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Digital Game-based Language Learning Affordances for Adult Users of English as a Lingua Franca in Multinational Enterprises

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Abstract

Despite the growing demand for English as a lingua franca (ELF) competence of employees of multinational enterprises and the growing perception of L2 proficiency as linguistic capital in the workplace, many employees find themselves unprepared for collaboration and creative communication with other ELF speakers. It is therefore pertinent to bridge this gap by investigating spaces and tools that afford language learning opportunities to adult working professionals in both extramural and formal contexts. Like other forms of media, digital games for commercial and educational purposes are easily accessible and offer various types of direct and indirect language learning affordances. Although digital game-based language learning affordance research has previously highlighted these possibilities, few studies focus on adult second language users outside of formal educational contexts.

This thesis explores language learning affordances perceived by adult users of English as a lingua franca during their experiences playing digital games in L2. This project uses qualitative methodology in the form of semi-structured interviews to identify the direct and indirect language learning affordances perceived by six adults working in multinational enterprises, and to determine which types, or elements of digital game playing they perceived as beneficial to second language learning.

Interactions in multiplayer gaming contexts were perceived as potential environments to develop interlanguage pragmatic skills, power dynamic roleplay, and seen as environments where collaboration, co-construction, and creative thinking in L2 were encouraged. It was determined that features of affinity spaces such as common endeavours, affiliation between participants, and player agency enable language learning affordances, whereas gaming inexperience and mismatches between target language complexity and a learner's Zone of Proximal Development were preconditions which hinder L2 engagement. These factors strongly affect gaming in massive multiplayer online roleplay game platforms which were perceived as less attractive spaces for beginner L2 gamers.

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List of Terms and Acronyms

BELF	Business English as a Lingua Franca
ELF	English as a Lingua Franca
L2	Second Language
MMORPG	Massive Multiplayer Online Roleplay Game
MNE	Multinational Enterprise
NPC	Non-Playable Character
SLA	Second Language Acquisition
VR	Virtual Reality
ZPD	Zone of Proximal Development

1. Introduction

English has become the preferred lingua franca for many multinational enterprises (MNEs) wishing to extend their trade and commerce to international markets (Melitz, 2018). Some reasons for the adoption of ELF are to facilitate and maintain participation in global trade networks (Neeley et al., 2012; Puck, 2017), streamline mergers between companies, expand the pool of possible hiring candidates, and enable collaboration between diverse L1 speakers (Neeley et al., 2012). By implementing a singular “company” language policy (Puck, 2017), multinational enterprises and their associates are afforded opportunities to share knowledge and collaborate on projects which benefit all stakeholders. Links have been established between volume of trade and the ease of communication between trading partners (Su et al., 2022), suggesting that lingua franca use will continue to grow in pursuit of maximising profit and growth. While ELF use affords company development, this development relies on the effectiveness of communication between ELF users (Neeley et al., 2012). Less proficient speakers need access to tools and resources which afford proficiency development (Puck, 2017). Some may take steps to improve their proficiency by undertaking language training, while others engage with L2 informally using resources such as proficient speakers, books, music, film and television, or digital games.

1.1 My Interests in the Topic

My interests in researching how ELF users in professional contexts stem from personal and professional reasons. Having worked primarily with adults learning English for professional purposes, I understand the challenges of adult language learners and for educators. After moving to Germany with almost no communicative skills, I understand the difficulties faced by adult language learners. For some, significant amounts of time had passed since their formal education and many of my clients found themselves expected to speak a language they had long forgotten, or never learned. Whether they *personally* desired to spend their evenings

completing book exercises and roleplaying business meetings was unimportant because most of them had been sent by their employers after facing communication issues in their workplaces.

Although curricula are designed to prepare ELF speakers for communication in business contexts, it is no secret that many language learners struggle to authentically reproduce content from textbooks and may find their lessons boring. It is very difficult to practise creativity based on formulaic scenarios because while language books are great resources for L2 vocabulary, rules, and phrases, difficulties might arise when practice moves beyond fill-in-the-gaps exercises. I noticed striking improvements in fluency when discussions turned to far more interesting topics such as colleagues, bosses, families, and personal interests. All the rules and formulae which seemed impossible to use creatively before flowed more naturally. Though I had noticed this creative shift in my younger students when lessons surrounded topics that *they* were interested in discussing, it was a luxury not often afforded to adult learners. I question why lesson plans for adults aren't also situated in modern, relevant, and enjoyable activities rather than in ongoing roleplays which look strikingly similar in each "new" context. Jonathan Reinhardt offers answers to my question in his stance on cultural attitudes of what constitutes "proper" adult learner behaviour: "Traditionally play is associated with childhood and thus immaturity and frivolity, and opposed to work, which is serious and expected of adults" (Reinhardt 2019 p.47). This alludes that for meaningful learning to take place, adults must relinquish childish things like frivolity and fun, because such things are not welcome in the workplace. As both a teacher and learner, I have found learning is most productive when it is situated in fun.

My experiences have greatly impacted my language learning trajectory. Of note was the choice-based narrative game *Telltale's the Walking Dead* which centers around the protagonist Clementine as she reaches adulthood during a zombie apocalypse. Clementine's

voice holds immense power over other characters who embody the very best and worst in humanity, but it is the *player* who gives Clementine her voice. We make choices based on the experience of “becoming” Clementine, and who we want Clementine to become. We must also live with the fallout of these choices and evaluate future (inter)actions within the game space. Although the audio was in English, I was unable to change the text-based language from German. Choosing whether to side with our longest-living friend with a tendency to antagonize others, or one of our many new companions was more challenging because I needed to process information in two languages. It took considerable effort to translate dialogue options, whilst thinking about the potential consequences of each action and hoping I had made the “right” choice for Clementine. Seeing the words “*Kenny wird sich daran erinnern* (Kenny will remember that)” signified that my choices were beginning to irrevocably shape her destiny, and the phrase remains etched into my brain. Although I am certain that playing the game in this way afforded many direct and indirect language learning benefits, I often wonder whether choosing to play in German audio might have further influenced my language learning journey and intend to explore further on completion of this project.

1.2 Current Issues Facing Working Professionals in Global Companies where English is a Lingua Franca

Two key issues facing ELF learners are developing skills in intercultural communicative competence and creative self-expression in L2. Globalisation is a driving force of ELF adoption in global businesses (Naur & Birlik, 2021). Despite this, it has been suggested that language training within MNEs tends to focus on learning vocabulary and grammar in business contexts without affording opportunities to engage with English as it is spoken across cultures (Puck, 2017). Of interest to Business English as a lingua franca (BELF) research is how this growing number of professionally connected L2 speakers pragmatically co-construct meaning and achieve their professional goals in a language whose form is dynamic and reshaped by the contexts in which it is learned and used (Naur & Birlik, 2021). While communicative competence in past research conceptualised pragmatic competence in part as the individual's

development of grammatical knowledge as well as their awareness of socioculturally appropriate language in various contexts, more recent research understands pragmatic competence as an interactive process, whereby meaning is fluid and constructed jointly by all communicating participants (Nguyen, 2022).

Investigating the emotional and practical effects of mandated ELF use is warranted, given that the trend towards multinational collaboration, outsourcing and international merges is more likely to increase than decrease (Neeley et al., 2012). Communication between ELF users is assisted by their ability to think critically and creatively in L2 contexts (Ferguson, 2021). In her foreword discussing the current developments in research relating to thinking skills in L2 educational settings, Li echoes this by referring to language learning as a “creative exercise because each user needs to use and combine elements of linguistic and non-linguistic knowledge in new ways to achieve communicative purposes” (Li, 2019, p.5). A globalised workforce demands its members be well versed in demonstrating higher-order thinking skills such as meaning-making, interpreting information, considering possibilities, and making judgements to ensure economic growth (Li, 2019). For ELF users in multinational contexts, “to learn a language is not an end in itself anymore,” but a tool used to demonstrate their skills as leaders, team players, and problem-solvers (García-Carbonell et al., 2014, p.9).

Despite evidence suggesting that incorporating thinking skills training affords L2 creative expression (Zhou et al., 2015; Chason et al., 2017; Soodmand et al., 2017; Ferguson, 2021; Bakhshayesh et al., 2023), educator-focused studies have found that educators face challenges such as appropriate training (Marin & Pava, 2017; Defianty & Wilson, 2019) and institutional obstructions such as restrictive curricula and funding (Marin & Pava, 2017). Learning to express critical thinking through an additional language in real time is a process which must be developed through interaction. Evidence suggests that learning such skills can be challenging without mediation, meaning that ELF professionals may struggle to find resources which afford the development of L2 creative thought and expression. Given the unavoidability of ELF use coupled with language instruction that does not address the

changing needs of its users (Puck, 2017), it is likely that a significant number of MNE members feel disempowered. To address the divide between demand for ELF proficiency and the changing needs of its speakers, SLA research should investigate resources and tools which afford adult ELF speakers opportunities to interact with L2 in meaningful, transferrable ways.

1.3 Digital Game-based (Language) Learning in Adult Working Professional Contexts

Interest in digital games as learning tools began in the late 1970s and increased rapidly over the last two decades due to computers and the internet becoming more accessible and to technological advancements in game design (Reinhardt, 2019; Peterson et al., 2021). Advocates of game-based learning have argued that it affords opportunities for language learners to interact with their target language in ways that are both entertaining and authentic (Reinhardt, 2019). Though a large body of digital game-based language learning research exists, most adult-focused research explores the affordances in tertiary education contexts (Govender & Arnedo-Moreno, 2020; Hung & Chang, 2020; Peterson et al., 2021; Peterson & Jabbari, 2023). Some digital game-based language learning studies focus on university students preparing for careers in which they will use L2 for professional purposes (Mueller, 2012; García-Carbonell et al., 2014; Alyaz & Genc, 2016; Marković, 2016; Alyaz et al., 2017), while others reference adult populations within the larger body data but did not publish details about these adults or their L2 gaming behaviours and contexts (Horowitz, 2019; Govender & Arnedo-Moreno, 2020). While some game-based learning studies have investigated skill-based affordances in MNE contexts such as opportunities for innovation and recruitment (Allal-Cherif & Bidan, 2016), leadership (Sousa & Rocha, 2019) and critical thinking development (Mets & Bauters, 2023), Few digital game-based language learning studies focus on adults in ELF contexts. It has been argued that this may stem from difficulties accessing data from organisations due to confidentiality concerns (Kaur & Birlik, 2021). One study was discovered which focused on digital game-based language learning in enterprises and relayed the initial phase of a project hoping to develop a game for assisting small to medium-sized organisations

with training for business English communication (Juzeleniene et al., 2014). Unfortunately, attempts to discover updates regarding the project have been unsuccessful, meaning that it is likely no longer in active development. In sum, while a significant amount of research suggests that digital game-based language learning affords language learning in explicit and implicit ways (Reinhardt, 2019), there is a substantial gap in knowledge concerning adults outside of formal learning contexts.

1.4 Rationale for this Research Project

Though evidence supports that digital games are tools which afford direct and indirect language learning, studies focusing on adult speakers' perceptions offer valuable insight which may contribute to future working professional focused L2 research. As most research projects have focused primarily on the perceptions of users who have not yet joined the workforce (van der Cruysse et al., 2013; Reinders & Wattana, 2015; Hwang et al., 2016; Horowitz, 2019; Rashid, 2019; Lai & Chen, 2021), or the perceptions of adult language teachers and educators (Beavis et al., 2014; Alyaz & Genc, 2016; Alyaz et al., 2017; Blume, 2019), it is worthwhile exploring how adults perceive language learning affordances in digital games when not situated in formal learning contexts.

2. Literature Review

2.1 Links between Knowledge, Power, and Linguistic Capital in MNE Contexts

The ability to communicate effectively in L2 is as necessary a tool for many MNE employees as laptops or phones (Ehrenreich, 2010). The difficulties one might face if unable to send emails, create documents, or contact others outside of their immediate vicinity reflects the relationship between knowledge, power, and linguistic capital in MNE contexts. Like computers and phones, language is a tool used for communicative purposes. These tools empower their users by mediating access to other valuable resources (Blume, 2019). Linguistic capital is often associated with overall professional competencies (Kaur & Birlik, 2021). This is likely because linguistic capital affords access to symbolic resources (Barkhuizen & Strauss, 2020), such as recognition and prestige (Neeley, 2013; Luring et al., 2022); material resources (Barkhuizen & Strauss, 2020) such as promotions ((Neeley, 2013; Luring et al., 2022); and social capital (Barkhuizen & Strauss, 2020) in the form of positive professional relationships and expanding their social networks. Evidence suggests that employees in leadership roles and other highly-skilled occupations were significantly more likely to be proficient L2 speakers than those in other occupations (*Eurostat*, 2016). In contrast, those without sufficient linguistic capital may be excluded from participation (Neeley et al., 2012), leading to power divides between those who can and cannot (Neeley, 2013; Blume, 2019; Luring, et al., 2022). Consequently, less proficient ELF users may experience anxiety or resentment and may avoid situations requiring ELF communication (Neeley et al., 2012), further decreasing the chances of their abilities being recognised. Thus, to increase their access to the benefits afforded by linguistic capital, some MNE employees may seek out language learning resources to improve their ELF proficiency.

2.2 Origins of Affordance Theory and Adaptations in Second Language Acquisition Research

The term *affordances* was coined by ecological psychologist James Gibson to explain the actions, interactions, and manipulations of organisms with their environment (Gibson, 1966,1977). According to Gibson, affordances are possibilities made available by objects and environments (Gibson, 1977). Through interactions with objects, animals evaluate whether they afford nourishment, camouflage, protection from predators and harsh weather, or whether interactions may have negative consequences. By paying close attention to the properties of objects in the environment, humans can combine, reshape, and repurpose them, providing further affordances which may help or hinder (Gibson, 1966,1977). Gibson proposed that the natural and artificial world are not different environments and that the latter is simply a result of human modifications “to change what [man’s environment] affords him” (Gibson, 1977, p.56). His theoretical work on affordances provides a basis for second language learning research, though some of his theoretical foundations have been expanded and recontextualised to reflect the changing nature of tools, environments, and interaction.

Second language acquisition (SLA) research has adapted Gibson’s definition of affordances as possibilities alongside sociocultural perspectives on learning. Around the same time that Gibson published his work on affordances (1977), psychologist Lev Vygotsky explored the relationship between mental functioning and sociocultural factors that contextualise meaning (Vygotsky, 1978 in van Lier, 2004). Like Gibson’s belief that objects afford possible actions, Vygotsky tools and resources afford opportunities to mediate symbolic meaning (van Lier, 2004; Vygotsky, 1978). Other work used in conjunction with SLA affordance research is Vygotsky’s *Zone of Proximal Development* (ZPD), which describes learners’ current level of development and their level for potential development with co-constructed, scaffolded learning (Vygotsky, 1978). Vygotsky’s use of *potential for development* rings true with Gibson’s definition of affordances as *possibilities*, because both terms depict actions which may be taken, or avoided based on foreseeable outcomes. While both theories have been used to

ground SLA affordance research (van Lier, 2004), there are notable differences in Gibson and Vygotsky's respective views on tools, interactions, and how they facilitate action.

While Gibson views affordances as naturally occurring regardless of whether they are noticed (Gibson, 1977), SLA researchers argue that humans must perceive cause for action in mediated environments (Lave & Wenger, 1991; Lantolf, 2000; van Lier, 2004; Nagy & Neff, 2015). The ability to identify and recognise resources' potential for acts of meaning-making is crucial to their facilitation of learning (van Lier, 2004). This means that the existence, or awareness of resources do not determine their benefit to active learning. While resources such as knowledgeable experts (Vygotsky, 1978; van Lier, 2004; Rama et al., 2012; Reinhardt, 2019), peers (van Lier, 2004; Rama et al., 2012; Scholz, 2017; Vosburg, 2017) and manmade tools such as dictionaries, music, or digital games can all be considered resources, they only become affordances through perception. Because learners are not "passive vessels into which the information is poured, but active agents" who are free to use tools and resources that enable their "full language learning potential (van Lier, 2004, p.97), resources only afford learning if their users recognise value in their use. Although affordances are often portrayed as entirely positive in language learning research, it is better to characterise them as possibilities which may be utilised or ignored (Henry, 2015). Evaluations may also be determined by preconditions (Nagy & Neff, 2015) such as an individual's perceived "effective abilities," or whether they view interaction with resources as possible based on their own capacity (Gee, 2014, p.16). Just as the diverse sociocultural layers of an individual influence language learning experiences, any number of factors may contribute to a person's assessment of their ability to effectively use tools for learning facilitation. If conditions are not perceived as favourable, or tools are evaluated as hindering rather than helping (van Lier, 2004), learners may not recognise a resource as an affordance (Duff, 2012). Like many aspects of human interaction, these assessments are dynamic and resources can be re-evaluated if effective conditions change (Henry, 2015).

SLA researchers give stronger credence to the role of social and cultural context in mediating how affordances are perceived. Gibson argues that as complex, movable or *detached* objects, humans learn what others may afford them through a series of cause-and-effect, interactive learning experiences (Gibson, 1977). Linguist Leo van Lier explains how ecological linguistics view human affordance perception as more complex, socially-situated, and dynamic:

An ecological [language acquisition] theory holds that if you take the context away there is no language left to be studied. It's like an onion. You can't peel away the layers and hope to get to the 'real' onion underneath: it's layers all the way down. So it is with language: it's context all the way down. (van Lier, 2004, p.21)

This clarifies that human meaning-making is influenced by factors far more complex than “behaviour beget[ting] behaviour” and what can be gained through performing interactions (Gibson, 1977, p.58). Each cultural, familial, mental, and personal experience are layers of an individual. These layers and others, such as linguistic backgrounds or societal norms, all have the power to shape L2 learning experiences (van Lier, 2004; Beavis et al., 2014). As such, language learning processes are not direct, immediate reactions to a perceived object, but complex, contextual, dynamic, and co-constructed through interactions mediated by environments *and* resources.

As mentioned in chapter one, the world, its inhabitants, and its workforce are more mobile and interconnected than ever before seen in humanity's history, which affords diverse interactions that were impossible just a few decades ago. This globalised interconnectivity requires new perspectives on how socially mediated interaction is understood and how environments are jointly constructed and influenced by intercultural connectivity. While Gibson was steadfast that the *environment* is not new despite its many manmade modifications, today's digital landscape requires a reimagining of this perspective (Nagy & Neff, 2015). These new developments also support explorations of digital environments as resources, their affordances for meaningful L2 learning, and how these environments can be utilised for explicit

and incidental language learning, self-directed learning opportunities, intercultural interactions which increase social and cultural competencies, and chances to develop skills which foster creative L2 thought and expression.

2.3 Key Language Learning Affordances in ELF Speaker Contexts

In the following subsections, I will discuss language learning affordances that are particularly relevant to ELF speakers in professional settings, and how they assist ELF speakers in attaining cultural and linguistic capital in professional contexts. Firstly, I discuss how ELF speaking professionals need opportunities to engage with authentically situated target language that move beyond grammar-translation practices and towards intercultural pragmatic awareness. Secondly, I discuss the how developing L2 higher-order thinking skills and creativity relate to linguistic capital and ELF speaker empowerment. I then discuss the importance of agency in L2 learning experiences and how it affords power in the form of self-directed learning. Finally, I discuss the role of identity for L2 users including the importance of developing L2 *voice* and how it affords linguistic capital, and how L2 identity development affords social and cultural capital through developing intercultural knowledge and pragmatic awareness. The common theme running through each context in which affordances are discussed is how they might facilitate the empowerment of ELF speakers in MNE contexts. Though affordances are possibilities and not inherently beneficial (Henry, 2015), I limit the following subsections to the discussion of affordances which have the potential to improve the experiences of ELF learners and users.

2.3.1 Affordances Related to Meaningful L2 Engagement

Though knowledge of L2 vocabulary and rules is still an integral aspect of second language mastery, ELF speakers need access to resources that aid in developing communicative efficiency, including knowledge of pragmatic communication in intercultural contexts. Recent decades have seen a shift towards language learning as a dynamic process, where meaning is situated in sociocultural context. This means that to become proficient L2 users, learners

need access to resources which develop lexicogrammatical linguistic knowledge and provide opportunities for L2 interaction (van Lier, 2004), as well as resources which afford learners a chance to develop their awareness of sociolinguistic meaning in diverse contexts (Sykes, 2018; Geeslin & Hanson, 2022; Jauregi-Ondarra & Canto, 2023; Taguchi, 2022). Like culture, language is “open to processes of inclusion and exclusion, prescribed and proscribed patterns of use, permeated by value judgments, markers of identity, and signs of success” (van Lier, 2004, p.85). This means that language use will vary greatly between interactions, depending on how intentions are interpreted in interpersonal, social, and cultural contexts (García-Carbonell et al., 2014; Jauregi-Ondarra & Canto, 2023; Sykes, 2018; Nguyen, 2022). While this pertains to personal, familial, social, and cultural influences (Lantolf, 2000; van Lier, 2004; Li 2019; Geeslin & Hanson, 2022), professionally situated internal and external communication also influences how lingua franca are used (Rogerson-Revell, 2007; Ehrenreich, 2010; Puck, 2017; Kaur & Birlik, 2021).

Researchers in the field of Business English lingua franca (BELF) studies are particularly interested in understanding the processes of interlanguage pragmatic communication due to the high-stakes contexts in which ELF is used (Kaur & Birlik, 2021). To achieve professional tasks and goals, many MNE workers communicate with diverse groups of speakers, each bringing a communicative style that is influenced by their respective sociocultural norms and expectations (García-Carbonell et al., 2014; Kaur & Birlik, 2021). As breakdowns in communication can have negative consequences to both organisations and individuals (Neeley, 2013), ELF workers do more than memorise and reproduce rules and vocabulary for competent ELF communication. They are also expected to develop their awareness of how intentions may be understood and expressed in diverse sociocultural contexts (Puck, 2017; Sykes, 2018; Taguchi, 2021; 2022; Geeslin & Hanson, 2022), negotiate with them to find “common ground” and co-construct “hybrid norms [of] interaction” (Taguchi, 2021, p.616). Learning intercultural pragmatic competence differs from lexicogrammatical instruction, its development requires authentic exposure to “multiple perspectives, identities, and

experiences” and chances to develop “metapragmatic awareness [and] diverse negotiation practices” (Nguyen, 2022, p.141). Despite the significance of sociocultural awareness in ELF communication, some argue that further classroom-based activities such as roleplay often lack authenticity (Taguchi, 2022) and that further efforts should be made to resources which afford opportunities to develop their intercultural competencies (Neeley et al., 2012; Neeley, 2013; García-Carbonell et al., 2014; Puck, 2017; Sykes, 2018; Kaur & Birlik, 2021; Taguchi, 2022).

2.3.2 Affordances Related to Higher-order Thinking and Creativity in L2

Resources which mediate the development of L2 higher-order thinking skills may also afford linguistic capital which can be used to demonstrate professional competencies. Thinking skills “can be considered life skills” that open pathways to success in personal and professional contexts (Ghanizadeh et al., 2020, p.2) and are essential skills to develop for those using L2 in professional contexts (García-Carbonell et al., 2014). Sociocultural theorists believe that language and thought are closely linked and develop interdependently through interactions with external stimuli, rather than innate human traits (Vygotsky, 1978). In contrast to lower-order thinking skills such as memorisation, comprehension and application of knowledge, higher-order-thinking skills require complex processes of critical analysis, evaluation, and creativity (Bloom, 1956 in Ghanizadeh et al., 2020). Learning to use L2 creatively is equally as important as thinking critically, because it demonstrates their capacity to use L2 in resourceful, innovative, and imaginative ways (Ferguson, 2021). Because of the perceived link between L2 proficiency and professional competencies (Neeley, 2013; Kaur & Birlik, 2021; Lauring et al., 2022), opportunities to develop higher-order thinking skills in tandem with the target language may prepare them for professional tasks requiring critical analysis, evaluation, problem-solving, and risk taking situated in ELF.

2.3.3 Affordances Related to Learner Agency

Resources which enable learner agency, and the development of cultural and linguistic identities are key affordances connected to the empowerment of L2 speakers and users.

Agency is the ability to “make choices, take control, self-regulate, and thereby pursue their goals as individuals” resulting in “personal or social transformation” (Duff, 2012, p.417). Learners who have agency have the power to determine their own goals and take internal and external actions which propel their learning trajectory (Gee, 2003). Having a sense of control over oneself, situation, and environment is essential to successful language learning, because it provides “the social or cultural capital” needed to make choices which foster self-directed learning (Duff, 2012, p.417). Because L2 capital is associated with power and professional competency (Kaur & Birlik, 2021) non-proficient ELF speakers may face disempowerment in terms of advancement opportunities and how their learning progresses. Learners undertaking formal language education often receive teaching based on explicit learning and teaching methodologies. In contrast to implicit learning which occurs incidentally, explicit learning involves a purposeful intent to discover rules, congruity, and meaning (van Patten & Smith, 2022). Explicit teaching methodologies, such as the Grammar-Translation method which focuses on the instruction and memorisation of lexicogrammatical structures, have been criticised for not preparing learners to use language in meaningful ways (Reinhardt, 2019; van Lier, 2004; van Patten & Smith, 2022). Having little choice in directing their learning activities, outcomes, and evaluations can be disempowering and may lead learners to disengage from active learning (Duff, 2012). Moreover, formal language training is not always a guarantee and learning must be entirely self-directed if they wish to attain the affordances associated with linguistic capital.

2.3.4 Affordances Related to L2 Identity

The construction of L2 identities plays a significant role in how second language learners and users situate themselves within their society. Although earlier characterisations of identities surrounded “monolithic categories” such as ethnicity, language, gender, and nationality, sociocultural perspectives now view identities as “variable, and socially and temporally constructed” (Duff, 2012, p.422). Identity is “both a *project* and *projection* of the self” that is internally and socially constructed attempts to situate oneself in their environment (van Lier’s

emphasis, 2004, p.125). Rather than something you *are* or possess, identities are in flux, being shaped and reshaped through interaction (Barkhuizen & Strauss, 2020). In MNE contexts, opportunities to construct L2 identities offer both personal and social affordances.

Resources which facilitate the development of the authentic L2 *voice* afford agency to express oneself accurately and creatively, demonstrate their professional competencies, and to access and disseminate knowledge with others. Developing *voice*, whereby thoughts and identity are accurately reflected through speech acts, is particularly challenging for L2 speakers. In unfamiliar or challenging contexts, L2 users may experience barriers “between [their] thoughts and [their] self” in unfamiliar contexts leading to them becoming “tongue-tied” (van Lier, 2004, p.128) and constraining an accurate demonstration of their professional competencies (Kaur & Birlik, 2021). While silence or avoidance are common strategies for non-proficient speakers in MNE contexts (Neeley et al., 2013; Takino, 2020), it ultimately constrains the primary function of ELF as a tool for collaboration. As mentioned in 1.1, attaining linguistic capital (*voice*) mediates access to symbolic and material resources. These resources increase social and cultural capital by situating their value within the dominant language’s society and opening potential future pathways that may otherwise be restricted (Barkhuizen & Strauss, 2020). In sum, *voice* affords power in ELF contexts. This means that access to language learning resources which increase their linguistic capital significantly aids L2 speakers in constructing their ELF identities by providing them with agency to direct how they place themselves within MNE contexts.

Resources which mediate diverse L2 interactions may afford social and cultural capital through the development of interpersonal skills, cultural competencies, and ELF identity construction. While an awareness of cultural communicative practises and pragmatic strategies can be used to inform meaning negotiation strategies (Kaur & Birlik, 2020; Taguchi, 2021), this knowledge may also afford the development of interpersonal skills such as collaboration, cooperation, and rapport building that can be used to co-construct positive working relationships (Puck, 2017). Personal connection is a key component of effective communication in MNE contexts

and rapport between communicators may be associated with trust (Puck, 2017; Takino, 2020) and professional competence (García-Carbonell et al., 2014; Kaur & Birlik, 2020). Just as identities are a product of past and present actions and experiences (van Lier, 2004; Gee, 2014), relationships are jointly constructed, and knowledge of sociocultural norms and expectations are developed through interaction (Taguchi, 2022).

Some aspects of pragmatic awareness which may increase social and cultural capital include knowledge of power and social distance dynamics (van Lier, 2004; Taguchi, 2022), appropriate use of humour (Rogerson-Revell, 2007; Nguyen, 2022), and politeness (Kaur & Birlik, 2021; Taguchi, 2022). These types of sociocultural knowledge assist ELF users to construct L2 identities that project themselves as empathic, trustworthy, and capable partners for collaboration (Puck, 2017). ELF users with less communicative experience outside of high stakes, professionally situated contexts may experience difficulties attaining social capital, particularly when speakers have conflicting goals (Takino, 2020) or unequal amounts of social and linguistic power (Ehrenreich, 2021; Neeley, 2013; Takino, 2020). This can lead to feelings of disempowerment (Barkhuizen & Strauss, 2020; Takino, 2020) and inaccurate stereotyping of others (Puck, 2017), and their exclusion from participation in L2 collaboration (Neeley et al., 2012; Neeley, 2013; Takino, 2020).

2.4 Digital Game-based (Language) Learning Affordances: Theoretical Perspectives

Digital games are resources which mediate learning and can also be considered as environments in which dynamic learning occurs. While digital games are tools manufactured, manipulated, and utilized by humans (Gibson, 1977), users' interactions take place in metaphysical spaces beyond the limits of the natural environment (Gibson, 1977). This makes digital games valuable resources that afford diverse possibilities for language learning engagement in formal education settings (Chen & Johnson, 2004; Thorne, 2008; Peterson, 2012; Rama et al., 2012; Reinders & Wattana, 2012, 2014; Reinhardt, 2012, 2019; Wu, 2012;

Chen & Yang, 2013; Vosburg, 2017; Sykes, 2018) and in extramural environments (Reinhardt & Kirby, 2022; Scholz, 2017; 2022; Sundqvist, 2015, 2019; Vasquez-Calvo, 2018). Linguist James Gee's methodological works promote how well-designed digital games contain learning principles which foster self-directed, flexible learning that formal education systems discourage (Gee, 2003, 2004, 2014; Reinhardt, 2019) and provide foundations for digital game-based language learning research. Though not grounded in L2 learning, Gee's works on the affordances of game-based learning provide a basis for investigations in language learning contexts including learner engagement affordances (Chen & Johnson, 2004; Chen & Yang, 2013; Jauregi-Ondarra & Canto, 2023; Reinhardt, 2019; Scholz, 2022; Sykes, 2017;), self-directed learning affordances (Reinhardt, 2019; Scholz 2017, 2022), interactive affordances (Reinhardt, 2019; Rama et al., 2012; Scholz, 2017; Thorne, 2008; Vosburg, 2017) intercultural communicative competence affordances (Jauregi-Ondarra & Canto, 2023; Sykes, 2018), and linguistic capital affordances (Blume, 2019).

One issue with identifying empirical research on digital game-based language learning affordances are the diverse classifications in terminology. Though some researchers use the key word *affordances* (Benini & Thomas, 2021; Blume, 2019; Gee, 2004; Hanghøj et al., 2021; Henry, 2015; Peterson et al., 2021; Rama et al., 2012; Reinhardt 2019; Reinhardt & Kirby, 2022; Vosburg, 2017) others report on the benefits (Deganzadeh et al., 2021; Sykes, 2017), potential (Beavis et al., 2014), effects (Reinders & Wattana, 2014), impacts (Chen & Yang, 2013), resources (Scholz, 2017) and opportunities (Goodwin-Jones, 2014; Peterson, 2012). Although affordances are possibilities which can hinder as well as help (Gibson, 1977; Henry, 2015; van Lier, 2004) and preconditions which hinder learning have been described as constraints (Henry, 2015). Despite the diverse terminology, findings present digital games as tools or environments and the possibilities they may hold for mediated language learning and L2 interaction. For clarity, the findings will be reported under the umbrella term of affordances. The following sections aim to connect Gee's concepts with the relevant SLA and digital game-based language learning affordance research. I discuss resources and elements of digital

games identified as facilitating L2 engagement and how these affordances may benefit ELF users working in professional contexts.

2.4.1 Digital Games and Meaningful L2 Interaction

Gee's works offer insights into the power of discourse in language and situated learning (Gee, 2014) which have been applied to SLA research. Gee argues that discourse is both the study of how language is used to infer and interpret meaning and how meaning is situated in context, and shared cultural knowledge (Gee, 2014). Games afford diverse opportunities to interact with context-situated language make intentional and incidental learning possible (Reinhardt, 2019). These interactions can take place between speakers *through the game*, in discussions *about the game*, and *with the game* such as interacting with audio/text-based dialogue and with story-embedded, non-playable characters (Knight et al., 2019). Some caution on importance of selecting *good* video games for language learning (Dixon et al., 2022; Gee, 2003) arguing that it is better to explore what elements of games afford in terms of L2 interaction (Dixon, 2022; Marković, 2016; Vandercryusse et al., 2013).

Like other forms of media, narrative elements mediate language and allow players to identify and relate to shared human experiences in complex settings, even when situated in fantasy (Gee, 2003; Reinhardt, 2019). These types of interactions also afford opportunities for active experimentation during and after gameplay (Knight et al., 2019; Reinhardt, 2019). Some elements of digital games may also afford interaction with non-linguistic context clues such as intonation, signs, gestures, music, and environmental clues that may assist learners to deduce meaning (Gee, 2014). This means that games with little, or less complex dialogue cannot be discounted as language learning resources. While these games may afford less proficient speakers opportunities to interact with language in more manageable amounts, digital games with complex narratives and dialogue can be used as springboards for meaningful discussions (Hanghøj, et al., 2019; Reinhardt, 2019). While researchers advocate for more digital game-based language learning to be incorporated into formal learning contexts (Alyaz et al., 2017;

Blume, 2019; Reinhardt, 2019), they are also suitable resources for extramural L2 interact (Scholz, 2022; Sundqvist, 2015, 2019). Due to the increased number and availability of commercial games, researchers also promote digital games as tools for extramural language learning (Reinhardt, 2019; Scholz, 2017, 2022). Because L2 can be interacted with directly through in-game actions requiring comprehension, and investment in narrative elements may afford incidental and intentional learning opportunities (Reinhardt, 2019).

2.4.2 Digital Games, Learner Agency, and Self-directed, Critical Learning

Digital games have design elements which afford users agency to self-direct their learning based on their personal communicative needs (Knight et al., 2019). Norms and expectations within formal education instil the belief in learners that there is only one correct way to learn, progress, and achieve goals (Gee, 2003; Knight et al., 2019; Reinhardt, 2019; van Lier, 2004). In these contexts, competence is often judged by language learners' ability memorise grammatical equations, whilst discouraging the use "imperfect" or "degenerate" language used in authentic contexts (van Lier, 2004, p.109). While these attitudes infer that using non-standard methods to solve problems equates to shows inability to grasp concepts and instructions, digital games often discourage players from taking the most-direct path when completing tasks (Gee, 2003). By rewarding exploration and experimentation, users are encouraged to use rules as a springboard for creativity, rather than as a prescribed method (Gee, 2003). Digital games also provide learners with multiple chances to achieve gaming goals without long-lasting negative consequences or significant time constraints. Unlike formally situated learning and evaluation, "losing is not losing and the point is not winning easily or judging yourself a failure" (Gee, 2003, p.164). Just as language learners experiment when negotiating meaning (van Lier, 2004), gamers increase their knowledge and competencies through exploration and interactions in the environment. Reinhardt (2019) draws parallels between flexible pathways towards goal attainment in games and in task-based language teaching pedagogy, with the key difference that failure in gameplay has significantly lower stakes. While this has implications for formal learning (Reinhardt, 2019),

the power to choose actions and outcomes when combined with a reward system can also foster self-directed L2 learning in extramural settings (Knight et al., 2020; Reinhardt, 2019; Scholz, 2017, 2022).

These environments are valuable for extramural learning opportunities because they allow players to move beyond *active learning*, where the player “[uses] situated meanings and the design grammar of the game to understand and produce meanings and actions” towards *critical learning*, where “rather than ritualizing the solutions to problems, [the player leaves I] open to undoing former mastery and finding new ways to solve new problems in new situations” (Gee, 2003, pp.41-44). Where formal education has been argued as discouraging of critical reflection and creative expression in favour of memorisation, competitiveness, and criteria-based learning objectives (Gee, 2004; Li, 2019; Reinhardt, 2019; Thorne, 2008; van Lier, 2004), elements of digital games such as quests and challenges may afford possibilities to practise higher-order thinking such as brainstorming, inductive reasoning, and evaluation (Gee, 2004; García-Carbonell et al., 2014; Reinhardt, 2019) and socially situated skills like delegation, teamwork, and co-construction (García-Carbonell et al., 2014; Reinhardt, 2019; Thorne, 2008).

2.4.3 Digital Games, L2 Identities, and Cultural Awareness

As discussed in 2.3.4, the development of an L2 *voice* which accurately depicts thoughts, identities and self is both necessary and particularly challenging. Reinhardt argues that narrative elements in digital games are valuable resources for language learning because they situate language in meaningful contexts:

[Stories] provide us with schema we can use to relate to new information. However, we have to do something with the stories we experience. We cannot learn an L2 only through abstraction and by memorizing de-contextualized rules, [we learn] by investing our identity in new narratives through the meaningful exercise of agency. (Reinhardt, 2019, pp.83-84)

Gee (2003) argues that learners who invest in the identities of their playable characters have opportunities to gain critical cultural awareness. While van Lier (2004) highlighted that personal identities are simultaneously projects and projections of interactive experiences, players may experience similar dynamic constructions in their identities through their interactions with playable characters. Because players are agents who actively progress game narratives, they may become invested in their characters' victories and defeats as if they were reflections of their own (Gee, 2003). When this happens, their real-world identities and *virtual* (character) identities fuse into a *projective identity*, where real-world beliefs and values amalgamate with those of their character and the parameters of the game space (Gee, 2003, 2014). While this has implications for situating meaning and explicit learning (Reinhardt, 2019), it also affords opportunities to reflect on their experiences as lived through their character. This may afford heightened social awareness of diverse social and cultural experiences which transcends to real-world contexts (Cornilie et al., 2012) and contribute to the development of meaningful relationships.

2.4.4 Multiplayer Gaming and Affinity Space Affordances

Digital games with multiplayer functions are argued to be valuable resources for socially driven language learning. With the sociocultural turn towards language learning as primarily constructed through dynamic interactions, it is unsurprising that multiplayer and massive multiplayer online roleplay games (MMORPGs) are used in the majority of commercial game-based language learning literature (Cornilie et al., 2012; Hung & Chang, 2020; Peterson et al., 2020; Peterson & Jabbari, 2023). These platforms connect large numbers of speakers, increasing opportunities for meaningful target language exposure, incidental learning, and communicative practice (Reinhardt, 2017; Reinhardt & Kirby, 2022; Sundqvist, 2019). Besides direct target language affordances, multiplayer interactive gaming is often associated with affinity spaces. Affinity spaces are created when individuals engage in mutual, goal-oriented activities in physical and virtual spaces (Gee, 2004, 2005). Because affinity spaces involve dynamic interactions, transformative creativity, and informal learning (Gee, 2004), affinity

spaces are thought to be environments which afford learner agency, identity co-construction, opportunities to develop L2 critical and creative thinking (Reinhardt, 2019; Reinhardt & Kirby, 2022; Scholz, 2017, 2022). These direct and indirect affordances make affinity space gaming valuable tools to mediate formal learning activities (Peterson, 2012; Rama et al., 2012; Reinhardt, 2012, 2019; Vosburg, 2017) and in extramurally situated learning (Gee 2005; Scholz 2017, 2022; Sundqvist, 2015, 2019; Thorne, 2008).

Gee defines some key features of affinity spaces which foster learning. Firstly, affinity spaces are inhabited by individuals brought together by common interests or endeavours rather than by typical sociocultural determiners such as nationality, race, social class, or gender (Gee, 2004; Scholz, 2017). These conditions allow users to interact with people with diverse linguistic social, and cultural backgrounds which may allow for introspection and contribute to culturally-aware L2 identity development (Przymus et al., 2022; Reinhardt, 2012, 2019; Thorne, 2008). Secondly, members have agency in choosing how they present themselves within the affinity space, and how they participate within the space, meaning that they can set their own learning goals and pathways to attainment (Gee, 2004, 2005; Plass et al., 2015; Reinhardt, 2019; Scholz, 2022). Thirdly, affinity spaces are shared by members with diverse levels of expertise and distribution of knowledge and resources is highly encouraged (Gee, 2004; Rama et al., 2012). While affinity spaces are not devoid of supervision or hierarchy, members can achieve status through participating in diverse ways. Moreover, leaders are seen as stewards of knowledge and resources rather than gatekeepers (Gee, 2004). Aligning with sociocultural perspectives on meaning negotiation between experts and novices (van Lier, 2004; Vygotsky, 1978) or peers (van Lier, 2004), knowledge is co-constructed within affinity spaces.

Finally, creative exploration and co-construction with others is made possible through collaborative discussions and the generation of novel content (Gee, 2004). While co-creative participation is possible *through* interactions with others in multiplayer gaming contexts, it can also take place *about* digital game content (Knight et al., 2019). Affinity space participants are

able connect with other speakers who share their common interests and engage in co-constructed L2 discussions when new portals of access are generated (Gee, 2004) such as streaming platforms, message boards, and social media apps (Przymus et al., 2022; Scholz, 2017, 2022). Vasquez-Calvo (2018) explored the online literacy practices of L1 Spanish gamers as they negotiated and co-constructed informal translations of English games on fanbase gaming forums. Though brought together through their shared L1 as well as a common interest in various games, Vazquez-Calvo demonstrate that spaces outside of game spaces can produce significant collaborative meaning negotiations where knowledge is shared, debated, and co-constructed. Their findings demonstrate that language learning opportunities are possible even when learners aren't interacting *with* or *through* games.

2.4.5 Preconditions Affecting the Perception of Digital Game-based Language Learning Affordances

As outlined in 2.1, affordances are conditional upon how (and whether) they are perceived, and whether acting upon them is evaluated as beneficial. Although research focuses in large on what digital games afford language learners, studies show that certain preconditions may constrain language learning. Gamer proficiency is often a precondition which effects whether digital gaming is perceived as affording language learning. Despite evidence suggesting that game mechanics may afford learners opportunities for supplemental meaning-making, studies report that language learners with no prior experience or interest in gaming may perceive less affordances than experienced gamers (Chen & Johnson, 2004; Chen & Yang, 2013; Rama et al., 2012; Reinhardt, 2017, 2019; Scholz, 2017). Other preconditions to language learning affordances also revolve around in-game time pressure. While some researchers highlight positive relationships between the amount of time invested in playing digital games and L2 gains (Ortiz de Gortari & Griffiths, 2015; Reinhardt, 2012; Reinhardt & Kirby, 2022; Sundqvist 2015, 2019), multiplayer, and MMORPGs games which demand real-time action and communication may be more cognitively taxing than games which can be paused, or replayed

(Dixon et al., 2022; Rama et al., 2012; Reinhardt, 2012, 2017; Reinhardt & Kirby, 2022; Sundqvist, 2019; Sykes, 2017).

Sociocultural attitudes and beliefs towards gaming may also have a constraining effect on the perceived benefits of digital games as language learning tools. Despite researchers' advocacy of digital gaming's implications in formally situated learning (Gee 2003; 2004; Reinhardt 2017; 2019), beliefs held by institutions, communities, families, and individuals can influence the effectiveness digital game-based language learning in formal schooling (Gee, 2003; Reinhardt, 2019). As well as concerns about impact of violent themes on player behaviour (Reinhardt, 2019) and exposing learners to TL which does not conform with expectations of grammatical authenticity (van Lier, 2004; Reinhardt, 2019), many educators oppose an amalgamation of learning and play, because it fails to prepare students for future, serious work life, that does not include playful behaviour (Gee, 2003; Reinhardt, 2019).

2.5 Notable Digital Game-based Language Learning Affordance Studies in Multiplayer, Single Player, and Serious Game Environments

The following three subsections will report on notable digital game-based language learning studies in the contexts of multiplayer, single player, and educational or *Serious* games. Though a discussion of the different types and genres of games are far too numerous and nuanced to discuss at length in this project (though certain important elements of games will be discussed in chapters 4 & 5), it is important to acknowledge how language learning affordances diverge in the contexts of multiplayer and single-player commercial games, as well as in Serious games which are designed with purposeful learning elements.

Multiplayer experiences afford interactions with the game and between others playing the same game simultaneously. For these interactions to occur, games must be designed to include a shared virtual space or network, that can be accessed by many players. Games which offer these spaces are often referred to as massive multiplayer online [games] (MMOs), or massive multiplayer online roleplay games (MMORPGs). Empirical research shows that

games with MMO mechanics make up a large body of digital game-based language learning research (Hung & Chang, 2020; Peterson et al., 2020), likely due to their potential as spaces for L2 language and cultural exposure (Reinhardt, 2017; Sundqvist, 2019). In contrast, single-player games are designed to be played and experienced individually, and without interactive multiplayer mechanics. While they do not offer the same opportunities for real-time communication between speakers, some argue that immersive narratives promote incidental L2 learning by giving context to meaningful language (Reinhardt, 2019; Reinhardt & Kirby, 2022) and allowing users more time to process and revisit language input than MMORPG environments (Dixon et al., 2022; Reinders & Wattana, 2012; Reinhardt, 2017, 2019; Reinhardt & Kirby, 2022; Sundqvist, 2015, 2019). Furthermore, some argue that language learners who enjoy playing in single player contexts games may use these experiences as a springboard to engagement with later multiplayer and MMORPG gaming (Sundqvist, 2015, 2019).

Serious games are digital games which have been designed with purposeful learning elements such as tasks which simulate authentic scenarios or language learning for specific purposes. While they have been referred to in the literature by many typologies, such as educational games, non-commercial games, simulation/gaming, virtual worlds, experiential learning (Reinhardt, 2019), this project will refer to games used for educational purposes as Serious games with a capital “S” to distinguish educational games from digital games with serious themes or content. As Serious games are marketed and sold as “a tool or resource for [purposeful] learning” rather than for entertainment (Reinhardt, 2019, p.5), the bulk of DGBLL Serious game research focuses on purchasable Serious games which introduce industry contextual target language (Mueller, 2012; Juzeleniene et al., 2014; Ibrahim 2019), or games which have been designed as part research projects focusing on English in foreign language classroom contexts (García-Carbonell et al., 2014; Berns et al., 2016; Alyaz, et al., 2017; González-Lloret, et al., 2019). To distinguish how language learning affordances are perceived using different tools, the following three subsections are divided into studies focusing on digital

game-based language learning in multiplayer and single player contexts, as well as studies which have explored the language learning affordances of Serious games.

2.5.1 Multiplayer Gaming Environments

Studies using multiplayer digital games demonstrate that Gee's features of affinity spaces (Gee, 2004) afford opportunities for target language engagement, L2 interactions, and learner identity exploration. A case study by Rama et al. (2012) exploring the affordances of L2 gaming within the MMORPG *World of Warcraft (WoW)* affinity space found that participant *Emilio* encountered language learning affordances whilst playing the game. Although Emilio was a beginner Spanish speaker, his previous experience playing the game in his L1 provided a foundation of common interest within the L2 portal and laid a basis for participation despite initial language barriers. By demonstrating his expertise as a player, Emilio gained some status within the space which led to interactions with native speakers who sought his participation in their quests and used him as a resource of knowledge. Through these interactions, Emilio gained exposure to meaningful written and spoken TL that transferred beyond the *WoW* game space. Moreover, the opportunity to share his game-related knowledge led to a boost in his confidence when communicating in Spanish and created symbiotic relationships between himself as a seeker of L2 knowledge, and native-speaking players who valued his resources as an experienced *WoW* player.

A similar study by Scholz (2017) exploring the learning trajectory of L2 German speakers within the *WoW* affinity space demonstrated similar findings. Like Emilio, *Kyrii** was a novice L2 speaker. While Kyrii had not previously played *WoW*, knowledge gained playing other games allowed her to master the mechanics and allowed for more interactive opportunities with other players. While Scholz demonstrates that MMORPG affinity spaces afford supplemental learning opportunities to those whose learning is formally situated, some findings suggest that these affordances extend to L2 speakers outside of formal contexts as well. Being the only participant in the study not receiving formal language instruction,

*Föresty's** findings demonstrate that his interactions in the *WoW* affinity space also allowed him to make significant L2 gains. According to the results, *Föresty* chose to spend significantly more time engaged in gameplay than the other participants and participated in quests that afforded interaction with large amounts of written and spoken TL. When discussing these experiences outside of the game space, he demonstrated significant language gains and exhibited an enthusiasm and willingness to recount his experiences, suggesting that he found the *WoW* affinity space to be a useful resource for L2 exposure and that participating in gameplay had a motivating effect on his language learning trajectory.

Social engagement and affinity space co-constructions also seem to impact on whether learners perceive affordances and how this affects their engagement. Social engagement refers to actions undertaken in supportive, collaborative, and mutually beneficial interactions (Reinders & Nakamura, 2022). Mediated learning is most productive when interlocutors are actively engaged and willing to participate in the co-construction of meaning aided by shared common goals and interests (Gee, 2004, 2005; Scholz, 2017). A study by Vosburg (2017) demonstrates the how the absence of common endeavour can have demotivating effects in multiplayer game spaces. Though participants of two groups of German L2 speakers playing *WoW* found having a language guide afforded opportunities for modelling and meaning negotiation, they reported that a lack of comradery between their peers discouraged them from interaction. Members of Group 1 mentioned that the difference in motivational levels had a negative effect on their language learning experiences. Though some were highly motivated to interact with other speakers, others were not linguistically prepared for gaming in L2.

Those participants reported doing very minimal out-of-classroom language activities and were more motivated to pass the class rather than to develop communicative competence. "Kevin" initially made frequent attempts to communicate, but as he noticed that his peers were relying on him to speak, he became disengaged and made fewer attempts at in-game communication. As mentioned, meaning making is a mutual process requiring dynamic participation. Feeling forced to take on the lion's share of verbal action by his less motivated team members, Kevin

chose not to interact with others despite his willingness to develop L2 proficiency. It was noted that the participants shared few personal or social interests, meaning that discussions unrelated to quests were limited. Despite having a knowledgeable other to mediate linguistic aspects of the game, the absence of solidarity and shared goals among group members led to participants perceiving the context in which they played *WoW* as affording non-action. As Vosburg's findings demonstrate (2017), even highly motivated individuals may disengage from active learning when unable to connect with others over shared collaborative goals.

These studies also highlight that gaming proficiency is a precondition which can afford or constrain interactive affordances. While Rama et al. (2012) reported that Emilio a low-level L2 speaker who was an experienced *WoW* player, was afforded a high level of interaction with others and gained access to linguistic and cultural TL, *Silvania** was inexperienced player and perceived fewer affordances. Despite being a highly proficient L2 speaker, she was constrained by not knowing how to play *WoW* and was less inclined to participate in social activities such as raids without the presence of known participators. Despite being a less proficient Spanish speaker than *Silvania*, Emilio found that an awareness of how to play *WoW* was far more valuable in the game space than language fluency. If a task is beyond the scope of an individual's gaming ZPD, working out how to play will likely be prioritised over communicative activities. This division of attention means that learners may perceive fewer affordances for language learning without first gaining some gameplay proficiency.

This is supported by findings reported by Scholz (2017) during observations of German L2 speakers playing *WoW*. Scholz's fourth subject *Trolinda* was the only participant who had no prior experience with gaming. Like *Silvania*, *Trolinda* was also a highly proficient L2 speaker. However, Scholz reports that she was less able to focus on new vocabulary and interactive activities, as she spent a great deal of time teaching herself how to play. Scholz's (2017) observations of *Trolinda* can be similarly linked to the trajectory experienced by Sundqvist's (2015) *Eldin* in his MMORPG experiences. Once *Trolinda* gained enough understanding of how to play the game, she was able to pay more attention to *WoW*'s language learning

affordances which motivated her to continue playing (Scholz, 2017). As well as requiring a certain level of linguistic and gameplay scaffolding, awareness of the potential affordances for action within digital games may be beneficial. If learners are unfamiliar with gaming and how it can assist language learning, drawing attention to any potential learning outcomes may also provide novice gamers with extrinsic motivation, encouraging them to pursue the activity further (Godwin-Jones, 2014; Benini & Thomas, 2021).

2.5.2 Single Player Gaming Environments

A two-part study by Chen & Yang (2013) explored the effect of adventure games on L2 vocabulary acquisition in Taiwanese university students. Pre- and post-tests were conducted to measure vocabulary knowledge before and after playing the adventure/puzzle game *Bone*. The findings reported gains in vocabulary, as well as improvements in reading and listening skills. The study also reported the participants' perceptions of the games as language learning resources. Some participants found the experience to be engaging, noting the game's interesting storyline, diverse ways to interact with the game, and feeling a sense of achievement when completing game tasks. Some however, reported difficulties with the complexity and speed of the game's dialogue, while others perceived some game tasks as too challenging, suggesting that gaming and linguistic ZPD play a role in the perceived affordances of digital game-based language learning. The authors noted that the participants were not able to complete the entire game due to time constraints, suggesting that limited time to master game play may affect language learning engagement. Similar findings regarding gaming ZPD were reported in a study by Chen & Johnson (2004), who used a modified version of the roleplay/adventure game *Neverwinter Nights* to examine levels of flow in L2 Spanish gaming environments. The study found that unfamiliarity with game mechanics severely disrupted episodes of flow in their participants' L2 gameplay. The participants struggled significantly with the game mechanics and researchers needed to intervene during the first two observations. Because the third participant had previously played *Neverwinter Nights* and was better able to focus on the language aspects of gameplay. The findings from these studies

suggest although single player gaming contexts allow users more flexibility to gradually increase gaming experience that helps facilitate interactive language learning (Gee, 2004; Reinhardt, 2019; Reinhardt & Kirby, 2022), it is possible that the time constraints of experimental research may negate these affordances. It is seemingly disruptive to learner engagement when there is little time to learn how games operate, or sessions are ended before users are ready, making it challenging to observe authentic meaning making in shorter time periods.

As discussed in 2.5.1, participant agency in their game interactions often results in more L2 interactions (Scholz, 2017), whether in MMORPG or solo, single-player gaming contexts. A study by Shahriarpour & Kafi (2014) found that participants who interacted with the choice-based narrative game *L.A. Noire* believed that they had learned new L2 vocabulary over the many hours they spent playing the game. This was observed by the researchers during observations and interviews. The participants also reported that elements of the game including an engaging murder mystery storyline and the need to use deductive reasoning and evaluation to find the killer motivated them to actively engage with the game's language. A case study by Sundqvist (2015) also supports the argument that L2 gamer agency may affect their perception of digital game-based language learning affordances. Sundqvist reported that *Eldin**, a Bosnian-born Swedish resident, made substantial gains in English as a result of leisure-based gaming. Driven by a desire to immerse himself in the narrative contexts of *Halo* which necessitated understanding spoken and written dialogue, Eldin undertook self-directed, explicit L2 learning in order to better inform his in-game actions. Once he felt comfortable with his own comprehension, Eldin transferred from single-player gaming to multiplayer and MMORPG gaming, suggesting that a type of scaffolded (language) learning took place (Vygotsky, 1978). As his L2 *and* gaming ZPD increased, he felt ready to interact with other L2 speakers who shared their linguistic knowledge with him. Eldin perceived his experiences in both gaming contexts as extremely significant in his language learning trajectory and reported that his L2 proficiency had already surpassed that of his Swedish schoolmates by the time he

formally began “learning” English as a foreign language. As suggested by Reinhardt (2019), Sundqvist’s study shows that while language learning is often an incidental result of undertaking leisurely gameplay, the motivation to situate meaning within storytelling elements may also result in explicit language learning. This increase in L2/gaming ZPD may then afford a perceived increase in their ability to effectively undertake L2 gaming with other speakers (see Gee, 2014), allowing for further potential interactive affordances and meaningful L2 engagement.

2.5.3 “*Serious Games*” with Purposeful Learning Elements

Alongside studies using commercial games to investigate digital game-based language learning affordances, researchers have examined the affordances of non-commercial games with purposeful learning elements. Though these games have been identified by many names including “educational games,” “simulation/gaming,” and “modelling,” I will use the term “*Serious game*” (with a capital “S”) to refer to digital games whose main purpose is not for entertainment, but for gamifying educational or training content (Reinhardt, 2019). Though some scholars differentiate simulation games from *Serious games* because they do not always contain the same achievement-focused, competitive elements of *Serious games* (Reinhardt, 2019; Benini & Thomas, 2021;), this project will discuss all non-commercial games used in conjunction with language learning-based studies under the umbrella term of *Serious games*, whilst drawing attention to the different game format and their use in the context of their respective studies. While commercial games have been likened to tools used to mediate digital game-based language learning, *Serious games* function as tutors by using targeted language learning goals, scaffolded tasks, and a consideration for learner ZPD (Scholz, 2022).

Serious games with simulated elements are often used in studies focused on teaching English for specific purposes (García-Carbonell et al., 2014; Juzelenine et al., 2014; Marković, 2016; Mueller, 2012; Reinhardt, 2019) because they mediate access to new competencies and enable learners to experiment in comfortable, low-stakes environments (Marković, 2016).

While they are frequently used in studies focusing on L2 for specific purposes, some researchers claim that Serious games often contend with the *chocolate-covered broccoli problem* (Reinhardt, 2019; Scholz, 2022). This issue arises when users can identify the educational content through its video game “chocolate coating,” thus perceiving them as an inauthentic attempt to disguise old and unappealing learning activities as innovative and exciting (Vandercruysee et al., 2013).

Several studies using Serious games as language learning tools focus their exploration on vocabulary acquisition affordances (Alyaz & Genc, 2016; Alyaz et al., 2017; Juzelenine et al., 2014; Mueller, 2012). Like the previously mentioned studies in single player gaming contexts. These studies reported similar gains in vocabulary (Mueller, 2012; and other affordances such as motivation (Alyaz et al., 2017; Vandercruysee et al., 2013) and engagement (Ibrahim, 2019). While expanding vocabulary has relevance for ELF speakers in MNE contexts, the following discussion aims to highlight other aspects of language learning Serious games may afford. These include opportunities to develop intercultural and pragmatic awareness and possibilities to practise meaning negotiation in simulated or “virtual reality” settings.

Vandercruysee et al. (2013) explored the effects of competition when learning formal and informal communication in ELF business contexts. Using an adventure style Serious game, participants in the non-control group completed tasks surrounding introductions between colleagues and networking. Participants were matched against a computer generated “competitor” to measure the effects of competitive game elements on language learning. The competitive elements were shown to affect performance in gaming tasks and participants in the control group scored lower on game tasks than those competing against the computer. Differences in motivation and engagement were also noted between participants who associated the activities with a *learning* environment and those who were told it was a *gaming* environment. Those who perceived the activities as gaming reported higher motivation, self-efficacy, and put more value on completed tasks. Vandercruysee et al. also noted limitations. Pre- and post-tests determined that competition did not affect their overall learning outcomes

and it was suggested that learning activities may have been too short to promote deeper engagement with complex aspects of language. They also suggest that the participants may have had preconceptions about game-based language learning and experienced drops in motivation when their expectations were not met. They also suggest that the participants perceived the “chocolate-covered broccoli.” The experimental conditions of a school-based computer lab and restricted agency in game exploration and completion may have been seen as inauthentic by some participants.

A study by Ibrahim (2019) explored meaning-making attempts made by learners of Arabic when using a Serious game that was designed to teach young L1 speakers skills related to entrepreneurship and business ethics. To capture the dynamic, emergent nature of learning, the participants were instructed to use *think aloud protocols* (Lewis, 1982 in Ibrahim, 2019) during their game interactions. Along with observing the participants, screencasts of their gameplay were recorded to track their in-game actions and they were instructed to record their experiences in journals. Their data demonstrated how learners used the game’s overall theme and narrativized tasks as well as semiotic clues such as visual, sounds, and actions to situate meaning when faced with unfamiliar language. The study also reports that because game tasks were scaffolded and previous tasks were easily related to new challenges, the participants were able to use higher-order thinking skills such as analysis, evaluation, and strategy when planning their interactions and often experimented with novel actions. Moreover, the game did not include time constraint elements, meaning that they were able to work at their own pace towards solving problems. The study’s findings support arguments that single player games are viable environments to mediate negotiate meaning and opportunities for dialogic interaction in the absence of human communication.

Studies exploring meaning negotiation in virtual reality environments support Ibrahim’s findings regarding the authenticity of interactions between learners and computer-generated speaking partners. Virtual reality games refer to simulation games which immerse users in three-dimensional virtual environments (Wu et al., 2022). Virtual reality environments with

purposeful learning designs provide opportunities to roleplay interactions in low stakes, diverse contextual and social settings, encourage active participation as opposed to passive observation, and provide chances for personal reflection on the outcomes and impacts of their communicative behaviour in a simulated environment (Taguchi 2021). Researchers have used virtual reality games to investigate language learning with a focus on interlanguage pragmatic communication (Taguchi, 2021), and how intercultural knowledge facilitates L2 learning (Jauregi-Ondarra & Canto, 2023; Wu et al., 2022).

A study by Taguchi investigated the effects on pragmatic speech acts in the digital game environment on both L1 and L2 English-speakers and compared the differences in strategies and pragmatic performance between computer-based tasks and virtual reality tasks (Taguchi 2022). In the study, sixty two native and non-native speaking university students completed roleplay tasks using both computer-based and virtual reality software. The tasks were designed to elicit speech acts relating to requests, refusals and opinions in settings that included interactions with non-player characters (NPCs) of varying social power, relational distance, and levels of imposition to the speaker. Their findings indicated that both L1 and L2 speakers were less fluent in virtual reality settings and were thought to have experienced significantly more cognitive load than in the computer-based scenarios. Taguchi suggests that this may be an effect of the “much more real” conditions of virtual reality simulations (Taguchi 2022 p.327). When completing the computer-based task, interactions were perceived as more spatially separated, whereas the virtual reality environment gave the illusion that a person was speaking directly to them. As a result, the participants spoke more slowly, used longer sentences, and made more attempts to modify their speech in tasks.

Taguchi suggests that the distance between user and screen may act as an interpersonal barrier and affect their pragmatic performance, whereas the authenticity of virtual reality environments causes learners to initiate speech acts more authentically in various social settings. Case study reports from Jauregi-Ondarra & Canto (2023) support Taguchi’s assumptions. Using a simulated, virtual world games to create a three-dimensional gaming

experience, Jauregi-Ondarra & Canto report that their participants felt more relaxed communicating in L2 Spanish and that discussions often led to co-constructions of L2 cultural knowledge. While the digital games were reportedly more immersive than commercial MMORPGs, the participants experienced similar spatial distances as those in Taguchi's (2022) computer-based observations. These studies demonstrate ways in which Serious game simulations can be utilised for meaningful, authentic L2 interactions beyond lexicogrammatical tasks.

2.6 Conclusion and Proposed Research Question

In sum, digital games are tools which provide diverse learning opportunities which ELF speakers in MNE contexts may find useful. Whether or not they undertake formal language learning, digital games are interactive resources which may afford the development of transferrable linguistic, social, and cultural capital that empower ELF speakers by mediating access to other valuable social and material resources. Studies presented highlight that various elements of digital games offer different possibilities for language interaction, as do the contexts in which digital games are situated. While empirical evidence demonstrates direct and indirect language learning affordances are perceived by adults in tertiary settings, limited studies exploring the perceptions of adult working professionals warrant further exploration. Therefore, this research project seeks to explore the following question:

What are the perceived affordances and preconditions of Digital game-based language learning according to ELF speakers in multinational enterprises (MNEs)?

3. Methodology

3.1 Research Design

As this research explores adult ELF speakers whose language learning and gaming histories were hypothesised to have begun prior to their interviews, a qualitative approach was thought most suitable to explore which experiences shaped their beliefs and perceptions on the topic (Lew et al., 2018). Narrative interviews were deemed to be the most suitable and practical method to help reveal their perceptions of digital game-based language learning affordances and how their gaming activities impacted these (Prior, 2018). Dörnyei (2007) suggests semi-structured interviews as a suitable methodology for researchers who have sufficient background knowledge on certain phenomena by which to guide their line of questions, whilst giving interviewees opportunities to provide a deeper and more personal insight into the research topic. Exploratory research design methods are suitable for discovering authentic L2 gaming behaviours that experimental conditions may influence (Scholz, 2022). In addition to questions relating to affordance research, it was deemed relevant to explore the impact of personal, social, and cultural influences on adult perceptions of language learning affordances in digital games. To collect this data, questions were included to determine L1 backgrounds, language learning experiences, and beliefs on cultural attitudes towards gaming. Other questions explored personal gaming preferences and perceptions on the role of genres and gaming environments (MMORPGs or single player) in language learning possibilities.

3.2 Pilot Interviews

To ensure that the research design would allow participants to relay their experiences in as much detail as possible in relation to the research questions (Prior, 2018), two pilot interviews were conducted to trial the questions for appropriateness and accuracy which allowed this first-time researcher to practise qualitative interviews before the project commenced. The pilot

interviewees were recruited through social media and shared networks. Their interviews lasted about 60 minutes, whereafter they were both asked for their feedback on questions. Both suggested that the final question, which asked for them to give their advice to language learners expressing interest in digital game-based language learning, be reworded for clarity. Each of their interviews provided insights which supported the appropriateness of the interview questions.

3.3 Ethics Approval

"Consideration of all possible ethical aspects of investigations involving human informants is vital in order to secure the privacy and well-being of participants as well as the reliability and validity of the research in question" (Sylvén, 2022, p.299). To ensure that my research was undertaken with the well-being of participants at forefront, I referred to ethical guidelines of Massey University's human ethical research committee (MUHEC) and ethics in applied linguistics research literature. The following ethical considerations were outlined in my application to MUHEC and ethical approval was obtained. Ethical SLA research considers the linguistic and social power dynamics between L2 participants and L1 researchers (Rolland et al., 2020). Though the participants did not identify themselves as belonging to any vulnerable sociocultural or linguistic groups (Prior, 2018), they were informed of this consideration and their rights to divulge what felt comfortable through an FAQ fact sheet (see Appendix C) and reinstated in participant consent forms (see Appendix D). Because I am a proficient German speaker, German speaking participants were also informed that interviews could be conducted in L1 or English (see Appendices C, D).

At the forefront of ethical considerations was the protection of participants from physical, mental, and spiritual harm (Sylvén, 2022). Because the interviews were conducted during the pandemic, interviews were conducted over Zoom to minimise physical harm, and ran for a maximum of 60 minutes with consideration of the mental taxation of long interviews. Maintaining the participants' privacy is always paramount in ethical research (Prior, 2018;

Rolland et al., 2020; Sylven, 2022), but was a significant consideration in this research project. Empirical research suggests that sociocultural attitudes to appropriate adult learning (Kaur & Birlik, 2021; Reinhardt, 2019) and adult perceptions of digital games may be unfavourable (Gee, 2003; Reinhardt, 2019). Given the importance of image and perceptions of professionalism in MNE contexts (Neeley et al., 2012), data did not contain identifiable information was paramount. To ensure their anonymity, the participants were given pseudonyms of characters in digital games and personal information such as references to their friends, colleagues, and companies were redacted or given pseudonyms (See Appendix C, Appendix D). Offers were extended to participants to review their transcripts so that they could request omissions or revisions if they felt that the data insufficiently protected their privacy (see Appendix C) and were informed of their right to redact permission to publish (see Appendix D). Based on these measures, this study was determined by MUHEC as low-risk (see Appendix B).

3.4 Participant Recruitment and Data Collection

3.4.1 Participant Recruitment

This research project was driven towards finding out how adult working professionals perceived their digital gaming experiences in relation to second language use. As the study is exploratory it was decided that criteria should only be restricted to adult ELF professional speakers who had gaming experience. Discussions with my supervisors that a pool of between three and six participants would likely suffice to gain enough data for a thematic analysis of a Master thesis research project. I first approached members of expatriate groups and international research community groups on social media. Though responses were limited, one person was recruited for a pilot interview. Personal networks were also approached and inquiries were made about acquaintances who fit the criteria of ELF-speaking professionals with L2 digital game play experience. Snowball sampling was used to increase the number of possible candidates (de Waele, 2018), and recruited participants were kindly requested to

refer friends or associates who may be interested in participating in the research project. This resulted in the recruitment of six individuals holding leadership roles working for MNEs based in Hong Kong and Singapore.

The six participants were all male ranging in age from 31 years old to 43 years old. All used ELF in professional settings, but often speak their native, second, and third languages for professional communication. All six participants began EFL classes at early ages which continued throughout their education and predated their engagement with gaming. Two of them attended British international schools from a young age, one had immigrated to the USA in his teens, and four of them had spent significant time abroad studying in English-speaking countries. Five of the participants work for multinational organisations, and one runs his own business in goods and services. They work in diverse specialisations ranging from marketing, banking, finance, sales, and I.T. Five were based in Hong Kong and one in Singapore.

3.4.2 Data Collection

Data was collected through interviews conducted over Skype and lasting between 40 and 60 minutes. The decision to conduct interviews over Skype ensured that I was able to include participants living significant distances from my location, and limited the risks to physical harm such as COVID-19 which was still prevalent at the time interviews were conducted. It also allowed for flexibility in arranging meetings with the participants. As the focus of this project was to gain insight into the past and present experiences of adult working professionals with L2 gaming experiences and what language learning opportunities they felt digital games afforded. Interviews were designed semi-structurally and focused on the affordances they perceived through their experiences playing digital games in ELF and other languages they spoke. The interviews were recorded and transcribed. Transcriptions were checked against the audio recordings, errors were edited, and final transcriptions were presented to participants individually to confirm their accuracy.

3.5 Data Analysis: Coding

The data was firstly coded using qualitative content analysis methodology. This coding methodology is useful for categorising qualitative data that are grounded in context (Fuad, 2020). Using this methodology, analysis began by looking for key words and phrases which related to broader types of affordances commonly found in empirical research such as “motivation,” “native speakers,” “vocabulary,” “practice,” “English,” “fun,” “learn,” and “friends.” While this approach helped me to familiarise myself with the data, after multiple cycles of categorising and coding, it became clear that what the participants perceived as relevant were not easily categorised by affordances, as initially planned in the research design. Further cycles of data analysis were undertaken using thematic analysis methodology. Inductive approaches to thematic analysis were deemed appropriate for organising findings, as these approaches derive themes directly from data sets, rather than deducing hypotheses based on previously conducted research (Braun & Clarke, 2006). These themes are not “dependent on quantifiable measures,” but take into consideration whether they relevant to the “overall research question” (Braun & Clarke, 2006, p.10). Because this research project is exploratory, thematic analysis was deemed to be a suitable method to identify affordances associated with digital gaming elements that the participants perceived as relevant to language learning.

Data was thematically coded based on emergent significance. These codes were then analysed to determine whether language learning affordances could be identified. Though the interview questions were designed and partly informed by SLA and digital game-based (language) learning literature, the participants’ data showed that their perceptions surrounding language learning affordances were organised around game elements such as “storytelling” and “strategy” and gaming environments such as “MMORPGs,” “and multiplayer gaming with friends or colleagues.” After applying thematic analysis coding to the data, language learning affordances and preconditions affecting engagement emerged from themes surrounded game elements and gaming environments.

4. Findings

The findings are presented as follows. The first subsection includes participant portraits that describe relevant background information. This includes brief summaries about their age, their native, second, and third language backgrounds and language learning experiences, how they are situated in MNE contexts, and their gaming experiences in L1, L2, and L3. These portraits were included to contextualise their perceptions regarding language learning affordances. The final subsections present a more detailed account of their L1 and ELF gaming experiences and their beliefs surrounding digital game-based language learning affordances. Section 4.2 provides a brief overview of how the findings are divided into the different contexts in which gaming and language learning affordances are discussed. These contexts include multiplayer gaming environments, single player experiences, and their beliefs on the language learning possibilities of Serious games for ELF speakers in MNEs. The last section presents preconditions relating to social and cultural attitudes towards gaming in general and professional contexts and how these may affect the acceptance of digital game-based language learning as a tool for facilitating ELF learning.

4.1 Participant Portraits

The following subsections present detailed portraits of the six participants. This was done to explore whether external, non-gaming experiences related to their perceptions of digital game-based language learning. All the participants had learned English from a very young age and most believed their formal language learning experiences were formulaic and lacked sufficient opportunities to engage in authentic communication. Some of them noted distinctions between the linguistic abilities of themselves and their professional associates who had not engaged with L2 outside of formal contexts. Those who did not communicate effectively, chose to rely on their L1-speaking colleagues to translate, or chose to remain silent in meetings were believed to be disadvantaged, whereas those who were able to speak with confidence and

use colloquial or informal language were perceived as more capable and approachable. The participants saw language used in games as more authentic and believed it to have led to more natural L2 communication outside of gaming. Some saw significance in games where humour or playful language was present and saw the ability to use witty language as critical to developing rapport in communication with internal and external business associates.

4.1.1 Alex

Alex is 33 years old and was born in Germany. He began learning English in school at a young age, went on several language exchange trips in his early teens, and spent significant time studying in Canada. Alex expressed frustration when recalling how he had been taught English in his German school, believing that the language being modelled in his classroom would have been highly ineffective in situations outside of the lesson's context, but also consumed a lot of English media and games in his early teens, which he believes had a significant impact on his proficiency. Alex works for a German MNE and is based in Hong Kong. He works directly with team members from Germany, Hong Kong, Pakistan, the Philippines, and Italy. He also has regular contact with associates in Malaysia, Vietnam, and his HQ in Germany. Alex reports gaming frequently from a young age. He first played on the family PC, then later upgraded to a PlayStation console. Over the years, Alex has played various types of games including turn-based strategy games such as the *Age of Empires* series, sports simulation games such as the *FIFA* series, single player/Co-Op shooters such as the *Call of Duty* series and participated regularly in MMORPG gameplay on an English-speaking Canadian server for *World of Warcraft*. Though he was able to convince them infrequently to play with him, his parents disapproved of the time he spent gaming, seeing it as unproductive and preferring that he play outside, or play traditional tabletop games.

4.1.2 Arthur

Arthur is 36 years old and was born in Germany. He does provide in depth schooling background but does note that traditional classroom learning focuses primarily on memorising

formulaic structures and vocabulary rather than speaking practice for real-life contexts. Arthur is based in Hong Kong and works for a German MNE. His internal colleagues are primarily L1 Cantonese-speakers who use ELF and he has regular multilingual meetings with his associates in Germany. Arthur began playing video games in L1 as a child and participated in local area network (LAN) parties with friends, where users connect their single devices to a shared network for the purpose of playing games together. Though his siblings occasionally joined him in gameplay, his parents saw gaming as an “unhealthy” waste of time. Arthur was the oldest to switch to L2 gaming at 31 years old, by which time he already used ELF in private and professional contexts. Some of his favourite games include the *Far Cry* series, the *Star Wars* series, and *Red Dead Redemption 2*. All three games are action/adventure, open world games.

Though he had not been driven to gaming for L2 improvement, Arthur recounted meeting a Balinese yoga teacher who had started gaming as an adult to improve his English. It was unclear from Arthur’s account whether the teacher’s desire to improve his English, or to progress more successfully through games acted as the motivational catalyst. As Arthur describes his experience, the teacher didn’t perceive learning English as a skill which would benefit him in the future while at school. But once he “got into gaming,” he realised that becoming a more proficient English user went hand in hand with progressing in his games. He believed improving his proficiency was driven by the teacher’s desire to engage more actively during gameplay. Though the teacher hadn’t perceived English as useful in his past, he had gone on to have a successful ELF career instructing yoga in Bali to foreign visitors and felt that L2 gaming had helped him communicate and connect better with clients.

4.1.3 Ezio

Ezio is 36 years old and grew up in a multilingual household speaking German and Spanish. Born in Germany, he moved to Guatemala when he was four years old and returned to Germany when he was 12. He attended a German international school in Guatemala and took

his lessons in Spanish, German, and English. He completed his university studies in Hong Kong. As he does not mention speaking Cantonese, it is assumed that he completed these studies in English. Ezio runs his own business in Hong Kong, where his staff are primarily Hong Kongese. Though ELF is used in his office, some staff members have multilingual backgrounds including German and Mandarin. Ezio first started playing digital games when he was about 9 years old. He shared a console with his sister and would take turns with other friends in Guatemala. Ezio has dabbled in many different genres of games and tends to enjoy ones which allow him flexible gameplay such as the *Minecraft*, *Oblivion*, and *GTA* series. His most significant gaming experiences happened playing *Heroes of Might and Magic*, a turn-based strategy game, with his best friend Connor*. The two have played the game for over twenty years. Though game text is in English, they code-switch between English, German, and “Denglish,” which is a German colloquial term for the combination of both languages

4.1.4 Joel

Joel is 31 years old and grew up speaking Cantonese in Hong Kong. He attended British international schools at six years old, where lessons were taught in English, Cantonese, and Mandarin. He also attended intensive after school tutoring from a very young age and completed his university degrees in America. He works for a German MNE but notes that the primary languages of communication are English, Cantonese, and Mandarin. His colleagues are all highly educated, and English fluency is essential to gaining a position at his company. Joel started playing digital games in English because Cantonese games were unavailable. He doesn't recall any language barriers, though he notes that the language used in these games was not particularly complex. Some of his favourite games are the *Grand Theft Auto* series, the *Assassin's Creed* series, and *The Last of Us 1 & 2*. These games are action/adventure, single-player games, with *AC* offering some co-op missions (he does not mention participating in these). While *GTA* and *AC* are open-world games where players are free to roam through large areas and complete story-adjacent side missions, *TLOU 1 & 2* are linear games which follow a predetermined narrative. He has also played a lot of combat simulation war games

such as *Ace Combat*. Though these games are single-player, Joel often talks about the games he has played with friends who also enjoyed them.

4.1.5 Nathan

Nathan is 43 years old and was born in Germany. He learned English in school and claims that his classroom experiences in Germany were generally satisfactory but didn't prepare him well for communicating with others. He mentions that studying in America allowed him to practise face-to-face with native speakers and feels this helped him improve more rapidly. As an adult, he learned Spanish while studying abroad, taught himself Russian for communication with his business associates, and learned Portuguese after moving to Brazil for work. He learned extramurally using what he called "classic" tools like flash cards and language books to mediate his language learning. He currently works for a German MNE in Singapore in a leadership role. Though he does not talk in depth about his professional life, he does mention that he has used ELF throughout most of his professional life. Nathan began playing digital games in his late teens and often participated in L1 multiplayer activities with friends. Nathan switched to L2 gaming in his mid-twenties. He now prefers playing in L2 and believes that the synchronisation between voices and visuals were distracting in German language games. He enjoys shooter games such as the *Call of Duty* series and the *Battlefield* series and has little interest in other game genres. Though he has participated in multiplayer interactions, he prefers single-player games. He sees his gaming activities as a leisurely way to unwind, and gave little thought to digital game-based language learning affordances prior to the interview. Though he does not discuss his gaming activities with colleagues and prefers to keep his professional and personal lives strictly separated, he happily participates in discussions with friends who work in similar professions.

4.1.6 Rodrik

Rodrik is 31 years old and was born in Spain. He went to a British international school and began learning English at around five or six years old. He struggled to pay attention in his

language lessons and had difficulties using English outside of the classroom. He moved to America when he was 15 years old and completed his high school and university studies in English. He has some knowledge of French and German but does not mention the context in which he learned these languages. He currently works for a German MNE in Hong Kong and worked at this company's headquarters in Germany. Rodrik began playing L1 puzzle-solving computer games when he was very young. In middle school, Rodrik gained an English copy of the *Age of Empires* series which he had previously played in Spanish. He initially experienced some comprehension challenges but quickly accustomed to playing in L2. He prefers single-player games, and sometimes feels insecure about his gaming proficiency in multiplayer contexts. Rodrik has enjoyed many games including the *FIFA*, *Call of Duty* and *Halo* series, and turn-based strategy games such as the *Age of Empires* series. One of his favourite games is the choice-based narrative game *Telltale's Game of Thrones*.

4.2 Organisation of Digital Game-based Language Learning Findings in Diverse Contexts

Through thematic data analysis, affordances were identified in relation to themes of game elements and gaming in different contexts and revealed preconditions which constrain language learning. The findings are organised into subsections which discuss the thematic elements and gaming environments determined by the participants as significant. These subsections are followed up with detailed analysis of affordances and preconditions to language learning identified in their thematic contexts. These sections and subsections are organised as follows. Section 4.3 discusses multiplayer gaming experiences which are subdivided into two contexts. These are their experiences in MMORPG spaces (4.3.1) and their shared L2 gaming experiences in MNE contexts (4.3.3). 4.4 presents affordances and preconditions to language learning identified in multiplayer gaming contexts. 4.5 introduces single player gaming contexts as a thematic discussion divided into two key elements. These elements are storytelling (4.6) and strategic elements (4.8). The affordances and preconditions to language learning associated with these elements are presented under their

separate subsections (4.7 and 4.9 respectively). 4.10 presents findings related to the participants' perceptions of Serious games as language learning tools. Finally, 4.11 presents preconditions to game mediated language learning outside of gaming contexts, primarily how social and cultural attitudes towards gaming and game-based learning affect the perception of digital game-based language learning.

4.3 Language Learning in Multiplayer Gaming Contexts

4.3.1 Solo Gaming in MMORPG Spaces

The findings of this project suggest that gaming in MMORPG spaces affords opportunities to interact with other speakers using meaningful TL. Ezio and Alex provided data which suggested a perception of affordances for interaction with native speakers. While studying abroad, Alex joined a North American server for *World of Warcraft* where he primarily interacted with L1 English speakers. He reports these experiences positively, noting that players he spoke with were supportive and often impressed by his English abilities. He had participated in and organised quests with others where verbal coordination and cooperation were essential to group acceptance. He believed that these activities could be highly beneficial to L2 speakers who experienced shyness or had had limited speaking practice opportunities: "I guess when you're in the early stages of a language, this is usually where you're most uncomfortable. And [participating in quests] requires you to speak out, otherwise, your teammates will hate you, because you eff up all the time." Alex believes that his interaction in the *World of Warcraft* chat contributed to an awareness of the importance of using concise language when participating in communicative activities such as advertising, buying, selling, and bartering of items and equipment. He noticed that players who sent longer messages would often be ignored, or their messages would become lost as others contributed to the chat. Thus, he realised that to receive feedback, he needed to use shorter, more direct sentences when negotiating with other players and began using techniques such as abbreviations to make his messages more attractive.

Though he preferred world exploring to participating in multiplayer campaigns, Ezio believed that games such as *World of Warcraft* afforded spaces which encourage L2 speakers and learners to use their target language in authentic contexts by removing the possibility of reverting to L1 communication and connecting them with knowledgeable speakers who shared their personal interests. He explains that MMORPGs require players to communicate efficiently with their teammates, which may encourage L2 speakers to put aside concerns about grammatical correctness in favour of fluency:

[I]f people don't connect with you [they may take a] product from this other person. But if you can add a little word to [the topic of discussion] because you've had the same joke with your international community in an MMO[RPGs] [others will think] he's participating, he's thinking about what we're saying.

Ezio implies that humour can be acquired and practised when players engage in banter with each other. He felt that “quick-wittedness” was an attractive quality in business relationships, as how you present yourself when interacting with others may determine whether they choose to conduct business with you.

While Ezio and Alex found their MMORPG gaming to be positive and recommended their usefulness, the analysis concluded that most of the participants were not interested in multiplayer or MMORPG gaming and preferred to play alone or with friends. While almost all interacted with MMORPGs, their perspectives suggest there are preconditions which affect engagement with language learning. Some highlighted that some MMORPG games lacked the rich dialogue and narrative immersion of single-player games, meaning their full attention was not required for participation. Arthur stated that multiplayer quests in games which offered both single- and multiplayer quests afforded fewer opportunities to situate L2 in diverse contexts. Despite listing *Red Dead Redemption 2* as one of his favourite games, Arthur thought that multiplayer storylines were simple and boring in comparison to main storyline quests. Alex and Nathan reported similar perceptions when describing their single-player and

multiplayer experiences in the *Call of Duty* series. Though Alex highly recommended this series for its immersive storytelling, he found that communication with other gamers in multiplayer storylines offered very little communicative opportunities.

The data also suggests that several features of affinity spaces were not experienced in MMORPG contexts. While multiplayer participation requires group cooperative action to complete in-game tasks, these missions did not seem to encourage episodes of meaning co-construction or creative expression between themselves and others. Nathan reported that gaming with strangers in MMORPG spaces required a high level of focus on mission goals, so communication between players was restricted to in-game item descriptions and actions required for completing the mission goals. Alex elaborated by demonstrating that communication in MMORPG gaming was often limited to simple imperatives such as “shoot,” “jump,” and “run,” or directing others’ movements between locations.

Gamer proficiency was perceived to be a key precondition for participation in MMORPG spaces, as too many mistakes resulted in negative feedback from other participants. Joel actively discouraged “newbies” from playing in these contexts, and believed that would only be exposed to abusive language that couldn’t be used in authentic contexts. Rodrik reported feeling intimidated by other gamers who were better than him and would often turn down invitations to play with others if they were significantly more experienced players. Affiliation was also a key component missing from their MMORPG experiences. Alex noted that he had not formed relationships with other players in these spaces, would seldom encounter the same players, and was not interested in pursuing further interactions with others. Their data suggests that gaming in this context was primarily undertaken as a goal-oriented leisure activity that necessitated cooperation with others and opportunities for L2 interaction with unknown others was not perceived as a language learning affordance.

4.3.2 Shared L2 Gaming Experiences in MNE Contexts

Although engaging in L2 gameplay with unknown persons was not perceived as motivating in the data, multiplayer gaming with known persons afforded the participants and their colleagues direct and indirect language learning affordances. Ezio Arthur and Rodrik identified several features of affinity spaces such as collaboration, pragmatic interaction, and a shifting of power dynamics. Ezio reported that learning to coordinate actions and projects with his accountant *Bayek** while playing *Minecraft* had positively impacted the dynamics of their professional relationship. Bayek was already an experienced player before giving a subscription to Ezio as a birthday present. As the Hong Kong government enforced strict curfews throughout the first two years of the pandemic, Ezio was grateful for something to do and an expert to show him how to play the game. They spent significant time playing together on a shared server coming up with ideas for virtual building projects. Given the low-stakes and enjoyable environment of project management in the game, Ezio was able to see a more relaxed and confident side to Bayek than he had been privy to in the office. In the confines of *Minecraft*, the hierarchical restrictions of boss and employee were replaced by “two guys playing and trying to come up with what to build.” Ezio viewed a change in their communication style at work after gaming with Bayek. He felt that their conversations around accounting topics were discussed more efficiently than before gaming together: “Now when we have an accounting problem it’s basically just like building a house together in *Minecraft*, we’re now solving this problem *together* in accounting.”

Rodrik and Arthur had both engaged in English-language virtual reality (VR) sandbox activities as part of team building exercises. Like Ezio, they perceived positive changes in their interpersonal relationships with colleagues who had participated and noticed differences in their willingness to communicate. Arthur’s team played an action/adventure style game which involved fighting monsters as a team and was similar to other co-op shooter games. He believed that workplace environments can stifle creativity when activities are solely focused on meeting financial targets and found that fighting virtual monsters together contributed to an

eradication of communication barriers caused by a lack of L2 confidence and hesitancy of challenging hierarchical boundaries. Rodrik inferred that having a tutorial-style game before the commencement of the primary virtual reality activities was helpful in preparing the group for collaborating in later tasks. Before the “real” game commenced, Rodrik’s team played a tutorial level, which required the team to prepare burgers in a kitchen. The relaxed nature of the game meant that even if they were to fail their mission, there would likely be no threat to their social standing within the group and prepared them for the next, more advanced game. This suggests that the warm-up round acted as a scaffolded introduction to language and communicative models which would reappear in later games played by the group.

4.4 Language Learning Affordances in Multiplayer Gaming Contexts

4.4.1 Possibilities for L2 Interaction in MMORPG Spaces

The data suggests that L2 gaming with others allows speakers to practise authentic L2 in a low-stakes environment. Most of the participants agreed that exercising one’s voice in professional contexts such as meetings shows competence, while believing that not contributing to conversations in the office lingua franca was often perceived as extremely detrimental to one’s professional image. The data suggests that digital gaming spaces value function over form in communication, making them ideal spaces to experiment with different communication styles. Alex demonstrated this in his thoughts around learning to communicate concisely in *World of Warcraft*. To be a valued member of his questing communities, Alex needed to demonstrate in real time that he understood what actions he needed to perform and instruct others on which actions to take. The affordances for authentic communication also impacted his written competences and gave him valuable exposure to authentic language which was present in his EFL lessons. To meet his goal of buying and selling game artefacts, Alex needed to consider how to formulate sentences to maximise user attention. Alex also mentioned that he gained a lot of exposure to abbreviations and other informal types of written English. He mentions that informal written language was almost completely exempt from his

formal lessons and that he has found them useful in real life contexts. Moreover, the introduction of fun activities means that stakes are low, which may reduce anxiety around L2 communication.

While he preferred to explore, rather than to quest in MMORPG games, Ezio believed that games such as *World of Warcraft* afforded spaces which encourage second language speakers to use the target language removing the possibility of reverting to L1 communication and connecting them with knowledgeable speakers who shared their personal interests. He explained that MMORPGs require players to communicate efficiently with their teammates, which may encourage L2 speakers to put aside concerns about grammatical correctness in favour of speaking more fluidly. Ezio also believed that banter between players may help ELF users to develop humour and ingratiate them with potential business partners. He felt that “quick-wittedness” was an attractive quality in professional relationships, as how you present yourself when interacting with others may determine whether they choose to conduct business with you:

[I]f people don't connect with you [they may take a] product from this other person. But if you can add a little word to [the topic of discussion] because you've had the same joke with your international community in an MMO[RPGs] [others will think] he's participating, he's thinking about what we're saying.

Ezio's comments suggest that humour contributes to membership in both authentic and MMORPG environments, as demonstrating humour is key to self-expression. According to Ezio, how others perceive you determines your worth as a business partner. Thus, the ability to be witty is linked to efficacy in business dealings. Ezio stated earlier that how one “sells” themselves in a business transaction is often more important than the product or service being sold. His beliefs highlight significant links between image, self-expression, and pragmatic competencies in commercial ELF communication. It also suggests that practising humourful

language in real-time gaming is perceived as a transferrable language skill that can be acquired through interaction with diverse L2 speakers.

4.4.2 Potential Affinity Space Affordances

Rodrik noticed improvements between himself and his ELF colleagues after their joint participation in a virtual reality gaming. Their game used mechanics like those used in escape rooms and involved a high level of coordinative, communicative, and problem-solving activities, such as notifying team members when important items were found, giving verbal instructions to help them regroup and discussing how to meet interim goals and finish the game together. These Virtual reality games were designed for all players to participate actively and equally towards a common goal by sharing information about objects, clues, and locations. Just as guild members playing *World of Warcraft* may need to recruit members with different abilities and skill sets, instruct teammates on how to locate them, and how to solve the puzzle of defeating enemies, the virtual reality games provided an environment that required a common endeavour, collaboration, and co-construction. Rodrik and Arthur noted a shift in power dynamics that allowed for a more relaxed and open form of communication with their colleagues. Neither Arthur nor Rodrik identified themselves as group leaders when gaming, but as team members who held equal power and responsibility for completing tasks.

Rodrik and Arthurs' experiences playing virtual reality games with colleagues supports Alex's arguments for functional, collaborative communication over grammatical accuracy. The virtual reality activities were designed for participants to share information about objects, clues, and locations to collectively achieve goals. Just as guild members playing *World of Warcraft* may need to recruit members with different abilities and skill sets, instruct teammates on how to locate them, and how to solve the puzzle of defeating enemies, the virtual reality experiences afforded an environment to practise group brainstorming, delegation of tasks, and collaboration. These sessions were more low-stakes than Alex's MMORPG activities because they focused more on fun and collaboration than competition and gaming proficiency was not

a precondition to participation. Before the “real” game commenced, Rodrik’s team conducted game tutorials that taught participants how the game’s mechanics worked. This reduced face-threatening incidents and prepared them for more advanced game activities. The warm-up round likely contributed to a lessening of anxiety relating to game inexperience and allowed participants to develop camaraderie and affiliation with each other.

Gaming with affiliated others in a second language was perceived as an opportunity to practise resource sharing and equal participation that reshaped established workplace power dynamics, cultural dissimilarities, and linguistic proficiency. The experiences shared by Ezio, Arthur and Rodrik suggest that the co-construction of in-game affinity spaces afforded dynamic changes to their relationships with their Asian colleagues. Although Rodrik was acquainted with members of his gaming team, they shared little affiliation prior to the virtual reality activities, despite working together on various projects. He believed that this “collective mental exercise” provided the team with a sense of shared achievement which led to warmer workplace communication with each other, including instances where they had engaged in small talk or friendly greetings with each other.

The Affinity space created between Ezio and Bayek in *Minecraft* had noticed impact on the communicative negotiations between the “boss” and his “accountant.” Ezio noticed that in the game’s space “[he] was no longer [Bayek’s] boss anymore.” This comment suggests that before gaming with Ezio, Bayek communicated with an awareness of the formal boundaries between individuals with perceived differences in power. Pre-*Minecraft*, Ezio was the *boss*, denoting that Bayek believed he must consider how he phrased his communication with Ezio carefully as a person holding less power in the workplace context. In the *Minecraft* space, Bayek was already an experienced player and needed to teach Ezio how to play the game. Because it is likely that situations requiring Bayek to instruct or command Ezio were scarce, the *Minecraft* space provides a key opportunity for Bayek to use new forms of communication with Ezio without face-threatening consequences. As their communication shifts from a high stake to a low stake environment, Bayek is freer to use his *voice* to project creative thoughts

which Ezio viewed favourably. Their relationship continued to shift once Ezio developed sufficient skill and they began to co-construct projects and mutually contribute their ideas. This strongly suggests that when affinity spaces are created during digital game play, participants are able to co-construct new relationships that allow for a better understanding between interlocutors.

The cooperative strategies that mediated *Minecraft* negotiations transferred to negotiations in professional contexts. Firstly, the barriers instilled by the notion of status seem to have been somewhat eroded by the act of employer/employee gaming. Through removing the identities of “boss” and “accountant” and replacing them with a shared identity of “two guys” practising mutual creativity allowed for more open, mutual contributions in financial discussions. Ezio claims that Bayek’s later interactions with him felt less one-sided and accounting problems were solved using similar negotiation strategies as they had used in *Minecraft*. This suggests that Ezio’s trust in Bayek’s professional competencies may have increased after experiencing Bayek’s critical and creative thinking first-hand.

While Rodrik noticed that his relationships with colleagues grew warmer after the virtual reality activities, his comments around gaming more generally also seemed to highlight a possible affinity space was emerging through discussions with those who shared his interest in leisure gaming. He recalled that conversations with colleagues who were not involved in the virtual reality activities conversed more enthusiastically with him after they revealed their shared interests in gaming: “ [My Hong Kong] colleagues sometimes might be even afraid to speak to [me], but when I talk to someone about video games [...] even if their English is not too good and I'm the boss and they want to be careful with how they say things, they're still willing to try.” Where before they would only have acknowledged him with a polite nod, the “gamers” now offered friendly greetings when passing each other in the office. He believed that upholding hierarchical boundaries in Asian cultures often led to some of his colleagues choosing to be silent around him and thought that revealing himself as a fellow gamer may have projected a more approachable image.

4.4.3 Preconditions for Language Learning in Multiplayer Gaming Contexts

MMORPGs were also perceived as exclusionary environments which might constrain less advanced L2 speakers and/or novice gamers from meaningful L2 interactions. Rodrik explained that feelings of his inferiority as a gamer had likely contributed to his preference for gaming alone. Though he had friends in college who were professional gamers, he was only invited to play a few times as they far outranked him in skill. This seems to denote that membership in gaming communities is related to skill, whereby those deemed as lacking proficiency were excluded from participating. Fast-paced mechanisms were also perceived by some as challenging for those unable to execute actions under pressure. Alex explains that when *World of Warcraft* was first introduced, not all players possessed the appropriate equipment, such as headsets and microphones, for effective communication with other players in the game. Those who lacked the ability to communicate in real time were often perceived as inferior players, as they were not able to coordinate actions with other players. Although he does not directly mention language in this context, he said that “if you can’t listen and talk then you’re just an inferior player and not as big of an ability to the group,” highlighting the significance of action-based and communicative participation in MMORPG spaces.

Joel’s beliefs about gaming inferiority echoed Alex’s sentiments from a different perspective. When asked what games he thought afforded language learning, Joel insisted that MMORPGs such as *PubG* are unsuitable environments for meaningful L2 interaction because inexperienced gamers could be exposed to insults or abusive forms of L2 which are inappropriate in authentic contexts, particularly in professional settings. These perceptions seem to suggest that language learners interested in participating in L2 MMORPG gaming may encounter barriers if they are inexperienced players of the respective MMORPGs or lack confidence when using L2 in unfamiliar environments. This data suggests that a certain amount of scaffolded gaming, and language preconditioning are necessary for undertaking L2 gameplay to allow for the perception of language learning affordances.

The positive experiences of Arthur and Rodrik during their virtual reality gaming demonstrate how digital game-based language learning activities may be more positively perceived if three types of scaffolding are available to users. Firstly, some pre-game activities such as tutorial levels allowed players to familiarise themselves with the rules and goals. This ensured that players were able to progress through the game with less difficulty, as they could experiment without consequential in-game losses. Secondly, pre-gaming tasks also allow for a communicative “warm-up.” The games’ focus on collaboration between players meant that communication tactics were practised concurrently with game interactivity. Finally, these two types of practises may also allow for players to co-construct affiliation. Arthur and Rodrik both discussed a noticed distance in relationships between themselves and their Hong Kong team members, which was alleviated in the process of undertaking an enjoyable, low-stakes, collaborative activity. This suggests that group affiliation is a key component of multiplayer L2 gaming which may result in whether L2 gameplay is seen as task-based activity, or an exercise in creative expression and cooperation with other speakers.

4.5 Language Learning Affordances in Single Player Gaming Contexts

The participants were asked whether they perceived differences between language learning affordances in multiplayer and single-player contexts to determine whether their perceptions aligned with literature-based discussions. Most felt strongly that it was particular elements of games that afforded language learning, rather than genre or multiplayer/single player environments. Personal interest in content was a significant motivating factor it was felt that deep immersion or “flow” would lead to implicit learning. According to Rodrik, “the good thing about video games is that as long as you are liking the experience and not really thinking about anything else, your brain will absorb everything like a sponge.” Besides personal interest, two primary game elements were thought to facilitate active learning. These were immersive storytelling and strategic games which necessitated higher-order thinking and creativity. The following sections will discuss these elements and their related language learning affordances separately.

4.6 Games with Impactful Storytelling Elements

Several participants felt that games which featured impactful narratives and well-developed characters afforded meaningful L2 engagement. Alex, Joel, and Rodrik reported instances in which they had paused gameplay to translate unfamiliar vocabulary to ensure that they had fully understood the narrative context, and five of the six participants recalled instances of hearing vocabulary or phrases in context triggering memories of their first exposure during gameplay. Interestingly, participants did not see vocabulary affordances in relation to any specific genre or gaming format. Significant value was placed on the relationship between storytelling which they found to be attention-grabbing and providing opportunities to interact with new vocabulary and pragmatic L2 language. When asked if they could recall any words or phrases which they could identify as acquiring while gaming, Alex was the only participant to identify specific words which he had picked up playing *Call of Duty: Cold War*. However, Ezio, Joel, Nathan and Arthur felt certain that they had acquired new L2 from gaming despite being unable to recall specific examples.

The four participants likened the process to their absorption of English through watching movies and television. Joel found that episodes in the game where the player cannot perform actions and a “cutscene” plays like a part of a story were highly beneficial for engaging with language. Discussing cutscenes in *The Last of Us* series, Joel states:

[S]ometimes you need to understand what's going on [so] you need to understand the language to understand the story [...] *with more dialogue involved [...] you are more exposed to certain words [that you] may not be particularly familiar with. And that could help you to understand the language better.*

Joel seems to liken a cutscenes in games with impactful storytelling to those seen in traditional digital media. He wants to “understand the story” as it plays out. This causes him to play close attention to verbal and non-verbal language cues in cutscenes.

Impactful storytelling was also perceived by some of the participants as a vehicle for roleplaying other identities and inspired passionate interest in themes surrounding the games' world. Ezio and Arthur talked about the power of well-designed storylines which immerse players in the world of the game. Ezio recalls his experience playing *Oblivion*: "it wasn't like reading a book but moving in [the game's world]. It was a very personal experience." Lack of motivation in formal language education settings was also mentioned by many of the participants and was compared with their feelings towards engaging with language they had been exposed to in storylines. Rodrik struggled to focus when his teachers were explaining things *to* him, whereas he felt that being an active participant "*in* the game" required closer attention and often necessitated explicit engagement with dialogue. Rodrik's data also suggests that his L2 identity outside of the game had merged with his characters' identity whilst playing interactive choice-based games.

4.7 Language Learning Affordances of Games with Impactful Storytelling Elements

4.7.1 Possibilities for Incidental and Intentional Language Learning

Just as Rodrik feels he needs to understand each dialogue option provided in Telltale's the Walking Dead series to achieve his desired narrative progression, Joel and Alex both describe a similar motivation to understand "what's going on" during cutscenes in *The Last of Us* and *Call of Duty: Cold War*. While they break this down in the context of their processes with engaging with smaller units of language such as vocabulary, it is important to remember that this is their recommendation for novice or interested digital game-based language learners, rather than examples of their own motivation for language learning engagement. Like the other four participants, they weren't drawn to gaming for linguistic improvement. Nevertheless, their data suggests that engagement with authentic L2 may occur as a by-product in the pursuit of their gaming objectives, and their investment in the stories used for worldbuilding in digital games. As Joel states, the player "need[s] to understand the language" to correctly deduce the context in its entirety, especially in games with highly complex narratives containing L2

language that may not be part of formal education curricula. Alex and Joel's data regarding cutscenes suggests knowing "what's going on" in the game's story may provide context clues which help players anticipate the actions they will need to take. Knowing what's going on can thus be viewed as a tool used to help deduce what's going to happen, and to strategise what has to be done in order to progress to the next part of the game.

Alex supports these statements when asked about what types of games he believed offered the most opportunities for L2 engagement. When asked whether he thought which genres of games were most impactful on language learning, Alex said he associated opportunities for active language learning with immersive narratives rather than game genre or format:

If you're playing a sports game your exposure to language is more limited because there's no storytelling going on... [I]f it's a big story arc [with a rescue mission] there's already so many words that you need to look up... which multiplies over time.

Rodrik clarifies how the desire to engage with stories beyond their gist may afford L2 speakers the chance to engage more deeply with unfamiliar language in context. Choice-based interactive narrative games are designed with cinematic elements in mind. The game progresses almost as if you are watching a film, with a game mechanism that allows you to choose how the story will progress by tasking the player with making a choice between "actions" in the form of dialogue choices. As any choice made by the player can have far-reaching narrative consequences, Rodrik recalled considering each of the multiple texts very carefully before choosing his actions: "You really have to think [before choosing a dialogue actions]. What do I say? What does each word mean? So, when I don't know something, I have to look it up."

Despite Rodrik not playing these types of games with awareness that he might expose himself to new and unfamiliar L2, the goal he sets in the context of the game (the goal being how he desires the game's story to unfold) requires that he engage actively with the verbal and written language of the game. This type of game requires that he recall the (L2) language in context,

including what happened in previous episodes of the game; what his current dialogic choices are; and how each dialogic choice might affect his gaming goal. He explains that each text option must be examined carefully, as misinterpreting a word or phrase may cause him to overlook a choice of action which may be more appropriate for his intended goal. This shows that while gamers might not engage in L2 gaming with an awareness, or intention of improving their proficiency, the environment of games which include impactful storytelling might afford implicit language learning.

4.7.2 Possibilities to Develop L2 Identities, Social, and Cultural Awareness

Findings on choice-based actions indicate that the participants were able to exercise agency through character dilemmas. These games may contribute to the empowerment of L2 speakers by providing an environment in which their L2 “voice” matters, by virtue of the actions they choose to perform. Ezio thought different games have nuanced levels of impact on a player’s engagement with choice-based actions. When discussing the thought process behind choosing to run over bystanders in GTA, Ezio describes it as “silly” and “fun.” He then discusses games which offer choices that impact the direction of the game and their effect on the playable character. While he perceives a deeper engagement with the consequences, he notes that it “has no impact on me” but could still lead to consequences within the game environment that may have a negative effect on his story. By Ezio’s definition, a “serious game” (not as defined in the literature) desires players to engage thoughtfully with the emotional and moral implications of the choices presented. Ezio makes a comparison between books, films, and games with narrative consequences:

People talk about putting the audience in a situation where [they need] to either choose [...] feel [...] or question certain things. I think books do that better than movies and I think games do it better than books, because you have an agency because you can make a choice and the plot changes based on that.

Ezio's reflection demonstrates the value of games which offer players chances to immerse themselves in a game's worldbuilding elements. The presence of complex narratives, well developed characters which encourage player investment, and an ability to influence the story's trajectory encourage deep engagement with and through language in complex contexts.

Ezio's perceptions suggest that interaction with characters in impactful stories with choice-based narratives may lead to introspective thoughts about social issues concerning morality, consequences of actions, and the perspectives of others. Though Ezio is aware that some actions which can be performed in games would be immoral when performed in the real world, the affected characters are presented as unimportant to the player's character arc. As such, actions performed, whether moral or immoral, are sans consequence. We are not shown these bystanders as real people with their own identities. Rather, they are objects in the game with no impact on the player/character's life. Thus, whether we choose to drive around them or run them down is irrelevant. It could even be argued that players are encouraged to perform immoral actions which would most certainly be condemned and punished outside of the game. Ezio has also played games such as those in the *Grand Theft Auto* series, which are mechanised to reward or punish a character's immoral actions. Though he exercises some agency when considering his actions more carefully to attain whatever goals he has set for himself within the game's environment, he may have no more emotional investment in these bystanders than those from *GTA*, and his actions do not have significant impact on his thoughts around these issues outside of the game.

Ezio believes that games which present non-player characters as fully-fledged "beings," as they are in good books, encourage players to reflect on their beliefs and values in the real world. Though powerful films certainly leave an emotional impact on their viewers and may lead to discussions between friends and family on what happened and what one would have done differently, the viewer is nevertheless a passive spectator. Despite all the ways Ezio may wish to engage with characters, he is relegated to the side-lines and remains unable to

influence events. While the same is true in impactful books, Ezio perceives a more intimate engagement with events and characters, likely because he can engage beyond seeing and interpreting actions performed or emotions felt. Books often immerse readers within the narrator's perspective, meaning we see *and* feel events through different eyes.

For Ezio, certain choice-based game mechanics combined with impactful character narratives offer the visual immersion of films and the emotional investment of books, whilst affording agency within the story. In these games, he is given “agency” to create the story he wishes to see unfold. The use of non-player characters as fully-fledged beings with human characteristics and authentic backgrounds allows Ezio to make decisions which have effects reaching beyond his playable character, or the “damage points” he might incur if his character acts immorally. In these types of games, there is a deeper consideration of the impact his choices have on the bystander as an entity who possesses their own story within Ezio's. This may lead to reflections on what actions towards the bystander say about our identities outside of the game's confines and how actions taken may influence real people and events in our surroundings. This demonstrates that certain games afford a high level of emotional and sociocultural engagement with the thematic and narrative designs.

4.7.3 Preconditions to Language Learning in Games with Impactful Storytelling Elements

Findings suggest that digital game-based language learners should be aware that not all commercial games contain storytelling elements requiring a high level of attention to dialogue, meaning that opportunities for exposure to new L2 might be overlooked. Some participants responded to uninteresting main storylines by avoiding story missions in favour of exploration, or by discontinuing their gameplay. Alex clarifies that while game genres and mechanics aim to encourage continuous engagement, he believes that rich worldbuilding and impactful narratives are a precondition for engaging actively with complex language: “If you're playing a sports game, your exposure to the language is very limited [...] But then if it's like a big story

arc [like in *Cold War: Call of Duty*] there's already so many words that you need to look up if you don't know them. And this then multiplies over time when you play the game.”

When asked to compare two different genres of games he had played, Arthur said: “*Monkey Island* trains your brain more in terms of creativity, and you're also more deep in the story. Whereas *Far Cry* is less about the dialogues. It has a story. But it's more like, you want to level up [and] you don't have to think that much.” Although *Fry Cry* has a storyline which he found interesting, he felt that he could easily complete the game without paying close attention to the dialogue and contextual events of the story. Despite the visually stimulating design of the *Far Cry* series, Arthur found himself more engaged by the story of *Monkey Island*. Moreover, the game's focus on narrative required Arthur to solve puzzles that often referred to vocabulary used in previously solved puzzles, meaning that he was required to retain vocabulary and context clues to progress through the game. This shows that good storytelling is not necessarily facilitated by large, open-world games with impressive graphics or stunning visual effects, nor do all adventure-based games afford language learning. I had initially identified the *Monkey Island* series as a primarily strategic game due to its focus on puzzle-solving. However, further analysis of Arthur's comments highlighted that attempting to categorise games by genre, or focusing too narrowly on game typification may lead to digital games with high potential for target language engagement being overlooked, or dismissed.

Despite their clear identification of impactful storylines as a factor which motivates engagement with language, some of the participants acknowledged that L2 users with low-level proficiencies may be constrained by the highly complex language, particularly if they have little experience with gaming. Some of the participants suggested that people within this category should take the opposite route and choose to play games with less complex language, simpler themes, easy-to-learn game mechanics or slower-paced games which allow the player time to think. Rodrik, Alex, and Ezio believed that language learners should still engage with games that have a genre or theme which they enjoy but suggested that games with less dialogue such as the *FIFA* or the *Legend of Zelda* series may afford a more low-

stakes and enjoyable introduction to language engagement in digital games. Once mastered, they may progress towards playing games that are more challenging and expose players to more complex forms of language. Ezio defines this process as a “learning curve,” whereby those interested in digital game-based language learning try out different games to find ones which engage their interests and are appropriately challenging for their gaming and language proficiencies.

4.8 Games with Strategic Elements

Many of the participants were fans of turn-based strategy games such as the *Age of Empires* series. These types of games often involve roleplay as leaders of civilizations, and where they undertake a multitude of tasks such as building projects, resource management, trade, and expansion campaigns. Alex reported that he would spend several hours slowly “mapping out [his] strategy” in *Age of Empires*. Similarly, when Ezio and his friend Connor played *Heroes of Might and Magic*, their sessions could last for days, and they would often pause the game for long periods of time to discuss their next moves. These games provide an environment in which skills such as task delegation, decision-making, problem solving, and critical thinking can be simulated. Rodrik’s first introduction to L2 was playing *Age of Empires*, a game series that he had originally played in his native Spanish. While he initially felt frustrated at the change, he eventually found that having knowledge of the game mechanics and the language relating to the game assisted him in overcoming the challenges of playing in a foreign language.

While many of them expressed interest in games which would be identified by genre as “games of strategy,” recollections from Ezio and Rodrik determined that games which included choice-based mechanisms also contained highly strategic elements such as problem analysis, predicting outcomes, and executive decision-making. Rodrik played the choice-based narrative game *Telltale’s Game of Thrones* numerous times to unlock the different endings. As mentioned, any given dialogic choice could have a benign or significant impact on the

direction of the story. Each time he replayed, he needed to recall the events and choices of his previous attempts and use them to assist him in creating a new story for his characters, suggesting that Rodrik exercised strategic thought processes related to L2 critical analysis, deductive reasoning, and decision making.

4.9 Language Learning Affordances of Games with Strategic Elements

4.9.1 Possibilities for Incidental and Intentional L2 Learning

Though the data suggests that language acquisition in commercial games was primarily implicit, some digital games have elements which require close attention to dialogue in game contexts. This may necessitate strategic engagement with unfamiliar language to attain goals decided through game mechanics and by the players themselves, as seen in recounts from Arthur's experiences playing *Monkey Island*, Rodrik when discussing *Telltale's Game of Thrones* and Ezio's considerations of L2 nuance whilst playing *Heroes of Might and Magic*.

Data suggests that thematic language in games with strategic elements may elicit deeper engagement with a target language outside of a game's context. Ezio recalled how engagement with *Heroes of Might and Magic* over a long period of time triggered a consideration of the difference in meaning between castles, ramparts and fortresses: "if you think about it, the names basically kind of mean similar things. But then you start to go like, what does that mean? And you realise that they're actually different structures." While he acquiesced that he was unlikely to use this vocabulary in contexts outside of the game, he considered his moment of realisation as a shift in the way he thought about nuance in English vocabulary, suggesting that games in more authentic contexts may, over time, lead to similar engagements with vocabulary nuance.

Rodrik did not express an awareness that he might expose himself to new and unfamiliar L2, the goal he sets in the context of the game (the goal being how he desires the game's story to unfold) requires that he engage fully with the verbal and written language of the game. This type of game requires that he recall the (L2) language in context, including what happened in

previous episodes of the game; what his current dialogic choices are; and how each dialogic choice might affect his gaming goal. Each choice of text must be examined carefully, as misinterpreting a word or phrase may cause him to overlook a choice of action which may be more appropriate for his intended goal. This shows that while digital game-based language learners might not engage in L2 gaming with an awareness, or intention of improving their proficiency, the environment of games which include impactful storytelling might afford implicit language learning.

A stronger connection with explicit language engagement is demonstrated through Arthur's interaction with the action/adventure puzzle game series *Monkey Island*. Arthur reports that the puzzles in the game were language based and thus, required him to pay attention to language: "you have to think and [...] read the dialogues. And you have to reply with the right answers to continue in the story [or] find specific items which you've combined to continue in the story. So [it] trains your brain." In this scenario, interaction with written texts is a key component of the puzzles. The dialogue options resonate with those from Rodrik's choice based narrative *Game of Thrones*. While Rodrik must engage with multiple sets of language to make the "right" choice for the story he wants to tell, Arthur's game is designed in a way where he must choose the "correct" option, as failing to do so means that the game will not progress. As Arthur describes it, *Monkey Island* affords strategic ways to interact with unfamiliar L2 such as his description of the game affording "brain training" suggests that there are elements of word and object associations, and memorisation of L2 words and phrases. He also mentioned that clues in later puzzles often referred to objects, vocabulary, and phrases used in previously solved puzzles. This suggests that some commercial games with a high exposure to L2 may offer similar affordances as applications, or programmes designed for language learning, such as Babel.

4.9.2 Possibilities to Develop Higher-order and Creative L2 Thinking

Thinking strategically in a non-native language was shown by the data as particularly important to this group of adult ELF users. While not directly related to language learning, these games can be mentally exerting, particularly when played in a non-native language. Games of strategy were deemed important by participants who held significant power within their companies and were thought to have influenced the evolution of their strategic and critical thinking skills. Despite many of the participants' belief that gaming was perceived by older generations as a wasteful activity with no benefits outside the realm of enjoyment, some participants were drawn to games which require players to negotiate, manage resources, and organise military campaigns and expansion projects. Ezio demonstrates how thinking critically in L2 is both creative and dynamic by revisiting the game to reattempt tasks which he had already solved. Ezio shows the deep level of engagement both with the game and with his own abilities to think critically and creatively.

Ezio compared his gaming experience with *Heroes of Might and Magic* to a chess player seeking to find new and innovative ways to interact with the board: "I always compare it [to] a more complex digital version of chess [...] if you play chess, the game is not new. But you try to find new ways to be creative within the game." Just as Rodrik gained experience using decision-making based on critical evaluation, Ezio demonstrates that games with strategic elements afford spaces to practise skills necessary for creative L2 thinking and expression. Moreover, these spaces allow for experimentation and chances to evaluate novel actions based on previously gained knowledge.

Data from some of the participants highlighted the value placed on expressing thoughts creatively in ELF professional contexts, and a belief that strategic games afford opportunities to experiment with L2 higher-order thinking. Some of the participants recognised knowledge gained through gaming that had transferred to professional settings. Rodrik came to the realisation through playing *Age of Empires* problem-solving requires a multipronged,

considerate approach: “[I]n the game just as in life, you should not prioritise defence over offence, you should try to do both. Because when you build a wall and no army, you get destroyed.” In this scenario, he realises that issues cannot be resolved solely through action or reaction and that all possible outcomes from actions should be considered. He reflects that actions in life also require careful analysis, planning and weighing of consequences and that this realisation leads him to mentally prepare multiple responses to any given outcome. Though he does not mention which authentic contexts of his life require offensive and defensive strategy, the nature of his profession and how ELF is situated within this environment suggest that it is likely a philosophy which influences his communication as an industry leader.

4.9.3 Possibilities for Self-Directed, Transferrable L2 Learning

Choice-based narrative games were also perceived by some participants as possessing strategic elements which afforded opportunities to practise L2 analytical thinking, evaluation, and problem-solving. This afforded self-directed learning opportunities where transferrable skills could be practised in low-stakes, enjoyable settings. Unlike turn-based strategy games which focus on problem solving at a macro level, interactive games often involve solving interpersonal problems between protagonists and NPCs. Companies are not usually managed by an omnipotent leader solely concerned with resources. Rather, they are a run through interactions between individuals with differing levels of experience, knowledge, and power who will both introduce problems and contribute towards solving them. Though groups are naturally involved in the process of solving problems, leaders may be responsible for executing actions and taking responsibility for them. Thus, interactive games which require players to practise analysis and evaluation may offer chances to practice task and interpersonal problem-solving that can be transferred to professional contexts.

As mentioned under findings concerning games with impactful storytelling, Ezio described the “psychological damage points” and other negative forms of game feedback when choosing

whether to take violent or benevolent action towards another character. Though actions are related to and affect others within the game's environment, his description of damage points in this context does not denote consequences for the other character involved in his scenario. In this case, the player's character receives negative feedback that affects his gameplay. Thus, Ezio as "leader" of the story can analyse the information with critical eyes, and evaluate outcomes of singular actions and how they may drive or obstruct his desired narrative trajectory. Rodrik had extensively engaged with interactive narrative games such as *Telltale's Game of Thrones* where he would make dialogic choices affecting the direction of the game's narrative. As the dialogue choices have varying levels of influence over the overarching narrative, Rodrik engaged in a significant amount of analysis before making his decisions: "If I say this, how does the game change? [...] It's not so linear, right? I like it when there's a little bit of complexity. I don't mean technical complexity, but like mental complexity." Much like his experiences playing *Age of Empires*, Rodrik displays a similarly critical process of reaching decisions when playing interactive games as he had playing *Age of Empires*.

Though the problems Rodrik is solving affect others' narratives within the game, his thought process behind choosing actions was driven by logic more than emotion. So, while these games afford opportunities to practise socially situated problem solving, they also allow users to evaluate the macro consequences of actions in L2. Just as Ezio revisited tasks in *Heroes of Might and Magic* seeking to find new and innovative solutions to problems he had already solved, Rodrik would analyse the consequences of each dialogue choice and whether they would unlock his desired narrative outcome. This required his careful consideration of how words and themes may trigger NPC actions. This also required him to recall his previous dialogue choices to ensure that the narrative trajectory changed. Although narrative choice-based games are valuable for their ability to engage with complex social and moral themes, they may also enable users to develop critical thinking strategies in L2 in spaces where failure has few long-lasting effects, and there are unlimited opportunities to tackle problems in diverse ways. Opportunities to practise higher-order thinking in environments in low-stakes contexts

allows users to experiment using L2 reasoning, future-focused thinking, and decision-making, all skills which are highly valued in ELF business contexts.

4.10 Serious Games with Purposeful Learning Elements and their Perceived Language Learning Affordances

None of the participants had played a Serious game for language learning purposes. Besides Arthur, who had undertaken educational gaming for workplace safety training, the others' knowledge of Serious Games was primarily based on my definition during the interviews and sources such as articles, podcasts, and word of mouth.

4.10.1 Possibilities for Explicit L2 Learning

Though their knowledge of Serious games often came from articles or podcasts they had listened to, some of the participants thought that games which provided players with extrinsic language learning goals may benefit lingua franca users wanting to focus on contextual language for professional purposes. Some of the participants believed that a learning-focused game design that offers explicit objectives and scaffolded activities may benefit novice gamers and beginner L2 speakers. Nathan had learned Portuguese and Russian extramurally using memory training tools such as flashcards. Using examples such as *Babbel*, he thought that Serious games were good resources for professionals who wanted explicit L2 learning opportunities but find "classic" tools boring. Arthur reported that his company used Serious games for training exercises and believed that games which simulate authentic situations were effective training resources for many subsets of professional skills including language learning. When asked about his perceptions of Serious games as a language learning tool, Ezio thought that beginners might find these types of games more impactful for explicit learning like vocabulary acquisition. Elaborating on Arthur's perceptions of Serious games as suitable resources for low-stakes, simulated training, Ezio explained that professionals with sufficient L1 knowledge may find the mechanics of a game designed to introduce target language less daunting, easier to achieve game goals, and more enjoyable than formal

learning. Ezio believed that these games offered a “learning curve” that allows users to pay more attention to language learning goals, whereas commercial games may distract inexperienced gamers from language-focused interactions.

Alex expressed similar thoughts on the benefits of Serious games concerning their high level of exposure to authentic communication for specific purposes. Alex thought that games designed specifically to target language required for professional purposes may afford structured L2 engagement: “[I]n a Serious game, it will probably be structured in a way that you can’t escape it. So you would get a [bigger and] better exposure to the language.” Alex points out that while fantasy games such as *World of Warcraft* may afford learners opportunities to interact with and practise communicating in L2, these games might not afford language interaction to less advanced L2 users. He also mentioned that if users are not invested in the lore of the game, they may not be attuned to language or perceive language as transferrable to authentic contexts.

4.10.2 Preconditions for Language Learning in Serious Games with Purposeful Learning Elements

While some of the participants perceived explicit language learning possibilities as the primary affordance of Serious games, a few of them mentioned factors which might affect motivation and engagement, particularly for language learners experienced with commercial games. Alex, Arthur, and Nathan all pointed to motivation as a contributing factor of whether L2 learners and users would benefit from Serious games. Though Nathan perceived language learning benefits of this type of gaming, he associated digital gameplay with leisure and was not inclined to seek out Serious games as a language learning tool. Though he believed that he had been exposed to a new language whilst gaming, it was an activity that he associated with relaxation, whereas language learning was always undertaken intentionally and required his full focus. Nathan believed that gaming helped him to disengage from his stressful work life and while he saw merit in gaming for learning purposes, it was not a method which he found particularly motivating.

Arthur and Alex seemed to suggest that while Serious games could benefit persons wanting explicit, targeted language learning opportunities, the focus on learning over engaging content might be perceived negatively by some users. While Alex perceived Serious Games as affording context-specific language learning opportunities which might benefit ELF users in professional contexts, he also expressed a belief that Serious games may feel “less like a game and more like work.” This suggests that language learners who had experience with commercial games may perceive Serious games as more closely aligned with formally-situated learning activities and perceive these games as lacking the elements which players find most enjoyable in L2 gaming. As mentioned, Arthur was aware of Serious games used in non-language learning contexts such as simulation games. Though he had read articles and listened to podcasts which convinced him of their benefit to skill development, he doubted whether Serious games for language learning would possess enough visual and narrative elements to rival commercial games. Like Alex, he believed that experienced gamers would not enjoy playing games unless they were comparable to commercial, entertainment games. He also thought that trends, and a sense of belonging contribute greatly to why players engage with commercial games and that being “part of the hype” acted as a catalyst for L2 development and learning would occur incidentally in pursuit of game participation. Arthur did not believe that Serious games would afford the same sense of membership to a wider network. Though he perceived their benefits to L2 professional development contexts, he did not believe that Serious games would be sought out by individuals willingly, or that players would continue to use them once no longer mandatory.

Many of the participants perceived their formal language education experiences as inauthentic compared to what they had learned informally through media, gaming, and by communicating with other L2 speakers. Alex’s perceptions of Serious games resonate with his perceptions of formal lessons and suggest a belief that learning focused on lexicogrammatical learning eventually loses its perceived importance. Formulaic learning may lead to disengagement with translation and memorisation exercises if it is not situated aspects of in meaningful contexts

where communication can be creatively practised. While beginner L2 speakers may find the structured learning of L2 Serious games beneficial, the participants' opinions suggest that these restrictions might be perceived as inauthentic to more advanced L2 speakers. It also seems that experienced gamers recognise differences between games designed for enjoyment and those designed for purposeful learning, perceiving that the latter lack qualities which drive engagement with authentic language such as good storytelling, membership, and enjoyment.

4.11 Sociocultural Attitudes and Beliefs around Digital Games as Effective Language Learning Resources

The consensus between all participants was that company members from older generations with Eurocentric backgrounds held negative views of gaming. Many of them used terms such as "childish," "silly," "geeky," or "a waste of time" to describe how such people might perceive gaming in the context of work. Alex and Joel further believed that admitting to being a gamer may contribute to an unprofessional, immature, or inept image. Nathan believed that this had less to do with gaming and more to do with the cultural climate of German MNEs, which tend to value personal privacy and refrain from talking about topics not directly related to the professional context. Though most of them believed that their German counterparts would undoubtedly enjoy and benefit from participating in L2 gaming activities, most of them doubted whether they would accept gaming as a legitimate L2 and team building practice.

Arthur believed that while external factors determine how much an individual engages with language learning, the driving factors of motivation were non-uniform. He believes that people are drawn to learning when it serves a "purpose," recounting how many EFL students feel a "lack of purpose" and are often unable to visualise how their classroom lessons will benefit their future selves. When undertaking enjoyable activities that require language comprehension, he thinks that improving one's proficiency may lead L2 speakers to engage more closely with language learning. Arthur used "gamification," to generally describe the

process of using game elements such as goal-based tasks, team-building exercises, and competition, likening it to MNO workshops he had attended. Though he had organised digital gaming activities for his Hong Kong staff such as *Mario Kart* multiplayer sessions and virtual reality “Sandbox” excursions, he believed that MNEs would not likely see the purpose of using digital gaming activities without first seeing documented evidence that demonstrated the benefits of digital game-based language learning. He also implied that L2 digital gaming sessions which he had organised in Hong Kong were likely successful because playing digital games was more culturally acceptable than in Germany.

Arthur and Rodrik believed that the organisation of digital game-based language learning activities in MNEs should be mediated by experts. Firstly, any games used in the workplace environment would need to be reviewed for their appropriateness. To gauge their perceptions of using L2 digital gaming in workplace contexts, I used the example of an episode of the American television series *The Office*. In the episode, the employees play *Call of Duty* as a team building exercise. When asked how they thought this activity would be received by their companies, most of the participants pointed to the inappropriateness of a shooter game for workplace situated activities. Rodrik commented that games such as *Call of Duty* would most certainly be deemed too violent for company contexts. He noted that the success of the virtual reality games they had played was likely because the content was family-friendly and wouldn't upset or trigger co-workers with violence.

Arthur thought that company cultures are “like a snapshot of, of the culture that you're living in.” This means that companies would need to consider the demographics within the company and select games which would be generally suitable for all ages, language and cultural backgrounds, and their experience with digital gaming. The participants who had previously worked in German contexts mentioned that interactive activities for cooperation and employee development were commonplace in their companies. They referred to physical games, teamwork activities, and extracurricular activities such as dinner events and social meetups. Nathan, who had worked in MNEs for the longest time out of all the participants, stated that

virtual reality games would be the most accepted form of digital game-based language learning by German MNEs, as it most closely resembled activities familiar in German company culture.

A second step which Arthur suggested companies take would be to have a “coach” mediate their activities. He believed that the intended outcomes should be made clear before the commencement of activities so that the “purpose” of the activities, such as cooperation and collaboration in L2 would be understood from the beginning. Secondly, a coach should conduct debriefing sessions and intervene in situations where the participants might encounter problems. He believed that the presence of an authoritative figure would legitimise the exercise and discourage participants from turning it into a competition without purpose: “based on my experience [...] some people they don't like to lose, or they don't think about collaborating first hand, and then they lose because they didn't collaborate, but then blame the others. And I think you only get [benefits out of corporate-run digital game-based language learning] if you give them [an] independent coach who is helping them to guide this reflection.” Arthur's perceptions indicate a belief shared by the participants that gaming is not perceived as a valuable learning tool in European-based professional contexts, despite some of them offering examples of similar “gamified” activities which were frequently used in training exercises. Many shared the belief that European-based enterprises will certainly require proven studies and well-structured programmes that offer both professional guidance, and clearly defined learning goals and activities before implementing work-based digital game-based language learning.

4.12 Summary

In sum, the findings demonstrate that ELF users of digital games perceive a number of direct and indirect language learning affordances that were perceived as transferrable to MNE and other ELF contexts. Possibilities for L2 interaction with others in multiplayer gaming contexts were identified. While solo gaming in MMORPG contexts were perceived as potential spaces

to develop L2 humour and efficiency, meaningful language learning was perceived as conditional upon users' gaming proficiency and affiliation to other players. It was also discussed that interactions through these games may be focused on quest-related gaming language, and acquiring meaningful, transferrable L2 was less likely than other gaming contexts. In contrast, shared multiplayer gaming experiences with other ELF speakers were perceived as spaces to renegotiate relationships between colleagues of unequal power, that led to collaboration, co-constructed pragmatic negotiations, and reconstructions of ELF identities.

Language learning affordances in single player gaming contexts were identified by elements such as storytelling and strategy. This is highlighted by the identification of both elements in similar game titles such as choice-based narrative games. Storytelling elements identified affordances related to incidental and explicit language learning opportunities through engagement with narratives, which were enhanced by player agency and investment in their fused character/player identities. However, narrative investment was a precondition to language learning and games which encouraged or required active attention to context-based L2 was seen as necessary. Strategic elements identified affordances such as possible L2 higher-order thinking development when using these to solve task-based game problems. Strategic game elements also often required explicit language learning when problems required attention to clues in games' dialogue.

While none of the participants had played Serious games, some perceived these types of games as affording explicit, structured L2 learning possibilities, but doubts were expressed as to whether Serious games would be as stimulating and engaging as commercial games. Finally, while the participants believed digital games as affording language learning that would benefit ELF users in MNE contexts, they believed that sociocultural attitudes towards gaming as a learning resources were generally unfavourable. Though some had directly experienced L2 gaming in, or adjacent to their professional settings, they believed that older adults and

company leaders would require further evidence demonstrating its benefits before promoting professionally-situated digital game-based language learning.

5. Discussion and Implications

As outlined in Chapters 1 & 2, attaining linguistic, social, and cultural capital has the potential to empower ELF speakers in multinational enterprises. In pursuit of participation in global markets and maximising profitability (Neeley et al., 2012), it is likely that MNEs will increase their use of lingua franca in business communicative practises and ELF will continue to be valued as an essential tool in many professionals' work kits (Ehrenreich, 2010). While the implications for organisations are clear, this project has chosen to focus on how ELF only contexts affect those tasked with using ELF. Though ELF policies clearly favour organisations rather than their employees, individuals can use ELF to procure access to other resources that increase their own power, which was reflected in the participants' high-level, externally situated positions with their companies. Linguistic capital is determined less by mastery of L2 rules and vocabulary and more by their awareness that preconceptions about effective and appropriate communication may differ greatly between ELF users, and a willingness to compromise in pursuit of understanding and collaboration (Li, 2019; Taguchi, 2021, 2022). While meaning is situated in its social and cultural contexts and learning emerges through dynamic interactions, the high stakes nature of MNE discourse leaves little room for communicative breakdowns in ELF negotiations and is not an ideal environment for experimentation (Kaur & Birlik, 2021). In light of the findings from this research project, the following sections will discuss how ELF speakers can use digital games as resources to develop their knowledge of ELF in wider sociocultural contexts and how this knowledge can be used to increase their personal and social power in MNE settings.

5.1 Linguistic Capital Afforded through Meaningful L2 Interactions

The findings from this research project support arguments that digital games afford opportunities for meaningful L2 interactions which may increase linguistic capital in ways which benefit them in authentic L2 communicative contexts (Blume, 2019). The data

demonstrated that learners recognise shortcomings in formal language learning practises to bring awareness to L2 as it is social and culturally situated (Gee, 2014; Reinhardt, 2019; Sundqvist, 2015, 2019; van Lier, 2004). Most of the participants described their school L2 instruction as heavily focused on memorising rules and vocabulary rather than opportunities to practise language in creative ways. In contrast, the participants perceived digital games as ideal resources for engaging with L2 in authentic contexts and discussed interactive affordances about games, with games, and through games (Knight et al., 2019).

5.1.1 L2 Interactions about Games

Some of the participants recalled meaningful interactions with others about their gaming experiences. In some cases, conversations took place between ELF-speaking friends which led to creative discussion about their favourite games. In others, identifying themselves as a fellow gamer to colleagues with less social power in the workplace created a sense of affinity and led to a change in communicative style. This supports arguments that meaningful learning can take place around digital game content without actively engaging in gameplay (Gee, 2004; Przymus et al., 2022; Scholz, 2017, 2021; Vasquez-Calvo, 2018). With the rise in popularity of gaming worldwide, the chances are many MNE workers share a common interest in digital games (Gee, 2004). This makes them suitable resources for mediating creative, co-constructed discussions around numerous topics using aspects of language that transfer meaningfully to professional contexts.

5.1.2 L2 Interactions through Games

Interactions through gaming with others also supported claims that multiplayer gaming environments facilitate dynamic, real-time, authentically situated L2 communication (Taguchi, 2021). MMORPG games were perceived as spaces to develop an awareness of pragmatic language that contributed to the development of an authentic L2 voice (van Lier, 2004). The findings from this study support arguments that professional competence is often evaluated based on communicative competence (Kaur & Birlik, 2021). While many thought that

communicative avoidance contributed poorly to professional image, the appropriate use of humorous language (Rogerson-Revell, 2007) and succinctness (Puck, 2017) were believed to project approachability, attentiveness, and the capacity to think extemporaneously. Some participants associated MMORPG communication with banter and brevity and believed that having opportunities to practise these skills in real-time, informal settings would contribute to the development of quick-wittedness that they valued in L2 networking and negotiations.

However, the findings also demonstrated that MMORPG-facilitated language learning may be conditional upon affinity space features such as common endeavour and affiliation between participants (Gee, 2004; Vosburg, 2017). Although Gee claims that a key feature of affinity (game) spaces is an inclusivity of players with diverse levels of expertise (Gee 2004), this project found that developing gaming proficiency was a precondition to interactivity in MMORPG contexts. The issue of gaming expertise is reflected in experimental game-based research, which found that novice gamers struggled to perceive language learning affordances whilst they simultaneously learned how to play the game (Rama et al 2012; Chen & Johnson 2013; Scholz 2017). This project's findings demonstrate that less-experienced gamers found MMORPG spaces intimidating and few were motivated to participate in these spaces. Data from Alex suggested that linguistic and gaming expertise may circumvent participatory issues presented in other MMORPG situated studies (Rama et al. 2012; Scholz 2017; Vosburg 2017). It was also suggested that MMORPG spaces require singular focus on game quests, meaning that truly *meaningful* L2 interactions may not occur. This project's findings support research claiming that language learning possibilities are more easily perceived when learners have control over their game interactions and when determine how much time they invest in gameplay (Scholz, 2017; Sundqvist, 2015; 2019), meaning that the project's findings, which showed that the participants perceived few language learning affordances in MMORPG gaming experiences, may be related to their gaming preferences rather than their perceptions of MMORPG-facilitated language learning.

5.1.3 L2 Interactions with Games

This project found that opportunities to engage with L2 in authentic settings were most easily identified in single player interactions *with* games. Aligning with literature which recommends that language learning affordances be explored using elements of games rather than genre (Dixon, 2022; Vandercruysse et al., 2013), two primary elements were recognised as affording linguistic capital which transferred to professional contexts. Storytelling in digital games was perceived as an element which fostered learner engagement. Strong worldbuilding, well-developed characters, and agency in the form of player-driven actions fostered investment in the narrative. In a few cases, learning was incidental (Reinhardt, 2019) where the participants believed that they were unconsciously acquiring new L2 knowledge, only realising with hindsight what they had learned during game interactions. In others, learning was more explicitly undertaken, either because game tasks required complete comprehension, or because they wanted to understand the full context of the narrative. Because narrative elements in mediated language emergence similarly to literature and film whilst allowing players some agency to move from passive viewer to active participant (Reinhardt, 2019; Scholz, 2022), digital games with these features are particularly useful for extramural learning opportunities.

The findings from this project spotlight a need for further research into links between games with strategic elements, and L2 creative thinking affordances. Some participants expressed beliefs that resonated with Gee's critical learning concept in their desire to "undo [their] former mastery" of previously played games (Gee, 2003, pp.41-44). Rather than discarding finished games, some recalled using analysis, evaluation, decision-making, and novel approaches to old tasks (Reinhardt, 2019). These gaming behaviours support arguments for the role of thinking skills in developing L2 proficiency. ELF speakers who can demonstrate their ingenuity and flexibility using higher-order thinking skills are highly valued in workplace contexts (García-Carbonell et al., 2014; Luring et al., 2022). Considering claims that L2 critical and creative thinking is not sufficiently incorporated into ELF-taught education programmes

(Bakhshayesh et al., 2023; Defianty & Wilson 2019; García-Carbonell et al., 2014; Ferguson, 2021; Puck, 2017; Sosnina & Starostina, 2021; Zhou et al., 2015). ELF learners and users may find these types of games highly beneficial for developing an L2 *voice* which helps them express their thoughts in creative ways.

The findings also suggest that when combined with impactful storytelling, strategic games may afford opportunities to develop interpersonal or *soft* skills that are often used in ELF professional contexts (García-Carbonell et al., 2014). By having players engage in problem-solving tasks shaped around a well-developed and diverse cast of characters, choice-based narrative games in L2 afford possibilities to develop interpersonal problem-solving skills that contextualise higher-order thinking in sociocultural contexts (Ghanizadeh et al., 2020). While their narratives may take place in fantastical worlds, they often contain themes which are grounded in authentic human experiences (Reinhardt, 2019), meaning that moral or philosophical lessons can be learnt and transferred to real-life contexts. Given that MNE workers are often required to engage in collaboration, problem-solving, and negotiation with a wide variety of diverse ELF speakers (García-Carbonell et al., 2014; Naur & Birlik, 2021), these types of games may afford valuable opportunities to develop L2 expression that is interculturally conscious. While this projects' findings support claims that some digital games foster critical learning and allow for self-directed learning and creativity (Gee 2003; 2004; Reinhardt 2019), digital game-based studies exploring L2 creativity, higher-order and/or critical thinking, or strategic learning were discovered during the literature review process. Though not concrete proof that strategic L2 gaming affords opportunities for leadership development was found, it is noteworthy that the participants who enjoyed gaming elements which required deep thinking and creativity regularly used similar skills in their professional contexts. As no studies currently prove or disprove this correlation, further research is highly recommended.

5.1.4 Serious Games and Authentic L2 Interactions

The findings from this project are inconclusive regarding the language learning affordances of Serious games. Though studies have demonstrated benefits L2 students in universities (González-Lloret et al., 2020; Markovic, 2016), schools (Alyaz & Genc, 2016; Alyaz et al., 2017), and for non-native speaking teachers of foreign languages (Alyaz, et al., 2017), none of the participants held much knowledge about educational, simulation, or “Serious games.” While some held perceptions that these types of games had benefits for less proficient speakers such as scaffolded learning and explicit language learning goals (Peterson, 2020), these games were not perceived as attractive to gamers well-versed in commercial games. In any case, their data indicates that L2 learners and speakers in this category would likely identify the proverbial “chocolate-covered broccoli” concealed beneath (Reinhardt, 2019; Scholz, 2022) and find attempts at concealing familiar, disinteresting learning methodologies in the form of a digital game. While this group were not enticed by Serious games, researchers and multinational enterprises should certainly explore their benefits in diverse populations. Though other studies have found success using virtual reality technology (Jauregi-Ondarra & Canto, 2023; Taguchi, 2021; Wu et al., 2022), the virtual reality games played by the participants were not designed with purposeful language learning elements. Because this project’s data suggests that language learning affordances were perceived in virtual reality gaming environments, future researchers may wish to explore the language learning affordances of Serious virtual reality games in multiplayer contexts.

5.2 Social and Cultural Capital through Renegotiated Power Dynamics and L2 Identity Co-construction

5.2.1 Intercultural Pragmatic Awareness Facilitated by Renegotiated Power Dynamics

Multiplayer gaming in MNE settings were perceived as spaces to develop their social and cultural capital by practising intercultural meaning negotiation in low-stakes contexts. In

contrast to their perceptions of MMORPG gaming as more challenging spaces for novice gamers to practise L2 interaction (Rama et al., 2012; Scholz, 2017), multiplayer gaming experienced with colleagues allowed for mutual negotiations of communicative norms through reconstructed power dynamics. Although some possessed high levels of authority and power in their workplace contexts, they desired to be perceived by team members with less power as approachable and saw openness in communication as essential to company growth. ELF interactions between persons possessing unequal social power, significant relational distance, and high levels of imposition or pressure often result in significant cognitive demands on interlocutors with less situational power, leading to behaviours such as long pauses or silence as to not cause offense or take face-threatening actions towards high-power members (Taguchi, 2022). While the expectation for a communicative shift usually falls on speakers not part of the dominant culture (Barkhuizen & Strauss), this project highlights how interpretations of cultural dominance are also socially situated. Bar Joel, all other participants were foreign nationals. Yet, their leadership positions in MNEs with overseas headquarters meant that the expectation for adherence to Western pragmatic norms fell to their local-born colleagues. This may explain communicative challenges as described by some of the participants with more senior leadership positions. The participants held values associated with Western communication styles, whilst most of their peers and staff were Hong Kong locals and were perceived by the participants as reluctant to speak unless directed to do so. ELF users bring different pragmatic norms and expectations for actions between speakers with unequal power and distant social relationships (Nguyen, 2022). Thus, relationship dynamics in which persons feel disempowered can lead to a breakdown in communication and hinder collaboration, whilst their high power-holding, European interlocutors may experience frustration, or hold inaccurate beliefs about their competence and trustworthiness (Puck, 2017).

This project found that features of affinity spaces in multiplayer gaming mediate the co-construction of new power dynamics by allowing players to shuck culturally constructed barriers and focus their communication on their common, game-related endeavours (Gee

2004; Rama et al., 2012; Reinhardt, 2019; Scholz, 2017). In multiplayer gaming contexts, strict hierarchical structures are not conducive to problem-solving tasks which require collaboration and those with more experience are treated as resources of knowledge until novices become co-constructors (Gee, 2004). The findings demonstrate how those normally seen as members of the dominant culture were given opportunities to renegotiate their projected identities from “bosses” to members of a team through their shared common gaming goals. This allowed team members from cultures with stricter expectations of communication between persons with different social standings to practise directness, and persons with more power to be seen as less imposing (Taguchi, 2022), allowing for knowledge to be shared equally between team members. This shows that giving team members with diverse sociocultural norms opportunities to communicate outside of high-stakes, face-threatening contexts creates spaces where communicative common ground can be negotiated in pursuit of low-stakes, enjoyment-based goals (Taguchi, 2021).

This project’s findings provide evidence that MNEs should consider digital game activities for ELF learning purposes but may wish to have activities mediated by an expert or guide. In the case of Rodrik and Arthur’s virtual reality game sessions, a company expert was present to brief the team, and to guide activities during the initial phase. Though they do not state this, it is likely that having an expert on hand to provide necessary intervention would have been beneficial if issues were to arise such as those seen in Chen & Yang’s (2013) *Neverwinter Nights* study. Mediation is particularly beneficial when digital game-based language learning is used in professional settings. As Arthur stated, employees may face obstructions such as hyper focusing on competition or misunderstanding the activity’s purpose. Thus, the presence of a mediator who sets common goals, scaffolds learning appropriately, and gives participants opportunities to ask questions and discuss their experiences would likely enrich professionally situated L2 gaming.

5.2.2 L2 Identities and Voice

The findings from this project also support that multiplayer gaming activities may provide opportunities to reconstruct their perspectives of others, and themselves. As well as renegotiations in pragmatic style, shifting interactions from high stakes, professionally situated environments to informal game spaces also allows users to demonstrate their L2 *voice* (van Lier, 2004). While it benefitted the participants who were able to project themselves as approachable and willing to receive the knowledge their team members shared, their data also demonstrated that opportunities to shift communicative styles provided safe spaces to demonstrate an authentic, creative *voice*. Developing an authentic L2 *voice* affords access to resources which empower speakers. As seen in Ezio's *Minecraft* experiences, the environmental shift led to a switch in power dynamics that afforded Bayek low-stakes opportunities to demonstrate his problem-solving skills and mentoring abilities. This changed Ezio's perceptions of his competencies (Kaur & Birlik, 2021) which had lasting impact on their professional working relationship. Though this data only pertains to Ezio's perceptions, his shifting perspective on Bayek's competencies related to problem-solving and creative expression through their game interactions *and* in their accounting-related problems suggests that Bayek gained some social capital through these interactions. While we can only speculate on the future implications of this gain, future research is certainly warranted.

5.3 Learner Agency and Self-directed Language Learning

The findings support that agency is a key component in facilitating digital game-based language learning. Extramural gaming can be highly impactful without pedagogic intervention, as it allows learners to choose their own purpose for gaming, rather than providing them with assigned goals for learning or gaming (Scholz, 2022). This self-directed L2 gaming allows players to improve at their own pace and without external pressure from other players. For ELF speakers, learning could be more explicit and focused on meaningful practises such as intercultural communication and L2 higher-order thinking skills, or incidental learning could

occur in pursuit of immersing themselves in impactful storytelling elements (Reinhardt, 2019). Freedom to choose how they played games was valued by the participants, as it allowed them to focus on developing skills *they* desired to improve such as meaning in context, or using L2 higher-order thinking to solve strategic problems and learning can be scaffolded, paced, and tailored by digital game-based language learners. Unlike studies which used controlled, experimental conditions where their participants were provided instructions for L2 gaming activities (Chen & Johnson, 2004; Chen & Yang, 2013; Rama et al., 2012; Vosburg, 2017), studies which highlight player/learner agency (Scholz, 2017; Sundqvist, 2015, 2019) demonstrate the significant role of agency in promoting sustained learner engagement (Duff, 2012) and how the freedom to self-direct L2 gaming may incentivise other forms of resource-rich, game interactions (Gee, 2003; Sundqvist, 2015).

As seen in previous studies (Sundqvist, 2015, 2019), the participants of this project chose their own games and contexts in which game interactions took place. While some participants had played the same games, they were overall interested in vastly different game genres. This demonstrates that digital game-based language learning may be more motivating when players have agency to choose games which peak their interest and how they interact with those games. Arthur and Ezio's disinterest in multiplayer activities compared to their enjoyment of the same games' single player functions demonstrates that individual preference plays a significant role in engagement. Were they to be relegated to a style of gaming which they wouldn't personally choose to play, it is possible that they may have felt unmotivated and disengaged as seen in Vosburg's (2017) exploration. This project demonstrates that freedom of choice may foster critical learning (Gee, 2003). Though they were interested in different thematic games, most of the participants identified similar game elements which they perceived to afford meaningful language learning. This supports arguments that elements of games should be a primary focus of language learning affordances rather than game genres, or gaming contexts (Dixon et al. 2022; Reinhardt, 2019, 2021; Vandercruyssen et al., 2013) and demonstrates that users of L2 games also recognise this to be true. It must be stressed

that all of the participants continue to choose L2 gaming over L1. It should not be discounted that L1 gaming would be significantly less taxing, yet they continue to challenge themselves and engage with L2 even in leisurely contexts. This suggests that allowing digital game-based language learners the freedom to self-direct their interactions empowers them to take charge when “undo[ing] their former mastery” (Gee, 2003, p. 41) and may lead to a sustained engagement with L2 learning (Duff, 2012).

6. Conclusions

6.1 Conclusions of this Research Project

Digital game-based language learning provides adult professionals significant opportunities for language learning and L2 interactions that may assist them in their professional duties and increase their linguistic, social, and cultural capital. In multiplayer contexts, users are afforded opportunities to engage in different pragmatic communicative styles and develop awareness of ELF used in diverse social and cultural contexts. Cooperative gaming tasks require similar collaboration expected in multinational enterprises, but are centred around low-risk communicative activities. This may encourage speakers' full participation by relieving anxiety around L2 communication. Mediated L2 gaming with colleagues affords members an environment to construct affinity spaces with others which facilitate L2 higher-order thinking L2 thinking, especially creativity. Collaborative experiences in these spaces may allow for shifting power dynamics and develop their intercultural awareness. This may affect L2 negotiation and communicative styles in authentic contexts, making them well-suited for professional L2 development in MNEs. These spaces may enable team members to demonstrate their knowledge in creative ways, provide those in leadership roles opportunities to become co-constructors rather than authoritative figures, and offer all participants opportunities to develop their ELF identities and multicultural awareness. Although MMORPG gameplay was shown to afford interactive language learning, the ability to perceive affordances is preconditioned by gaming and linguistic proficiencies, as well as a sense of affinity and common endeavour between group members. Learner agency in determining how they use games in L2 contexts fosters self-directed learning.

Single player games also afford L2 interaction and incidental learning. Games with impactful storytelling elements allow for engagement with L2 in meaningful contexts. When combined with the power to progress the game's narrative through their own actions and the

development of a dual player/character identity, users become more invested in situating the language in context, allowing for a deeper engagement with L2 and exposure to new sociocultural perspectives and identities. It is key to remember that not all games contain storytelling elements which require players' attention to language or context. Games with strategic elements afford opportunities to develop lower- and higher-order thinking in L2. Despite this being a highly valued skill in MNE organisations, opportunities to practise these skills outside of high-stakes contexts may be limited. Playing strategic games in L2 may thus benefit ELF employees by providing low-stakes opportunities to practise transferrable, higher-order skills in L2 such as analysis, creativity, and evaluation, used in decision-making.

6.2 Limitations and Suggestions for Future Research

This research project makes an important contribution to understanding digital games' language learning possibilities for adult ELF users in an as yet under-researched area. However, this project has several limitations that should be noted. The small body of research focused on digital game-based language learning and adults in non-educational settings was a significant challenge. As a first-time researcher, it was daunting to find myself in under researched territory and designing research methodology to accurately explore adult ELF speakers. I wanted to explore authentic experiences and thus chose interviews as the most practical methodological approach. My interview prompts were informed by qualitative research methods in SLA research and by previous research in digital-game based language learning and affordance research to explore concepts I deemed important to adults-focused research. However, it is likely that a richer, more focused set of data could be gained from refocusing questions more explicitly towards language-related experiences. While my findings demonstrate that a lot of data can be gained in a sixty-minute interview, multiple interviews may also increase robustness or depth by revisiting events or making further inquiries.

Another limitation to this study pertains to the sample. Given that the demographic was adults working in multinational enterprises, finding participants who were ELF users with

backgrounds in L2 gaming and who were willing to partake in unpaid interviews proved more challenging than I had anticipated. Despite sending interview invitations to several acquaintances in the industry as well as social media groups for researchers, global expatriate communities, very few candidates expressed interest in participating. This meant that my interview group was small, and less diverse than I had hoped. Some of the participants moved in the same social or professional circles and shared similar interests and experiences. The participants were all highly educated, near-fluent speakers of English, and most of them were working outside of their companies' headquarters where ELF proficiency is already a prerequisite. Though they provided insights into possible perspectives of ELF-speaking friends and colleagues, the findings only represent the participants' perceptions and experiences during these interactions. It is therefore recommended that future adult focused digital game-based language learning researchers use sampling methods that include groups with diverse L2 proficiency levels and varied contexts in which they use ELF for a fuller picture. Using interview methodology meant that participants were recalling events and beliefs around language interactions that had occurred in their past. This means that data may be partially influenced by memory and personal perspective.

Qualitative research examining digital game-based language learning in diverse cultural and linguistic backgrounds may shed more light on the phenomena in different sociocultural contexts. As the participants were all males in their thirties, research should also consider how gender, as well as culture and social contexts influence affordance perception. While not used in this project, the responses from a female pilot interviewee suggested that women may perceive language learning affordances differently than men. Finally, future research should consider exploring how second language speakers born before the digital age perceive and respond to digital game-based language learning. As seen in 4.11, the participants believed that their parents and other older associates viewed gaming as a childish activity with few (language) learning affordances. It is therefore recommended that future researchers focus their investigations on older adults' perceptions of digital game-based language learning.

Researchers may also wish to consider experimental research such as observing older adults' interactions in digital game-based language learning, longitudinal case studies, narrative data such as journals, or quantitative research methods such as large-scale surveys concerning diverse age groups of adults and their perceptions of digital game-based language learning. Finally, it is not within the scope or aims of this project to provide a detailed analysis each game mentioned in connection to their potential language learning affordances. While I have played some of the games mentioned by participants and perceived similar L2 affordances, my personal experiences and those of the participants may have influenced how I interpreted the findings and may be evaluated differently by other researchers and L2 gamers.

References

- Alyaz, Y., & Genc, Z. S. (2016). Digital Game-Based Language Learning in Foreign Language Teacher Education. *Turkish Online Journal of Distance Education*, 17(4), pp. 130-146. <https://files.eric.ed.gov/fulltext/EJ1116837.pdf>
- Alyaz, Y., Spaniel-Weise, D., & Gürsoy, E. (2017). A Study on Using Serious Games in Teaching German as a Foreign Language. *Journal of Education and Learning*, 6, pp. 250-264. <https://www.ccsenet.org/journal/index.php/jel/article/view/67363>
- Bakhshayesh, M., Jafarpour, A., & Hashemian, M. (2023). Relationship among Critical Thinking, Multiple Intelligence, and Iranian EFL Learners' Speaking Skill. *Language Teaching Research*, Sage, pp. 1-26. <http://doi.org/10.1177/13621688221144718>
- Bahrack, H. P., Bahrack, L. E., Bahrack, A. S., & Bahrack, P. E. (1993). Maintenance of Foreign Language Vocabulary and the Spacing Effect. *Psychological Science*, 4(5), pp. 316-321. <https://doi.org/10.1111/j.1467-9280.1993.tb00571.x>
- Barkhuizen, G. P., & Strauss, P. (2020). *Communicating Identities* (1st ed.), Routledge: New York. <https://doi.org/10.4324/9781315100630>
- Beavis, C., Rowan, L., Dezuanni, M., McGillivray, C., O'Mara, J., Prestridge, S., Stieler-Hunt, C., Thompson, R., & Zagami, J. (2014). Teachers' Beliefs about the Possibilities and Limitations of Digital Games in Classrooms. *E-Learning and Digital Media*, 11(6), pp. 569-581. <https://doi.org/10.2304/elea.2014.11.6.569>
- Benini, S., & Thomas, M. (2021). A Critical Review of Research on Gamification and Second Language Acquisition. In Peterson, M., Thomas, M., & Yamazaki, K. (Eds.), *Digital Games and Language Learning: Theory, Development and Implementation* (pp. 9-36). Bloomsbury.
- Blume, C. (2019). Playing By Their Rules: Why Issues of Capital (Should) Influence Digital Game-Based Language Learning in Schools. *CALICO Journal*, 36(1), pp. 19–38. <https://www.jstor.org/stable/26724274>.
- Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), pp. 77-101. <https://doi.org/10.1191/1478088706qp0630a>
- Chason, L., Loyet, D., Sorenson, L., & Stoops, A. (2016). An Approach for Embedding Critical Thinking in Second Language Paragraph Writing. *TESOL Journal*, 8(3), pp. 1-31. <https://doi.org/10.1002/tesj.288>
- Chen, M., & Johnson, S. (2004). Measuring flow in a computer game simulating a foreign language environment. Self-published by Chen, M. https://www.markdangerchen.net/pubs/flow_in_game_simulating_fle.pdf
- Chen, H. J. H., & Yang, T. Y. C. (2013). The impact of adventure video games on foreign language learning and the perceptions of learners, *Interactive Learning Environments*, 21(2), pp. 129-141. <http://dx.doi.org/10.1080/10494820.2012.705851>.

- Clark, B. (2021). *Pragmatics: The Basics* (1st ed.). Routledge.
<https://doi.org/10.4324/9781003197263>.
- Dehghanzadeh, H., Fardanesh, H., Hatami, J., Talaei, E., & Noroozi, O. (2021). Using gamification to support learning English as a second language: a systematic review, *Computer Assisted Language Learning*, 34(7), pp. 934-957. <https://doi.org/10.1080/09588221.2019.1648298>
- Dixon, D. H., Dixon, T., & Jordan, E. (2022). Second language (L2) gains through digital game-based language learning (DGBLL): A meta-analysis. *Language Learning & Technology*, 26(1), pp. 1– 25. <http://hdl.handle.net/10125/73464>.
- Duff, P. (2012). Identity, agency, and second language acquisition. In Mackey, A., & Gass, S. (Eds.) *The Routledge handbook of second language acquisition* (pp. 410-426). Routledge.
- Ehrenreich, S. (2010). English as a business lingua franca in a German multinational corporation: Meeting the challenge. *Journal of Business Communication*, 47(4), pp. 408-431.
<https://doi.org/10.1177/0021943610377303>.
- Eurostat. (2016). Number of Foreign Languages Known (Self-Reported) by Occupation, EDAT_AES_L25, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Foreign_language_skills_statistics#Level_of_command_of_best_known_foreign_language
- Ferguson, S. B. (2021). Accessing the creative self: Encouraging innovative L2 expression within a Japanese business university self-access centre. *Studies in Self- Access Learning Journal*, 12(1), pp. 40-69. <https://doi.org/10.37237/120104>
- Ghanizadeh, A., Al-Hoorie, A. H., & Jahedizadeh, S. (Eds.) (2020). *Higher order thinking skills in the language classroom: a concise guide*. Springer.
- García-Carbonell, A., Andreu-Andrés, M. A., & Watts, F. (2014). Simulation and Gaming as the future's language of language learning and acquisition of professional competences. In Kris, W. C., & Duke, R. D. (Eds.). *Back to the Future of Gaming* (pp. 214-227). WB Verlag.
- Gee, J.P. (2003). *What video games have to teach us about learning and literacy* (1st Ed.). Palgrave Macmillan.
- Gee, J.P. (2004). *Situated language and learning : a critique of traditional schooling*. Routledge.
- Gee, J.P. (2005). Semiotic social spaces and affinity spaces: From the age of mythology to today's schools. In Barton, D., & Tusting, K. (Eds.), *Beyond communities of practice: Language, power, and social context* (pp. 214-232). Cambridge University Press.
<https://doi.org/10.1017/CBO9780511610554.012>.
- Gee, J.P. (2014). *Unified Discourse Analysis : Language, Reality, Virtual Worlds and Video Games*. Taylor & Francis Group.
<http://ebookcentral.proquest.com/lib/massey/detail.action?docID=1715785>.
- Geeslin, K. L., & Hanson, S. (2022) Sociolinguistic approaches to communicative competence. In Kanwit, M., & Solon, M. (Eds.). *Communicative Competence in a Second Language: Theory, Method, and Applications* (pp. 40-59). Routledge. <https://doi.org/10.4324/9781003160779>
- Gibson, J.J. (1966). *The Senses Considered as Perceptual Systems*. Boston: Houghton Mifflin.

- Gibson, J.J. (1977). The Theory of Affordances. In Shaw, R., & Bransford, J. (Eds.). *Perceiving, Acting, and Knowing: Toward an Ecological Psychology* (pp. 67-82). Lawrence Erlbaum.
- Godwin-Jones, R. (2014). Games in language learning: Opportunities and challenges. *Language Learning & Technology*, 18(2), pp. 9-19. <http://lt.msu.edu/issues/june2014/emerging.pdf>
- Gonzalez-Lloret, M., Ortega, M. D., & Payne, S. (2020). Gaming alone or together? L2 beginner-level gaming practices. *Perspectiva*, 38(2), pp. 1-21. <https://doi.org/10.5007/2175-795X.2020.E67573>
- Govender, T., & Arnedo-Moreno, J. (2021). An Analysis of Game Design Elements Used in Digital Game-Based Language Learning. *Sustainability*, 13(12), pp. 66-79. <http://dx.doi.org/10.3390/su13126679>
- Hanghøj, T., Silseth, K., & Arnseth, H. C. (2019). Games as Tools for Dialogic Teaching and Learning. In Arnseth, H. C., Hanghøj, T., Henrikson, T. D., Misfeldt, M., Ramberg, R., & Selander, S. (Eds.). *Games and Education: Designs in and for Learning* (pp. 123–139). Brill. https://doi.org/10.1163/9789004388826_008
- Henry, A. (2015). Enablements and constraints: Inventorying affordances associated with lingua franca English. *International Journal of Bilingual Education and Bilingualism*, 19(5), pp. 1-41. [10.1080/13670050.2015.1014465](https://doi.org/10.1080/13670050.2015.1014465)
- Horowitz, K.S. (2019). Video Games and English as a Second Language: The Effect of Massive Multiplayer Online Video Games on The Willingness to Communicate and Communicative Anxiety of College Students in Puerto Rico. *American Journal of Play*, 11, pp. 379-410. <https://eric.ed.gov/?id=EJ1220304>
- Ibrahim, K. (2019). Foreign language practice in simulation video games: An analysis of game-based FL use dynamics. *Foreign Language Annals*, 52(2), pp. 335-357. <https://doi.org/10.1111/flan.12388>
- Jauregi-Ondarra, K., & Canto, S. (2023). Interaction games to boost intercultural communication in virtual worlds and video communication. In Peterson, M., & Jabbari, N. (Eds.) (2023). *Digital games in language learning: case studies and applications* (pp. 158-184). Routledge. <https://doi.org/10.4324/9781003240075>
- Juzeleniene, S., Mikelioniene, J., Escudeiro, P., & Vaz de Carvalho, C. (2014). GABALL Project: Serious Games Based Language Learning, *Procedia - Social and Behavioral Sciences*, 136, pp. 350-354, <https://doi.org/10.1016/j.sbspro.2014.05.340>.
- Kaur, J., & Birlik, S. (2021). Communicative Effectiveness in BELF (English as a Business Lingua Franca) Meetings: 'Explaining' as a Pragmatic Strategy. *The Modern Language Journal*, 105(3), pp. 623-638. <https://doi.org/10.1111/modl.12717>
- Lantolf, J. (2000). Second language learning as a mediated process. *Language Teaching*, 33(2), pp.79-96.
- Lantolf, J. P., & Poehner, M. E. (2014). Sociocultural Theory and the Pedagogical Imperative in L2 Education: Vygotskian Praxis and the Research/Practice Divide (1st ed.). Routledge. <https://doi.org.ezproxy.massey.ac.nz/10.4324/9780203813850>.
- Lauring, J., Vulchanov, I. O., & Stoermer, S. (2022). Linguistic capital and status: The interaction between language skills, personal reputation, and perceived collaboration performance. *The*

- Journal of The European Academy of Management, European Management Review*, pp. 1-15. <https://doi.org/10.1111/emre.12519>
- Li, L. (Ed.). (2019). *Thinking Skills and Creativity in Second Language Education: Case Studies from International Perspectives* (1st ed.). Routledge. <https://doi-org.ezproxy.massey.ac.nz/10.4324/9781315098920>
- Marin, M. & Pava, L. (2017). Conceptions of Critical Thinking from University EFL Teachers. *English Language Teaching* 10(8), pp. 78- 88. [10.5539/elt.v10n7p78](https://doi.org/10.5539/elt.v10n7p78)
- Marković, T. (2016). Game-Based Learning in English for Professional Purposes. *Foreign Language Learning and Teaching*, Sinteza, pp. 332-339. <https://portal.sinteza.singidunum.ac.rs/paper/442>
- MUHEC Code of Ethical Conduct. *Massey University Human Ethics Committee (MUHEC)*. Massey University. <https://www.massey.ac.nz/research/ethics/human-ethics/>
- Melitz, J. (2018). English as a Lingua Franca: Facts, benefits, and costs. *World Economy*, 41(7), Wiley Online, pp. 1-26.
- Mets, J., & Bauters, M. (2023). Engaging Company Employees in Critical Thinking Through Game-Based Learning: A Qualitative Study. In: Huang, Y. M., Rocha, T. (Eds). *Innovative Technologies and Learning. ICITL 2023. Lecture Notes in Computer Science* (pp. 403-408),14099. Springer. https://doi.org/10.1007/978-3-031-40113-8_39.
- Mueller, A. (2012). Research-based design of a medical vocabulary videogame. *International Journal of Pedagogies and Learning*, 7(2), pp. 122-134. <https://doi.org/10.5172/ijpl.2012.7.2.122>
- Neeley, T. B. (2013). Language Matters: Status Loss and Achieved Status Distinctions in Global Organizations. *Organization Science*, 24(2), pp. 476–497. <http://www.jstor.org/stable/42002859>.
- Neeley, T. B., Hinds, P. J. & Cramton, C. D. (2012) The (un)hidden turmoil of language in global collaboration. *Organizational Dynamics*, 41(3), pp. 236–244. <https://doi.org/10.1016/j.orgdyn.2012.03.008>.
- Nguyen, M. T. T. (2022). Interlanguage pragmatics as communicative competence. In Kanwit, M., & Solon, M. (Eds.) *Communicative Competence in a Second Language: Theory, Method, and Applications* (1st ed., pp. 135-151). Routledge. <https://doi.org/10.4324/9781003160779>
- Plass, J. L., Homer, B. D., & Kinzer, C. K. (2015). Foundations of Game-Based Learning, *Educational Psychologist*, 50(4), pp. 258-283. <https://files.eric.ed.gov/fulltext/EJ1090277.pdf>
- Peterson, M. (2010). Massively multiplayer online role-playing games as arenas for second language learning. *Computer Assisted Language Learning*, 23(5), pp. 429-439. <https://doi.org/10.1080/09588221.2010.520673>
- Peterson, M., & Jabbari, N. (Eds.) (2023). *Digital games in language learning: case studies and applications*. Routledge. <https://doi.org/10.4324/9781003240075>
- Peterson, M., Thomas, M., & Yamazaki, K. (Eds.) (2021). Digital games and language learning: The state of play, *Digital Games and Language Learning: Theory, Development and Implementation*. Bloomsbury.

- Prior, M. T. (2018). Interviews & Focus Groups. In Phakiti, A., de Costa, P., Plonsky, L., & Starfield, S. (Eds.) *The Palgrave Handbook of Applied Linguistics Research Methodology* (pp. 225-248). Palgrave. <https://link.springer.com/book/10.1057/978-1-137-59900-1>
- Przymus, S. D., Lengeling, M. M., Irasema Mora-Pablo, I., & Serna-Gutiérrez, O. (2022). From DACA to Dark Souls: MMORPGs as Sanctuary, Sites of Language/Identity Development, and Third-Space Translanguaging Pedagogy for Los Otros Dreamers, *Journal of Language, Identity & Education*, 21(4), pp. 248-264. [10.1080/15348458.2020.1791711](https://doi.org/10.1080/15348458.2020.1791711)
- Rama, P. S., Black, R. W., van Es, E. and Warschauer, M. (2012). Affordances for Second Language Learning in World of Warcraft. *ReCALL*, 24(3), pp. 322-338. <http://dx.doi.org/10.1017/S0958344012000171>.
- Reinders, H., & Wattana, S. (2012). Talk to Me! Games and Students' Willingness to Communicate. In Reinders, H. (Ed.) *Digital Games in Language and Teaching* (pp. 156-189). Middlesex University.
- Reinders, H. & Wattana, S. (2014). Affect and willingness to communicate in digital game-based learning. *ReCALL*, 27(1), pp. 38-57. <http://doi.org/10.1017/S0958344014000226>
- Reinhardt, J. (2019). *Gameful second and foreign language teaching and learning: Theory, research, and practice*. Palgrave Macmillan. <https://link.springer.com/book/10.1007/978-3-030-04729-0>
- Reinhardt, J. (2021). Not all MMOGs are created equal: A design-informed approach to the study of L2 learning in multiplayer online games. In Peterson, M., Yamazaki, K., & Thomas, M. (Eds.), *Digital Games and Language Learning: Theory, Development and Implementation* (pp. 1-16). Bloomsbury.
- Reinhardt, J. & Kirby, S. (Eds.) (2022). Second Language acquisition and multiplayer gaming. *The Routledge handbook of second language Acquisition and Technology*. Routledge, pp. 286- 296.
- Rogerson-Revell, P. (2007). Using English for International Business: A European Case Study. *English for Specific Purposes*, 26(1), pp. 103-120. <https://doi.org/10.1016/j.esp.2005.12.004>
- Rolland, L., Dewaele, J., & Costa, B. (2020). Planning and conducting ethical interviews: Power, language and emotions. In McKinley, J., & Rose, H. (Eds.), *Routledge Handbook of Research Methods in Applied Linguistics* (pp. 279-289). Routledge.
- Sato, T. (2022). Assessing critical thinking through L2 argumentative essays: an investigation of relevant and salient criteria from raters' perspectives. *Language Testing in Asia*, 12(1), pp. 1–19. <https://doi.org/10.1186/s40468-022-00159-4>
- Scholz, K. (2017). Encouraging Free Play: Extramural Digital Game-Based Language Learning as a Complex Adaptive System. *CALICO Journal*, 34(1), pp. 39-57. <https://www.jstor.org/stable/90014677>
- Scholz, K. (2022). Digital Game Based Language Learning in Extramural Settings. In Peterson, T. M., & Yamazaki, K. (Eds.), *Digital games and language learning : theory, development and implementation* (pp. 129-141). Bloomsbury.
- Shahriarpour, N., & Kafi, Z. (2014) On the Effect of Playing Digital Games on Iranian Intermediate EFL Learners' Motivation toward Learning English Vocabularies. *Procedia-Social and Behavioral Sciences*, 98, pp. 1738-1743. <http://dx.doi.org/10.1016/j.sbspro.2014.03.601>.

- Soodmand A. H., Movassagh, H., & Arbabi, H. R. (2017). The interrelationship among critical thinking, writing an argumentative essay in an L2 and their subskills. *Language Learning Journal*, 45(4), pp. 419-433. <https://doi.org/10.1080/09571736.2017.1320420>
- Sosnina, E. P., Starostina, N. N. (2021). Critical Thinking Development Model as a Tool to Teach Business English Effectively. In: Sakas, D.P., Nasiopoulos, D.K., Taratuhina, Y. (eds.) *Business Intelligence and Modelling* (pp. 379-385). Springer Proceedings in Business and Economics, Springer. https://doi.org/10.1007/978-3-030-57065-1_38
- Sousa, M., & Rocha, A. (2019). Leadership styles and skills developed through game-based learning, *Journal of Business Research*, 94, pp. 360-366. <https://doi.org/10.1016/j.jbusres.2018.01.057>
- Su, L., Jung, H. J., & Yang, M. Z. (2022). Does a Lingua Franca matter in bilateral international trade?, *International Studies of Economics*, 18(1), pp. 80-96. <https://doi.org/10.1016/j.jebo.2010.03.013>
- Sundqvist, P. (2015). About a boy: A gamer and L2 English speaker coming into being by use of self-access. *Studies in Self-Access Learning Journal*, 6(4), pp. 352-364. <https://sisaljournal.org/archives/dec15/sundqvist/>
- Sundqvist, P. (2019). Commercial-off-the-shelf games in the digital wild and L2 learner vocabulary. *Language Learning and Technology*. 23(1), pp. 87-113. <https://www.lltjournal.org/item/10125-44674/>
- Sykes, J. M. (2017). Digital Games and Language Teaching and Learning, *Foreign Language Annals*, 51(1), pp. 219-224. <https://eric.ed.gov/?id=EJ1172877>
- Sykes, J. M. (2018). Interlanguage Pragmatics, Curricular Innovation, and Digital Technologies. *CALICO Journal*, 35(2), pp. 120-141. <https://doi.org/10.1558/cj.36175>
- Sylvén, L. K. (2022). Ethics, Privacy, and Security in Researching LBC, *The Routledge Handbook of Language Learning and Teaching Beyond the Classroom*. Routledge, pp. 299-311.
- Takino, M. (2020). Power in International Business Communication and Linguistic Competence: Analyzing the Experiences of Nonnative Business People Who Use English as a Business Lingua Franca (BELF). *International Journal of Business Communication*, 57(4), pp. 517-544. <https://doi.org/10.1177/2329488417714222>
- Thorne, S. L. (2008). Transcultural Communication in Open Internet Environments and Massively Multiplayer Online Games. In Magnan, S. (Ed.), *Mediating Discourse Online* (pp. 305-227). John Benjamins.
- Vandercruysse, S., Vandewaetere, M., Cornillie, F., & Clarebout, G. (2013). Competition and students' perceptions in a game-based language learning environment. *Educational Technology Research and Development*, 61(6), pp. 927-950. <https://link.springer.com/article/10.1007/s11423-013-9314-5>
- Van Lier, L. (2004). *The Ecology and Semiotics of Language Learning: A Sociocultural Perspective*. Springer. <https://link.springer.com/book/10.1007/1-4020-7912-5>
- Van Patten, B., & Smith, M. (2022). *Explicit and Implicit Learning in Second Language Acquisition*. Cambridge University Press. <http://doi.org/10.1017/9781009043571/>

- Vasquez-Calvo, B. (2018). The Online Ecology of Literacy and Language Practices of a Gamer. *Educational Technology & Society*, 21(3), pp. 199-212. <https://www.jstor.org/stable/26458518>
- Vosburg, D. (2017). The effects of group dynamics on language learning and use in an MMOG. *CALICO Journal*, 34(1), pp. 58–74. <https://eric.ed.gov/?id=EJ1143358>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge University Press. <http://dx.doi.org/10.2307/j.ctvjf9vz4>.
- Wu, J. G., Zhang, D., & Wang, M. (2022). Game-Based Virtual Reality for Languaculture Learning: An Example of the Forbidden City. *8th International Conference of the Immersive Learning Research Network (iLRN)*, Vienna, Austria, pp. 1-5. [10.23919/iLRN55037.2022.9815946](https://doi.org/10.23919/iLRN55037.2022.9815946)
- Young, M. F. & Slota, S. T. (Eds.) (2017). *Castle upon a Hill. Exploding the Castle: Rethinking how Video Games and Game Mechanics can shape the future of education*. Information Age Publishing. https://content.infoagepub.com/files/fm/p596a610a8ece7/9781681239378_FM.pdf
- Zhou, J., Jiang, Y., & Yao, Y. (2015). The Investigation on Critical Thinking Ability in EFL Reading Class. *English Language Teaching*, 8(1), pp. 83-94. <http://dx.doi.org/10.5539/elt.v8n1p83>

Appendices

Appendix A: Interview Prompts

Section one: Consent

1. Warm up greetings, small talk
2. Consent confirmation (Before recording)

Section two: General questions

3. Can you tell me a little bit about yourself and your language learning background?
 - Age
 - Country of birth
 - First language
 - Other spoken languages (if you feel comfortable could you tell me what level you are/think you are?)
 - What do you do for work? (You do not have to tell me anything too detailed if you do not feel comfortable, just general title)

Section Three: *language learning experience with digital gaming*

4. Can you tell me about the time when you started playing digital games?
 - How old were you?
 - What made you start?
 - What was the first game you every played? Can you tell me about it (console/type/language? What did you enjoy about it?)
 - Were there any other friends or family members in your life who also played digital games?
 - How did the people in your life perceive or react to you playing of video games? Were there any positive or negative experiences that come to mind?
5. Can you tell me about some of your favorite games? They can be ones you've played recently or in the past.
 - Title
 - Type of game (1P/ MMORPG/ shooting/ narrative/ open world etc./ platform you play on)
6. What features of video games keep you playing? (story/narrative, visuals, teamply or missions)

Section Four *language learning experience with digital gaming*

7. Can you tell me a little bit about your experiences playing in (English)?

What emotions did you experience the first time? Did these emotions change over time? What made them change?

8. Has there ever been a time when you have discovered a new word, phrase, or sentence structure in a game? Did you feel motivated to learn more about this outside of the game?

9. Has there ever been a time when you've been able to use something you learned through gaming in a professional context? Can you tell me about this?

10. A lot of studies have reported that people gain more confidence speaking a second language after playing video games. What do you think about this?

11. In your experience, is there a difference in language ability between gamers and non-gamers? Why do you think this is?

12. Have you made (English)-speaking friends through gaming? Can you tell me a bit about how you became friends? Did any of these friendships spill over into your real life?


13. Do you think different types of games are better for learning (English) than others? (1P, MP, MMORPG, Open world) Can you explain why you feel this way?

14. There is an episode of the US TV series "The office" where Jim and his colleagues play call of duty at work as a team building exercise. How do you think this would work if your company were to try using this strategy? What steps should they take to make this exercise a successful one? Do you think people should play in English/other languages?

15. A lot of people say that they don't discuss their gaming activities with colleagues or employers. What do you think about this? (Why do you think this is? Do your colleagues and bosses know that you play?)

16. Imagine someone you know wants to use video games to improve their (English). What advice would you give them to best go about this?

Appendix B: Ethics Invitation Letter for Participants



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Project information (interview)

Hello fellow gamers! I am inviting you to participate in my master's thesis project because you are an adult working professional who also identifies as a gamer. I realize that the end of the year can be a busy and stressful time for employees of multinational organizations, and I appreciate you taking the time to read and consider my proposal.

Project title

Exploring the language learning affordances of digital games for adult second language learners working for multinational organizations.

About our team

Raechel Ziemer
Master's thesis candidate in Applied Linguistics
Teaching English to Speakers of Other Languages
Massey University
New Zealand (Extramural)


I am the writer of this project. I have been teaching English since 2015, with a focus on English for business communication. My research interests lie in exploring functional second language communication and using digital media to assist adults with second language learning.

Supervisors

Dr. Ute Walker
Senior Lecturer in Linguistics & Applied Linguistics
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About our project

A large body of research suggests that second language learners may benefit from digital gaming by engaging with meaningful language and by connecting them with other speakers in a low-stakes, enjoyable environment. These aspects of gaming may also increase motivation and engagement and decrease anxiety when speaking in a second language. Unfortunately, most of these studies focus on language learners in settings such as schools and universities. As many more adults find themselves needing to speak a second language for professional communication, I want to explore whether playing digital games in a second language might also help them to engage with language learning outside of the traditional classroom.

How you can support our project

As a second language speaker and self-identifying gamer, your gaming experiences, and their effect on both your language learning and professional communication are important to our team, as they may shed light on an important and under-researched avenue of adult second language learning. I invite you to participate in one or two 60-minute interviews via Zoom. If you decide to participate, please let me know via email and I will arrange a meeting at your convenience.

Participants' rights

Participation in this project is completely voluntary and there is no obligation to accept this invitation. If you decide to participate, I ask that you complete the attached consent form. You have the right to:

- Decline to answer any question.
- Ask any questions about the project at any time before or during participation.
- Review your edited transcripts before data analysis begins.
- Provide information on the understanding that your name and any other information which may identify you will not be used unless you provide explicit permission, and that all data used will be anonymized.
- Withdraw at any time.

Data management and use

Data collected for this project will be kept confidential and stored securely on my personal, password-protected device. Confidentiality will be assured by using pseudonyms and not releasing or displaying any features that might identify participating individuals, their companies, or settings. At the end of the project, raw data will be removed from my personal device. Findings from this project may be used for future dissemination such as academic publications or conference papers.

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Ethical conduct and considerations

This project has been evaluated by peer review and has been judged to be low risk (notification number: 4000026460). As such, it has not been reviewed by Massey University's Human Ethics committees. The researchers named above are responsible for the ethical conduct of this research. This includes transparency about the researchers' respective roles and contributions to the research. I, Raechel Ziemer, am the sole researcher and responsible for the project design. Dr. Ute Walker and Dr. Qijue Ballance are the research supervisors and are responsible for guidance in all aspects of ethical and thorough research in applied linguistics. As experienced researchers and teachers, they provide a wealth of experience in the fields of Linguistics, Applied Linguistics, and English for Academic Purposes and a strong foundation in research methodology.

Thank you so much for your consideration, I hope to hear from you soon!



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Appendix C: Ethics Participant FAQs

FAQs for Participants

What is expected of me by consenting to participate?

You are invited to participate in 1-2 online interviews of up to 60 minutes. These interviews will be recorded and transcribed for data analysis. You will also be notified once the interviews have been anonymized and transcribed and will be given a copy of your interview transcript for review before beginning data analysis via your submitted email address.

Am I obliged to participate?

Although your participation is greatly appreciated, you are under no obligation to participate in this study. You may choose to withdraw your consent at any time before data analysis commences and you will be notified in writing before this phase is initiated.

How will my confidentiality be protected?

Your personal data, such as your name and email address, your recorded interviews and transcripts will be stored and password-protected on my personal device. You are welcome to choose a pseudonym for yourself and any persons or institutions mentioned in your interviews. If you do not choose pseudonyms, you will be notified of the pseudonyms chosen for you. Your recorded interviews and transcripts will only be accessed by myself. Anonymized data may be reviewed by my supervising professors. Upon submission of my thesis, your data will be destroyed.

Do I have to have a high proficiency in English?

So long as you understand the questions and feel comfortable and able to answer them, I welcome your participation. We are not measuring skill or ability. Rather, we are interested in your experiences. Though the interviews are planned to be conducted in English, I am a proficient German speaker. Therefore, I am happy to conduct interviews in English, German, or a combination of both.

What if I have concerns about what was said during the interviews? Can I review my transcripts before the thesis is published?

Once your interview has been transcribed, you will be provided with an anonymized copy for you to review, as well as to raise any concerns with me before your data is analyzed. You submit any concerns or revisions up to 7 days after receiving your transcripts. You will be notified in writing before I start to analyze the data.

What do I stand to gain from participating in this study? Does anyone stand to gain from this study?

Though I unfortunately cannot offer a financial incentive, this project has the potential to uncover new avenues of research in corporate language training. I am happy to provide a copy of the completed thesis to you and discuss my findings. No parties involved in this research will receive financial incentives for their participation. As mentioned, this study may assist in the development of language training programs by highlighting ways to engage with language learning outside of the classroom.

Can I withdraw from this study?

You are welcome to notify me of your intent to withdraw from this project at any time before data analysis begins. I will provide you with a written notification before beginning this phase.

Appendix D: Ethics Participant Consent Forms


Invitation to participate in Master's thesis research exploring the language learning benefits of digital gaming for adult working professionals

ziemer.raechel@gmail.com [Switch accounts](#)

*** Indicates required question**

Email *

Your email address



MASSEY UNIVERSITY
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Please read the statements below and indicate whether you consent to participate in this research project under these conditions by ticking the boxes:

Yes

I understand that this research involves my participation in one or two interviews of up to 60 minutes conducted over Zoom and that interviews will be audio-recorded, transcribed, stored, and password protected on Raechel Ziemer's personal computer.

Yes

I understand that I may choose to conduct the interviews in English, German, or a combination of both languages. I am also aware that the Raechel Ziemer and their supervising professor have a sound command of German and will ensure an accurate English translation of my transcripts.

Yes

I understand that I have the right to review my transcripts and provide feedback before data analysis begins including rephrasing or omission.

Yes

I understand that only I, Raechel Ziemer, and the supervising professors (Dr Ute Walker and Dr Oliver Ballance) will have access to the audio-recordings and the transcripts. If findings are used for academic purposes such as conferences, I am aware that my data will remain anonymous.

Yes

I understand that Raechel Ziemer will make every effort to protect my anonymity and the privacy of people or institutions that I mention and that pseudonyms will be used to protect all identities and settings.

Yes

I understand that my data will be safely stored up until submission of the project to Massey University. Upon completion, my data will be destroyed.

Yes

I understand that I am under no obligation to participate in this study and that I have the right to withdraw from this study at any time up until data analysis commences.

Yes

I understand that neither I, the researchers, or any related parties stand to gain financially from this study.

Yes

I understand that I am under no obligation to participate in this study and that I have the right to withdraw from this study at any time up until data analysis commences.

Yes

I understand that neither I, the researchers, or any related parties stand to gain financially from this study.

Yes

I have been informed of the aims of this Massey University Master's thesis project as well as my rights as a participant. I hereby consent to participating in the following Master's research project conducted by Raechel Ziemer and supervised by Dr Ute Walker and Dr Oliver Ballance through Massey University (New Zealand). Please confirm by writing your email address below.

Your answer

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Google Forms

Appendix E: Qualitative Codebook

General/background information			Language learning affordances codes		
Code theme	Definition	Examples	Code theme	Definition	Examples
General personal	General contextual background about individual participant which may contextualise their perceptions	Age; Gender; Country of Origin; Country of residence; native language(s); family dynamics; countries where they lived/worked/studied; gaming history (L1/L2); favourite games/game genres/play styles; how others feel about their gaming (or gaming in general)	Linguistic Capital	Power/status gained through demonstrating perceived linguistic proficiency or capabilities	Ability to accurately present ideas/concepts; share & receive knowledge; respond quickly & creatively; proficient use of complex language/grammar/vocabulary; transformative use of L2 (not repetition)
Language learning background	General contextual background about their L2 learning history	Age they began learning; experiences & opinions of formal learning (in school/university/professional); experiences & opinions of extramural learning (tutoring; media; interactions with L2 native/non-native speakers; self-directed learning experiences); their current perceived proficiency	Social Capital	Power/status gained through interactions with others that result in acceptance/belonging/sense of value to community	Co-construction; co-constructing positive relationships; collaboration; creating affiliation & affinity with others; networking; demonstrating empathy/intercultural awareness; connecting with others through shared beliefs/humour/
ELF background (professional)	General contextual background of their professional experience using English as a lingua franca	Professional title/duties (previous or current); where ELF is used (in home country/overseas/online); content of their professional environment (colleagues L1/countries of origin; experiences working with ELF speakers from other countries); impact of ELF on their daily work life	L2 exposure/practise	Opportunities to engage with & model target language	Listening/reading/writing game dialogue & responding through in game actions; listening/reading/writing with other players & responding verbally/textually/speaking
ELF background (personal)	General contextual background of their personal use of English as a lingua franca	Friends/partners/family members who speak ELF; the impact of ELF on their daily personal life	L2 identity development	Equal parts projection of authentic self & reflection of interactions with others	Ability to express oneself accurately & authentically; influenced by interactions with diverse others; changes in beliefs/perceptions from interactions with diverse others; impact of L1 on L2/L2 on L1; how they perceive themselves in L1/L2
Game element/environment codes			Explicit L2 learning	Language learning with an intentional goal/learning outcome	task-based language activities, problem-solving & tests (e.g. grammar, vocabulary phrasal exercises)
Storytelling Game elements	Game elements related to narrative progression	Plot devices and structures (genres, themes, playable/non-playable character development); audio-visual scene setting (music; environment/setting; lighting); Spoken/written dialogue used for narrative progression (including character, narrator, and player-driven dialogue); Player-performed actions which affect games' narrative progression	Implicit L2 learning	Language learning which occurs incidentally through gameplay, but is not the primary/intentional goal	Later realisations of meaning/form; understanding language exposed to in games in context outside of games; reproduction of language heard in games
Strategic Game elements	Game design elements requiring players' use of higher-order thinking skills	Task-based problem-solving; Critical analysis; Deductive reasoning; Evaluating evidence/information; Consideration of actions/consequences; Recalling & evaluating past actions; Executive decision-making; Critical reflection	Power dynamics	Preconceived (L1) Sociocultural norms regarding (perceived) social power which affect L2 communicative style	Similarities or differences in social power (e.g. age; professional position/status); perceived linguistic proficiency/knowledge that have origins in L1 culture, that influence L2 speech actions (e.g. silence/voicing opinion; politeness; humour; directness/indirectness)
Purposeful learning Gaming elements	Games which are designed for learning purposes rather than for entertainment purposes	Games that include tasks designed with explicit intent to teach and/or test targeted, predetermined learning outcomes (e.g. vocabulary, grammar, or other skills)	L2 higher order thinking	Thinking processes which require deep, critical, and/or creative thinking in target language	Critical analysis; Deductive reasoning; Evaluating evidence/information; Considering of actions/consequences; Recalling & evaluating past actions; Executive decision-making; Critical reflection
Multiplayer Gaming environments	Game environments which enable in-game interactions between game environment, AND other players	Players can perform actions which affect game narrative, game environment, and non-playable characters, alongside real-time interactions between other human players on a shared server (this includes cooperative, competitive or combative actions against other player characters; and real-time audio/textual communication between players)	Intercultural pragmatic awareness	Knowledge of other ELF speakers' social & cultural norms influence their L2 communicative styles	Awareness of intercultural power dynamics; speech actions which may be considered face-threatening; how politeness is conveyed; appropriate use of formality; humour; turn-taking etiquette; body language/gestures
Single player Gaming environments	Game environments which only enable interactions between ONE player and game environment	Players can perform actions which affect game narrative, environment, non-playable characters, but cannot interact with other human players	Preconditions to DGBLL	Aspects affecting whether affordances are evaluated as worthy of action or perceived as constraining learning	Social/cultural attitudes towards topics gaming; power dynamics; lack of affinity/shared purpose; linguistic constraints; appropriateness of material (e.g. game genre/language used in game)
Affinity spaces	Environment where groups of individuals collaborate & co-construct based on common goals/endeavours	Fluid hierarchies; shared interests or intrinsic motivations (e.g. interest in particular digital game or interest in completing similar goals out of enjoyment); fluid hierarchies; encouragement of knowledge dissemination;			