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Teaching language and literacy with games: What? How? Why?

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ABSTRACT

In this successful one-year extracurricular project, I implemented the pedagogy of multiliteracies to address discouraging trends and under-recognized ideas uncovered by asking critical questions about the practices and purposes of teaching language and literacy with games. The student, with my help, played games, analyzed texts, explored academic concepts, and actively participated on a gaming website. What and how she learned was investigated using session transcripts, textual analysis work, the participatory project, concept maps, questionnaires, interviews, and language tests. Key findings were: (1) careful integration of goals, activities and games resulted in literacy, intellectual and participatory development, (2) materials and teacher mediation helped her learn and accomplish more than she could individually, (3) learning occurred mostly around games, not during games, (4) multimodality and affinity spaces contributed to broad linguistic exploration and better understanding, (5) learning repertoires were extended and elements were transferred, (6) she struggled with some textual meanings, some sociocultural connections and some assignments. The teacher's role is described in detail. Language teaching and learning with games can evolve by integrating important aspects of goal-setting, pedagogical frameworks, materials, active teacher mediation, multimodality, multiple learning spaces and a broader consideration of games. I challenge researchers to broaden their horizons. I guide teachers by sharing frameworks, materials and accounts of interactions with the student.

KEY POINTS

Background: Research on games and L2 learning overlooks broader educational goals and how teachers drive learning.

Aim: Understand what effect a comprehensive pedagogy, multiple texts and intensive teaching with games has on L2 and literacy development.

Methods: Qualitative: discussions, worksheets, writings, and interview analyses. Quantitative: pre and post-tests and reflections.

Results: The student gained and applied conceptual knowledge and second language literacy skills. She participated online. She struggled.

Conclusion: Multiliteracies pedagogy broadens teaching and research with games. Hi-resolution accounts of teaching are needed.

TWEET

Can discussions, analyses and project work do more for L2 development than just playing games? Yes. Are these additional activities hard? Yes. Could changing teaching be a key to evolving game-based language learning? Let's explore that together. #gamesandteaching #gameterakoya

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1. Introduction

To plan a second language teaching and learning project using games, I surveyed the literature for examples, data, and advice to answer some fundamental questions:

- *What* should I teach? *What* should I use? (Section 1.1)
- *How* should I teach using games? (Section 1.2)
- *Why* should I even use games? (Section 1.3)

The literature on teaching language with games spans more than 40 years, with recent increased interest. My scouring, unfortunately, turned up few practical pedagogical examples and generated many additional questions and concerns. Experts rightly categorize the field as "in its infancy" (Sykes & Reinhardt, 2013, p.11), "barely discovered" (Gee, 2012, p.xiv), or in a "false dawn" state (Peterson, 2013, p.6). In this introduction, I will describe some concerning trends, some promising projects and ideas, and my connecting these to the "what-how-why" of this paper's project. I hope that other teachers in other contexts will share their answers to the questions that I raise.

1.1 What should I teach? What should I use?

Overall, the field of teaching language with games seems narrowly focused. Peterson (2013) identifies various learning outcomes but emphasizes the "heav[y] focus" (p.99) on vocabulary studies and the "need for studies that explore other areas associated with language learning" (p.99). So many studies on vocabulary acquisition with games have been published that researchers have recently begun to be able to publish meta-analyses of the small field. Tsai and Tsai (2018) were able to include 26 vocabulary-focused papers in their examination of research published after the year 2000. Sykes and Reinhardt (2013) express concern that teachers' and researchers' use of games as lexical content "leads to conceptualizing communication as transmission and learning as reception" (p. 37-38). They link the potential for improved language teaching with games to theoretical (Halliday, 1978), pedagogical (Kumaravadivelu, 2006) and game studies (Salen & Zimmerman, 2004) work and recommend a broader range of language and culture work (e.g., on genre, dialect or ideology) with, through, around and about games. Sykes (2009) and Shirazi et al. (2016) conducted rare investigations of L2 pragmatics interactions using games.

The literature tends to focus on game-based language *learning*: students playing games and learning or practising a language on their own, whether in class or at home. Game-based language *teaching* features much less prominently in the literature, making it hard to find practical examples or advice for teachers. Furthermore, the game-based teaching approach that seems to persist is one that only considers the language students use *during* a game. Rixon (1981), for example, argues that "chess is an excellent game in itself, but it is almost useless from the language-teaching point of view" (p.3) and balks at the potential teacher effort on "considerable adaptation" (p.3) of a game that could focus learners on other linguistic and intellectual and cultural aspects of the game (for example, the rules or history or player communities of chess). Many papers (e.g., Chik, 2011; Ensslin, 2011; Gee & Hayes, 2012; Sykes & Reinhardt, 2013; Thorne, Fischer & Lu, 2012) have explored the variety of language and learning practices in the texts and community spaces around games; incorporating this language and these practices would greatly develop the game-based language classroom.

1.2 How should I teach? How should I use games?

Up-to-date information in the field concerning empirically-driven pedagogical advice is scarce.

Miller and Hegelheimer (2006) and Ranalli (2008) conducted important work that demonstrated that mediating materials (i.e., worksheets) improve vocabulary learning with games. Unfortunately, research has not sufficiently investigated how materials affect learning other linguistic and cultural aspects, or how *teacher* mediation (e.g., discussions) affects learning with games.

Furthermore, it is frustrating that game-based teaching is often described abstractly; the literature lacks hi-resolution accounts of actual practice. Though many authors, like Miller and Hegelheimer, stress that "the role of the instructor is crucial and computer simulation games in no way provide a substitute for ESL practitioners;" (p.323), the problem remains that "what [instruction] should look like

… is still unclear and will require a great deal more research and practice" (Filsecker & Bündgens-Kosten, 2012, p.64). As many (e.g, Reinhardt, 2017, Crookall, 2010; Reinders, 2009; Sykes and Reinhardt, 2013) have suggested, better descriptions of classroom teaching with games will guide teachers towards better practices with the media.

Cornillie et al.'s (2012) tentpole meta-analysis of 1984-2010 revealed an increasing focus on theoretical, technological and design topics over pedagogical explorations. Teachers should be concerned. Zhou (2016) argues that continued experimental studies make it difficult for teachers to "adopt or to implement" (p.4) games.

Focusing on the teacher's role in teaching languages with games revealed that papers tend to advocate for the CLT-based "guide-on-the-side" (e.g., Meskill, 1990), which, though positioning students central to learning, ignores the potential of teacher mediation to lead development and perpetuates games-as-content. Some studies (e.g., Reinhardt & Zander, 2011) have utilized post-CLT approaches, but the teachers' roles are not clearly reported for other practitioners.

But, helpful descriptions of teacher roles do appear sporadically. Coleman (2002) connected a game with particular affordances, mediation via materials and activities, and various roles of the teacher (orienting, engaging, debriefing) to address students' academic writing problems. Chee, Mehorta & Ong's (2014) dialogic investigation documents the "not technology-centric but practice centric" (Conclusion Section) challenges of game-based classrooms. Hubbard (2004) and Kurek and Hauck (2014) describe the necessity of teachers to scaffold language students to online participation. Teachers can guide students towards deeper reflection and engagement (Gee, 2003; Filsecker & Bundgens-Kosten, 2012) and elusive and critical academic concepts (Egenfeldt-Nielsen, 2005; Squire, 2011). Game-based language instruction and research can benefit from drawing on recent explorations of the stronger role and agency of the teacher in other game-based educational contexts (e.g., Molin, 2017).

1.3 Why should I use games?

The literature focuses on theoretical, experimental and design studies centred around games' popularity, player motivation, technological novelty and vocabulary acquisition. Though some research (e.g., Miller & Hegelheimer, 2006; Ranalli, 2008) has pointed the field towards new teaching models, the predominance of experimental studies investigating games and vocabulary acquisition can be seen as perpetuating games as "content," or games as "magic bullets," or the field as one based on "techno-utopian" (Thomas, 2012) "false-dawn" (Peterson, 2013, p.99) hype (Cornillie et al.; Egenfeldt-Nielsen, 2005) about the use of games in education. Games are not yet normalized or integrated with pedagogy and contexts (Peterson, 2013). There are no magic bullets in (game-based language) education.

Warschauer (e.g., 2004; Warschauer & Ware, 2008) identifies participation as a "meaningful purpose" for learning language, "to be able to use English to have a real impact on the world" (p.23). Unfortunately, much of the literature on teaching languages with games frames students' mere use of language during gameplay as, Mawer and Stanley (2011) articulate this view well, "doing real things with language" (p.15). Game-based language classrooms, as Pennycook characterized CLT classes, may be full of "empty babble" (1994, p.311). Empty babble is talk for its own sake; the only thing that matters is that students are talking. What students are talking about, or what the talk might result in is inconsequential. Games may just be another way to get students to talk, if the meanings in and around games are never explored, or if the meaning-making that can continue to happen as a result of playing games is never encouraged. Empty babble might be contrasted with real-world impact. What impact do students, in a classroom, playing games, have on the world? Most papers examine in-game interactions or post-play test scores, not students' productive contribution to personal, public or professional aspects of society. Game and TBLT explorations (Sykes & Reinhardt, 2012; Purushotma, Thorne & Wheatley, 2009; Vegel, 2018; York et al., 2019) do demonstrate robust integrations of games with pedagogy, but these combinations also tend to focus on gameplay, not real-world participatory impact. Chik (2011), Ryu (2013), and Thorne, Black and Sykes (2009) documented remarkable examples of self-driven participatory L2 use around games, but work must explore how teachers integrate technology, values and pedagogy to scaffold students from playing to participation in various spheres of life.

Much of the literature on teaching language with games is missing an ideological backbone, ignoring fundamental purposes and processes of education. If the purpose of education is to develop students' interests and abilities to participate, as they wish, in various private, public and professional areas of life, then games, if used at all, should directly facilitate students' reaching this goal. My view was shaped by Freire's (1985) arguments for liberation through reading and writing through words and actions in the world, by viewing teaching as transforming students (Slavich & Zimbardo, 2012), by Selwyn's (2014) and Cuban's (2009) and Toyama's (2011) descriptions and critiques of technology's ineffectiveness to improve education, by Dewey's (2007) need for authentic connections between the world and formal education, by Jenkins et al.'s (2009) and Ito et al.'s (2013) framing of gaming as opportunities for young people to develop agency and bridge the "participation gap" (Jenkins et al., 2009, p.xii), by the learning that happens as people join and contribute to a community (Lave and Wenger, 1991), by Blume's (2019) examination of why and how games can develop students' identities and social capital, by Squire's (2008; 2011) call for games to develop students' basic educational rights and interests and identities, and by Gee's (2003), Filsecker and Bündgens-Kosten's (2012), and Thomas' (2012) arguments that the "active" learning in games not supercede cognitive, critical, reflective and participatory learning around games. Filsecker and Bündgens-Kosten urge the field to believe along with them that

> For a game-based activity to be educational, we need more than engagement in general, we need *cognitive engagement* with the subject matter and we need more than motivation for entertainment, but we need to foster motivation to *learn* … [to] prepare learners for experiencing the world in richer ways … that will prepare them for future learning (p64-65).

Very few articles in the field of game-based language teaching and learning seem to share or be as explicit or passionate about these perspectives and goals.

After orienting myself to fundamental educational concerns, I also considered why I wanted to use games in the current project to accomplish these goals. I write about the benefits of games as simulations, as instantiations of language, as various texts, and as personal interests in Section 3.5.

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2. Pedagogy of Multiliteracies

This project utilized the "pedagogy of multiliteracies" (New London Group, 1996) and its "learning by design" (Cope & Kalantzis, 2000) reframing. These ambitious manifestos address the what, how and why of language and literacy education. The next three sections present an overview of the pedagogical frameworks (New London Group, 1996; Cope & Kalantzis, 2000) that formed the backbone of the project described in this paper.

2.1 The why of the pedagogy of multiliteracies

The pedagogy aims to "make some sort of difference for real children in real classrooms" (New London Group, p.96) and to improve society. If teachers help students to deeply understand meanings and to contribute meaningfully, students gain ability and agency. "Transformation" of learners, texts and society is a central goal. The pedagogy's activities give teachers and learners "agency" over what and how they teach and learn, "extending" their teaching and learning "repertoires."

2.2 The what of the pedagogy of multiliteracies

The pedagogy is tied to the fact that work, civics, ideas, language and technologies are always changing. Learners engage in "meaning-making:" understanding what and how communication is created and received. Meanings are made using various texts and tools (e.g., print, images, sounds, interactive systems); learners look within and across "multimodal" representations. Language is not a

uniform construct of dominant dialects or discourses; everyday, hobbyist, academic and professional language, from vocabulary to pragmatics and genre can be compared and contrasted and connected to discussions and analyses of sociocultural knowledge and meanings.

2.3 The how of the pedagogy of multiliteracies

The pedagogy of multiliteracies' core pedagogical sequence, both in New London Group (1996) and Cope and Kalantzis (2000) includes four stages. The first and last stages are more progressive and experiential. The second and third stages are more traditional and analytic. The stages will be described in detail in this section, but before doing so, some general characterizations of teachers and teaching will be offered.

The pedagogy includes both traditional/didactic and progressive/experiential teaching and learning activities; teachers act in a "reflexive" way, selecting and implementing various activities as "designers" (Cope & Kalantzis, p. 31) of learning. Teachers are active; they participate (e.g., play games) and reflect (e.g., discuss ideas and analyze information) alongside students. The pedagogy connects students' everyday experiences, school's rigorous thinking and research, and society's private, public and professional communities. The pedagogy is not rigid; it permits "weaving" back and forth between activities, and between school and society. Texts in the world, "available designs," are experienced and examined, learners then do "designing" work to research and create meanings, resulting in "redesigned" texts, learners, and the world.

Stage 1: Situated practice / Experiencing the known and the new

In this stage, teachers encourage learners to explore meaningful interests to create vivid experiences, evidence and data for future learning. Beginning with tacit exploration of familiar interests gives learners a foundation on which new and more explicit ways of thinking and learning and doing can be added by the teacher. New examples and aspects of familiar interests generates diversity and new perspectives and additional data.

Stage 2: Overt instruction / Conceptualizing by names and by theory

In this stage, learners describe and analyze their experiences and data. To make deeper meaning of their situated practice of everyday life or media, learners are expected to use context-specific terms (metalanguage) to reduce ambiguities in natural language; academic and specialist concepts and theories and models naturally arise and can be used in future learning activities. Teachers react to learner attempts and offer additional instruction and tasks to raise learners' active and conscious awareness and understanding and control of the experience; teachers help learners to (but do not tell how to) accomplish something more complex than what they can do on their own.

Stage 3: Critical framing / Analyzing functionally and critically

In this stage, learners need to investigate the connections between experiences and texts and context: the related political, cultural, economic, social and personal meanings and ideologies and interests and purposes. Teachers develop students' awareness and understanding of these connections; teachers help students stand at a distance from the objects of study and become more distant from and conscious and critical and analytical of knowledge and practice in texts and society. Teachers help learners objectively find and explain connections and patterns in various data and also subjectively deduce and evaluate perspectives, interests and motives.

Stage 4: Transformed practice / Applying appropriately and creatively

In this stage, students must finally use what they have learned, and how they have learned to learn, to create something meaningful to themselves and to others. The pedagogy's previous experiences, concept building and analytical work connect to and culminate in real-world works or actions inside or outside typical educational settings. Students are free to choose how and where to apply their new knowledge, language and other abilities for both predictable and also innovative purposes. Artistic, political, academic, and entrepreneurial aims are equally valid. This final stage offers students the opportunity to test and demonstrate prior learning, transfer learning to new contexts, and also to gain

new knowledge and skills through the construction of cumulative projects. Ultimately, the creation of new texts or products develops both the world and the learner.

2.4 Implementation with games

Multiliteracies pedagogy, following critiques of CLT (e.g., Warner, 2011) has been increasingly applied in language education (Johnson et al., 2015; Kumagai, Lopez-Sanchez & Wu, 2015; Paesani, Allen & Dupuy, 2015). Though largely untested in game-based language teaching, two important models have been inspired by and remixed multiliteracies pedagogy, integrating games with broader literacy and intellectual and participatory development.

First, Thorne and Reinhardt (2008) discussed games in university-level "bridging activities." Teachers are essential to the approach; they guide students' exploration of media and texts and help learners notice particular language (similar to the first stage of the multiliteracies pedagogy). The authors mention the importance of teachers' metalinguistic discussions with students to "foster critical awareness" (p.567) of the texts that students collect (similar to the second and third stages). Ultimately, students participate via communities and media (similar to the last stage).

Next, Reinhardt and Sykes discussed teaching with, through and around games in their "Explore-Examine-Extend" framework (2011; 2013). Their framework suggests that students play games and collect language (similar to the first stage of the multiliteracies pedagogy), then analyze the language and its social connections (similar to the second and third stages) and then apply the language in creative ways (similar to the last stage). They integrate goals and pedagogy, stressing "wraparound activities" connected to goals," and "guidance and direction from the instructor" (Reinhardt & Sykes, 2011, Section 4.2).

Unfortunately, most publications that cite these two papers refer to their discussions of games' technological affordances for learning, not pedagogical guidance. Lesson plans using the models exist (Kim, 2016; Games2Teach lesson plans[1]), but data from their implementation has not been shared.

Reinhardt, Warner and Lange (2014), Warner, Lange and Richardson (2016), Warner and Richardson (2017) and Warner, Richardson and Lange (2019) investigated taught units "loosely based on the bridging activities framework" (Warner & Richardson, p.205) around L2 German students' explorations of browser games, gamers, and gaming. Students engaged more fully with classwork (wiki logs, language collecting, position papers and ethnographic projects) and classmates than with online communities, some students baulked at games in school, and some students opposed participating online. The lack of practical implementation of game-based Bridging Activities and Explore-Examine-Extend multiliteracies-based frameworks may be due to the participatory work (e.g., video creation, or long-term engagement in online forums) being difficult for or counter to the goals of students, teachers or schools.

3. The Project

An extracurricular program, "The Game Terakoya[2]" was created to explore the integration of the multiliteracies pedagogy with games. It also drew from the Bridging and Explore-Examine-Extend models. This project aimed to address the problems and possibilities in the what-how-why of second language teaching and learning with games and to develop students' language, literacy, intellectual and participatory abilities.

The project explored various language and literacy aspects with and about games and connected game culture (the "what"). I will argue that any game can hold educational value when integrated with broader pedagogical, linguistic and sociocultural aims. The project made extensive use of various texts (Section 3.5), analytical activities related to language and knowledge development (Sections 4.1.1, 4.1.2, 4.1.3, 4.1.5, Appendix 1) and participatory work in affinity spaces (Sections 4.1.1, 4.1.4, 4.1.5).

[1] Games2Teach lesson plans: https://games2teach.uoregon.edu/download/classroom-activities/
[2] *Terakoya*s were Japanese private schools (17th to 19th century) for teaching reading, writing and culture to children.

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pedagogical, linguistic and sociocultural aims.

The project was a concerted effort to detail the intersection of pedagogy and games (the "how"). Both didactic and progressive teacher roles were adopted (Section 3.3) in order to lead students' language, academic and participatory development (Sections 4.1.1 to 4.1.5). Textual analysis worksheets were developed and utilized (Sections 3.3, 4.1.1, 4.1.3, Appendix 1). Teacher mediation and materials related to discussions and analysis are shared as a starting point for other practitioners (Section 3.3, Appendices 1 and 9).

This project attempted to put educational ideals (the "why") into practice by utilizing pedagogical materials and activities (Section 3.3) to guide students from playing to reflection (Sections 4.1.2, 4.1.3) to participation (Section 4.1.4). I tried to make a difference in the lives of real students by focusing on students' participation, liberation, agency, intellectual growth and multifaceted transformation. I did not think that continuing my prior technology-centric hypothetical (deHaan, 2005a), observational (deHaan, 2005b; deHaan, 2013) or vocabulary-focused experimental (deHaan, 2010) work could accomplish these goals. This project "course corrected" and investigated game-based language teaching and learning by exploring the integration of games with a pedagogy explicitly considerate of *why* language and literacy education can matter, *how* technology and individuals can help, and *what* the objects and outcomes of education can be. Figure 1 depicts the goals, content and pedagogy in the Game Terakoya project.

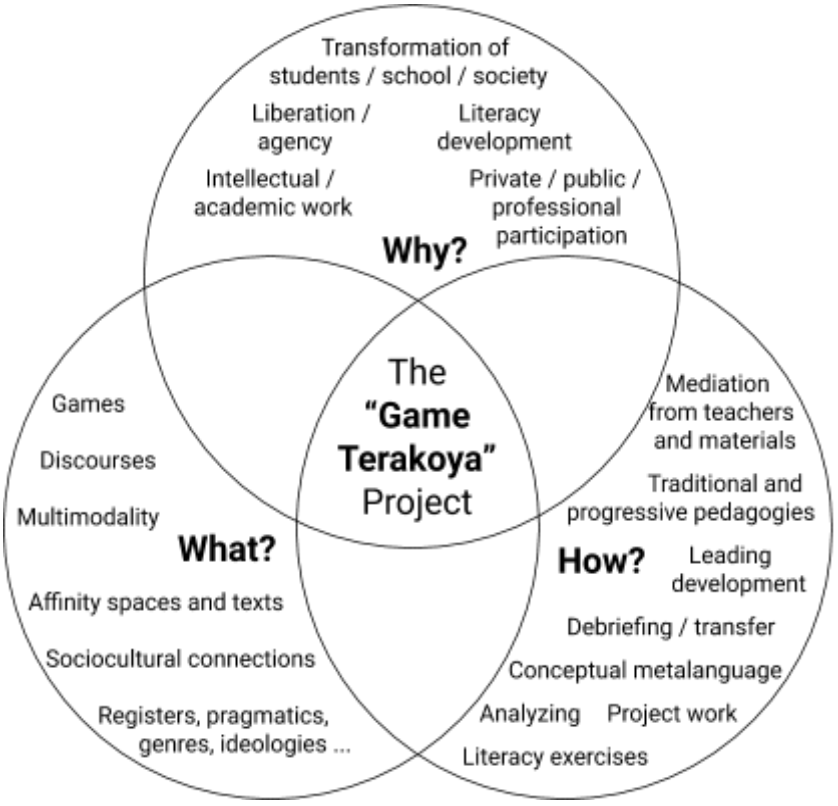

Figure 1 *The What - How - Why of the Game Terakoya Project*

3.1 Context

The project was conducted at a public Japanese university whose English curriculum, like many in Japan (Johnson et al., 2015), exemplifies the "weak CLT" model: speaking skills are prioritized, language and culture are rarely connected, and, besides mandatory TOEIC tests, students have few opportunities to apply language skills. Students were recruited in departmental information sessions and through university emails.

3.2 Sequence

One female student and I had 27 extracurricular meetings over one year (approximately 40 contact hours). The student gave informed consent. Games were played in six of the 27 meetings; to emphasize the disparity between time spent playing games and time spent on related teaching and learning activities, the instances of gameplay are bolded in Table 1. Teaching and learning activities wove through the multiliteracies pedagogy stages. The student (and I):

- Played games, read reviews, watched videos ("experiencing")
- Discussed games and reviews and videos, uncovered concepts, read academic articles and wrote an essay ("conceptualizing")
- Examined games and texts, and gathered data in society ("analyzing"), and
- Posted a review and discussed games on a gamer website ("applying").

Table 1 *Game Terakoya activities sequence*

Phase	Teaching and learning activities
Before the project	Recruitment, questionnaires and tests, brainstorming "participation projects" to work on after playing games
Experiencing the known	Reading rulebooks and watching actual gameplay YouTube videos Brainstorming useful language for the game **Playing familiar games** Analyzing our own language (e.g., grammar, pragmatics, ideologies) Being made aware of language and ideas in texts and experiences
Experiencing the new	Learning about, choosing and **playing new games** Reading rulebooks and watching actual gameplay YouTube videos Brainstorming useful language for the game Analyzing our own language (e.g., grammar, pragmatics, ideologies) Being made aware of language and ideas in texts and experiences
Conceptualizing with names	Having a discussion about the game (led by students) Being helped to name concepts (e.g., the magic circle)
Conceptualizing with theory	Choosing one concept, Learning about the concept (i.e., reading academic texts) Discussing, defining, comparing and contrasting ideas about the concept Writing an academic essay that connects concepts and experiences
Analyzing functionally	Using literacy-approach driven language worksheets to collaboratively analyze games and connected texts (e.g., reviews, videos)
Analyzing critically	Comparing and contrasting experiences and texts, investigating the sociocultural context of games (e.g., history, environment, labor, consumerism), reflecting on the usefulness of games for studying language, doing research to prepare for the project
Applying appropriately	Based on research and resources, discussing, planning and completing the project (for example, writing and posting a game review to websites such as amazon.com or boardgamegeek.com)
Applying creatively	Based on research and resources, discussing and planning, and completing the participation project (for example, remixing played games, creating a survey for game fans, communicating with fans in online discussion forums)
After the project	Questionnaires and tests, interviews

3.3 Teacher Decisions, Roles and Actions

The role of the teacher in game-based language education was a core focus of this project. I made many decisions and took many actions before and during the project.

In designing the project, I considered my educational context, determined the project goals, selected an extracurricular environment, and recruited students widely. After reviewing several frameworks, I selected the multiliteracies framework and developed supplemental materials based on the goals and pedagogy. I included as many multiliteracies pedagogy stages and activities as possible. I carefully considered games' potentials and pitfalls, and positioned games as an academic subject that integrated gameplay experiences with other activities. I also treated language broadly and included many texts and modes.

I relied on my teaching strengths and also learned about new teaching practices. I worked to lead development by learning about my student and selecting appropriate activities, then modelling work, adapting to the student's abilities, and requiring various tasks to be repeated. I mediated the student's learning through discussions, worksheets, short mini lectures, and Internet media and tools. I established teaching and learning goals, then stayed focused on them. I wanted my student to be transformed, to participate as she wished, and to give her agency in her learning and development.

These decisions and actions are described in more depth in Appendix 2.

3.4 Student

The female participant, "M," a native speaker of Japanese, was 20 years old, a 2nd year university student, in the top stream of English classes, had six hours of weekly English classes, studied about 90 minutes a week at home, had 16 years of English lessons, reported that she "love[d]" English, and had a pre-project TOEIC score of 770. She joined the project to learn more about games, to improve her English skills (especially listening skills), and to have fun. She identified as a "non-gamer."

3.5 Games and Texts

Games were used in this project for various reasons.

Games are simulations (e.g., Aldrich, 2009; Alessi & Trollip, 2000); they model (i.e., show a simplified version of) society or interpersonal relations. Games can make concepts or events or interactions from history, communication, psychology, science, business, mathematics, economics or politics easier or safer for players to recognize and manipulate and experience. Because games connect to these different areas of personal, public or professional life, I used games to help students engage with academic, intellectual and participatory projects based on their realizations and research of these simulations of society.

Games are concrete experiences or instantiations of language. As Gee (2003) writes, language divorced from experience is very hard to process or understand, such as the experience of a student struggling with academic textbook language. But, once someone has had a vivid experience, for example, tried to play a game or experienced the game in some embodied way (e.g., a YouTube video), the language that describes that experience (e.g., game rules, card games' technical language, or a review of the game) becomes more understandable and possible to analyze and apply in other contexts. Games were a scaffold for experience-grounded subsequent analyses of difficult language in various genres (e.g., rulebooks, YouTube videos, forum posts).

Games, considered broadly, contain and connect to numerous language and literacy skills and texts. Games can include cards, rulebooks, dialogs, menus and many more language-based elements (Ensslin, 2011; Sykes & Reinhardt, 2013). These different elements use language in different ways; games use specific genres and language for specific purposes. For example, textual rulebooks have more formal instructive language, but gameplay often creates opportunities for the use of oral communication in a more casual, spontaneous register (Masuda & deHaan, 2015). Gamers discuss games using SNS and online forums (a blending of formal and casual communication styles) in textual or oral (video) formats that might focus on strategy testing, enthusiasm or criticism of games

through reviews, or other participatory culture such as fanfiction posts or walkthrough posts. I used games and game-related texts to develop students' awareness of a breadth and depth of language and literacy aspects and skills.

Games are something both I and the student are interested in. The student, though a "non-gamer," was interested in games (among other things) and I wanted to support her various interests in this elective project. I have been interested in games for most of my personal and professional life, and I believed I could leverage my knowledge of and experience with various games and related projects. Though I did not want students to be over-focused on just playing games, I did want some initial interest in games to act as a sort of springboard to the more difficult intellectual and design work that the project included. In the introductory sessions and in the pre-materials for the project, I stressed the academic and participatory work that would be done in the project. I did that to temper any students' over-enthusiasm for just playing games and to signal that if students were interested in learning more and doing more with games, that this project would prioritize meeting those aims. I hoped that students' interests in games and various domains would be developed in this game-based project.

Five tabletop games were played (see Table 2).

Table 2 *Games used*

Game	**Brief description**
UNO	a mass market card game
Tic-Tac-Toe	a simple paper-and-pencil strategy game
Railways of the World	a highly rated strategy game that explores the history of railway development in various countries
Hey That's My Fish	an abstract family game
TransAmerica	a similar, yet simpler than *Railways of the World*, train game

The majority of work (19 sessions) was done with and around *Railways of the World* (*ROTW*). M chose *ROTW* after a thorough discussion of her participatory goals. She was interested in *ROTW*'s theme and gameplay, and thought she could remix or review it (her chosen goals).

Various affinity space game-related affinity spaces were explored, all of them found during the project (not prepared in advance). See Appendix 3.

3.6 Data Collection

Table 3 shows the schedule, sources and instruments.

Table 3 *Data collection schedule and sources*

Phase	Data sources and instruments
Pre-project	Questionnaire - game and education and language skills and habits - 21st Century Skills (Partnership for 21st Century Skills, 2016) - New Media Literacy Habits (Literat, 2014), - concept map creation (i.e., what the participant knew about games, media, education, social issues and teamwork) (Novak & Gowin, 1984; Shaffer, 2004; Stoddart, Abrams, Gasper, & Canaday, 2000)
During the project	Meeting notes, audio and video recordings, and transcripts Textual analysis sheets Student notes/highlights Summer homework Email exchanges Product (the student's game review)
Post-project	Questionnaire - game and education and language skills and habits - 21st Century Skills (Partnership for 21st Century Skills, 2016) - New Media Literacy Habits (Literat, 2014), - concept map creation (i.e., what the participant knew about games, media, education, social issues and teamwork) (Novak & Gowin, 1984; Shaffer, 2004; Stoddart, Abrams, Gasper, & Canaday, 2000) Short answer questionnaire Interviews
10 weeks post-project	10-week ad-hoc post-project vocabulary test comprised of 157 items (all new words to M) collected from the participant's notes

4. Results

A large amount of data was collected. An overview of what the student did and how she learned, related to language, literacy, intellectual and participatory goals, is presented here in Tables 4 to 7, separated into processes, comparative data and summative reflections.

Table 4 *Processes*

Section	Data
4.1.1	Language use in and around games
4.1.2	Development of conceptual knowledge (the magic circle)
4.1.3	Development of meaning-recognition in texts (sarcasm)
4.1.4	Participation process product (boardgamegeek.com review)
4.1.5	Literacy work (what was noticed and appropriated)

Table 5 *Pre- and post-project comparisons*

Section	Data
4.2.1	Pre-post New Media Literacy Skills
4.2.2	Pre-post 21st Century Skills
4.2.3	Pre-post Knowledge (concept maps in five areas)
4.2.4	Pre-post TOEIC scores
4.2.5	10-week post project vocabulary test results

Table 6 *Reflections*

Section	Data
4.3.1	Reflections on project goals (the why)
4.3.2	Reflections on pedagogy, people and materials (the how)

Table 7 *Transfer and extended repertoires*

Section	Data
4.4.1	The student's transferred knowledge and skills
4.4.2	The student's and teacher's extended repertoires

4.1 Processes

4.1.1 Language use in and around games

Games were played in six of the 27 sessions. Games were part of an extensive sequence of activities, before and after play, to develop linguistic awareness, intellectual skills, and participatory opportunities. The sequence (see Table 8) included:

Table 8 *Activities around games*

Phase	Activities
Before the game	Reading and analyzing the rules of the game Watching and analyzing YouTube videos of actual plays or reviews of the game Brainstorming language that could be used during the game
The game	*UNO* was played once, *Railways of the World* was played twice
After the game	Discussing the game Reviewing the language we used during the game Reading and analyzing written reviews of the game Noticing and awareness-raising of language in texts Writing an essay connecting a concept to the experience of playing the game Conducting additional research and completing a participatory project extending the language and knowledge from the project

Examples of M's language work in and around games and texts are presented here (see Table 9). Most L2 activity occurred before and after, not during, the games. M tended to focus on vocabulary and simple functional language before play, but did comment on some textual features before *ROTW*. M reflected on her L2 usage during *ROTW* through transcription and analysis and her attention was brought to additional textual features post-play. M raised more and a broader range of language and literacy aspects around *ROTW*, the second game. An extensive presentation of the language work in and around these games is presented in Appendix 4.

Table 9 *Language used in and around games*

Phase	Activities	Language in and around *UNO*	Language in and around *Railways of the World*
Before the game	Reading and analyzing the rules	Focused on vocabulary (e.g., "draw pile," "clockwise," "tally")	M noticed the capitalization, the "short" sentences, the introduction was written more narratively and casually to the player (used "you" and ! and ? marks)
	Watching and analyzing YouTube videos	Focused on play, not the L2; e.g., "people played more quickly than Japanese people"	M noticed specialist vocab, (e.g., "flat broke, financial empire, cut throat"), stated that the L2 was "too fast to understand" and "like another language" and that "only rulebook or only video doesn't work well. The combination is important."
	Brainstorming language	E.g., "Your turn," "what color will you make it?" "Yay!" "Sorry!" "I don't need that!"	M brainstormed language for announcing actions, e.g., "I take the bond. I will take the bond. I am going to go ahead and take the bond."
During the game	*UNO* was played once, *Railways of the World* was played twice	M said "I'm sorry" many times, communicated colors (e.g., "it's blue"), announced the end of the game ("finished") and said "congratulations"	M did not talk about the game while playing the game; she preferred to play quietly to focus on her own game. She announced actions (e.g., "I take ...")
After the game	Discussing the game	The concept of the magic circle was uncovered (see 4.1.2), M said that *UNO* is "not for learning language, but for fun and relationships"	We co-led a 60-minute discussion of rules, strategies, and the map. M recycled rule language (e.g., "urbanize" and "upgrade"). M had difficulty connecting the game and environmental and consumerist aspects of reality (see section 4.1.2)
After the game (cont.)	Reviewing the language we used during the game	e.g., "I'm sorry," "it's blue," "sorry," "what do the rules say?" "finished," "congratulations."	M thought that she had used "I take" instead of "I am going to take" because she wanted to "play quickly." She avoided using "wanna" and "gonna" because she did not want to be seen as a person who is "excessively inspired by the native culture." M transcribed and tallied how she announced actions (see Appendix 4).
	Reading and analyzing written reviews	This data is presented in the sections on sarcasm (4.1.3) and literacy work (4.1.5)	This data is presented in the section on literacy work (4.1.5)
	Noticing and awareness raising of language in texts	E.g., the repeated usages of "he/she" in the rules, the rules "don't mix 1st, 2nd, 3rd person," the use of the passive voice "focusing on object."	e.g., the manner of stressing rules in a YouTube video, e.g., "every single turn," "you can never," and "extra special bonus," and him saying "thanks for watching" at the end of his videos.

	Writing an essay connecting a concept to the experience of playing the game	This data is presented in the section on an essay on the magic circle concept (4.1.2)
	Conducting additional research and completing a participatory project	This data is presented in the sections on literacy work on written game reviews (4.1.5) and the project of M writing and posting her game review (4.1.4)

Most L2 activity occurred before and after, not during, the games.

4.1.2 Development of conceptual knowledge

M's knowledge of "the magic circle" game studies concept developed in and through the project's stages and beyond.

We played *UNO* by the rules, then examined the rulebook and actual gameplay videos. M connected the rulebook's use of "must" to the idea of "rules" and "a fair game" and "everyone has to follow" the rules "to have fun." I then extemporaneously played *tic-tac-toe* with M, and purposefully cheated (taking 2 turns in a row) to illustrate the effect that rules have on gameplay and fairness, and shared the concept of "the magic circle," which I had studied in school and in various game studies publications. Every concept that was discussed in the project is presented and discussed briefly in Appendix 5, illustrating how games can connect to various academic, social and design topics.

I asked M to write an essay (Figure 2) using readings to explain her experience of a concept. She chose "the magic circle," read information in her first and second languages, and wrote a 390-word essay, which we discussed.

The magic circle is a necessary concept of game play that gives the meaning of it. There are mainly two reasons for this: fair play spirit and another world.

Firstly, the magic circle works to grow fair play spirit in the heart of all people who are related to the game. One of the most important things of great and enjoyable games is fair play spirit, and it comes from the magic circle. Once you started playing a game, you are being in the magic circle. In this circle, all players have to be loyal to predetermined rules. If you go out from this range, in other words, if you neglect the rules during the play, the game has no meaning. Anyone can win, but no one would be happy because it is not fair. “Game” is a really wide field, and it concludes not only video games or board games like Railways of the World but also any sports you play. This aspect of the magic circle is more outstanding in the latter. The reason why audiences and players themselves are moved after the sports game is that they were in the magic circle, and thus they shared the same rules. They lose or win under the spirit of fair play and this is a great meaning of the game.

Secondly, players can feel that as if they are in the world of the game ,namely the another world thanks to the magic circle. This is also the meaning of the game play. For instance, I played Railways of the World for the first time two months ago and enjoyed fully. This is because I was an American or Mexican baron in the game and had a big mission to deliver cubes and boost the cities. Although I am a Japanese, a usual girl and a university student, I can be anyone in the magic circle. This gap between the real world and the game world is the important meaning of game play, and it is realized by the concept of the magic circle.

In conclusion, games without the magic circle do not have the meaning, and the magic circle is indispensable in any games. It gives the sense of fair play and the attractive atmosphere. These make the games meaningful, and that is why people like playing them.

[Lists of Reference]

Business Famitsu BROG
n.d. なぜ相手を殴りつけたりしないでサッカーが成立するのか?ゲームと遺伝子（３）
http://www.famitsu.com/guc/blog/shin/12136.html accessed September 15.2016

JAPAN SPORTS ASSOCIATION
N.d. フェアプレイって？http://www.japan-sports.or.jp/portals/0/data0/fair/about/ accessed September 15.2016

Figure 2 *Academic Essay*

In her BGG review (Section 4.1.5), M wrote ”Although there are some hard "tasks" to go into the world of the railway, they are definitely worth doing for English learners like me.” While discussing her draft, M confirmed her application of the magic circle concept in her review:

Teacher:	*… “to go into the world of the railway.” Why did you write it like that?*
M:	*I think to enjoy playing games also includes enjoying atmosphere or the air that the game makes, so I imaged I go into the map and stay in the map and be a baron.*
Teacher:	*Are you referring to the magic circle?*
M:	*Yes! Yes! Yes! (laughs)*

Later, when asked what she transferred from the year-long project, she stated “magic circle - I would research about this as my thesis.” Following the project, M chose a thesis seminar in which she could continue studying the magic circle. As of this publication, M has read additional academic literature on play and games, and has interviewed classmates on their experience of the magic circle in games.

Not all of the conceptual and intellectual work in the project was as successful as that which was done with the magic circle concept. M’s post-game discussion questions (Appendix 4) dealt with play experience and opinions, not critical or cultural topics. In the post-game discussion, I described

ROTW's focused representation of consumption and tried to connect the discussion to her daily life. M could not participate in the discussion, saying "That is a hard question. I don't know how to answer." After I described *ROTW*'s lack of environmental damage modelling, M could suggest additional rules to "make the player think" about environmental destruction. Later, M admitted to being unable to "connect the game and the aspects related to society or culture at that time" and could not remember the discussions.

M admitted to being unable to "connect the game and the aspects related to society or culture at that time" and could not remember the discussions.

4.1.3 Development of meaning-recognition in texts

This section describes M's inability to recognize a review's sarcasm, both independently and via worksheet mediation. She had to be explicitly told the text's meaning. She was later able to recognize another text's sarcasm.

After playing *UNO*, M thought it was "without any strategy." She then read a sarcastic review I suggested ("A Game of Deep Strategy"), and it changed her opinion:

M:	*Personally, I thought UNO is a game for kids, but it was really interesting to read that UNO is a game of deep strategy. There were so many opinions I didn't have ...*
Teacher:	*Did you notice anything interesting or strange?*
M:	*I really agree the statement. (reading from the text) 'many novices fail to notice the ocean's depth of strategy, and come to the absolutely incorrect conclusion that UNO is just an exercise in pure luck.' This* **was** *(emphasis hers) my opinion.*
Teacher:	*Is it still your opinion?*
M:	*No.*

For homework, M re-read the article and completed a Textual Analysis Worksheet (Appendix 1). M noticed the "strong words" but took the "secrets" and "strategies" and "exclamations" at face value. She thought the author wrote "to share tips" and "inform them of strategies;" she read the text again as information.

I then directly told her that I thought the article was "making fun of *UNO*" and was written sarcastically. I supported my opinion with language in the review. M knew what sarcasm is, but admitted she could not recognize it and "read [the review] like a serious review." M said ""Teachers shouldn't tell the truth. Students should notice. But I couldn't notice."

M then re-analyzed the review (again using the Textual Analysis Sheet) and connected the "really positive expressions" and how "deep gamers" would "enjoy reading such a sarcastic review about games." She expressed her "culture shock" that sarcasm is "ok in another country."

'Many novices fail to notice the ocean's depth of strategy, and come to the absolutely incorrect conclusion that *UNO* is just an exercise in pure luck.' "This *was* my opinion."

"Teachers shouldn't tell the truth. Students should notice. But I couldn't notice."

Later in the project, M read a *ROTW* review ("This Game Is Broken") and correctly and independently identified that "by several ways, people are emphasizing the sentences," that the review was meant as a "joke" and the author is a "facetious person," and that forum users had various understandings and reactions; some "express[ed] their complaint," and some "notice[d] that this is not a serious comment." She connected her own inability to "enjoy" the "joking" to her lack of knowledge and experience of board games.

4.1.4 Participation process and product

Participation was a core goal and constant focus. 18 of the 27 sessions (and three email threads) included discussions or project work related to final participation. I oriented and guided M towards participation. M's attitude (coming early for many sessions) and effort (completing a surprising number of textual analyses) showed that she was motivated to complete the project.

Pre-project materials required that M brainstorm game-based projects. Our first meeting began with a discussion of teacher and student learning goals, and then a discussion of teacher-suggested participatory projects (Appendix 7). We discussed participatory projects after each game.

M selected and connected games and projects; she wanted to design a game or write a review after playing *ROTW*. She designed a poll for boardgamegeek (BGG) users and brainstormed game designs over the summer. After learning of a Kickstarted *ROTW* Nippon expansion[3], we shifted from creating a Japan map to a Shizuoka map. M researched the local railroad history, we looked at *ROTW* BGG data regarding player ratings and comments, and we created a poll for BGG users.

Soon after these tasks were completed, M said that she was feeling a lot of stress from her schoolwork and the time and effort that she thought would be needed to complete her Game Terakoya project on her own, so I helped her shift the project from a game design to a game review. M read and analyzed 33 Amazon.com *ROTW* reviews and two Boardgamegeek.com *ROTW* reviews. She compared and contrasted the purpose and audience of BGG and Amazon reviews, drafted a review, self-analyzed it using the Textual Analysis Worksheet, then we discussed and improved her draft. M posted her final review of *ROTW* to boardgamegeek.com, and replied to five BGG users' comments. Her review was briefly featured as a "hot review" on the site's front page (Figure 3).

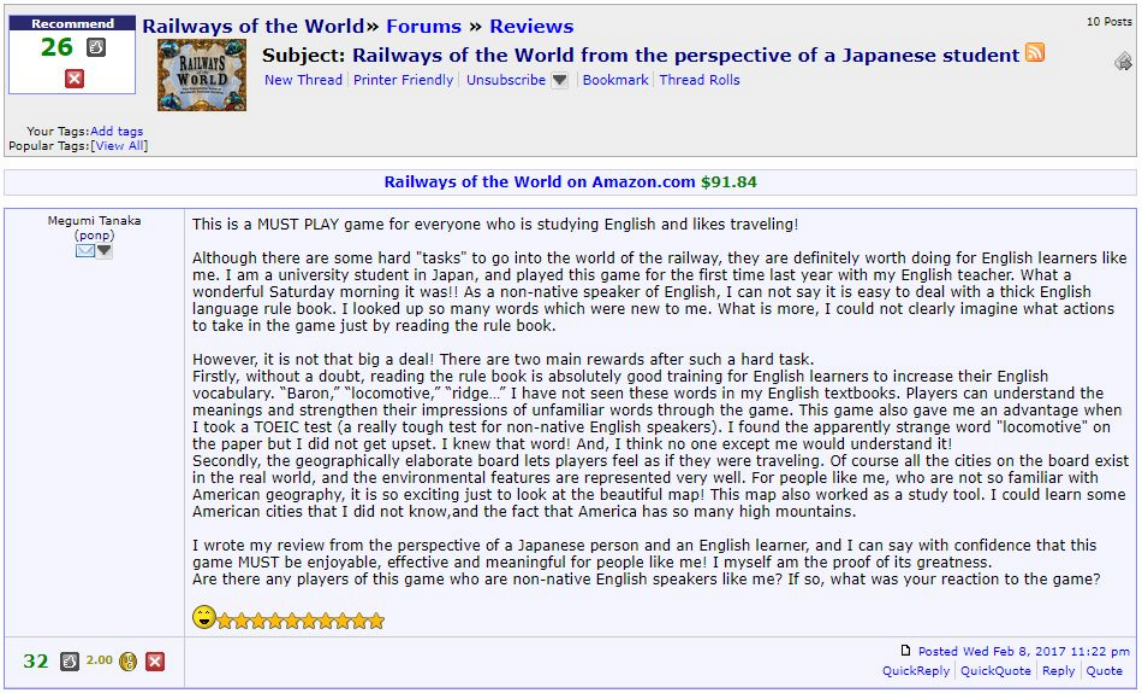

Figure 3 *Student's review on boardgamegeek.com*

[3] *Railways of the World* Kickstarter campaign: https://www.kickstarter.com/projects/eaglegryphon/railways-of-nippon-the-next-train-stop-on-the-rotw

4.1.5 Literacy work

The sequence of the project's literacy development activities with game texts, moving from reading and analyzing to planning and writing, is shown in Table 10.

Table 10 *Analysis and application sequence in the project*

Analyzing functionally and critically →	**Applying appropriately and creatively**
M found and read 35 online review texts about *Railways of the World*	
M analyzed these texts about *Railways of the World* in terms of: ● Content ● Purpose ● Register and style ● Organization ● Author identity and lifestyle ● Creative techniques	M planned her own review of *Railways of the World* in terms of: ● Content ● Purpose ● Register and style ● Organization ● Author identity and lifestyle ● Creative techniques
	M wrote (drafted and revised) then posted her review of *Railways of the World* online

Tables 11 to 16 present M's noticed and applied broad textual aspects of content, purpose, register and style, organization, author identity and lifestyle, and creative techniques. These data were collated from worksheets and discussions throughout the project. What M noticed and articulated in textual analysis worksheets, connected discussions and planning sessions, she consciously appropriated and correctly applied in her participatory writing (see Table 17). The quotes in the following tables are from M's review and her reflections on her work.

Table 11 *Content*

Analyzed	**Applied**
M noticed the effect that the inclusion of reasons, examples and comparisons has on the reader's reaction to a piece of writing, and then planned to include numerous details in her own review in order to express herself. She also recognized the importance of writing truthfully and sharing actual experience in her review.	M wrote a lengthy review, "much longer than [she] expected, but … necessary to write in detail to convey [her] feeling" and to write "honestly" and "in detail" about her identity, her process of learning and playing the game, the benefits for learners of English, and what gamers might find attractive about the game.

Table 12 *Purpose*

Analyzed	**Applied**
M recognized that texts have different purposes, for example to entertain or to inform, and intended to use her own review text to recommend the game to others and to tell non-native speakers of English that there is educational value in learning to play this game.	M wrote the review to strongly recommend the game "this is a MUST play game" and to tell learners of English that the process of learning the game is "defenitely worth doing them" and there are "mainly two rewards after such a hard work" and that the "game MUST be enjoyable, effective and meaningfull."

Table 13 *Register and style*

Analyzed	Applied
M noticed that many reviews were written in a formal academic style in terms of organization and sentence structure (and that Amazon.com users tended to rate reviews written in complete sentences as being helpful), but that some authors include casual expressions and mechanics (e.g., capitalization). She decided to write in a similar register and style, using complete sentences, casual words and phrases and some use of all capitalization.	M's review demonstrates both formal and casual writing. M wrote in complete sentences and did not drop subjects, for example: " This is a MUST play game." M used some casual expressions such as "it is not a big deal" and "without a doubt." M ended six of the 20 sentences in her review with exclamation points, such as "What a wonderful Saturday it was!!" and "... I can say with confidence that this game MUST be enjoyable, effective and meaningfull for us!" M capitalized words in the middle of sentences twice: "This is a MUST play game …" and "...this game MUST be enjoyable."

Table 14 *Organization*

Analyzed	Applied
M recognized that most reviews were carefully organized into topical sections that helped the reader. She carefully planned the topics she wanted to cover in her writing, the order of her sentences and topics, and used transitions and indents to organize her ideas.	M organized her review into clear sections: a strong recommendation, information about herself, the difficulty process of learning the game, the usefulness for English learners, the beautiful map and a strong concluding message. M used transitions to help the reader understand moves between sections, such as ""However," "Firstly" and Secondly" M indented her paragraphs to help the reader see her sections, for example: "I am a university student..."

Table 15 *Author identity and lifestyle*

Analyzed	Applied
M noticed that useful reviews included information about the author's knowledge, experiences and social life, and then decided to include a variety of personal details about herself in her own review.	M included information about herself throughout her review, such as: "for English learners like me." "I am a university student in Japan" "with my English teacher. What a wonderful Saturday it was!!" "As Japanese people," "I wrote my review so far from the perspective of foreiner, English learner" and the title "from the perspective of Japanese student."

Table 16 *Creative techniques and work*

Analyzed	Applied
M thought that text authors used capital letters and certain "impressive" phrases creatively, and wanted to attempt to use them as well in her review. M also thought that most online reviews seemed to be written by native speakers of English, and that by writing from her perspective as a non-native English speaker, she could share "a new perspective" with gamers on those sites.	M capitalized words mid-sentence: "This is a MUST play game …" and "...this game MUST be enjoyable." M used some casual expressions "it is not a big deal" and "without a doubt." M stressed her experience as an English language learner because she did not see a review written from this perspective on either Amazon.com or Boardgamegeek.com: "I wrote my review so far from the perspective of foreiner, English learner."

What M noticed (and articulated in textual analysis worksheets, connected discussions and planning sessions) she consciously appropriated and correctly applied in her participatory writing.

Table 17 *Draft and final review*

Draft (session 25)	**Final (session 26)**
from the perspective of Japanese student This is a MUST play game for everone who is studying English and likes traveilng! Although there are some hard "tasks" to go into the world of the railway, it is defenitely worth doing them for English learners like me. I am a university student in Japan, and have played this game for the first time last year with my English teacher. What a wonderful Saturday it was!! As Japanese people, I can not say it is easy to deal with a thick rule book written in forein language. I checked and checked the words which do not exist in my brain. What is more, I could not imaine well how to proceed the game acutually just by reading it. However, it is not a big deal! There are mainly two rewards after such a hard work. Firstly, without a doubt, it must be a good training for English learners to increase English vocabulary. Baron, locomotive, ridge... I have not seen these words on my textbook. Players can understand the meaning and strengthen the impression of unfamiliar words through the game. This game also made me an advantage when I took TOEIC (really tough test for non native English speakers). I found the strange word "locomotive" on the paper but I did not upset. No one except me would understand! Secondly, geographicaly elaborate map let players feel as if they were traveilng. Of course all the cities in the game map exist in the real world, and the environmental features are reflected very well. For foreiners like me, it is so exciting just to watch the beatiful map! I wrote my review so far from the perspective of foreiner, English learner, and I can say with the confidence that this game MUST be enjoyable, effective and meaningfull for us! I myself is the proof of its greatness.	Railways of the World from the perspective of a Japanese student This is a MUST PLAY game for everyone who is studying English and likes traveling! Although there are some hard "tasks" to go into the world of the railway, they are definitely worth doing for English learners like me. I am a university student in Japan, and played this game for the first time last year with my English teacher. What a wonderful Saturday morning it was!! As a non-native speaker of English, I can not say it is easy to deal with a thick English language rule book. I looked up so many words which were new to me. What is more, I could not clearly imagine what actions to take in the game just by reading the rule book. However, it is not that big a deal! There are two main rewards after such a hard task. Firstly, without a doubt, reading the rule book is absolutely good training for English learners to increase their English vocabulary. “Baron,” “locomotive,” “ridge…” I have not seen these words in my English textbooks. Players can understand the meanings and strengthen their impressions of unfamiliar words through the game. This game also gave me an advantage when I took a TOEIC test (a really tough test for non-native English speakers). I found the apparently strange word "locomotive" on the paper but I did not get upset. I knew that word! And, I think no one except me would understand it! Secondly, the geographically elaborate board lets players feel as if they were traveling. Of course all the cities on the board exist in the real world, and the environmental features are represented very well. For people like me, who are not so familiar with American geography, it is so exciting just to look at the beautiful map! This map also worked as a study tool. I could learn some American cities that I did not know,and the fact that America has so many high mountains. I wrote my review from the perspective of a Japanese person and an English learner, and I can say with confidence that this game MUST be enjoyable, effective and meaningful for people like me! I myself am the proof of its greatness. Are there any players of this game who are non-native English speakers like me? If so, what was your reaction to the game?

The textual aspects that M noticed, analyzed, planned and applied in her online review are highlighted in Figure 4.

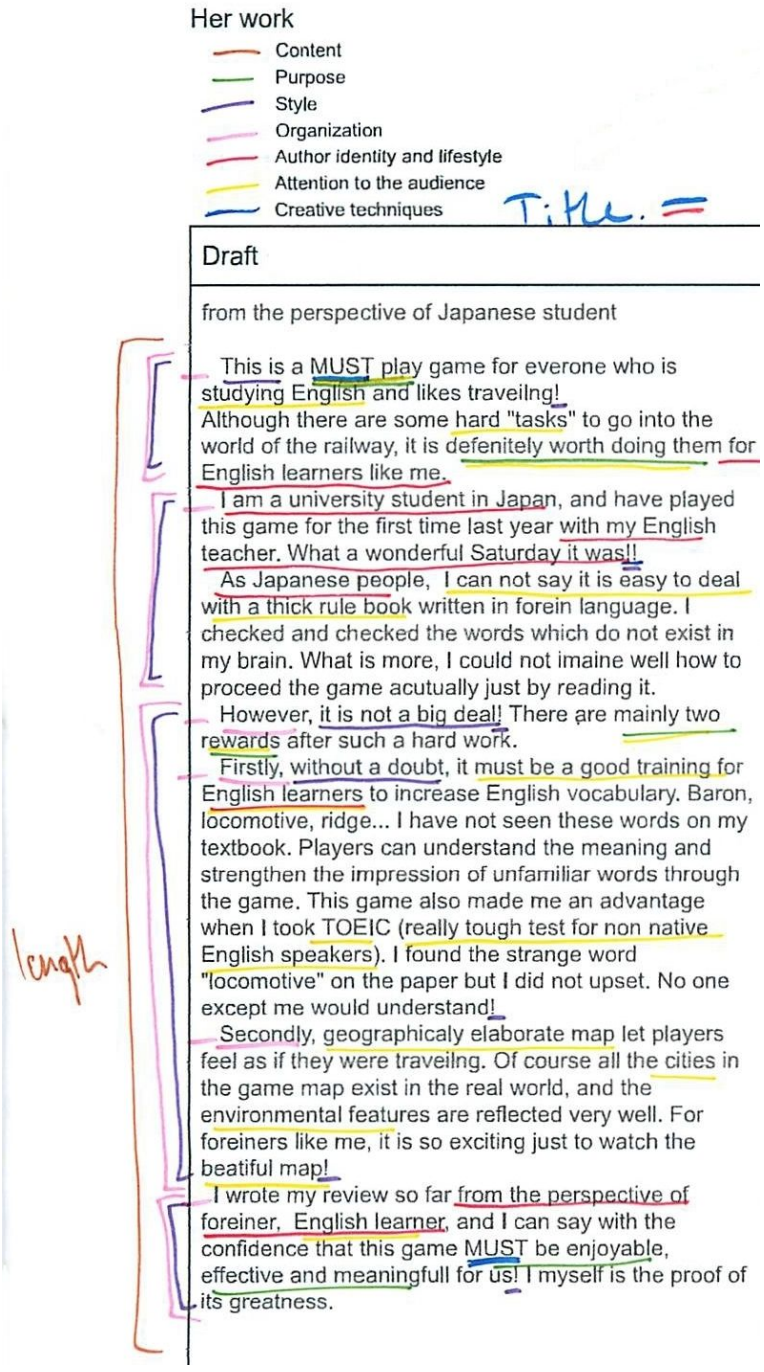

Figure 4 *Highlights of textual features*

4.2 Comparisons

4.2.1 New Media Literacy Skills

M's post-project self-rated New Media Literacy skills were, on average, 0.34 points higher than her pre-project ratings (see Table 18). Only six games were played; "play" and "simulation" did not improve. "Judgement" and "appropriation," core post-play non-game activities, were higher post-project.

Table 18 *New Media Literacy skills*

Skill	Pre	Post	Difference
Play	3.2	2.8	-0.4
Simulation	4.2	3.8	-0.4
Performance	2.6	2.2	-0.4
Civic Engagement	4.2	4.2	0
Networking	2.2	2.2	0
Collective Intelligence	4	4.2	+0.2
Negotiation	2.8	3.2	+0.4
Transmedia Navigation	3	3.4	+0.4
Distributed Cognition	3.8	4.4	+0.6
Appropriation	2.8	3.4	+0.6
Visualization	2.8	3.4	+0.6
Multitasking	1.8	3	+1.2
Judgement	2.4	4	+1.6
Average	3.06	3.40	+0.34

4.2.2 21st Century Skills

M's post-project self-rated 21st Century skills were, on average, 0.06 points higher than her pre-project ratings (see Table 19). She repeatedly stated wanting to have worked with others.

Table 19 *21st Century skills*

Skill	Pre	Post	Difference	Post-project comments[4]
Initiative and Self-Direction	5	3	-2	"We wanted to make our original Japanese map, but we couldn't. We should have thought about the number and time we have."
Communication and Collaboration	5	4	-1	"I think I became to be able to convey my thoughts and idea more compared to the beginning of this project, but I wanted to know more various opinions from others"
Social and Cross-Cultural Skills	5	4	-1	"It would be much better if I had more opportunities to work with other people"
Productivity and Responsibility	5	4	-1	"It would be much better if I had more opportunities to work with other people"
ICT Literacy	3	3	0	"We made our own Twitter account and blog, but we couldn't utilize them effectively."
Flexibility and Adaptability	4	4	0	"We could change and adjust the schedule according to our state of progress."
Financial, Economic, Business and Entrepreneurial Literacy	3	3	0	"I had few opportunities to learn such a topic."
Health Literacy	3	3	0	"I had few opportunities to learn such a topic."
Environmental Literacy	3	3	0	"I had few opportunities to learn such a topic."
Leadership and Responsibility	4	4	0	"By exchanging opinions and ideas, I could know what other people think about the same topic."
Global Awareness	4	5	+1	"BGG has helped me to understand various kinds of view and eyesights of foreigners."
Information Literacy	3	4	+1	"We used various kinds of information, but everytime I relied on the material that Dr. deHaan gave me, so I should search more by myself."
Media Literacy	3	4	+1	"Through reading other people's opinions and posting my English review in BGG and Amazon website, I could learn how people use them to exchange their thoughts."
Civic Literacy	3	4	+1	"I could know how people are dealing with information."
Creativity and Innovation	4	5	+1	"By setting the final goal (to make our original Japanese map), I could/had to use my creativity to come up with good ideas."
Critical Thinking and Problem Solving	3	4	+1	"It was not easy for me to understand the rule book and some reviews, but by reading them over and over, I could analyze them much deeper, which leads to understanding."
Average	3.75	3.81	+0.06	
Total	60	61	+1	

[4] M copied and pasted some of her comments on her self-ratings.

4.2.3 Knowledge

Post-project concept maps had, in total, 205 nodes (an increase of 285%) and 234 connections (an increase of 300%); see Table 20. M's "education" gains can be partially attributed to teacher training coursework. We did not particularly focus on "media industries;" the scores reflect this. M's "game" knowledge pre- and post-project concept maps are shown in Figures 5 and 6.

Table 20 *Concept maps*

Topic	Element	Pre	Post	Difference (Raw)	Additional concepts in the post-project map
Games	Nodes	22	55	+33	Not only children, but adults were mentioned; not only video games, but also board and card games were included; Uses and purposes included family, communication, and health; Texts and learning English; Industry elements (creation, buying, selling); the magic circle concept
	Connections	23	72	+49	
Media Industries	Nodes	24	25	+1	Added a note about skills for judging whether something is true or false
	Connections	28	27	-1	
Education and learning	Nodes	3	57	+54	Curriculum and syllabus; school and society; teacher tasks and thoughts; concepts of learning and knowledge and wisdom; student tasks and interests; the effects of peers; the goals of education; methods and effort to reach educational goals; measuring learning; life education from parents and the home
	Connections	4	62	+58	
Participating in society	Nodes	18	46	+28	Problems and solutions; Details about volunteering with many reasons for doing so; Aspects of society; Religious values; Other spheres and details of society (school, public, economic, professional)
	Connections	18	50	+32	
Working as a team to complete a project	Nodes	5	22	+17	Methods, tools and approaches for planning and completing group work; Cooperation; Team structure (leader, partner)
	Connections	5	23	+18	
Total	Nodes	72	205	+133	
	Connections	78	234	+156	

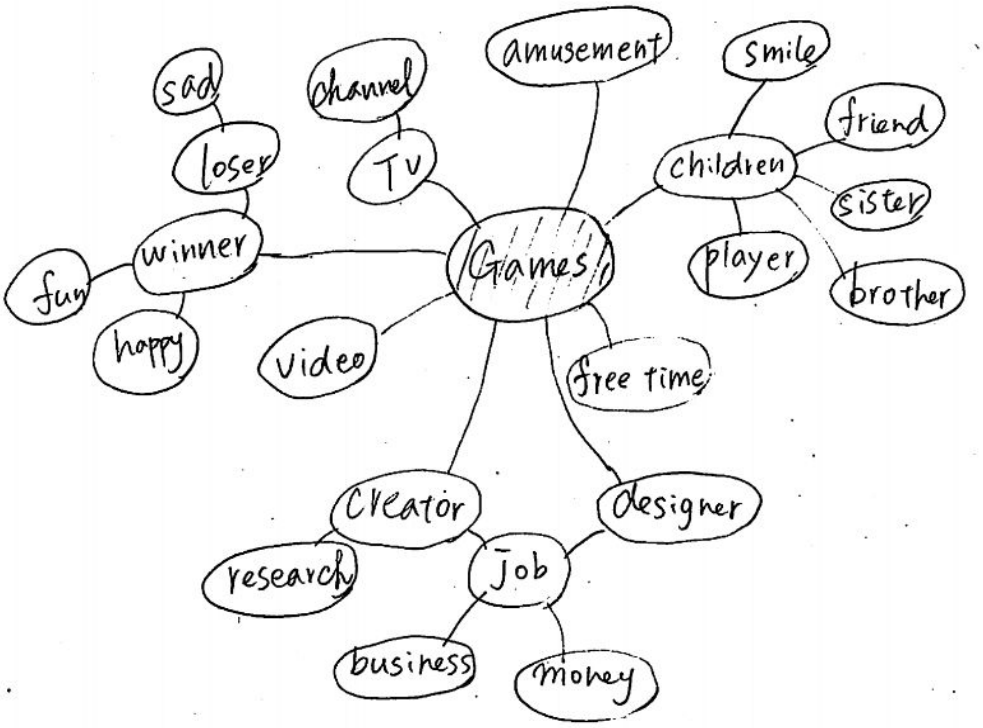

Figure 5 *"Games" pre-project concept map*

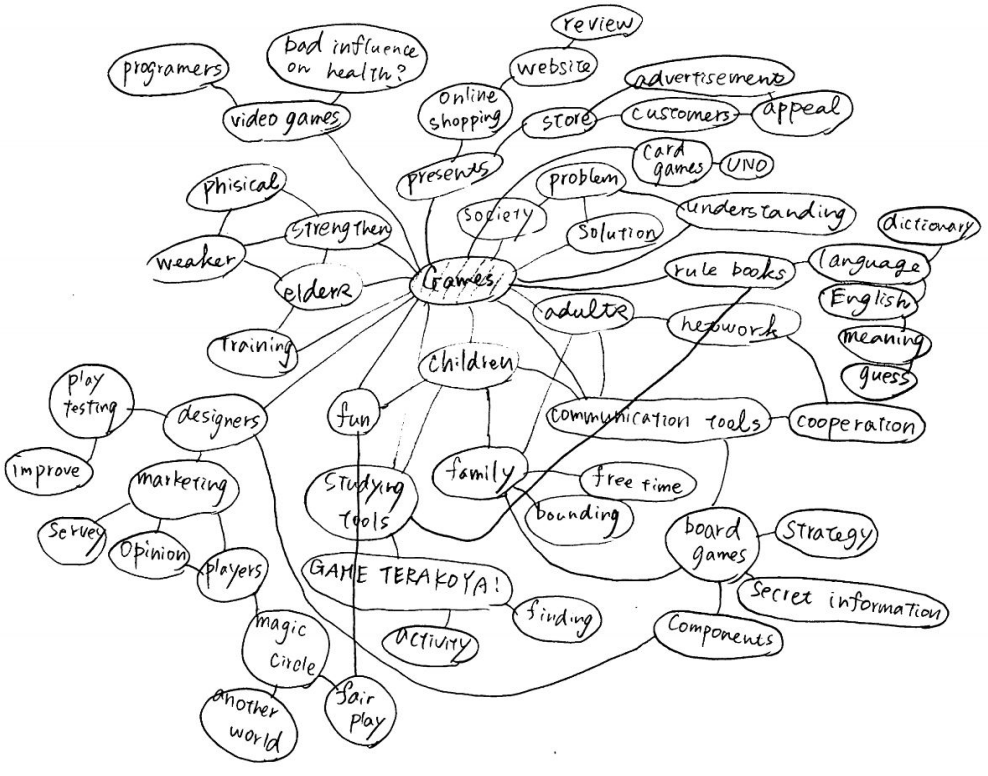

Figure 6 *"Games" post-project concept map*

Post-project concept maps had, in total, 205 nodes (an increase of 285%) and 234 connections (an increase of 300%)

4.2.4 TOEIC

M's TOEIC score improved 95 points over the project's timeframe (see Table 21). She reported nine hours of daily test preparation, in addition to work in classes and in this project, near the project's end.

Table 21 *TOEIC scores*

Section	Pre-project	Mid-project	Post-project
Listening	420	440	460
Reading	350	325	405
Total	770	765	865

4.2.5 Vocabulary

10 weeks post-project, M correctly translated (from English to Japanese) 55 of 157 new items found in her notes from the entire project (see Appendix 6). See Table 22. The majority of new words were off-list; she translated these with the lowest accuracy.

Table 22 *Vocabulary test scores*

Vocabulary level	Number of items on the test	Correctly translated items	Percentage of the category correctly translated
K1	21 (13.38%)	12	57.14%
K2	14 (8.92%)	10	71.43%
AWL	17 (10.82%)	7	41.18%
Off-list	105 (66.88%)	26	24.76%
Total	157 (100%)	55	35.01%

4.3 Student Reflections

Interviews and questionnaire data were coded. Tables 23 and 24 present themes, representative quotes, and summaries of comments related to the project's goals (why) and activities (how).

4.3.1 Reflections on project goals (the why)

M thought participatory, liberating, and transformative goals were achieved. She enjoyed the project and felt her English improved.

> "In my other English classes,
> I don't think deeply not so much."

Table 23 *Reflections on project goals*

Theme	Representative quote	Summary of related comments on the topic
Participation	*"Why I came here and I want to join this project... to have more better English skill and I want to use English more practically, in the real society [was] done" in the project.*	The student said that the project met her goal of using English more practically, she interacted with society, the project was different than her other English classes, she shared and received thoughts and feelings in her communication, and gained knowledge and perspective in the project
Transformation	*"Way of thinking has completely changed through this project."*	She felt inspired by the texts, and that the experience helped her "remember … what [she] did in this project," and the texts and worksheets were necessary to create her own review. She felt her English, her confidence, her knowledge and opinion of games, her way of thinking she categorized as "study[ing] something academically," the way she read texts, the way she thought about and wrote for an audience for the "first" time, and her project management skills changed through the project.
Liberation	*"Test English or just difficult word is not so useful to convey my true feeling … it is more important for me to say what i want to say with my own English."*	She felt free in the project, she expressed herself, she realized the teacher changed instruction based on her interests, and did not feel as many constraints as in her other university classes
Motivation	*"Using English to discuss the games after playing has been fun for me. I have to deeply think about how to convey my thought in English, and at this time I could feel that I use my brain fully. In my other English classes, I don't think deeply not so much."*	She enjoyed the project, her motivation was higher than in her other English classes, she came to find games as interesting as the English discussion and analysis exercises, saying "at first doing the review and doing some worksheets, they are really [more] enjoyable for me than playing games" and "eventually enjoyed to play games." She was motivated to continue to learn more about games and the magic circle and about English.
Her English	*"At first, I couldn't believe we can develop my language through games, but now, I can say my English had developed well."*	She thought her listening, speaking, and academic reading skills improved because of the project. She thought she remembered tested words because she had used them: "one reason would be that I didn't have any situation where I can use them by myself. I just checked the words I couldn't understand, and didn't do any exercise or practice to remember them" and "I feel the necessary words for playing, maybe I remembered most of them. But the other words are just written for the explanation or background of the game. Maybe I felt that these words are not so important for playing the game."

4.3.2 Reflections on pedagogy, people and materials (the how)

She found my mediation helpful, the combination of materials useful for understanding games and language, the worksheets helpful but difficult, and wondered what peers might have contributed.

Table 24 *Activities (how)*

Theme	Representative quote	Summary of related comments on the topic
Activities	*"Combination of various kinds of texts such as games, videos, reviews, worksheets, interview, and homework have helped ... greatly to carry on the project and understand."*	She shared that she had learned various language-related things from the various media, but did not state that she had learned anything from the game. She thought that additional activities are necessary to make learning with games more effective and for the learning to transfer to other contexts, and that only playing games to learn English would be "monotonous" and "too simple." She thought that playing a known game was necessary to help her understand a newer more difficult game. She felt that she studied both English and games in the project. She said that the transcription and reflection activity helped her to know her own English skills.
Multimodality in the pedagogy	*"By playing by myself, the context or rules became much understandable and clear … the effect of actual play. Reading before playing is to follow the game. Reading after playing is to know more about the game."*	She was asked if it was hard to play *Railways of the World* after reading the rule book. She said it had been "a little hard" and that she "couldn't make an image of how to play (I understood the basic in my mind, but I was not sure)" and that the "video on YouTube (how to play) greatly helped me to understand the rules and what to do." She said it was easier to read and analyze the rulebook after playing the game.
Teacher	*"You did many review work, I think."*	She said she recognized that I listened to her ideas and asked her questions to guide her thinking and to prompt deeper answers. She thought that she would not have been able to understand the magic circle concept or the "hidden information" of games by playing with family or friends because they "just play," and that I also helped to make her aware of social connections to the games we played: "I guess, unless you asked such a thing, I just play games, maybe I had no opportunity to connect the games and real society," and also helped her manage her project work.

Table 24 (continued) *Activities (how)*

Theme	Representative quote	Summary of related comments on the topic
Worksheets	*Teacher: Could you have written a review on your own?* *M: "Not without reading … without analyzing, without those worksheets. By reading other people's review or doing worksheets, I could make my point clear … arrange, or tidy, what we did."*	The student said that the worksheets helped her to write her review and to learn English and that they were good additional activities in the project. She said the worksheets helped her to think more deeply, more logically and to help her express her thoughts. She found it easier to think more deeply and to better explain her ideas with the worksheets. She said that by "filling in the analysis worksheets helped me to be more critical … think deeper … not just surface" and that they helped her to remember some vocabulary items. She said that she could explain texts on her own but she "can do that better with papers" and "if I have papers, I can understand what to say clearly" and "if I have some materials, maybe I can be able to think about deeper and have the connection in the sentence and sentence."
Difficulty	*"At first, I thought this is very difficult, and I had many things to write, but later, I became used to it … doing many times the same thing."*	Though the student stated that she enjoyed and became used to the workload in the project, the worksheets and homework were "tough" and "needed much time and energy."
Context	*"I strongly think one-on-one style was really meaningful, but another student's (not teacher, professor) opinion would be also efficient."*	The student found the weekly year-long project comfortable and that a more intense workshop would have been "very tough." Though she "felt free" in the one-on-one meetings, she recognized that having other students in the project would have created opportunities to share experiences and also the project workload.

4.4 Transfer and Extended Repertoires

4.4.1 Transfer

M transferred vocabulary from rules to gameplay and a discussion (see Section 4.1.1) and to her game review (see Section 4.1.4), and the word "locomotive" to a departmental TOEIC test (see Section 4.1.5). She transferred "the magic circle" concept to her academic essay, review and thesis work (see Section 4.1.2). She appropriated textual aspects in her review (see Section 4.1.5). She applied her awareness of sarcasm (4.1.3). In this project, skill and knowledge transfer was simply observed and reflected on; future projects will investigate transfer within and outside the Game Terakoya sequence in more quantitative detail.

4.4.2 Extended repertoires

M, for the first time, learned with games, experienced self-transcription and analysis, read English rulebooks and online reviews, blogged and tweeted, and wrote an online review. I, for the first time, studied and practiced multiliteracies pedagogy, and explored language and literacy instruction through the design and use of an analytical worksheet and through post-game discussions.

5. Discussion

5.1 Generalizations and limitations

Overall, the pedagogy of multiliteracies effectively addressed issues and opportunities related to the what, how and why of language and literacy teaching in this project's use of games. The student learned and accomplished a great deal in terms of language and literacy development, and scholarly and participatory work.

However, at first glance, the activities and results of this project are nearly impossible to generalize or apply to other contexts. M was a highly motivated and proficient language learner, and what she did, over one year, with and around particular board games, under the constant supervision of a game-literate teacher who wanted to deeply explore progressive pedagogies, cannot likely be replicated or transplanted in lock-step. It is improbable that anyone will explore close variations of this project to see if their students would be similarly enamoured with the magic circle concept, would similarly struggle with sarcasm, and would create similar online reviews of *Railways of the World*.

But, to consider this project in that light is to entirely miss the purpose of the conceptualization, implementation and forthcoming discussion of this project's place in the current landscape of game-based language teaching and learning. The purpose of this project was to shine a spotlight on the lack of mediation (either from teachers, or through materials) in the field, and to deeply explore what would result from taking mediation to an extreme form with and around games. This project embraced the reflecting, planning, designing, instructing, observing, reacting, interacting, and evaluating work that teachers do that leads students' development. A one-on-one one-year extracurricular project, with its freedom and flexibility, was the appropriate context in which to explore game-based teaching as broadly and deeply as possible. This project did not try to engineer a "magic bullet" of a particular game or project. The "magic bullet" (read: "hard work") that readers should discover is that purposefully integrating games and pedagogy can radically change what and how and why students learn. Integrations and instantiations can and must vary based on differing contexts, goals, students and teacher abilities. More inclusion of and focus on purposeful pedagogy is something that should be generalized to, more common in, and the impetus of more teaching and research in the field.

The "magic bullet" (read: "hard work") that readers should discover is that purposefully integrating games and pedagogy can radically change what and how and why students learn.

Of course, the next step is to take the pedagogical lessons learned in this project and work to adapt them to other (i.e., more typical) teaching and learning contexts. The next sections will discuss the results and their applications in more detail; however, some quick pedagogical generalizations will be made here. Teachers must decide clear goals for game-based language education, and either focus their students on a specific objective, or encourage students' to take more agency and then manage the subsequent multiple learning trajectories. Teachers must determine if learning objectives can be reached mainly with games and mediation, or if it is helpful or necessary to also include affinity space texts and communities. Teachers must reflect on their knowledge of games and pedagogies and determine what aspects of students' learning they already know how to support and what they will need to learn in order to better help their students achieve the learning objectives.

Teachers should work to be as involved as possible in students' learning. This will become more challenging the larger and more varied the class is. But, teachers can teach and scaffold more than has been demonstrated in prior accounts of game-based language education. Teachers can turn their learning objectives into sequences of activities, clear instructions, assessment rubrics, self and peer reflection, and comparisons of work throughout the sequence. If teachers cannot be present in all groups' gameplay, discussions or project work, they can require that students complete a stage and then present their work for teacher and peer feedback. This articulation can make both students and teachers more aware of achievements and opportunities for development. Material mediation (e.g.,

reference texts, discussion worksheets, analysis assignments, project workbooks) can reduce some of the difficulty of one teacher trying to lead the development of multiple groups or many students. Materials should continue to be developed, researched and shared.

Again, though the results of one project with one student cannot be generalized to the entire field of language teaching with games, the intensive experience of the current project connects to many important topics and trends in the literature; some observations and suggestions are offered here.

5.2 Goals (the why) are important

Contemplating the purpose of education and the potential of games to improve students' lives spurred this project into existence. Diverse literature shaped its goals of productive participation, academic rigor, liberation, and transformation of students and society. If these goals had not been established at the outset, goal-connected activities would not have been developed or implemented, nor would the goals have been reached. L2 teachers interested in games should first reflect on their educational goals, what pedagogies will reach those goals, and how games, if at all, can support those practices and goals.

Coleman (2002) directed students' consideration of audience through interactions around a computer game. M developed her understanding and writing for audience by writing for other gamers after playing a tabletop game. These dissimilar projects successfully met a similar goal, reinforcing the unlikelihood of a "magic bullet" for reaching educational goals. More reports of creative combinations of contexts, pedagogies, games and goals are needed.

L2 teachers interested in games should first reflect on their educational goals, what pedagogies will reach those goals, and how games, if at all, can support those practices and goals.

5.3 Pedagogy (the how) is important

This project is unique in its practical implementation of multiliteracies pedagogy that connected gaming, academic work, and participatory projects. See Table 25.

Table 25 *Pedagogies, purposes and practices*

	Pedagogies	Purposes	Practices
↓	Situated practice / Experiencing the known and the new / Available designs	**Game activities**: Experiencing games, media and culture	Learning games Playing games Using connected texts (reviews, videos) to understand games
↓	Overt instruction and Critical Framing / Conceptualizing by names and by theory and Analyzing functionally and critically / Designing	**School activities**: Understanding games through intellectual work	Discussing games Analyzing games and texts (using materials) Finding concepts Reading about games Writing about games Doing preparatory research about games
↓	Transformed practice / Applying appropriately and creatively / The redesigned	**Life activities**: Broadening potential for participation through games, media and culture	Orienting game projects Planning game projects Conducting game projects Evaluating game projects

The multiliteracies pedagogy guided me before and during the project. Academic and participatory activities were included because of the pedagogical instruction. The literature helped me connect activities, for example, playing known games before new games, and repeating and accumulating the conceptual and analytical work with games and texts. Showing M the sequence oriented her to the workflow. Because my and the pedagogy's goals of transformation, liberation and literacy development aligned, as much of the pedagogy as possible was included and repeated, contributing to M's successful game review project and deep linguistic and intellectual work.

The rigorous pedagogy guided M's literacy development. She deliberately moved from finding and analyzing texts about the game she played to planning and writing and contributing an original text to an online game community. Without these stages' activities, it is unlikely that M would have appropriated the depth and variety of textual features she did into her online review. If teachers want students to deeply understand games and language, then they should structure deliberate literacy-building activities, both reading and writing, into teaching and learning.

Furthermore, writing reviews is only one way to develop literacy in and around games. Literacy development can be taught and learned by analyzing and applying language and systems such as rulebooks, social media, game mechanics, company websites, podcasts, magazines, community events and the broad spectrum of linguistic, social, industry, and technological aspects of games and gaming. Some examples are given in Table 26. Deliberate analysis and application helps students do more with games, and these activities scaffold students towards the sometimes difficult goal of personal, public or professional participation.

Table 26 *Examples of literacy activities with and around games*

Analyzing functionally and critically	→	**Applying appropriately and creatively**
Analyzing reviews		Writing reviews
Analyzing game rulebooks		Writing game rulebooks
Analyzing game rules		Writing game rules
Analyzing L2 gameplay language		Applying L2 gameplay language
Analyzing forum discussions		Joining forum discussions
Analyzing game communities		Creating game communities
Analyzing game research		Conducting game research
Analyzing game-based learning		Facilitating game-based learning

This project offers a pedagogical counterpoint to CLT-driven approaches prioritizing spoken interaction in games; the multiliteracies-driven approach integrated broader pedagogical acts to promote not only linguistic but intellectual and social development. Projects integrating multiliteracies pedagogy and games contingent on spoken interaction (e.g., *Dungeons & Dragons*, *Diplomacy*) could produce even broader outcomes.

Other pedagogical work (e.g., media education's sociocultural questions) and certain outcomes (21st Century Skills and New Media Literacy Skills) were not as successful, likely because they were less prioritized. More ambitious sociocultural research projects or participatory projects, integrated with the multiliteracies pedagogy, might better promote other competencies.

5.4 Materials (the how) are important

This study offers important evidence that game-connected materials benefit not just vocabulary learning but broader literacy development. This study's materials, though difficult and time-consuming, shifted M's focus away from only vocabulary, helped her notice and articulate knowledge of aspects like register and audience, helped her evaluate and complete project work, helped her think deeply and express herself, and helped prepare her for discussions. Materials should be used in conjunction with games, not just for vocabulary learning, but to support deeper learning and project work throughout pedagogical sequences.

The materials did not, however, help M recognize sarcasm, again reinforcing the unlikelihood of educational "magic bullets." The materials might have bolstered her ideationally-oriented reading and

helped her change her opinion. There may be limits to what materials can accomplish for language teaching with games. Materials might lead students to incorrect or dangerous textual interpretations. As this project demonstrates, a combination of worksheet mediation and follow-up teacher interaction may prove more effective than worksheets alone, but this remains to be demonstrated through further practice and study.

A goal for sociocultural-theory informed teaching practices (e.g., the Pedagogy of Multiliteracies, Learning by Design, and the Game Terakoya project) is for students to move from regulation by others (i.e., a teacher) or regulation by tools (e.g., a worksheet) to self-regulation. M first completed textual analysis work with my assistance and was later able to complete textual analyses away from me using the worksheet. She moved from other to tool regulation in the project, but I was not able to document her self-regulated understanding of texts without either worksheets or my assistance (e.g., her being able to extemporaneously understand or analyze or apply a new text). Since language awareness needs to become self-regulated, teachers should require that students finally analyze a text without worksheet and teacher scaffolds.

Materials and practices should continue to be developed, tested and shared to guide game-based language teaching. An unsolved issue is how to help students notice and critique difficult textual meanings (such as humor or political messages), especially those, like sarcasm in this study, that are unacceptable in one culture but acceptable in another. One textual analysis worksheet addition to be tested will include a list of speech acts or meanings (e.g., "to inform," "to joke," "to praise," "to critique," or "to harm") and for students to select one and give language from the text to explain their choice. This might raise students' awareness of different potential textual meanings and keep them responsible for identifying and explaining meanings. Materials will be even more difficult and time-consuming for students of lower proficiencies than M, so work should investigate streamlining the questions, focusing on fewer aspects, and examining how peer work impacts materials-driven analysis. Practice-focused research can document how teachers adapt materials on-the-fly based on students' understandings (for example, adding prompts, sharing examples, or modelling work with materials with a few students in front of the class), and how students use preparatory worksheet notes in their articulation of ideas in face-to-face discussions with peers or teachers.

> Materials … shifted M's focus away from only vocabulary, helped her notice and articulate knowledge of aspects like register and audience, helped her evaluate and complete project work, helped her think deeply and express herself, and helped prepare her for discussions.

5.5 Teachers (the how) are important

M initially focused on vocabulary and gameplay, not broader language and literacy aspects. She could not articulate the magic circle concept, comprehend some sections of YouTube videos, or notice a game review's sarcasm. She did not ask and had difficulty answering sociocultural questions. She did not autonomously alter her struggling participatory project. Each of these experiences required that I shift her attention or provide direct instruction. This project documented that what teachers can do with games can be broader, and be more important than what students can do on their own, or with materials. Teachers can build on students' fascination or facility to play games to help students be reflective, critical, and analytical, and use their gameplay experiences for real-world participatory action. Teachers can select and design pedagogical sequences towards specific goals, introduce students to pedagogies and activities, blend traditional and progressive teaching and learning, and prevent gameplay from dominating what students do or think. Teachers can discuss and react to students' ideas, shift students' attention, push students towards intellectual and participatory work, and spontaneously modify and add materials and activities. Other student limitations and appropriate teacher mediation should be investigated and shared in order to patch the diminishing focus on pedagogy-focused research on game-based language teaching. Researching pedagogical scaffolds to raise students' awareness of games' sociocultural connections is particularly important.

This project demonstrated that what teachers can do with games can be broader, and be more important than what students can do on their own, or with materials.

Simple rules can create emergent gameplay (e.g., *Go* rules generate billions of possible games). This project was similarly unpredictable, as will other multiliteracies-driven game-based language pedagogy prioritizing student liberation. I prescribed a sequence of activities targeting broad language and literacy goals, but did not know which of the nearly limitless choices and combinations of participatory projects, games, affinity space texts, concepts, and analytical work M would choose. I did not know what M would or would not be able to accomplish, and what guidance she would need. Teachers themselves can, of course, select games and texts and projects to focus students on particular learning and literacy objectives. But, if broader pedagogical questions regarding the "what-how-why" of language and literacy teaching and learning with games are answered with a multiliteracies pedagogy in which students have more agency, there will be considerable unpredictability and effort in the teaching and learning.

Teachers can prepare for unpredictability by learning about pedagogy and games. Educational literature helped me implement transcription, textual analysis, playing known games before new games, and effective discussions. More sharing of actual practice is required for teachers to draw from. I could introduce, play and discuss games and game-related concepts (e.g., the "magic circle") because of a professional and personal interest in games. Teachers might independently play then reflect on games, ponder connected concepts, markup rules, and brainstorm game-based projects. The more literate teachers are, not only about games and game communities, but about newer pedagogies and practices, the more successful continued integration of games and teaching for broader linguistic and educational purposes will be. Appendix 8 suggests some resources.

Teachers can prepare for unpredictability by developing pedagogy around materials. Implementing a textual analysis worksheet focused M's attention on broader literacy aspects. M's analysis presentations helped me see which areas required further discussion. Appendix 9 has materials teachers can use or adapt to direct students' attention and then connect to subsequent discussion and activities. Additional materials, perhaps on gameplay, sociocultural research activities, or project management, should be developed, tested and shared. This project explored only two participatory projects. M's first idea to create a local map for *ROTW* was halted after seeing a similar product in the market and also realizing how much work making another map would be for one student. Her second idea to write a game review was completed successfully; her earlier textual analysis work and her motivation helped her become invested and able to complete the project. Other projects (Appendix 7) may require other pedagogies to help students meet goals. Discussions in this project were nearly always one-to-one, and dialogic dynamics will be different with larger classes. Teachers might join discussions in turn, or give students autonomy but require a debriefing or presentation in which to provide guidance. Appendix 9 offers a post-game discussion activity for larger classes.

Teachers can manage unpredictability by doing work alongside students. Once M chose a text, we both analyzed it. Following her presentation, and discussions, M looked at my work and noticed additional language. If teachers complete work alongside students (e.g., a teacher analyzing a student-chosen text in real time in front of the class), they can not only familiarize themselves with student-chosen texts, and notice instructional opportunities, but demonstrate the analytical rigor expected from students. Continued pedagogy-focused work should share classroom-tested lesson plans, and also teachers' text markups.

The more literate teachers are, not only about games and game communities, but about newer pedagogies and practices, the more successful continued integrations of games and teaching for broader linguistic and educational purposes will be.

5.6 Multiple modes and spaces (the what) are important

Because various texts from game affinity spaces (i.e., rulebooks, "actual play" and "how to play" videos, written reviews) were included, M explored not only vocabulary and ideational language, but interpersonal discourse, text structures, registers (particularly sarcasm), genres, styles, grammars and meanings, voice and purpose, language and gender, and connections between language and context, audience, purpose, culture and lifestyle. She categorized this work as a "practical" application of her English. This work would not have occurred had the project taken a traditional CLT approach to games and language and only focused on the very limited spoken interaction during the games. Teachers wanting to broaden and deepen students' linguistic repertoires should include as many spaces (e.g., community forums, social media platforms, library groups) and texts (e.g., game components, game rulebooks, YouTube videos, social media messages, marketing messages) as possible in game-based instruction. Students can then engage with the many aspects of language through analytical worksheets, discussions, and projects.

M reported difficulty understanding rules and video language before playing the game, but could re-analyze the language with better comprehension after gameplay. She could engage in more abstract discussions after playing the game, and could apply her experience and knowledge about games to the research and writing of her participatory work. Students' comprehension and extension of language and knowledge can depend on the inclusion and careful ordering of multiple text modes in and around games (such as reading/watching texts, then playing, then reading/watching texts again). Teachers should include and rely on the multimodality around games to improve learning outcomes with games.

This project focused primarily on written language. Future projects should explore how to guide students' experiences, analysis and applications of oral, visual, spatial and gestural communication in and around games. Additionally, the sarcasm M encountered was quite benign, but gamer culture can expose students to hateful language. Including that language in education might be important, but it can connect students to dangers (SXSW EDU, 2018) and teachers need more guidance in this area.

5.7 Are games important?

From one perspective, games were the least important element of this project. Less than 25% of the sessions involved gameplay. M used few and simple L2 utterances during games. M stated the "review work" (i.e., discussions and worksheets) helped her "think deeply" and "express" herself, and she learned "how to write" a game review, but left the question of "what did you learn from the game?" blank. Vocabulary was recalled from noticing it in rulebooks and using it on worksheets. M was more attracted to the project because of its focus on language learning than on games, and (not from the beginning) "*eventually* enjoyed playing games." The project could easily be reframed as a multiliteracies pedagogy-driven reading and writing project, rather than a gameplay project. It is hard to identify anything that M learned while playing games.

> In terms of educational potential, it's not just a game as a product, but a game and its culture, and what one does over the course of a class or project with *all* of that, before and during and after playing games, that can matter.

But, from another perspective, games were fundamental to the project's successes. M needed to "remember ... what [she] did" to communicate something "honestly" and "in detail" to her audience through her game review. Gameplay created the relevance of the discussions about language (texts: rulebooks, videos and reviews), concepts (the magic circle), social themes (history, consumerism, the environment) and M's participation (research on the local railroad, review writing). From this second perspective, what was important or educational was not just the game in the box nor the gameplay, but rather the broadly-conceptualized "Game" (Gee, 2008) that included our discussions around the game, the rulebooks, the gamer-created texts on YouTube, BoardGameGeek, Amazon and Twitter, company media on Kickstarter, and M's participation in some of those spaces. The game became meaningful in this project through the investigation of meanings and language in the game's

connected affinity spaces and sociocultural links. In terms of educational potential, it's not just a game as a product, but a game and its culture, and what one does over the course of a class or project with *all* of that, before and during and after playing games, that can matter. See Table 27.

Table 27 *Learning with and around games*

Language learning with games	Language learning with and around games
Playing games	Playing games
	Reading and analyzing rulebooks
	Discussing games
	Reading and watching and analyzing affinity space texts (e.g., reviews, videos)
	Reading academic work on games
	Doing research about games (e.g., gathering information in the community, looking at gamer culture data)
	Participating around games (e.g., writing a review, sharing a game remix)

One way of viewing this project, and evolved game-based language teaching, is as a Content and Language Integrated Learning (CLIL) class with the subject of games and implemented using multiliteracies pedagogy (see Dupuy's (2011) parallels between CLIL and multiliteracies). This study demonstrated that games do not need hype; they can be treated as an academic subject that requires purposeful exploration, guided contemplation, contextual analysis and research, and participatory work. The connections Sykes and Reinhardt (2013) make between game-based language teaching and learning and the field of game studies, in light of the pedagogical successes of the current project, hold great potential and should continue to be explored to avoid continuing hype.

Tabletop games afford face-to-face interaction, simulate real-world phenomena, and present multifaceted language in components, rulebooks and affinity space texts. This project focused on the third aspect. Future projects will explore this project's pedagogical framework with games requiring more sophisticated player-player interactions, for example, the alliance-building and breaking in *Diplomacy* (Niculae et al., 2015). Other projects will explore ideological concerns using games (alongside academic work and participatory projects) designed to transform players and the world (e.g., Games for Change[5], Molleindustria games[6], TerrorBull Games[7]). These combinations of games and pedagogy might demonstrate that both games and what teachers do with them matters a great deal for language, literacy, intellectual and social development.

Games do not need hype; they can be treated as an academic subject that requires purposeful exploration, guided contemplation, contextual analysis and research, and participatory work.

5.8 Closing Thoughts

Conceptualizing, planning, conducting, analyzing and sharing this project required an extraordinary amount of time and effort. The hard work of asking big questions, learning and making new things, and discovering how M developed various literacy, intellectual and participatory skills also changed

[5] Games for Change: http://www.gamesforchange.org/games/
[6] Molleindustria Games: http://www.molleindustria.org/
[7] TerrorBull Games: https://www.terrorbullgames.co.uk/

me. I constructed new understandings of the literature, gained skills as a teacher, and believe that I can continue to use games in new ways to broaden students' potential. I recognize, now more than ever, that discipline and effort are needed to develop a person, whether the person is a student (like M), or a student of teaching (like me).

I have continued to use the pedagogy piloted in this project to help students transform themselves and society. This deep dive was not a "one off" research project. I have used this deep dive into multiliteracies pedagogy and games to create interventions in workshops, an elective undergraduate class and my two-year undergraduate thesis seminar. I post materials and activities on my lab website [8] and on Twitter[9]. I have also shared some materials in Appendix 9. Research and walkthroughs from continued explorations of the multiliteracies pedagogy with and around games will be shared.

I realize that getting students (and teachers) to commit the time and effort needed to complete any of the activities in this pedagogy is a significant challenge. Game designers have found ways to engage players early on and to sustain players' motivation through continuing challenges and skill improvement; to keep learners in a "flow state." I, and other teachers, need to continue to learn from games and game designers and wrestle with how to engage language learners (and teachers) with the additional tasks we need them to attempt in order to see significant transformations in students, schools and society. I encourage teachers interested in games to reflect on, and share, their answers to the introductory questions of what-how-why for their own contexts, curriculums and students. Doing so may not only expand teaching and learning repertoires, but also contribute to the field's necessary development. Planning and conducting this project often felt like throwing rocks into a pool and reacting to what the ripples touched. I think teachers need to throw more rocks.

Planning and conducting this project often felt like throwing rocks into a pool and reacting to what the ripples touched. I think teachers need to throw more rocks.

Declaration of conflicting interests

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[8] University of Shizuoka Game Lab: https://sites.google.com/site/gamelabshizuoka
[9] Game Terakoya work on Twitter: https://twitter.com/hashtag/gameterakoya?src=hash

Neil Johnson pushed a pebble down a mountain when he directed me towards the pedagogy of multiliteracies as a way for me to improve my teaching. He made me question, again and again, my understanding of teaching and learning. It took me a long time to begin to put his suggestions and ideas into practice; I just hope the work that I am doing somehow approaches his very high standards.

This paper was written while listening repeatedly to My Bloody Valentine's "Loveless" album.

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Appendix 1: Textual analysis worksheet

There are 16 questions dealing with new language, common patterns, strange or unique language, organization, style, creative techniques, context, author, lifestyle and values, purpose, intended audience, other audiences, effectiveness, personal reaction, questions and comments.

Write the title or URL of the text: _____
Read the text, then answer the questions.

1. What new language did you find in the text? For each:
    - Write the Japanese translation or meaning
    - How can this new language be applied in other contexts?

2. Look over the text again.
    - What common patterns do you see in the text? (e.g., verbs, nouns, grammar, phrases, speech functions)
    - What strange or unique instances or patterns of language can you find?
    - How is the text organized?
    - How would you describe the style of the text?
    - What creative techniques are used in the text?

3. Analyze the text even further. For each question, give your answer. Also, explain why you think so.
    - What words or sentences from the text are evidence for your answer?
    - What is the context of the text? Why does the text appear here?
    - What do you know about the text's author?
    - What lifestyle / values / point of view are expressed in the text?
    - What is the purpose of the text? Why was this text created?
    - What are the causes and effects of the text? (e.g., Is the text communicating something Personal? Social? Informational? ideological?)
    - What do you know about the intended audience?
    - How might someone other than the intended audience view this text?

4. Evaluate
    - Do you think that this text is effective? Why or why not?

5. React
    - What is your personal reaction to this text? Why do you think or feel that way?

6. If you have any other questions or comments about this text, please write them here.

The questions were informed by:

- Johnson, Neil. Reading lesson questions. (personal communication)
- Kalantzis, M., & Cope, B. (2005). Learning by design. Common Ground.
- Thorne, S. L., & Reinhardt, J. (2008). Bridging activities, new media literacies, and advanced foreign language proficiency. Calico Journal, 25(3), 558-572.
- Kern, R. Technologies and Literacies in Language Education: Looking Beyond Communicative Competence
- Center for Media Literacy. Five Key Questions Form Foundation for Media Inquiry
- York, J. Kotoba Rollers Framework

Appendix 2: Teaching decisions, roles and actions

Project design

Decisions	Actions
Considered context	I learned more about problems and opportunities in school and society; I considered students' educational abilities and trajectories
Determined goals	I determined I wanted students to use a breadth of language, to use knowledge outside of school, to have agency, to be transformed, and to develop academic skills
Selected the learning environment	I realized an extracurricular project would allow the most flexibility and would let me explore untested activities and ideas
Recruited widely	I shared the project information with about 1000 students

Pedagogical framework

Decisions	Actions
Selected an appropriate framework	I reviewed several frameworks, then selected the multiliteracies pedagogy; it addressed project goals and had detailed practical suggestions
Prepared pedagogical implementation	I decided to use the pedagogy linearly, I identified supplemental materials to use and materials that would have to be developed
Used the pedagogy as thoroughly as possible	I worked to complete the entire pedagogical sequence, and included as many activities in each stage as possible; I helped the student to complete each activity and stage to the best of her ability

Game and language perspectives

Decisions	Actions
Considered the potentials and pitfalls of using games	I recognized games as simulations to experience, and their numerous affinity space texts; I focused on educational goals to avoid hyping games and only oral communication
Approached games academically	I treated games like other art forms worthy of appreciation and investigation and discussion; I asked the student to read and write about concepts in games; I introduced her to game-related concepts and further study
Integrated games and activities, and texts and practices	I helped the student match a participatory project and a game; I then assigned worksheets, homework and research to connect the two; we explored broad and various aspects of our own language during play and the language in the game's affinity space texts; all activities were connected by participatory goals
Connected games and culture	I introduced social impact games, I brought up historical and environmental issues, we discussed people, business, values and cultural uses of language in affinity space texts
Considered language broadly	I included as many different texts and modes as possible, not only for information, but for different literacy aspects that I wanted the student to notice and apply; I developed a broadly focused analysis worksheet; I shared my broad noticings after the student shared hers; I asked the student to use the broad aspects of literacy on the worksheet to critique her own writing

Teacher roles and actions

Decisions	Actions
Used strengths and explored new activities	I could rely on my project work experience with students, and also my knowledge and experiences of games; I did not have experience doing discussion and analysis work with students, so I spent time researching and developing prompts for these activities before using them in the project
Worked to lead development	I used pre-project tests and mid-project worksheets and discussions to understand what the student could accomplish; I then selected new activities for her and helped her accomplish these
Shared and modelled work	I completed many of the assigned tasks along with the student; the student looked at and noticed new language from my notes; I also explained my notes and answered questions about them
Adapted to student performance	I paid attention to and valued student actions and utterances; I asked focusing questions and developed tasks, (e.g., a worksheet), to address gaps in knowledge and abilities; I changed materials based on her abilities
Repeated tasks	I realized students could be overwhelmed, miss details, and make mistakes, I repeated instructional sequences around games, and had the student complete several analyses of rulebooks and affinity space texts using the same textual analysis sheet

Teacher's mediating actions

Decisions	Actions
Used dialog to develop thinking	I made time to discuss games and texts; this was not for oral communication practice; I did not lecture, but asked open-ended questions (e.g., "What do you think of X?") and then asked for additional reasons and details; I wanted discussions to help her find academic topics she was interested in; discussions connected to the participatory work
Created and used materials	I noticed that students focused on vocabulary, so I collected and modified literacy-focused questions to create a worksheet to analyze texts; sections for evidence and reasons were added; I also used it to foster reflection after her writing; worksheet work was a precursor to follow-up discussion work
Sometimes guided more forcefully	I based my instruction on and valued the student's work, using dialog to guide, but used direct instruction, after trying scaffolds and prompts, to inform the student of the meaning of a text she could not understand and also to prompt her to reflect and decide to change a participatory project that seemed to be in peril
Used technology to guide understanding and reflection	I used Internet videos, reviews, statistics, tweets, and kickstarter pages to help build understanding of language and game culture and to help with subsequent play of the game; following brainstorming language for a game, I asked the student (after note taking during the game did not succeed) to transcribe a video recording and tally and give reasons for variations in grammar about specific functional language used during the game

Teaching goals

Decisions	**Actions**
Focused on transformation	I did not just focus on one stage, such as playing games; I required that the student experience new games and new texts, analyze them deeply, and apply new knowledge creatively to increase the possibility of the student and society changing
Focused on participation	I explicitly directed the student to participatory goals and projects when the project started, showed example participatory projects, encouraged her to choose connected games and projects, prioritized participatory work over gameplay, helped her blog and tweet about their work, assigned summer participatory project brainstorming work, and project drafts and revisions
Focused on liberation	I chose an extracurricular project to give us freedom from curricular constraints; I valued and connected my instruction to the student's interests, experiences, identities and opinions; I allowed the student to choose games, texts, concepts and projects to focus on in the project; I reacted to the student's ideas instead of prioritizing my own; the student controlled the pacing of the project; the student's questions were prioritized in post-play discussions

Appendix 3: Media used

Media type	Specific media texts (titles and URLs)
Game Rules (some online, some printed)	Original *UNO* Rules http://www.unorules.com/ "*Railways of the World*" Rulebook (from game box) "*Railways of the Eastern U.S.*" Rulebook (from game box) "*Railways of Mexico*" Rulebook (from game box)
YouTube "how to play" videos, "actual play" videos, game review videos	Let's Play Board Games - UNO https://www.youtube.com/watch?v=nfwZ9cY6iTo How to play UNO https://www.youtube.com/watch?v=Gf9lzuPxMQs Railways of the World - Part 1 How to Play https://www.youtube.com/watch?v=GPSrOFIEJfg Railways of the World - Part 2 Sample Gameplay https://www.youtube.com/watch?v=406dDsMVqMI
Boardgame geek.com forum discussions and game reviews and files	UNO Variation Cards https://boardgamegeek.com/image/294422/uno A Game of Deep Strategy (a Cheeky Buddha Review) https://boardgamegeek.com/thread/1366371/game-deep-strategy A game for kids, not geeks. https://boardgamegeek.com/thread/312340/game-kids-not-geeks This game is broken. https://boardgamegeek.com/thread/125191/game-broken A Comprehensive Pictorial Overview: The quintessential train game for the typical modern gamer https://boardgamegeek.com/thread/533330/comprehensive-pictorial-overview-quintessential-tr Is this game dead in terms of future expansions? https://boardgamegeek.com/thread/1649974/game-dead-terms-future-expansions
Amazon.com product pages	Customer Reviews of Mattel Games UNO Card Game https://www.amazon.com/Mattel-42003-Uno-Card-Game/dp/B00004TZY8 Customer Reviews of Eagle-Gryphon Games Railways Of The World Strategy Board Game https://www.amazon.com/Eagle-Games-101122N-Railways-World/dp/B002I61OOU
Kickstarter.com projects	Railways of Nippon: The Next Train Stop on the ROTW Track! https://www.kickstarter.com/projects/eaglegryphon/railways-of-nippon-the-next-train-stop-on-the-rotw
Web sites and videos related to language and literacy	A Sarcasm Introduction https://www.youtube.com/watch?v=6QhfeBLIBMc How to Understand Sarcasm - The Key Guide https://www.youtube.com/watch?v=ewV8mhHRTKM Sarcasm http://www.ecenglish.com/learnenglish/lessons/how-use-sarcasm What are the different types of conclusions? https://answers.yahoo.com/question/index?qid=20100830024532AAxfUK8
Web pages and papers related to games	House Rule https://en.wikipedia.org/wiki/House_rule Gaming Conceptz: Huizinga's magic circle https://gamingconceptz.blogspot.com/2012/10/huizingas-magic-circle.html Abandoning the Magic Circle http://www.dpwoodford.net/Papers/MCSeminar.pdf
Other	'08 Obama Campaign Advertisement http://img.hebus.com/hebus_2008/11/05/preview/081105123436_14.jpg Map of Transportation in Shizuoka Prefecture http://www.angelfire.com/cantina/cdnfemme21/ShizuokaPrefMap.gif "Railroad History in Shizuoka" http://www4.tokai.or.jp/s.tetudourekisi/

Appendix 4: Language use in / around games

Games were played in six of the 27 sessions. Games were part of an extensive sequence of activities, before and after play, to develop linguistic awareness, intellectual skills, and participatory opportunities. The sequence included:

Activities around games

Phase	Activities
Before the game	Reading and analyzing the rules of the game Watching and analyzing YouTube videos of actual plays or reviews of the game Brainstorming language that could be used during the game
The game	*UNO* was played once, *Railways of the World* was played twice
After the game	Discussing the game; Reviewing the language we used during the game Reading and analyzing written reviews of the game Noticing and awareness-raising of language in texts: with the various texts (rules, reviews, videos), the student took and shared notes first, then the teacher shared his notes for the student to use to point out things of interest to her, and then the teacher shared remaining points of interest Writing an essay connecting a concept to the experience of playing the game (section 4.1.2) Conducting additional research and completing a participatory project extending the language and knowledge from the project (section 4.1.4)

M's language work in and around games and texts is presented here. Most L2 activity occurred before and after, not during, the games. M tended to focus on vocabulary and simple functional language before play, but did comment on some textual features before *ROTW*. M reflected on her L2 usage during *ROTW* through transcription and analysis and her attention was brought to additional textual features post-play. M raised more and a broader range of language and literacy aspects around *ROTW*, the second game.

Before playing UNO *(a known game)*

Activity	Language work
UNO rulebook	The student focused on unknown vocabulary in the rules: "draw pile," "depleted," "clockwise," "tally," "forfeit," "regenerate."
UNO YouTube	The student's comments focused on the play of the game and not the language; "people played more quickly than Japanese people" and "guys seemed not to care about showing their cards compared to Japanese."
Brainstorming *UNO*	The student thought she would use the following language while playing the game: "*UNO*," "your turn," "what's the color? / what color will it be? what color will you make it?" "Yay!" "Sorry!" "I don't need that!"

After playing UNO

Activity	**Language work**
Reviewing *UNO*	The student remembered she used the following language while playing the game: “I’m sorry,” “it’s blue,” “sorry,” “what do the rules say?” “finished,” “congratulations.”
Discussion of *UNO*	The concept of the magic circle was uncovered (see section 4.1.2), the student said that *UNO* is “not for learning language, but for fun and relationships” and that she noticed that the language in the rulebook shows them “how to ... explain something to someone … this is good practice”
UNO reviews	This data is presented in the sections on sarcasm (section 4.1.3) and literacy work (section 4.1.5)
UNO teacher notes	The student’s attention was brought to the repeated usages of “he/she” in the rules, she noticed that the rules “don’t mix 1st, 2nd, 3rd person,” and she noticed the use of the passive voice “focusing on object.”

Before playing Railways of the World *(a new game)*

Activity	**Language work**
ROTW rulebook	M estimated understanding "60%" of the rulebook, she could explain the basic idea of the game: "link cities, deliver black cube to black city, earn money," She noticed the use of capitalization, that many of the sentences in the rules were "short" because "the author wants us to understand," and said that the introduction to the rulebook was written more narratively and casually to the player "you" and used ! and ? marks and "comparative adjectives" and that she was "excited. want to play soon" because of this. I used recasts in a short interchange with M about the cost of creating a special "Western Link" in the Eastern United States expansion: *M: $3,000.* *T: $3,000?* *M: $13,000.* *T: $13,000?* *M: $30,000.* *T: Right.*
ROTW YouTube	The student noticed that the speaker in the videos often said "let me explain" which was not in the rulebook, she noticed many specialist vocabulary items ("flat broke, money pie, restrict, caveat, thematic, rename, tangent, signify, declare, dead broke, debt, beneficial, financial empire, cut throat, hammer, conservative, stagnation, jerk"), that the speaker used comparatives and adverbs to "give advice" and "stress the rule." M mentioned not understanding some of the language in the video because it was "too fast to understand" and "like another language" and the teacher transcribed the explained the problematic section about the game's development history. M benefitted from reading the rulebook and then watching the YouTube videos: "combining with vocal and actual play this is more easier for me to understand. When I first read the rulebook it was difficult to imagine the actual play, so I think the video is better." She also said that "only rulebook or only video doesn't work well. The combination is important."
Brainstorming *ROTW*	M realized that we might need to look up rules: "Please tell me what the rule is." M also said "I take the bond," which led to brainstorming various forms for announcing taking actions (and the student was asked to think about which were appropriate and to try to be conscious of which they used during the game): ● I take the bond. ● I will take the bond. ● I want to take the bond. ● I am taking the bond. ● I need the bond. ● I am going to take the bond. ● I am going to go ahead and take the bond

After playing Railways of the World *(a new game)*

<table>
<tr><th>Activity</th><th>Language work</th></tr>
<tr><td>Reviewing ROTW</td><td>M thought that she had used “I take” or ” I want to take” instead of “I am going to take” because that form is “long” and she wanted to “play quickly.”</td></tr>
<tr><td>Transcribing ROTW play</td><td>M transcribed and tallied her utterances to announce actions during the game.

<table>
<tr><th>Form</th><th>Times YOU used the form</th><th>Form</th><th>Times YOU used the form</th></tr>
<tr><td>I (verb)</td><td>94</td><td>I need</td><td>0</td></tr>
<tr><td>I will (verb)</td><td>10</td><td>I am going to (verb)</td><td>0</td></tr>
<tr><td>I want to (verb)</td><td>28</td><td>I am going to go ahead and (verb)</td><td>0</td></tr>
<tr><td>I am (verb)-ing</td><td>2</td><td>Other: have to</td><td>10</td></tr>
</table>

Some of her observations included that she “used ‘I do’ and ‘I want to’ mostly. Thinking of this, I guess I didn’t think about situation carefully and I used the form that I often use and feel familiar” and that “‘I want to V’ is a suitable phrase to express the player’s thinking with action”
She shared later that there were certain grammatical forms that she avoided using during play (e.g., “wanna,” “gonna”) because she did not want to be seen as a person who is “excessively inspired by the native culture.”</td></tr>
</table>

After playing Railways of the World *(a new game)*

Activity	**Language work**
ROTW discussion	The student was asked to "think and write down 2 or 3 questions to talk about the game and also to practice your English… what do you want to talk about?" which led to discussions of opinions and strategies, and covered topics such as ● the feel of the USA map compared to the Mexico map, ● the cost of building track in the mountains, ● the puzzle of correct track placement, ● the benefits of going first each round and the benefits of waiting and seeing what other players do first, ● strategies for getting money and getting points, ● balancing territory expansion and making money or points, ● which map we liked better, and ● things that they did not like about the game system (they wanted more track patterns, perhaps at more cost to build). Our discussion lasted for almost 60 minutes and we discussed 12 main questions. She used long sentences, took many turns and spoke more quickly than in the discussion after *UNO*. She recycled language (e.g., vocabulary such as "urbanize" and "upgrade") from the rules and gameplay in the discussions. Her questions created opportunities to discuss concepts like multitasking and prioritizing. M said that "honestly, maybe I didn't speak so much English during the play, but, before the starting the game I had to read tough rule books and during the play I also have to think about what this [pointing at language on the cards] means, so, overall I think that this is very good for studying English." The student did not talk about the game while playing the game. I offered the example utterances such as "That was a nice move" or "It looks like N is in the lead!" M said that she preferred to play quietly to focus on her own game. She said that she might use those utterances about the game as she plays more and becomes more familiar with the game. M had difficulty connecting the game and environmental and consumerist aspects of reality (see section 4.1.2)
ROTW reviews	This data is presented in the section on literacy work (section 4.1.5)
ROTW teacher notes	The student's attention was brought to the YouTube video speaker's manner of stressing rules: "if you happen to," "every single turn," "you can never," and "extra special bonus," and him saying "thanks for watching" at the end of his videos. I pointed her at the frequent usage of "him" in the core rules and some instances of "she" in the USA rulebook. M thought the word "Expandable" written on the cover of the box and rulebook referred to expanding territory, not game expansions, so I showed her some board game expansions (e.g., Sid Meier's Civilization) and expansions being additional nations or maps that companies can sell.

Appendix 5: Every concept discussed in the project

Concepts	Information that was discussed in the project
House rules	Some gamers (consciously or unconsciously) change rules to make games more enjoyable for themselves. A classic example is the Monopoly "Free Parking" house rule that gives players more money.
Sarcasm	Sarcastic language conveys the opposite of what is stated. Sarcasm can be hurtful or humorous. Sarcasm has different roles in different cultures.
Fairness / cheating	Games have rules, and players can choose to follow or disregard these rules. These decisions can affect other players' enjoyment of a game.
The magic circle	Game rules create an artificial reality in which play can occur safely.
Fun	Games are typically enjoyable. Different people find different game elements (e.g., themes, rules, player interactions) more or less enjoyable.
Consuming	Many games model social structures. Many games require that players locate, use, buy or convert resources for personal gain.
The "story" of a game (narrative arc)	Traditional media (e.g., films, novels) have beginnings, middles, and ends. Some games also have different stages of play that create similar stages of engagement in the player.
The difference between spoken and written language	Typically, written language (e.g., rulebooks) is more formal, compact and explicit. Typically, spoken language (e.g., gameplay) is more casual, dynamic and contains more grammatical errors.
Social cachet of certain games (e.g., poker)	Society holds some games (for their difficulty, or theme) in higher (or lower) regard than others.
The sense of achievement	Games involve challenge, and overcoming puzzles or difficulties can make players feel satisfied at having accomplished something.
Hidden / private information in games	While some games (e.g., chess) have all information public, some games hide information or abilities (e.g., on cards that only one player can see).
Human activities not involving consuming	We use, buy or convert resources in daily life. However, contemplative, educational or artistic activities do not need to consume resources.
Metagame discussions / table talk / sports commentary	Games are interactive systems, and players often enjoy discussing what is happening in the game, or listening to experts discuss the games, in order to understand and learn more about the games.
Realism in games / Games as representing reality	Some games attempt to model social phenomenon (e.g., history, ecosystems, economics, human behavior). Games can vary in terms of their level of representation (from very abstract to hi-res models) of reality.
Random information in games (e.g., cubes, cards, roles)	Some designers add variety and replayability to games by adding systems that randomize information or rules for players. For example, cards can be shuffled and drawn, and dice can be rolled.
Personal connection to a map / imagining going to map places	Some games use maps of real-world places. Players can spend hours looking at these maps, and might find themselves thinking about the places in the game.
Games as a series of interesting decisions	Players make many choices in games. One way of understanding and designing games is to think about the number, type and consequences of the decisions the players have to or want to make.

Appendix 6: Vocabulary test items

157 items were found in the student's notes post-project. She student had written, highlighted or translated these items in her notes. The items were listed in English which the student had to translate to Japanese, with space to add notes or knowledge about the items. (192 items were collected from her notes, but the student identified knowing 35 of these before the project).

adjacent, advanced, all-time high, annals, at stake, bam, baron, BGG, bidding, bogie, bond, certificates, bulge, butt, capturing, caveat, complacency, conditional, confluence, consumption, control locomotives, cooperative game, corridor, cumulative, cut throat, dead broke, debt, deceptively, denomination, depleted, derailments, distinguished, drastic, draw pile, empire, empty city markers, engine cards, epic, exclamation, facetious, fad, fad-driven, fairness, financial empire, first player marker, flat broke, fledgeling, gameplay, gang up, geez, get schooled, goods cubes, hex, house rule, immensely, ingenuity, jerk, lame, licensing, locomotive, look no further, lookout, lucrative, lulling, lumber, match, meaty game, membrane, money, money pie, multimodal, narrative arc, new city tiles, not playable, overlord, payout, pedigree, peon, pictorial, Prefix: de (derailment), Prefix: trans, (TransAmerica), profitable, quintessential, random information, realism, representation, restrictor, retaliation, revolves, revolves around, ridge, sarcasm, share (noun), shedding, slaughterhouse, social cachet, social impact, special link tiles, sprawling, stagnation, staying power, subsequent, summation, tabletalk, tally, tangent, terrain, that being said, the magic circle, thematic, to advance something, to be available, to be on the lookout, to be/sit on the fence, to bite the bullet, to bulge, to burn money on ~, to capture, to cheat, to declare, to delve into, to dent, to dig up, to discard something, to dive right in, to embed, to engrave, to envision, to forfeit, to go ahead and, to gripe, to hammer, to happen to (verb), to hoard, to lull, to maneuver, to outbid, to redirect, to regenerate, to rename, to seal, to shed cards, to signify, to spell out something, to submit a bid, to tally, to teem, to urbanize, to yell, to yield, track tiles, tribute, tycoon, unparalleled, variant, variation, vice versa, wild

Appendix 7: Participatory projects suggested to the student

29 projects around 6 identity themes were suggested. The student was also free to suggest her own projects. Other projects were discussed.

Designer

- remix or modify a game
- translate a game from a video game to a board game, or a board game to a card game
- sell our game online
- sell our game at the Game Market
- make a social impact game
- have a release party for our game (on YouTube or at school)
- join a game jam
- make a tshirt to sell for a charity

Teacher

- teach the game to someone else
- use the game in a lesson to teach something
- teach others about games and media
- teach others how to make a game
- join an afterschool game group

Entrepreneur

- translate the rules to Japanese and import the game into Japan
- playtest a game for the same company
- compete in the Shizuoka Business Plan Contest (or another contest)
- create a game-based travel plan for tourists to Japan
- create a game for a specific company (e.g., ANA, Fuji Airways)

Fan

- write a strategy guide / FAQ
- write fanfiction
- review the game online (e.g., Amazon.com)
- write a reflective forum post
- interview the game designer

Activist

- run an event with the game (e.g., a charity game)
- transfer the ideas from the game to a real world volunteer project
- play the game in public
- make a game for the children's hospital

Researcher

- collect and share more data about the language in games
- collect and share data about how games are played in society

Appendix 8: Learn more about multiliteracies and games

- Games2Teach: Developing Digital Game-Mediated Foreign Language Literacies (information, materials, games)
- Teaching With Games. The personal blog of James York. Exploring the use of games and play in language teaching.
- James Paul Gee talks on YouTube
    - "Language, the World, and Video Games: Why and How All Learning is Language Learning"
    - "Talk at the Games for Learning Institute"
    - "Games for Change 2012 Keynote"
- "Learning by Design" information and materials on the New Learning website
- Mark Rasmussen's blog on language, culture and teaching (games and TBLT, games and multiliteracies)
- "Extra Credits" YouTube series (presentations on video games, gaming, game design)
- "Ludology" podcast (discussions and interviews about tabletop games, gaming, game design)

Appendix 9: Additional teaching resources

The following project-related teaching materials are available in the Ludic Language Pedagogy Compendium:

- 4-week multiliteracies and games lesson plan and materials (play a known and a new game, discuss them, analyze them, remix one, make a poster and post work to Twitter) - Google Document
- Additional participation project ideas and examples - Google Document
- Worksheet for connecting students' goals and games - Google Document
- Post-game discussion activity for larger groups - Google Document
- Checklist for playing new games - Google Document
- Revised textual analysis worksheet - Google Document
- Post-game analysis and participation assignment - Google Document
- Post-game reading and research report assignment - Google Document
- Game-based participatory project:
    - proposal - Google Document
    - tasks and timeline worksheet - Google Document
    - planning, recording, doing - Google Document
    - evaluating and reporting - Google Document