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Engagement with Technology: Gaming, Immersion and Sub-Optimal Experiences

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Abstract

This article focuses on student engagement, and the use of digital games in language classrooms. Contributing to the mapping of student engagement across SLA (Dörnyei, 2019a), and in line with the need to use established theories to develop insights into engagement in contexts of digital gaming, a case is made for the concept of immersion (Brown & Cairns, 2004). First, the concept is introduced. Then, to explain how immersion can contribute in understanding student engagement with digital games, an example of engaged gameplay from a classroom ethnographic project in Sweden is provided. Drawing on this example, immersion is contrasted with two established concepts: L2 willingness to communicate and flow. These comparisons illustrate how immersion captures a form of engaged behaviour particular to playing video games, and which is distinct from other types of focused behaviour previously identified in contexts of L2 learning. It is suggested that immersion can make a significant contribution to understanding student engagement in contemporary language classrooms: it captures engaged behaviour of varying intensities, validated measurement instruments exist, and it can be used in multi-variable designs. Although immersion relates to a form of engagement particular to gaming experiences, it has potential to extend to other digital technologies.

Keywords: Digital technologies; Language Learning; Motivation; Engagement; Digital Games; Immersion

Introduction

L2 motivation research may have reached a crossroads. In all of the phases up until the present time, the focus of quantitative and qualitative work has been on identifying and exploring the sources of learner motivation (Dörnyei & Ryan, 2015). Entering the third decade of the millennium, and after some sixty years of research (Al-Hoorie, 2017), scholars are beginning to direct attention to the outplay of motivation in focused behaviour, and the involvement and participation of students in classroom situations. In this article we focus on student engagement (Dörnyei, 2019a) in the context of technology

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use in L2 classrooms. Described by Skinner (2016) as providing "a leitmotif for a fuzzy set of constructs capturing students' involvement, participation, attachment, bonding, and connections to school and its many facets, including schoolwork, extracurricular activities, teachers, classmates, and friends" (p. 146), student engagement is emerging as a construct of considerable importance in language learning contexts (Dörnyei, 2019a, 2019b; Mercer & Dörnyei, 2020). With a view to developing a conceptual framework that can capture the behaviours and experiences characteristic for situations where interactive technologies such as digital games form a part of L2 learning, we examine the concept of immersion, a construct that captures experiences of engagement in video gaming (Brown & Cairns, 2004; Carins, Cox & Nordin, 2014; Jennet et al., 2008). To illustrate how immersion can contribute in understanding L2 students' engagement with technology, we provide an example from a classroom in Sweden where a browser-based game was used to support students in overcoming communication apprehension by providing unintimidating opportunities for L2 interactions. By making comparisons with the established constructs of L2 willingness to communicate (MacIntyre, Clément, Dörnyei & Noels, 1998) and flow (Csikszentmihalyi, 1990; Egbert, 2003), we aim to show how immersion captures a form of engaged behaviour particular to gameplay, and which needs to be understood as conceptually distinct from other types of focused activity in L2 classrooms.

Student engagement

Although an established sub-field of motivation research in mainstream educational psychology, it is only recently that student engagement has been explored in SLA. As Mercer and Dörnyei (2020) explain, this may have historical reasons, as concepts such as learning strategies and self-regulation (Oxford, 2017) have been used to account for L2 learning behaviours. However, with the emergence of the broader field of language learning psychology (Mercer & Ryan, 2016), and moves towards greater use of theory from mainstream paradigms (Yun, Hiver & Al-Hoorie, 2018), engagement is now capturing the attention of L2 researchers. A book-length treatment of the topic has recently been published (Mercer & Dörnyei, 2020), and an anthology including cutting-edge empirical work is in preparation (Hiver, Mercer & Al-Hoorie, in preparation).

The "new-kid-on-the-block" status in SLA mirrors developments in mainstream research. Here too motivation is the established research tradition, and engagement the far younger (but more vital) subfield (Skinner, 2016). Because engagement is operationalized in contexts across the domain of educational psychology, it has a broad conceptual space. While various conceptualizations have been developed, there is no one definition that is universally accepted. This said, there is general agreement about three key features of the student engagement construct (Skinner, 2016; Skinner & Pitzer, 2012). The first aspect upon which there is wide agreement is the understanding that engagement operates in relation to particular targets, and that the nature of the target influences the consequences of the student's engagement. Second, there is also agreement that student engagement is a multidimensional construct, and that it encompasses behavioural, affective and cognitive dimensions (Fredricks, Blumenfeld & Paris, 2004). Finally, there is additional consensus that, at root, student engagement concerns involvement in observable behaviours that are directly related to the learning process. Described variously as "participation" or "task focus," engaged behaviour can range in intensity from attentiveness and compliance, all the way through to concentration, focused effort and persistence (Skinner, 2016).

A subfield of L2 motivation research

For researchers interested in the learning behaviour of people involved in developing L2 skills, engagement is an attractive construct. This is because it focuses on the individual's active involvement in learning activities. As Dörnyei (2019a), explains, "it requires little justification that student

engagement is equally important in the field of SLA, because the automatization of L2 skills requires an extended period of practice that involves meaningful learner participation" (p. 24). In understanding active participation in the L2 classroom, student engagement can make three important contributions (Dörnyei, 2019a; Mercer & Dörnyei, 2020). First, given the nature of language learning in many contemporary classrooms, where time is spent providing students with opportunities to work with meaningful activities, student engagement provides a means of understanding how motivation plays out in concrete actions. In the context of particular learning activities, it can provide insight into the ways in which focus and attention emerge and are sustained (Dörnyei, 2019b). Secondly, the benefit of a focus on student engagement rather than motivation, is that the motive (the driving force) and its manifestation (involvement in activities) can be addressed together. As Dörnyei (2019b) explains, student engagement can be understood as a unified concept:

> *When students are "engaged," they are inevitably fuelled by some motivation that gives direction to their action, but the fact that they are engaged also means that this motivational drive has succeeded in cutting through the complexity of the surrounding multitude of distractions, temptations and alternatives. (p. 60)*

The final reason that makes student engagement attractive in understanding focused behaviour in L2 learning is the multi-dimensional nature of the concept (Fredricks, Blumenfeld & Paris, 2004). Congruent with increasing recognition within SLA of a need to provide holistic accounts of dynamic processes (The Douglas Fir Group, 2016), student engagement offers a means of understanding the antecedents of focused activity, as well as the trajectories of focused behaviour during particular learning sequences.

Engagement in SLA

Prior to the current wave of interest (Mercer & Dörnyei, 2020; Hiver et al., in preparation), engagement has previously featured in SLA research, although in a somewhat different form (Philp & Duchesne, 2016; Svalberg, 2009). In comparison with attempts by Dörnyei (2019a, 2019b; Mercer & Dörnyei, 2020) to develop a holistic theory of L2 motivation, these previous conceptualizations are narrower in scope. In her conceptualization of *engagement with language*, Svalberg (2009) offers a view of engagement as a "cognitive, and/or affective, and/or social state and a process in which the learner is the agent and language is the object (and sometimes vehicle)" (p. 247). Exploring the nature of engagement in tasks in the context of language learning, Philp and Duchesne (2016) take a wider compass. However, while recognising that engagement is a multidimensional construct, within which behavioural, cognitive, emotional and social dimensions interact, their interest is specifically focused on tasks which, in a TLBT framing, they define as "a particular kind of activity that involves a primary focus on meaning" (p 51).

In contrast – and because Dörnyei and Mercer are interested in the broader social dimensions of language leaning such as interactions with teachers, peers, activity content and working methods – the construct space of L2 student engagement is significantly wider. Because it seeks to capture an expansive phenomenon, student engagement encompasses a diverse array of sub-constructs. In the coming years, one of the most important tasks facing motivation researchers will be to map this construct space. Building on work in mainstream as well L2 motivation research, the goal will be to identify the various aspects of L2 learning that can be encompassed within the concept. To a great extent, this work will involve identifying the targets of student engagement.

In developing an understanding of student engagement in L2 contexts, Dörnyei (2019a) emphasises the importance of the *focus* of engagement. As he explains, the learner has to engage *with* something.

In language learning, the targets of student engagement are multifarious, and cover numerous meaningful dimensions. These dimensions can include, but are not limited to, the school context, the peer-group, the teacher, the materials used in learning, and the activities carried out (Dörnyei, 2019a). In contemporary language learning, one of these target dimensions is technology use. Because the uses and functions of technology in language learning vary widely, there is need to map the characteristics of engagement that are associated with particular types of technology. One use of technology that has become increasingly common in language classrooms and is widely recognised to be associated with positive approaches to learning, is digital gaming (Reinhardt, 2017; Reinders, 2017).

Engagement with games

Games are recognised as having an important influence on affective aspects of language learning (Reinders, 2017). A growing number of studies demonstrate links between the use of digital games in language education, and positive effects on students' learning behaviours (for recent overviews see Reinhardt (2017) and Reinders (2017)). In studying the positive effects of games in instructional designs that focus on L2 acquisition, Cornillie (2017) has developed a conceptualization of engagement with digital games specific to Computer-Assisted Language Learning that he terms *engagement in game-based CALL*. Defining learners' engagement as "intrinsically motivated behavior in an L2 that primarily involves meaningful and communicative L2 use but also attention to linguistic form," Cornillie conceptualizes engagement in game-based CALL as typified by three characteristics: (i) it is "driven by intrinsic motivation in the broader game activity," (ii) it is focused on "language meaning and communicative use," and (iii) it involves "attention to linguistic form" (p. 363).

As this definition indicates, engagement in game-based CALL is a narrowly-focused construct which, since it involves a focus on form, shares similarities with Svalberg's (2009) concept of engagement with language. As with Svalberg's work, the studies that underpin Cornillie's concept have centred on linguistically-focused behaviours, such as noticing, responses to corrective feedback, and explicit and implicit learning. Reflecting on the research carried out into focused behaviour when digital games are a part of L2 leaning, Cornillie (2017) notes how a "majority of studies in this area are informed by a cognitivist second language acquisition (SLA) perspective," and that far fewer have focused on "design in instructed L2 environments from a motivational point of view" (p. 370). Given the paucity of CALL research with an explicit focus on motivation (Henry & Lamb, 2020), and the lack of conceptual clarity surrounding the engagement construct, there is need for critical enquiry into broader dimensions of engagement, and for studies that draw on established motivational theories (Cornillie, 2017). In this regard, researchers need to capitalize on psychological constructs from mainstream, as well as SLA paradigms. Constructs applied in research designs need to be sensitive to the distinctive characteristics of gaming environments, and bring understanding to the particular experiences connected with gaming (Cornillie, 2017).

As part of the process of mapping student engagement across SLA (Dörnyei, 2019a), and in line with Cornillie's (2017) recognition of the importance of drawing on established theories to develop insights into engagement when digital games form a part of L2 learning, immersion (Brown & Cairns, 2004; Cairns, 2016; Jennet et al., 2008) can make an important contribution. In the sections that follow, we first introduce the concept. Then, with the aim of identifying how immersion can contribute in understanding student engagement with digital games, we provide an example of engaged gameplay from a large-scale ethnographic project carried out in Sweden. We describe how the observed behavior cannot be adequately explained using the established concepts of willingness to communicate and flow and suggest that the students' engagement may be best understood in terms of being immersed in the game.

Immersion

Immersion involves the affective experiences connected with gaming and recognizes how engagement with games can vary in intensity (Brown & Cairns, 2004; Cairns, 2016; Cairns, Cox & Nordin, 2014). As the name implies, the construct alludes to the sense of being immersed in water. Indeed, it is the sense of being totally suspended in a liquid environment that captures the deepest level of involvement experienced when playing a digital game and which, colloquially, is often referred to as being "in the game" (Cairns, Cox & Nordin, 2014).

Like other theories that seek to explain intense experiences and optimal functioning, the immersion construct was initially developed in person-focused research. In their grounded theory study of gamers' experiences, Brown and Cairns (2004) found that participants were able to identify different levels of involvement during a gaming sequence, and particular cognitive and affective states characteristic for each level. Immersion is therefore conceptualized as an experience specific to gaming, which takes place at a particular moment in time, and which can be graded at different levels (Jennet et al., 2008). The first of these levels is termed *engagement*. This corresponds to the sense that players invest time and effort in playing the game. The second level is *engrossment*. This is conceptualized to represent the situation where players display focused attention and emotional involvement. At this level, the player not only loses self-awareness, but also awareness of the immediate surroundings. The third level is *total immersion*. This encapsulates the sense of complete involvement with the game, to the extent that nothing else matters and the player experiences being a part of the game. At this level, other concerns fade from cognition, and the game becomes the only thing that matters. For this reason, and because of its intensity, total immersion is seen as a fleeting experience and something that is not systematically characteristic in any gaming session (Jennet et al., 2008).

As Brown and Cairns (2004) make clear, most of the immersive experiences described by the gamers in their study corresponded with the first and second levels of the model (i.e. engaging or engrossing varieties). Total immersion was less frequently experienced, and was seen as attaching to shorter periods during longer sessions of gameplay. They also noted that movement between levels of immersion could sometimes be constrained, and that factors such as the time available for play, and levels of energy needed to make emotional investments could condition the nature of the immersive experience. Further, as Cairns and colleagues (2014) point out, the notion of being "in the game," integral to total immersion, does not relate to a spatial or a social location, but rather to a cognitive state. Thus, even when playing a simple platform game such as *Bubble Bobble*, where there is no meaningful location for the player to inhabit (spatial or social), the player can nevertheless be "in the game." A further point needing to be noted is that, as a state of cognitive involvement, immersion is not an exclusive property of the gaming experience; it can also be experienced in other pleasurable activities involving media such as, for example, watching a film or reading a book. However, unlike activities of this sort, in gaming players have agency within the mediated world (Cairns et al., 2014). Finally, immersion involves the cognitive state and emotional mood of the player during a gaming experience (i.e. being engaged, involved or immersed), and is not intended to extend to other types of cognitive activity or experience such as, for example, self-efficacy (Cairns et al., 2014; Jennet et al., 2008).

While immersion is a concept widely used in investigating pleasurable experiences attributable to gaming, immersion-focused research has been criticised for failing to account for shifts in a gamer's state of mind during a gameplay sequence. In particular, it has been suggested that in the categorization of specific states, immersion might be overly-rigid, and may not adequately account for the experiences of people who play games on mobile devices. Arguing that a more fluid account of immersion is required, Southerton (2014) has suggested that gameplay "could be productively

characterized as a series of shifts in potential during which attention and conscious awareness are in constant flux" (p. 1). Specifically, she suggests that a more flexible, fluid conceptualization of immersion would better account for situations of extreme concentration and absorption, as well as other times when movements become mechanical or repetitive, when little attention is required, and when more shallow connections are created.

An example of immersion dynamics

In both SLA and mainstream education, researchers now seek holistic accounts of motivational influences and motivated behaviour. In this changing environment, engagement has particular importance. In advocating the value of student engagement as a construct for investigating focused behaviour in language classrooms, Dörnyei (2019a, 2019b) has pointed to the need to identify different targets of student engagement, and to conceptualize the features of engagement in particular domains. In this article we propose that immersion (Brown & Cairns, 2004) offers a valuable way of conceptualizing student engagement with digital games in L2 learning, and of describing and understanding behaviors characteristic for gameplay. Using an example of engaged gameplay from data collected in the Motivational Teaching in Swedish Secondary English (MoTiSSE) project (Henry, Sundqvist & Thorsen, 2019), we will show how the behaviours of students playing a browser-based game cannot be adequately understood through the application of constructs traditionally used to explain motivated behaviour in language classrooms, and will argue that immersion enables a more fine-tuned understanding of the observed interactions.

The MoTiSSE project

The MoTiSSE project is a large-scale ethnographic project that took place between 2014 and 2018 in Sweden, with the purpose of exploring language teachers' motivational practices. Observations (N = 258) were carried out in the classrooms of English teachers in school grades 6–9 who were identified as successful in motivating their students. The project methodology is described in a number of publications (see e.g. Henry & Thorsen, 2018). The data included here comes from fieldnotes made by the second author during an activity where students in grade seven (aged 12–13) played an online digital game, and where the aim was to overcome communication apprehension and to develop L2 confidence. Because the teacher taught three parallel classes, the lesson in which the activity took place was observed on three separate occasions. In each of these lessons, similar situations were noted; students who were initially hesitant to engage in the activity often appeared to overcome their apprehension and become highly involved. In the example we present, focus is directed to the interactions of two girls, whose engagement with the activity follows this reluctance–involvement pattern.

The Swedish context

Before presenting the example, we briefly mention the context in which the activity took place. In Sweden, young people spend considerable periods of time in English-mediated environments online, watching videos and live streams, playing digital games, accessing information, and engaging in various forms of meaningful interaction (Swedish Media Council, 2019). This has significant implications for teaching. Some students can develop high levels of fluency and are extremely comfortable in communication. For students who are extensively involved in English-mediated activities beyond school, lessons can be experienced as dull and mundane. Motivating such students is no easy task, and in developing motivational strategies teachers need to focus on ways of bridging between experiences in and out of school (Henry, Korp, Sundqvist & Thorsen, 2018). However, for students whose online encounters with English are less frequent, and less rich than many of their peers,

the English classroom can be an intimidating place. Because these students can develop avoidance strategies, teacher support is needed in order to overcome apprehension in communicating. This involves creating a secure, respectful and inclusive classroom environment where students feel confident in using English (Henry & Thorsen, 2019).

The activity

Being aware of these challenges and recognizing that there were many students in her seventh grade classes who were reluctant to speak English during lessons, the teacher in our example created an activity that she believed would be motivational, and would help students overcome communication fears. The activity involved the students in playing a digital game. Students were told that they could chose an online game they wanted to play, the only proviso being that it should be non-violent. Some students decided to play *Minecraft*. Others chose *Tanki Online*, a browser-based, flash-player, 3D action game by AlternativaPlatform that simulates tank-based warfare (https://tankionline.com/start2/?utm_source). The girls in our example played *Tanki Online*.

The activity was designed so that students would work in small groups, either playing with, or against each other. They were told that all communication was to take place in English. While they were playing, a student would receive instructions from the teacher to perform a certain task, or carry out a particular manoeuvre or mission. These instructions were then relayed to the other group members. At the beginning of the lesson, responses were mixed. While some students were enthusiastic and excited, certain others – primarily boys – appeared bored. It was also noticeable that many students – mainly girls – seemed apprehensive. They asked questions about the activity, what they had to do, whether it would be assessed, and whether they had to speak English the entire time.

Carrying out her observations, the second author moved from group to group, writing fieldnotes. The group that included the two girls sat at a table next to the whiteboard. During the lesson the second author sat with this "whiteboard group" on four occasions. The fieldnotes written in Swedish (and here translated to English) record the students' interactions at these times. Excerpt 1 comes from a point around 10 minutes after the start of the activity. Excerpt 4 comes from the end of the lesson. In the fieldnotes, speech is recorded in the language spoken, and is in italics. Utterances in Swedish are translated and appear in bold typeface.

EXCERPT 1

1 I move my position in the classroom and sit next to two girls who are in the group at the front by the whiteboard.
2 They are speaking quite a lot of Swedish, even if on occasion one or other of them tries to speak English.
3 "*Leave the match, leave the match. We can create our own server and play just us,"* says one of the boys.
4 "***Do we have to speak English the whole time*?**" asks one of the girls.
5 *"Yes,"* say the two boys. "*It is an English lesson, we have to talk English*."
6 All of the students at the table seem to accept this, because now I can only hear English.
7 "*Join the match.*"
8 "*Which team?*"
9 "*I play for the blue team.*"
10 "*I'm red then.*"
11 "*I suck at this game. Oh I see you. Drive to the left side. I have the flag, I have the flag.*"
12 "*No, I have the flag.*"

13 "***What does** left side **mean*?"** asks one of the girls.
14 "*Whose team is the best*?" asks the other girl.
15 "*The red.*"
16 "*Okay I'll join your team then,*" says the girl.
17 "*Kill hiiiim ta ta ta ta ta tat ta tata,*" sings the other girl.
18 "*I killed them all,*" says one of the boys.
19 "*Run, run,*" shouts one of the girls.
20 "*Oh fuck, I didn't go, I didn't go, I didn't go,*" says the other.
21 I turn my gaze to the two girls sitting at the table in the middle.
22 They also seem to have started a conversation and are speaking English.

EXCERPT 2

23 At the table with the boys and girls at the whiteboard next to me, one of the girls has now started speaking Swedish.
24 "***Fast, fast, fast***," she says.
25 One of the boys corrects her, "*fast, fast, fast*."
26 "*Oh, my god, I'm the new rank,*" the girl now says.
27 "*Did you level up?*" asks the boy
28 "*Yeah. Oh no,*" shouts the girl.
29 "*Click that button*," says the other girl leaning forwards towards her.
30 I move places again.

EXCERPT 3

31 Later I am distracted by the group at the whiteboard.
32 I hear how they are playing with accents, and how one of the boys says "*Come on mate, come on mate,*" in an Australian accent.
33 All of the students seem completely absorbed in the task.
34 T moves round the room passing out missions that they have to give each other.
35 This creates some protests, and not all of the students want to give these missions.
36 Eventually those protesting seem to accept that they have to do this, and start giving instructions in English to one another.
37 Others however seem to be more worried that they have not done enough, since this activity is being assessed, and they ask for more instructions so that can adequately display their knowledge.
38 T says that she has to go round and give out missions to the other students first, "*And then we will see later*."
39 The group at the whiteboard are very engaged, and are calling out and shouting their commands to each other in English.
40 "*Just take the flag.*"
41 "*Go there and let us take the flag.*"
42 "*Okay someone has to kill him. Kill him and help him. He's in the middle of the shit man*."
43 "*Yes, no. Just go there and take the flag then.*"
44 "*What the fuck, how did I lose the flag?*"
45 "*Ha ha, you lost the flag,*" says one of the girls.
46 "*Seriously how did I lose it?*" the boy asks again,

EXCERPT 4

47 Another girl comes over and wants to join the group at the whiteboard.
48 She speaks Swedish and I wonder whether she too will get into English-speaking, or whether she will continue speaking Swedish and the dynamic will change.
49 However none of the others seem to switch.
50 Rather, they continue speaking English, and the dynamic doesn't seem to change.
51 T is taking a fairly backstage role in all of this.
52 She moves around and hands out paper memos on which the missions are written.
53 She waits a sufficient amount of time to hear that students have carried out the mission, and that they can give and understand the instructions.
54 Then she moves on.
55 My reflections are suddenly interrupted when someone shouts: "*She is taking the flag, she is taking the flag!*"
56 "*Oh my god, she jumped over me. It self-destructs!*"
57 I reflect that there is a lot of highly authentic communication in English taking place here inside the classroom, and that I need to ask about this when I do the interviews.
58 My thoughts are interrupted when I hear T suddenly say: "*It is time to wrap it up and go to lunch.*"
59 Most of the students pack up and go, but several remain behind, most noticeably the group by the whiteboard, who seem to be completely absorbed in the game and appear to have forgotten that they are actually speaking English.
60 Suddenly, one of the girls cries out: "*Oh my god! It is taco salad. We have to go*!"

Willingness to communicate?

At the time of the observation, and during the early stages of our analytical work, we viewed the interactions taking place in these classrooms as examples of the emergence of willingness to communicate (WTC). In the course of the thirty or so minutes that had elapsed between visits to the "whiteboard group," the two girls had overcome an initial reluctance to carry out the activity in English. From mostly speaking Swedish and questioning whether they had to speak English (excerpt 1), at the end of the activity (excerpt 4) they spoke only in English.

It is easy to see how these interactions could be understood as evidence of the girls' increasing WTC, and how this willingness emerges as a consequence of environmental factors, such as pleasure in playing the game with the boys and succeeding with the various maneuvers and missions. As conceptualized by MacIntyre and colleagues (1998), L2 WTC involves the individual's "readiness to enter into discourse at a particular time with a specific person or persons, using a L2" (p. 547). Unlike its L1 counterpart, L2 WTC is much more susceptible to changes in the social environment. In any communication event, WTC can be understood as involving a tipping point, at which the person commits to communicating in the L2. An individual student's decision to communicate (or to not communicate) at a specific time has been likened to a "crossing of the Rubicon" (MacIntyre, 2007). These decisions affect the context of ongoing communication, meaning that in L2 classrooms WTC can be understood as an emerging state of readiness to speak:

> *Context, including topic, group-level affective state, ambience, other students' reactions, and exquisitely contingent processes interact to trigger fleeting, momentary psychological reactions that include feeling self-confidence and a desire to communicate at a particular moment with a particular person (or persons) – this is the definition of WTC and the final psychological step prior to L2 use.* (Yashima, MacIntyre & Ikeda, 2018, p. 132)

Reading through the fieldnotes, we began to wonder whether the notion of a decision, desire or commitment – conscious or unconscious – to communicate at a particular moment in time, and with a particular person(s), fitted with the communication behaviour of these two girls and the other "reluctant" students observed in these lessons. First, there seemed to be no sense in which their communication was oriented to a particular interlocutor. Rather, it seems that communication takes place in a disembodied form. Like the live streaming of video gaming, where the streamer creates an entertainment product that mixes gameplay with a lively and often humorous commentary (Taylor, 2018), the girls' L2 communication also seems to take the form of a performance. As their talk becomes increasingly animated, utterances do not appear to be directed to a particular person (excerpt 3). Fragmented, and lacking cohesion, neither do their exclamations always anticipate a response from other group members.

The second way in which the communication observed here differs from communication patterns described in studies of situated WTC, is the sense that the traversing of the Rubicon is neither tentative, nor is it crossed and re-crossed on an event-by-event basis. Instead, the fieldnotes seem to indicate a shift into a fully-engaged and largely uninhibited outflow of communication. This sense of suddenly "going all in" is unlike the fluctuation patterns of L2 WTC previously described in classroom contexts, where research suggests that subtle differences in a communication context can quickly change a learner's affective state back and forth between willingness and unwillingness to communicate (MacIntyre, Burns & Jessome, 2011; Pawlak, Mystkowska-Wiertelak & Bielak, 2015).

While the girls' communication may be unlike patterns of WTC generally found in L2 classrooms, the rapid onset of a dramatic change in communication behaviour (and sudden shift in observed emotional behaviour) seems characteristic of gaming experiences. In games that are engaging, the start of a gameplay sequence is a time when involvement can be rapidly triggered. In research using neuroimaging, different events within a game – for example an initial challenge or a death event in a platform game – have been shown to be connected with higher levels of arousal and engagement. These changes in the brain's activity are hypothesised to reflect the entering of a stressful, yet highly engaging state where the player's vigilance increases (McMahan, Parberry & Parsons, 2015). In different stages of a game, latency – the time taken to trigger a strong emotional response – can also differ. In particular, the onset of a game has been found to rapidly trigger activity in the prefrontal cortex (the area of the brain that involves executive functioning) (Li et al., 2018). Recognising these characteristics, and recalling the manner in which the girls' L2 communication rapidly transitions from a state of hesitancy (line 2) and experienced coercion (line 4), to a state of intense activity (lines 26–29), these interactions appear to be better explained in terms of an experience specific to being immersed in a digital game.

Like WTC, immersion can be understood as a dynamic construct. Emphasising the transformative nature of gameplay, and the fluidity of immersion, Southerton (2014) points to constant shifts in attentional capacities and affective states that occur when a player is caught up in a game. In playing *Tanki Online*, factors such as the game's visceral appeal, the PVP (player-versus-player) challenges involved in "capture the flag" missions, the non-challenging difficulty, and the collaborative team-play combine to create a ludic environment high in attraction, and which triggers the rapid shift in involvement seen in excerpts 1 and 2. In the engrossment level of the immersion model (Brown & Cairns, 2004), focused attention and emotional involvement mean that players lose self-awareness, and pay less attention to physical surroundings. Here, it seems that shortly after the start of the game, the girls become immediately transported into a state of engrossment. For example, they show no obvious response when another student arrives to the group (excerpt 4, lines 47-50). Nor do they appear to heed the teacher's call at the end of the lesson to finish the activity (line 58). In fact, their

engrossment in the game is only broken when one of them suddenly declares – still in English – that "*It is taco salad. We have to go!*" (line 60).

A flow experience?

Alongside viewing the interactions in these classrooms as examples of WTC, we also initially understood them as instances of flow (Csikszentmihalyi, 1975/2000). In her fieldnotes the second author specifically describes how the students are "completely absorbed" in the activity (line 33, line 59). Flow phenomena characteristic of both individuals and groups have been recognized as occurring in language classrooms (Aubrey, 2017; Egbert, 2003; see also Muir, 2018, 2020), and in our observations we were alert to behavior indicating high-intensity focus and concentration. However, becoming subsequently acquainted with the literature on immersion (Brown & Cairns, 2004; Jennet et al., 2008), we came to question these early interpretations. Specifically, our reading drew our attention to the fact that not all of the criteria conceptualized as necessary for a flow experience appeared to be present in the twenty or so minutes that the students were involved in playing these games.

While students were given instructions about maneuvering the tanks, and while they completed "capture the flag" missions, the activity lacked a clear goal. Rather, like casual gameplay in general, the activity appears open-ended and lacking the meaning that attaches to the types of goal that are characteristic for flow experiences. The observed gameplay seemed to have little in common with the types of personal endeavor that Csikszentmihalyi (1988) focused on when developing the theory of flow (e.g. completing a painting or scaling a rock outcrop). Equally, there is no obvious challenge–skills balance. While the activity places demands on collaboration, there is no sense that it is beyond the skills of the group members; the boys have no problems carrying out the rather simple tasks they are given and, with the support of the boys, the girls also succeed in correctly maneuvering the tanks.

The fact that many intense gaming experiences lack components conceptualized as integral to a flow experience has been highlighted by Cairns and his colleagues (2014), who argue that flow and immersion are fundamentally different concepts. Taking *Minecraft* as an example, they point out that because the creative process is potentially unending, there is no final goal to achieve. Equally, there seems to be little in the way of an obvious challenge; although creation is ongoing, playing *Minecraft* does not require constant problem-solving and innovation. As Cairns and colleagues (2014) argue, while immersion is a graded experience, flow can never be "partial." With flow you are either "in the zone," or you are not. Moreover, while total immersion – the most intense form – might indeed correspond with flow, Cairns and colleagues point out that this is often described by gamers as a fleeting experience. This can be contrasted with flow, which is generally more enduring and self-sustaining.

As a graded concept, immersion captures high-intensity experiences that fall short of flow. As Dörnyei (2019b) has pointed out, there can be problems in applying the flow concept in L2 learning activities, in that "learners in a typical language learning environment hardly ever experience full-blown flow (i.e., when they are absorbed in the task to such an extent that they forget about time)." Therefore, he argues, "it is questionable how meaningful it is to speak about "partial flow" experiences" (p. 59). For the students we observed, absorbedness in the game lacks the sense of intense concentration, loss of self-awareness, and dissociation of time and space that are centrally characteristic of flow. Rather, for these students, immersion in the game is a sub-optimal "prosaic experience" (Jennet el al., 2008, p. 643) of joyful interaction and competition.

To be sure, playing *Tanki Online* is fun, absorbing, and disrupts awareness of activity-external factors in a way that few other activities in a language classroom might do. Yet, as soon as the activity is over,

attention switches to the next attractive event on the horizon, which for the girls in our example is the serving of a taco buffet in the school's dining hall. Unlike the painters studied by Csikszentmihalyi (1975/2000), there is no sense that after the activity is over the students "could hardly wait to start on a new one" (p. xiv). Rather, in the way that Jennet and colleagues (2008) describe, the outcome of immersion can often be divorced from the outcome of the game. As they explain, people do not necessarily play games because they seek an immersive experience. On the contrary, immersion is "just something that happens" (p. 643).

Toward a framework of student engagement with technology in L2 learning

Student engagement is a multifaceted concept, and taxonomies generally include behavioural, cognitive, affective and social dimensions (Fredricks, Blumenfeld & Paris, 2004). In developing the concept in L2 learning, Dörnyei (2019a) follows Skinner and colleagues (2008) who identify "behavioral participation in the classroom" as the construct most prototypical of engagement (p. 778). As Mercer and Dörnyei (2020) make clear, it is the participatory aspect of student engagement that makes it particularly well-suited for research in language classrooms, and "commends considering this construct [student engagement] over other related concepts such as motivation and self-regulation" (p. 9).

Taking behavioural participation as the archetype of student engagement in L2 learning, and the foundation upon which understandings of particular types of engagement can be developed, there is a need to identify and conceptualize aspects of behavioural participation in the context of the things that L2 students engage with (Dörnyei, 2019a). This brings with it the challenge of identifying concepts that can usefully shed light on these various aspects. This is no easy task. In the development of ways with which to study the psychology of language learning, there is a need to be selective when identifying candidate theories, and frameworks that can be integrated into existing SLA traditions. As Dörnyei (2019c) points out, "not only is there such a vast amount of psychological knowledge to select from," but "the popularity of a theory or paradigm in a particular psychological strand does not automatically guarantee that it will be a useful addition to the SLA research toolkit" (p. 34). In the context of engagement with digital games, Cornillie (2017) sounds a similar note. As he makes clear, it is "critical that researchers look at such complex and often elusive issues from the perspective of established theories, both in SLA and in related fields, while remaining sensitive to the specificities of gaming environments" (p. 371).

It is with these cautions in mind that our attempts to use immersion as a means of understanding L2 students' engagement with technology have been made. To demonstrate the sensitivity and applicability of the construct when digital games are used in L2 classrooms, we took the example of students' interactions with a browser-based 3D action game to show how an immersion perspective could provide more a compelling analysis of observed behavior than explanations drawing on theories of L2 WTC and flow. Indeed, it is because immersion can generate understandings that are qualitatively different from these established constructs, that we believe that it can make an original contribution in the mapping of L2 student engagement (Dörnyei, 2019a).

In assessing the value of this contribution, several factors speak to the potential offered by immersion. First, considerable work has taken place in the development of instruments measuring immersion, and which can be used in quantitative designs. Notable in this regard is work by Jennet and colleagues (2008), who developed a questionnaire operationalizing the construct (the Immersive Experience Questionnaire (IEQ)). Tapping into the subjective experiences conceptualized to be particular to the three levels of immersion, the IEQ has been validated in large scale studies, and is widely used in survey research (Denisova, Nordin & Cairns, 2016). Second, because immersion encompasses three

different levels of cognitive and affective engagement, it provides opportunities to carry out correlation-based work. Using a suitably adapted version of the IEQ, examinations of the relationships between the intensity of engagement in L2 gameplay and various outcomes (linguistic and non-linguistic) can be carried out. Third, although in our example we tried to show how immersion differs from WTC, it is clear that immersion can be incorporated into multi-construct designs. As Cairns and colleagues (2014) make clear, in focusing on the state of mind of a player during gameplay, immersion is intended to capture differing but specific aspects of the experience. In our example, students played a browser-based game which did not require online interaction with other players. In more advanced types of gaming, for example massive multiplayer online role-playing games such as Ragnarok Online that was studied by Reinders and Wattana (2015), immersion can function as a complement to WTC in developing a multifaceted, holistic understanding of engagement in complex gaming environments.

Finally, and perhaps the most important argument of all, while immersion captures particular qualities specific to gaming experiences, there seem to be possibilities to extend its use beyond computer-based games. For example, Cairns and his colleagues have investigated immersion in mobile games such as *Doodle Jump* (a simple platform game) (Cairns et al., 2014b), and in connection with non-gaming activities such as an interactive museum exhibit (Haywood & Cairns, 2005, cited in Jennet et al., 2008). Southerton (2014), for example, has demonstrated a use for immersion in understanding user experiences in another non-traditional gaming context, in her case the smart-phone video running game, *Zombies, Run!*. Thus, although studies in non-gaming contexts remain few, and development of the immersion concept is continuing, it would seem clear that people can become similarly immersed in other digital practices. As Jennet and colleagues (2008) suggest, immersion in non-gaming contexts may occur if there is a "basic progressive structure" that allows users "to apply their own ideas in understanding the interactive system" (p. 642). Thus it may not be exclusively in the context of gaming, but also in relation to other technologies that promote or facilitate language acquisition, that immersion can offer insights into the engagement of L2 learners. As technology becomes increasingly implicated in language learning, immersion offers exciting potential for developing holistic understandings of learner experiences. In the mapping of student engagement across SLA (Dörnyei, 2019a), it can provide a means through which a wider compass of focused behavior in digital environments can be understood.

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