Facilitating Language Use and Communication in ESL/EFL Classrooms through Game-Based Learning

Tamara Galoyan, Drexel University, United States
Mamta Shah, Drexel University, United States
Aroutis Foster, Drexel University, United States

The IAFOR International Conference on Language Learning – Hawaii 2017
Official Conference Proceedings

Abstract
Researchers and educational advocates have been documenting the positive impact of video games on language learning (Gee, 2003; Peterson, 2010; Zheng, 2006). However, despite the potential benefits of using games for language learning, there is still limited research on the specific pedagogical approaches used to incorporate game-based learning into the regular course curriculum (Young et al., 2012).
This paper introduces the Game Network Analysis (GaNA) (Foster, Shah, & Duvall, 2015) framework in the context of language learning. GaNA is a combination of frameworks that allows teachers to implement game-based learning for achieving specific curricular goals through a systematic approach that involves game analysis, game integration, and consideration for conditions within the teachers' context that would impact the success of facilitating learning with games (Shah & Foster, 2015). The paper argues for the benefits of video games to enhance language use and communication in ESL/EFL classrooms using theories of second language acquisition (SLA), namely sociocultural SLA (Vygotsky, 1978), and situated learning (Greeno, Collins & Resnick , 1996).
The paper demonstrates the application of GaNA in a sample lesson plan focusing on the incorporation of the online version of the classic Monopoly game to teach new vocabulary and improve English language learners' communicative skills. The paper concludes with recommendations for EFL and ESL researchers and educators who are interested in examining and using games for language learning.

Keywords: GaNA, game-based learning, language learning; communication; situated learning; second language acquisition.

Introduction

In today's digitalized world, it is not surprising that an increasing number of educators and researchers have been expressing interest in using games for educational purposes (Peterson, 2010) in general, and language learning (Godwin-Jones, 2014; Zheng, Young, Wagner, & Brewer, 2009), in particular. Previous studies, focusing on games for learning, have demonstrated the positive impact of educational games on a variety of learning outcomes, such as increased motivation, engagement, and mastery of content-related knowledge and skills (Oxarart, Weaver, Al-Bataineh, & Al Bataineh, 2014; Robertson & Howells, 2008).

Well-designed educational games can target players' immediate needs and interests, as well as enhance student interaction to help them achieve instructional goals (Franzwa, Tang, Johnson, & Bielefeldt, 2015). Furthermore, game can help students comprehend disciplinary concepts and acquire 21st century skills by embedding their experiences in a contextualized learning environment (Oxarart, et al., 2014; Franzwa et al., 2015). For instance, Young et al. (2012) conducted meta-analysis of the affordances of video games for learning academic content, including language learning. They concluded that well-designed educational games, combined with appropriate instructional strategies, can help learners achieve greater success in learning content than the traditional curricula, which often present content as a set of isolated facts.

Despite all the documented positive outcomes of games-based learning, there is still limited research on the mediating processes by which gaming affects different learning outcomes (Young et al., 2012). Moreover, as noted by Godwin-Jones (2014), there is a need for developing specific practical solutions that could help to overcome pedagogical obstacles and facilitate effective adoption of video games for learning.

This paper addresses this issue by introducing the Game Network Analysis (GaNA) framework (Foster, 2012) as a methodological tool for facilitating integration of games into regular course curricula. More specifically, the GaNA framework is discussed in the context of language learning with games, followed by its application in designing a sample lesson plan for an EFL class.

Language Learning and Games

Historically, both language learning and games have been viewed as tools for enculturation (Vygotsky, 1978). Young et al. (2012) indicated that unlike many other school subjects, language learning is inherently social and the pedagogical approaches to teaching a language should be linked to socially contextualized scenarios, such as dialogues and role plays. Thus, the most powerful way of learning a language is by immersing oneself in a culture where the target language is constantly used for the purposes of interaction, negotiation of meaning, and socialization. With this in mind, games and language learning need to be analyzed as context-specific phenomena, with the application of the perspectives of embodied cognition (Gibbs, 2006),

sociocultural theory (Vygotsky, 1978), and situated learning (Greeno, Collins, & Resnick, 1996).

The concept of embodied cognition links thinking to our body, whether it be real or virtual (Gibbs, 2006; Goodwin, 2000). For instance, Clinton (2006) studied the process of embodiment through video game play and showed how players adopt virtual character's moves by experiencing control over the character's actions. Similarly, Dewey (1910) argued that the main goal of language is to coordinate action since most thought is embodied in action. Cowley (2007) extended this idea by arguing that language is embodied in human activities and behaviors triggered by co-action. In this view, language is both an individual and social learning product

Similarly, the sociocultural theory describes learning as a process of interaction between the learner and the surrounding environment in which learning takes place (van Lier, 2004). According to sociocultural approaches to language learning, language acquisition cannot be explained without understanding how it is integrated into socially mediated words (Atkinson, 2002). Language is reflected in sociocultural behavior, both resulting from and creating context and structure (Zheng et al., 2006).

Sociocultural approaches to second language acquisition are often linked to Vygotsky's (1978) ideas of human development and scaffolding between experts and novices. Vygotsky conceptualized human development as a process of transforming and internalizing socially shared activities. He introduced the concept of the zone of proximal development to explain how social and participatory learning takes place. The zone of proximal development was described as "the distance between the actual development level and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86).

Drawing upon Vygotsky's ideas of learning through social interaction, Brown and colleagues (1993) designed and implemented an educational program focusing on learners as active agents within the zone of proximal development. They analyzed the participants' roles in conjunction with various tools and symbols involved in the learning process. This and subsequent research emphasized the role of divergent classrooms in shaping learning communities in which each participant can make an important contribution to the common knowledge building.

Other related research supports the idea that linguistic and cognitive mastery are based on relationships between individuals (John-Steiner & Mahn, 1996). Young and colleagues (2012) noted that through video games, players immerse in a social environment where learning the language is necessary for survival and success within the game. Thus, successful foreign language teaching methodology should encourage learners to socialize and participate in cultural practices of the target language (Krashen, 1991).

Based on sociocultural views, Ragoff (1994) conceptualized learning as a result of the learner's participation in a community of practice. Such communities can often be

formed around games and play. For instance, Vygotsky (1978) emphasized the importance of games and play in developing children's abstract imaginative thinking, as well as achieving goals they could not achieve in real life. Moreover, games can often provide communities of players with a social platform defined by social norms that are associated with the target language and guide players' actions within the gameplay (Rankin, Gold, & Gooch, 2006). Zheng and colleagues (2009) showed that virtual environments provide multiple opportunities for language learning and teaching through repeated practice, feedback, scaffolding, interaction and socialization in a meaningful context. These are crucial elements both for language development and sustaining the community of practice where players practice the target language by engaging in the community discourse (Lave & Wenger, 1991). In these communities the main aspects of participation, such as agency, accountability, authority, are distributed among participants in their interaction with each other and the immediate environment (Greeno, 2006). Such communities can help learners gain proficiency in the target language while communicating with each other as well as native speakers. Thus, video games have the potential of closing the gap between foreign language learning in a traditional classroom setting and interaction with native speakers (Schwienhorst, 2002).

A study conducted by Kuppens (2010) with 374 sixth-grade learners in Netherlands showed that there were statistically significant gains in the use of English grammar by students who watched TV or played video games as compared to those who were not involved in those activities. Similarly, in a meta-analysis of research on video games for language learning, Peterson (2010) outlined the affordances of video games, such as *Active Worlds*, *The Sims*, and *WoW,* for creating learner-centered environments with opportunities for experiential learning, collaborative forums for negotiating meaning, as well as engaging contexts for learning.

Unfortunately, despite all the affordances of games for language learning, there still remains a gap between theoretical implications of game-based language learning and specific pedagogical solutions that could help educators effectively integrate games in their language classes. Some of these obstacles include aiding instructors in choosing the right game, finding the opportunities for language learning in a gameplay, as well as integrating gameplay and its related activities into the curriculum (Godwin-Jones, 2014).

The GaNA Framework

Game Network Analysis (GaNA) was developed as a methodological process for game-based learning (Foster, 2012). Specifically, GaNA is a combination of analytical and pedagogical frameworks developed to aid teachers, researchers and designers in adopting game-based learning in their context with an emphasis on game analysis and game integration. GaNA includes the Play Curricular activity, Reflection Discussion (PCaRD) model for game-based learning, the inquiry, communication, construction, and expression (ICCE) framework, and the ecological conditions impacting the integration of games in formal and informal learning contexts (see Foster, Shah, & Duvall, 2015 for more information.)

The framework includes a focus on the pedagogy and content of games as well as the process for employing game-based learning in classrooms in a given context (Shah & Foster 2015). In the process of adopting GaNA, teachers first select and analyze games as curriculum with constraints and affordances for technology, pedagogy, and content (Foster, 2012). Once necessary knowledge of the game is obtained, teachers design a curricular theme, a unit or a course by designing play (P) experiences, curricular activities (Ca), reflection (R) and discussion (D) (PCaRD) opportunities (PCaRD). These experiences are anchored in the game and designed to allow for students to *inquire* (I) into the curricular concepts, *communicate* (C) with teachers, peers, and in-game features (if applicable) to build their knowledge further, *construct* (C) models to demonstrate their understanding, and *express* (E) (ICCE) themselves affectively. The teacher makes conscious decisions about game analysis and game integration by considering the technological, pedagogical, and social conditions that would impact the successful implementation of the game-based learning curriculum (Shah & Foster, 2014).

Application of GaNA in the Context of Language Learning

The GaNA framework was applied to design a sample lesson plan (see Table 1) for game-based learning in an EFL classroom. The main objective of the lesson was to teach business-related vocabulary and concepts, while create opportunities for collaboration, learner engagement, and communication in the target language. An online version of the classic Monopoly game was chosen for this purpose.

Content, Technology, and Pedagogy

Monopoly is a real-estate board game reflecting the contexts of economy and business. The main goal of the game is to purchase property and to remain financially solvent while trying to make the opponents go bankrupt. The game content provides a meaningful and authentic context for language students to learn business-related words and concepts (Table 1) and to practice them in group discussions and negotiations. For instance, examples form the game play may be used to teach abstract business vocabulary, such as *bankruptcy, luxury tax, real estate, liability,* which, otherwise, would often be hard to teach in a language class. Shanklin and Ehlen (2011) support this view by indicating that Monopoly allows for simple representation of concepts and makes it easier for learners to grasp the difference between certain economic and business definitions of terms.

The online version of the classic Monopoly board game can be accessed through multiple platforms, including phones and computers. This feature makes the game accessible to a large number of students at the same time. The online version of the game used for creating this lesson plan can be played with both human and computer opponents, which can make it easier for teachers to form player groups. For example, a group may consist of two human and two computer players.

From the pedagogical perceptive, the Monopoly game provides the teacher with an opportunity to create curricular activities which are based on meaningful *inquiry,*

communication, construction, and *expression* (ICCE). It is known, that the process of inquiry is iterative, involving problem generation and problem solution and should be enhanced through guided discovery-based learning (Mayer, 2004). Through Monopoly game play, the teacher can situate and facilitate learners' inquiry and communication processes in the contexts of business and economy. For instance, while mastering the rules of the game, players are engaged in an inquiry process involving discovery of essential business-related concepts, financial principles, and strategies that may be needed to succeed in the game play as well as other related real-world business contexts. These includes learning how to trade real estate, how to negotiate for win-win deals, and how to manage your assets to avoid or delay bankruptcy. In addition, all these negotiation and problem solving activities allow learners to actively communicate and exchange ideas in the target language.

A possible limitation of the game is that it may not provide learners with enough opportunities to intentionally reflect on their game experience and make explicit connections across the game play, the learning goals, and the real-world context. This constraint can be overcome by implementing the PCaRD model that can help instructors design anchored learning activities to enhance learner's abilities to transfer their game experiences to other pedagogical and personal contexts (Foster & Shah, 2015). The follow-up curricular activities in the sample lesson plan, involving poster creation, presentation, reflection, and discussion, were designed based on the PCaRD model, allowing learners to actively reflect on their experiences within the game play and make meaningful connections across contexts. These activities incorporate the components of *construction* and *expression* of the ICCE framework where learners are engaged in active knowledge building, as well as sharing their emotions, values, and ideas related to the game and follow-up activities.

Table 1
Sample Lesson Plan

Sample Lesson Plan **Monopoly Game-Based Language Learning**
General Information • Level of English: Intermediate • Age: High-School • Course: English for General Purposes • Duration: 1 hour 35 min. • Game Used: Monopoly (online version) • Link to the game: http://www.pogo.com/games/monopoly

Goals

- Teach business-related vocabulary in English
- Engage students in interactive curricular activities based on PCaRD and ICCE
- Help students practice and acquire 21st century knowledge and skills, such as problem solving, critical thinking, collaboration, communication, strategic thinking, and effective negotiation
- Enhance in-class communication and interaction in English.

Learning Outcomes

- Use business-related English vocabulary in meaningful conversations
- Practice problem solving, critical thinking, collaboration skills, strategic thinking, and negotiation skills to communicate with peers and play the game effectively
- Make relevant connections between the game, classroom activities, and their lives

Anticipated Problems

- Some students might not be familiar with the game and need additional support from their peers and the teacher.
- Some technical problems might occur while playing the game online.

Activity	Procedure	Objectives	Time
Introduction	• Introduce the topic of the lesson and the game. • Distribute handouts with the rules of the game and discuss them with the students.	• To scaffold the learners into the following curricular activities.	10 min.

Vocabulary teaching	• Pre-teach some essential vocabulary from Monopoly. • *Vocabulary from Monopoly* • *Monopoly* • *Property* • *Mortgage* • *Bankruptcy* • *Liability* • *Own, owner, ownership* • *Auction off* • *Income tax* • *Luxury tax* • *Jail* • *Real estate* • *Community*	• To activate the learners' schema. • To provide them with the necessary vocabulary for in-game communication and interaction and follow-up reflection and discussion activities.	10 min.
Play (**P**CaRD)	• Provide each group with a computer or ask them to use their mobile phones. • Give the necessary instructions on how to access the game online. • Get the students to play the game in groups of three or four (alternatively, they can play with a virtual opponent).	• To make students play the game collaboratively to engage them in **Inquiry** and **communication** (**IC**CE). • To engage them in **discussions** (PCaR**D**) where they can practice the target language and the game strategies.	60 min.

Curricular Activity and Reflection (P**C**a**R**D) **Creating and presenting a poster**	• Split the students into groups of 3-4. • Provide the students with poster paper and markers. • Give instructions on how to create and present a poster sharing their experience with the game. *Sample questions to be used as prompts:* - *What business-related concepts and strategies did you learn from the game?* - *What were the challenges when playing the game?* - *How is the game related to your future jobs or life? Bring some examples.* - *What did you mostly like/dislike about the game?* - *Would you behave differently in real life?*	• To provide an opportunity for **construction** and **expression (**IC**CE**). • To get the students to actively **reflect** (PCa**R**D) on their experiences with the game and make them make meaningful connections between the game play, curricular activities, and their personal lives.	15 min.

Anecdotal Findings

This lesson plan was implemented in an English language class with eight high-school students in Yerevan, the capital city of the Republic of Armenia. For all the participants, English was a foreign language, and their English language proficiency level ranged from pre-intermediate to intermediate.

Based on the teacher's observations, in-class discussions, and informal interviews with the participants after class, all the students enjoyed playing the game. The

teacher reported that the students were engaged in active discussion and negotiation in the target language during the game play. In addition, the follow-up activities provided ample opportunities for practicing the target vocabulary in meaningful discussion and reflection.

Conclusion

The GaNA framework was used to analyze the content of the Monopoly game along with its pedagogical and technological aspects, revealing a number of affordances for ICCE and PCaRD in the EFL context. The analysis allowed for the creation of a sample game-based lesson plan that can be used by EFL/ESL instructors to integrate game-based learning in their classes.

Both the game play and the follow-up activities designed based on the PCaRD model have the potential of enhancing students' communicative and problem solving skills while situating their learning in a relevant context. In these activities, English languages can become a necessary tool to master the game content and strategies, to engage in meaningful inquiry, active discussion and reflection within and beyond the game play.

These experiences reflect some of the core ideas in the theories of sociocultural SLA (Vygotsky, 1978), and situated learning (Greeno et al.,1996). Various forms of learner communication during and after the game can be linked to Vygotsky's (1978) conceptualization of learning as participation in social interaction. The Monopoly game has affordances for language learning through situating learner interaction and socialization in a business context defined by social norms and rules that guide players' actions.

Researchers and educators could adopt the GaNA framework to reveal the affordances and constraints of other games for language learning. A similar lesson plan incorporating the elements of the ICCE framework and the PCaRD model, can be designed and implemented by EFL instructors to allow for systematic and step-by-step integration of game-based learning to meet the desired learning objectives.

References

Atkinson, D. (2002). Toward a Sociocognitive approach to second language acquisition. *The Modern Language Journal*, *86*(4), 525-545.

Brown, A. L., Ash, D., Rutherford, M., Nakagawa, K., Gordon, A., & Campione, J. C. (1993). Distributed expertise in the classroom. Teoksessa G. Salomon (toim.) Distributed cognitions: Psychological and educational considerations (pp. 188–228).

linton, K. A. (2006). *Being-in-the-digital-world: How videogames engage our pre-linguistic sense-making abilities* (pp. 1-236).

Cowley, S. J. (2007). The cognitive dynamics of distributed language.

Dewey, J. (1910). How we think. Boston. *MA: DC Heath*.

Foster, A., Shah, M., & Duvall, M. (2015). Game Network Analysis: A methodological framework for teaching with video games. In M.L. Niess & H. Gillow-Wiles (Eds.) *Handbook of Research on Teacher Education in the Digital Age*

Foster, A. & Shah, M. (2015). The play curricular activity reflection and discussion model for game-based learning. *Journal of Research on Technology in Education, 47*(2), 71-88.

Foster, A. & Shah, M. (2015b). The ICCE framework: Framing learning experiences afforded by games. *Journal of Educational Computing Research, 51*(4), 369-395.

Foster, A. (2012). Assessing learning games for school content: Framework and methodology. In D. Ifenthaler, D. Eseryel & X. Ge (Eds.), *Assessment in Game-based Learning: Foundations, Innovations, and Perspectives*. New York: Springer.

Foster, A., Mishra, P., & Koehler, M. (2011). Digital game analysis: Using the Technological Pedagogical Content Knowledge framework to determine the affordances of a game for learning. In M. Khine (Ed.), *Learning to Play: Exploring the Future of Education with Video Games*. New York: Peter Lang Publications.

Franzwa, C., Tang, Y., Johnson, A., & Bielefeldt, T. (2015). Balancing Fun and Learning in a Serious Game Design. *Gamification: Concepts, Methodologies, Tools, and Applications: Concepts, Methodologies, Tools, and Applications*, 452.

Gee, J. P. (2003). What video games have to teach us about learning and literacy. *Computers in Entertainment (CIE)*, *1*(1), 20-20.

Gibbs, R. W. (2006). *Embodiment and cognitive science*. New York: Cambridge University Press.

Goodwin, C. (2000). Action and embodiment within situated human interaction. *Journal of pragmatics*, *32*(10), 1489-1522.

Godwin-Jones, R. (2014). Emerging technologies games in language learning: Opportunities and challenges. *Language Learning & Technology*, *18*(2), 9-19.

Greeno, James G. *Learning in activity*. na, 2006.

Greeno, J. G., Collins, A. M., & Resnick, L. B. (1996). Cognition and learning. *Handbook of educational psychology*, *77*, 15-46.

Inal, Y., & Cagiltay, K. (2007). Flow experiences of children in an interactive social game environment. *British Journal of Educational Technology*, *38*(3), 455-464.

John-Steiner, V., & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. *Educational psychologist*, *31*(3-4), 191-206.

Kuppens, A. H. (2010). Incidental foreign language acquisition from media exposure. *Learning, Media and Technology*, *35*(1), 65-85.

Kuppens, A. H. (2010). Incidental foreign language acquisition from media exposure. *Learning, Media and Technology*, *35*(1), 65-85.

Krashen, S. D. (1991). Second Language Acquisition and Second Language Leraning. Pergamon Press.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge university press.

Oxarart, A., Weaver, J., Al-Bataineh, A., & Al Bataineh, M. T. (2014). Game Design and Motivation. *International Journal of Arts & Sciences*, *7*(2), 347.

Peterson, M. (2010). Massively multiplayer online role-playing games as arenas for second language learning. *Computer Assisted Language Learning*, *23*(5), 429-439.

Rankin, Y. A., Gold, R., & Gooch, B. (2006, September). 3D role-playing games as language learning tools. In *Eurographics (Education Papers)* (pp. 33-38).

Robertson, J., & Howells, C. (2008). Computer game design: Opportunities for successful learning. *Computers & Education*, *50*(2), 559-578.

Rogoff, B. (1994). Developing understanding of the idea of communities of learners. *Mind, culture, and activity*, *1*(4), 209-229.

Schwienhorst, K., 2002. Why virtual, Why environments. Implementing vs concepts in call. Simulations and Gaming. 33 (2). 196-209.

Shah, M. & Foster, A. (2015). Developing and assessing teachers' knowledge of game-based learning. *Journal of Technology and Teacher Education, 23*(2), 241-267. Chesapeake, VA: Society for Information Technology & Teacher Education.

Shah, M. & Foster, A. (2014). Undertaking an ecological approach to advance game-based learning: A case study. Special issue on game-based learning for 21st century transferable skills: Challenges and opportunities. *Journal of Educational Technology and Society, 17*(1), 29-41

Shanklin, S. B., & Ehlen, C. R. (2011). Using The Monopoly Board Game As An Efficient Tool In Introductory Financial Accounting Instruction. *Journal of Business Case Studies (JBCS)*, *3*(3), 17-22.

Van Lier, L. (2004). The Ecology and Semiotics of Language Learning: A socio-cultural approach.

Vygotsky, L. S. (1978). Mind in society: The development of higher mental process.

Young, M. F., Slota, S., Cutter, A. B., Jalette, G., Mullin, G., Lai, B., ... & Yukhymenko, M. (2012). Our princess is in another castle a review of trends in serious gaming for education. *Review of educational research*, *82*(1), 61-89.

Zheng, D. (2006). Affordances of 3D virtual environments for English language learning: An ecological psychological analysis. *Unpublished doctoral dissertation). University of Connecticut, Storrs, CT*.

Zheng, D., Young, M. F., Wagner, M., & Brewer, R. A. (2009). Negotiation for Action: English Language Learning in Game Based Virtual Worlds. *The Modern Language Journal*, *93*(4), 489-511.

Contact email: toma.galoyan@gmail.com