that DGBLLT can foster extrinsic motivation (Calvo-Ferrer, 2017) by incorporating elements such as points, levels, and rewards (Zarzycka-Piskorz, 2016). In this context, Anisa et al. (2020) observed that external regulation, a type of extrinsic motivation, arises from external support and is associated with punishments and rewards. Their study found that students engaged with *Kahoot* to achieve high scores and win the game. The platform's rewarding system, including leaderboards and points and its competitive nature, stimulated learners' interest in playing. Additionally, their findings revealed that *Kahoot* contributed to two other types of extrinsic motivation: introjected regulation, which involves avoiding anxiety or guilt and enhancing ego through feelings such as pride, and identified regulation, which entails endorsing goals. When asked whether *Kahoot* enabled them to showcase their intelligence and demonstrate their ability to succeed, most students reported feeling smart, as they could answer the questions accurately. The results also indicated that using *Kahoot* helped learners understand key concepts of the learning material, achieve learning objectives, and be willing to learn the correct answers if they made mistakes.

The second key finding is that DGBLLT can positively contribute to learner enjoyment (Rajendran et al., 2019). This enjoyment enhances language learners' engagement and motivation (Allen et al., 2014). It is important to reiterate that the primary aim of educational games is to create learning experiences that are both enjoyable and effective. Learners will likely

disengage without enjoyment and avoid further interactions (Jackson & McNamara, 2013). When students enjoy the gaming experience, their persistent, attentive, competitive, and explorative instincts, which facilitate learning, are amplified (Fithriani, 2021). In this context, a study by Allen et al. (2014) revealed that learners' level of enjoyment significantly predicted their motivation and engagement. They argued that despite the benefits of repetitive training, students can easily disengage from repetitive tasks within the game. Therefore, their enjoyment of the practice environment significantly influences second language learners' engagement with learning activities. Allen et al. (2014) emphasised that leveraging L2 learners' inherent interest in games can enhance their motivation and engagement in training. They discovered that repeated writing strategy training using *Writing Pal* (W-Pal)—an intelligent tutoring system designed to provide explicit writing strategy instruction and practice in an engaging and adaptive environment—not only maintained learners' motivation and engagement levels but also positively influenced their writing performance and affect (i.e., engagement, motivation, and perceived performance). Furthermore, the learners' attitudes toward the games impacted their perceived performance, as they rated the training sessions higher when they found the games beneficial, enjoyable, and easy to play.

The third key finding highlights that educational games can significantly increase student cooperation and collaboration. The social aspects of many educational digital games provide opportunities for collaborative learning and interaction in the target language, which can help learners develop their communicative competence and cross-cultural understanding. For example, Connolly et al. (2011) reported that their developed Alternate Reality Game (ARG) for language learning fostered positive attitudes and increased teamwork skills, contributing to a more cooperative learning experience among learners. Both students and language teachers

considered *The Tower of Babel* ARG a collaborative and stimulating environment that allowed students to communicate in different languages with their peers from across Europe. Utilising such technologies, typically absent in traditional classroom settings, creates opportunities for cooperation, collaboration, and community-building among learners. This collaboration can enhance positive affective factors among language learners as they exchange ideas and work together to solve puzzles and complete various quests within the game.

In summary, incorporating digital games into language learning represents an innovative teaching method that aims to engage learners not just intellectually but also emotionally, socially, and culturally. The interplay of cognitive, emotional, social, and motivational aspects in DGBLLT can create a comprehensive learning experience, significantly improving language learning outcomes. The exploration of emotions in DGBLLT is still a relatively new field of study; hence, future research should continue to examine various emotional and motivational aspects of DGBLLT to understand how positive and negative emotions intersect with the mechanics of these games to provide optimum conditions for language learning and teaching. Furthermore, we recommend that researchers investigate the impact of using DGBLLT on other motivational aspects of L2 learning, such as grit, mindsets, and goal orientations. Regarding emotional engagement in DGBLLT, we suggest that researchers explore learners' psychological flow when using DGBLLT, as flow represents maximum emotional engagement in an activity. This can offer valuable insights on how to maximise the educational benefits of DGBLLT. Lastly, we advise that the examination of positive and negative emotions in DGBLLT encompass a broader range of emotions (e.g., disappointment, shame, regret) to more accurately depict students' emotional experiences in DGBLLT.

Cross-References

⇒ DGBLLT

⇒ DGBLLT and Entertainment Games

⇒ Feedback in DGBLLT

⇒ Gamification and LLT

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