Similarities between Playing *World of Warcraft* and CLIL

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This article argues that playing World of Warcraft (WoW) and Content and Language Integrated Learning (CLIL) have a number of similar features. We base our argument on findings from three studies. The first (Sylvén 2004/2010) is about CLIL and non-CLIL students at upper secondary level and aims to investigate what effect, if any, CLIL has on the incidental acquisition of vocabulary. The second (Sundqvist 2009) is about extramural English and aims to examine its potential impact on learners' oral proficiency and vocabulary. Extramural English is broadly defined as any type of contact that learners have with English outside the classroom. The third is a joint study focusing on young learners and their extramural English habits and aims to see whether there is a relationship between what the learners do in English in their spare time and their learning outcomes in school, as measured by the national test of English and a written vocabulary test. A pattern regarding gaming and learning outcomes emerged from the three studies, making it possible to claim that playing WoW shares many features with CLIL. In CLIL contexts, the aim is to integrate the learning of subject content with the learning of an L2. Similarly, in a game such as WoW – an extramural informal arena – an authentic, content-rich L2 immersive environment is supplied. We conclude that what CLIL claims to do intramurally, that is, in the classroom, WoW and possibly also other massively multiplayer online role-playing games seem to accomplish, at least to some degree, extramurally.

Keywords: CLIL, gender, computer gaming, second language acquisition

1 Introduction

For a long time, school was the place where people went in order to learn to speak foreign languages, with the language teacher as the main provider of the desired target language (TL) input. But, to quote Bob Dylan, "the times they are a-changin'". Today, in the 2010s, more options are available in terms of accessing the TL for learning purposes. In the case of English as a foreign language (EFL), it has long been possible to receive input via other channels than the classroom. In the 1960s, for example, many – in particular teenagers –

tried to improve their English skills with the help of the aforementioned Dylan and his music, or The Beatles, or whichever idols they had. Even so, English accessibility has changed dramatically thanks to the emergence of the Internet in the mid 1990s, where English was and still is the dominant language (Crystal 2006), and its widespread use thereafter. Written and spoken English in an interactive format is nowadays just a click away for anyone with access to the Internet. As has been pointed out by many others before us (see e.g. Black 2009; Estling Vannestål 2009; Gee 2007a, 2007b), thanks to the Internet and modern multimodal tools there is what we could call a golden age for language learning in general, and English language learning in particular. Picking up English outside of school in informal contexts, some online, is not unusual. In a thesis from 2009, Sundqvist (2009: 197) describes how a boy with Swedish as a first language (L1) grew up to become fluent in English by the age of 15:

> He had gone from playing simple video games and watching English-speaking TV shows with subtitles to interacting almost daily both in speech and writing with native speakers while playing video games; he had several friends in Great Britain, for example, whom he met regularly online. In addition, he enjoyed watching films and preferred English subtitling. When asked about what he learned in school, he claimed that school did not offer much that he did not already know in English, or already was involved in (in English) at home. […] He further claimed that on occasion he had even started talking English to Swedish friends before realizing his mistake and switching back to Swedish.

This boy is a typical example of someone who has learned English with the help of involvement in extramural English activities; that is, informal activities outside the walls of the classroom. The term *extramural English* (*EE*) was introduced in Sundqvist (Sundqvist 2009: 25–26) in reference to pastime language activities that children and adolescents choose to engage in (such as listening to music, playing computer games, chatting, reading, watching TV, etc.) even though they might have no deliberate intention to actually learn English by doing so. Thus, EE involves potential language learning processes that take place in non-instructional out-of-school contexts (see also Sundqvist & Sylvén, 2012). Playing computer games is one extramural English activity, and the particular learner described above had spent hundreds of hours gaming in the virtual worlds offered by the massively multiplayer online role-playing game (MMORPG) *World of Warcraft* (*WoW*).

WoW is one part of the topic of this paper, the other being *Content and Language Integrated Learning* (*CLIL*). In Europe, CLIL has been implemented in schools as a means of increasing students' time of exposure to the TL, most often English (Dalton-Puffer 2011), with the aim of improving students' second/foreign language (L2) skills. In the present article, we argue that playing *WoW* and CLIL have a number of related features. We present empirical findings from three studies, which were the impetus for our initial thoughts on the similarities between playing *WoW* and CLIL. The results from the studies strengthen the hypothesis that involvement in EE activities may enhance L2 learning. We present an inventory of the presence/absence of Gee's (2007b) learning principles in *WoW* and CLIL respectively. Moreover, we suggest three factors that are fundamental to L2 acquisition – immersion, authenticity,

motivation – which we relate to *WoW* and CLIL theoretically. Our aim is to show that what CLIL claims to do in the language classroom, *WoW* seems to accomplish, at least to some degree, in learners' spare time.

2 Theoretical background

In this section, we briefly develop three factors which we consider fundamental to L2 acquisition/learning and which lay at the core of both *WoW* and CLIL: immersion, authenticity, and motivation.

   To begin with, immersion is a concept not only used in L2 acquisition theory, but also in computer game theory. In gaming contexts, immersion generally refers to how successful a computer game is in creating an experience of escapism for the gamer (Örtqvist & Liljedahl 2010). In our opinion, some computer games, in particular MMORPGs, seem to be better equipped than other game genres to supply a content-rich immersive environment (cf. Sundqvist & Sylvén in press). The game in focus in the present article, *WoW*, is the most popular MMORPG in the world, with 12 million subscribers in 2010 (http://us.blizzard.com/enus/company/press/pressreleases.html?id =2847881). With regard to immersion, several scholars have highlighted how important this aspect is in *WoW* (Gee 2007b; Linderoth & Bennerstedt 2007; Stenberg 2011). Furthermore, the connection between immersion and L2 learning is established since long, and recently the immersive environment of digital games has received scholarly attention from the perspective of L2 acquisition (see e.g. Cornillie, Jacques, De Wannemacker, Paulussen & Desmet 2011; deHaan, Reed & Kuwada 2010). The default language in *WoW* is English (Waters 2007). Thus, upon entering the game, the player is immersed in a virtual world where English is heard and seen everywhere and where he or she needs to understand and be able to communicate in that language in order to survive and make progress in the game.

   CLIL takes its point of departure in the Canadian immersion programs which were introduced to English L1 children who wanted to learn French as an L2 in the 1960s (Swain & Lapkin 1981). Originally, the term *immersion* means being immersed in water but is here used metaphorically to mean 'being immersed in another language'. Immersion in French was achieved through the exclusive use of French in school from an early age. This was made possible by the availability of bilingual English and French teachers, Canada being a bilingual country. An authentic L2 language environment could therefore be created in pre-school and school settings, in an attempt to mimic the natural situation in L1 acquisition (cf. Benson 2001: 62). As the speakers of the TL were the children's caretakers/teachers, the children were motivated to understand as well as making themselves understood in the TL. One benefit of implementing immersion teaching in a bilingual setting and with bilingual tutors is that even though the TL (i.e., the children's L2) is constantly used by the teachers, they still understand the children when they are unable to express themselves in the L2 and have to revert to their L1. The teachers can then use various strategies, such as paraphrasing and scaffolding (cf. Hammond 2001), to build the children's L2 competence.

This way of acquiring an L2 nicely mirrors the sociocultural approach to second language acquisition (SLA) where the mediation of communicative and mental activity is central (see Lantolf 2011). This approach builds on Vygotsky's seminal work on learning as a joint activity, where junior members of a group are guided by more senior and/or skilled ones. At the core of Vygotsky's work is the Zone of Proximal Development (ZPD), which is the mental area where learning takes place. By collaborating with more knowledgeable peers, the newcomer is socialized into the domain of expertise. Translated into SLA, this means that when language learners find themselves in a context where the L2 is used naturally, they acquire that language in much the same way as an L1. In CLIL, students find themselves in a situation where the TL is used as the medium of communication in the teaching of content matter, and thereby ideally acquire content and language knowledge simultaneously (see also Dalton-Puffer 2007).

Authenticity is the second factor that we find fundamental to L2 acquisition and at the core of both *WoW* and CLIL. Clearly, *WoW* is not adapted in any way to cater for particular needs that players who play in their L2 might have. From that perspective, then, *WoW* seems to have a high degree of authenticity (Stenberg 2011: 158). Similarly, regardless of the fact that CLIL is an overt arena for L2 learning, the intent is to create a language situation in the classroom which is perceived by all participants as authentic (cf. Nikula 2007: 206). Learning an L2 is time-consuming, but by using the TL as the medium of instruction and communication, the amount of TL exposure is increased extensively in comparison to when it is only being taught as a separate subject. Taking the Swedish curriculum for compulsory school as an example, a student is guaranteed a total of 480 hours of English language arts throughout compulsory school. If CLIL is implemented in, for instance, math and physical education already from year 1, the number of hours with potential exposure to English increases to a total of 1,880 (900 hours math + 500 hours physical education) (Skolverket 2009). In an ideal CLIL content class, students constantly receive input, produce output, and interact in the TL, activities which indeed are considered conducive for L2 learning (Gass & Selinker 1994: 304–367). However, for learners to make progress in terms of communicative ability, models of and opportunities for language use are needed (see Gilmore 2007 for an overview). It is thus imperative that CLIL content teachers realize that they are role models with regard to both subject content and L2 knowledge. Preferably, CLIL content teachers therefore actively engage also in language issues, and not only concern themselves with the content of their own subject (cf. Escobar Urmeneta 2010: 196–197). After all, according to the Council of Europe, the definition of CLIL is that it is "a dual-focus approach in which an additional language is used for the learning and teaching of *both content and language*" (see http://archive.ecml.at/mtp2/clilmatrix/; our italics).

Motivation is the third factor we would like to discuss with regard to L2 acquisition, playing *WoW* and learning a language in a CLIL class. Indisputably, motivation is very important for successful L2 language learning (Dörnyei 2001). Without motivation, whether it is to please the teacher, to receive good grades, to be able to advance in a game, or to be able to work and function in an L2 environment in the future, no learning of an L2 will take place. In the gaming environment of *WoW*, participants are highly motivated to understand the communication between co-players and the rules and commands that are

inherent parts of the game itself. Thus, when unknown words or phrases are encountered, great efforts need to be made by the player in order to make sense out of what is communicated. Supposedly, when the same word or phrase reappears, less of an effort is needed until the words or phrases finally are stored in the mental lexicon (cf. Aitchison 1994). This way, *WoW* offers a great deal of linguistic input, some on the border of or beyond the proficiency level of the players. Through negotiation of meaning with fellow players, learning within the individual's ZPD is facilitated. As *WoW* is not designed as an L2 learning game and participation is completely voluntary – a good prerequisite for motivation – it is up to individual players to see to it that they understand the language of the game. Consequently, *WoW* simulates the real-life experiences of being in a country where an L2 is spoken, as has been pointed out by, for instance, Waters (2007). Presumably, just like a person in a foreign country, a player in *WoW* has a high degree of motivation to comprehend the L2 in order to "survive".

In the CLIL classroom, frequent encounters with the TL in situations when content needs to be mastered motivate students to acquire the TL in passing while learning the subject. As Dalton-Puffer (2007: 294) puts it, the CLIL classroom "provides a space for language learners where they can act in a context that is not geared specifically and exclusively to foreign language learning (i.e. it has a 'real' purpose)". With a CLIL teacher who is trained in combining content and language and therefore pays a great deal of attention to language also in content classes, student motivation can be increased even further by the use of subject-related language tasks which are adequately challenging for their L2 to expand (cf. Blanck 1990: 50). As pointed out above, in an ideal CLIL classroom, students should be challenged to understand the content at hand and to communicate in the TL. There are some studies that have examined this matter. In a Finnish study based on data from CLIL-lessons, Nikula (2007: 220) concludes that the CLIL-students show signs of "emerging bilingualism" in that they confidently use English throughout the lessons. Further, Broner and Tedick (2011) provide examples of effective work with language-related content tasks in an early total Spanish immersion program. Moreover, the importance of professional CLIL teacher training is illustrated by Hoare (2011), who reports on the neglect of focus on language in immersion classes in Hong Kong and mainland China resulting in unsatisfactory language gains (see also Lim Falk 2008). In sum, with well-educated teachers, the CLIL classroom has every potential to offer a strongly motivating context for L2 learning.

Before ending this section, we also need to address the issue of gender. Regarding L2 learning in school, females generally show more positive attitudes than males (Baker & MacIntyre 2000; Carr & Pauwels 2006), and they also achieve higher grades (see http://www.skolverket.se/sb/d/1637 for Swedish statistics). However, there is one notable exception in terms of gender and L2 proficiency, namely vocabulary. A number of studies have shown that boys outperform girls regarding vocabulary (Boyle 1987; Herriman 1997; Sundqvist 2009; Sylvén 2004). One possible explanation for this particular gender-related difference may be the learners' involvement in digital gaming, which we will return to. Finally, as for gender in relation to CLIL, it is more common that girls enroll in CLIL-classes than boys (San Isidro 2010; Sylvén 2004).

3 Computer gaming and L2 acquisition: empirical findings

This section includes an account of three of our own studies, from which the idea of comparing playing *WoW* with learning an L2 in CLIL classes grew. We then move on to other studies investigating the relationship between computer gaming and L2 acquisition. However, for the benefit of the reader, the section first begins with a few words on CLIL and EE in some European countries.

As mentioned above, CLIL is the European model of immersion teaching and it is implemented in unique ways in each country. Finland is one of the countries where the method has been established and researched for some time, with positive results for learners in primary (Järvinen 1999) as well as secondary school (Nikula 2010). Likewise, there are positive findings from Austria (Dalton-Puffer 2007) and Spain (Lasagabaster & Ruíz de Zarobe 2010). In comparison, findings from CLIL research in Sweden are not as promising: gains in the TL have been low or non-existing (Edlund 2011; Sylvén 2004; Washburn 1997), content proficiency may be lower than that of non-CLIL students (Washburn 1997), and communication seems to be less frequent, possibly due to what is described as monologic teacher instruction (Lim Falk 2008). Just as CLIL comes in many versions, the availability of potential EE activities varies between countries. For instance, in Spain, France and Germany, English-speaking movies are in most cases dubbed, while the Nordic countries, in contrast, generally broadcast such films with subtitles, Thus, where English is dubbed into the national language, the opportunities for hearing English outside of school are fewer than in countries where subtitles are used. As shown below, these differences in exposure to English is, most likely, of decisive importance regarding L2 proficiency.

After this brief description of CLIL and EE, we turn to our empirical data and a study carried out at the turn of the century. In Sylvén (2004), the main research question was to see to what extent CLIL leads to improved L2 English lexical competence. CLIL (N = 99) and non-CLIL (N = 264) students were tracked over a period of two school years during which time four types of vocabulary tests were administered on three occasions. The first type of test was a multiple-choice test where the test item was given in the context of a sentence; the second, the vocabulary knowledge scale (Paribakht & Wesche 1997); the third was a test of phrases and collocations; and in the fourth, words were taken out of an authentic newspaper article. The specific items tested were chosen based on frequency and word class and more of a general, rather than subject specific, nature. It was found that the CLIL students' L2 vocabulary proficiency did indeed increase over this period, but their vocabulary size was significantly larger already at the time of the first testing. As is well known, the more words an individual knows, the easier it is for him/her to learn new words (Nation & Waring 1997). Therefore, it was not possible to attribute the vocabulary growth to CLIL alone. However, when the data were analyzed from another perspective, namely exposure to out-of-school English, it was found that students who read English texts had significantly higher lexical proficiency regardless of whether they belonged to the CLIL or non-CLIL class. *Reading* was broadly defined to include any type of text, i.e., texts in books and newspapers, on the Internet, etc. Gender differences were significant with the boys outperforming the girls (Sylvén 2004: 215). A follow-up question asked students to specify the kinds of

text (using the notion of *a broader concept of text*) they were exposed to, revealing that those who engaged in role-playing games were among the ones whose vocabulary size increased the most. This fact may account for at least part of the gender difference, since most of those who claimed to be engaged in role-playing games were boys.

In the second of the studies from which our interest in the topic of the present article grew, Sundqvist (2009) investigated the potential effects of EE on oral proficiency and vocabulary among Swedish learners in ninth grade (N = 80; aged 15–16). EE in total (i.e., the total amount of time spent on all investigated EE activities) was found to correlate positively with both the level of oral proficiency and size of vocabulary. Moreover, three of the extramural activities (reading; playing computer games; using the Internet) were found to be relatively more important for oral proficiency and vocabulary than the other activities (watching TV; watching films; listening to music). Whereas neither the boys nor the girls read very much in English in their spare time, the results showed that the boys spent significantly more time than the girls on computer gaming and using the Internet. Therefore, the boys benefitted more from their L2 EE activities than the girls did. This could be seen, for instance, in the fact that the boys scored higher than the girls on both the productive and the receptive vocabulary test that were included (although only significantly higher on the latter one).

The third study is a joint project from 2010 which focused on young learners and their EE habits and aimed to see whether there is a relationship between what the learners do in English outside school and their learning outcomes in school, as measured by the national test of English and a written vocabulary test. The study in its entirety was carried out in grades 4 to 6, but here only findings from grade 5 are dealt with (see Sylvén & Sundqvist forthcoming). A total of 102 learners (aged 11–12) participated over a period of one semester. First, they filled out a one-week language diary in which they indicated the amount of time spent on any activity involving EE, such as watching TV, playing computer games, and so forth (seven types of activities were listed, with an additional open category at the end). Moreover, they answered a questionnaire with general background questions as well as questions regarding their EE habits. Finally, the learners took a vocabulary test that measured both receptive and productive vocabulary. In addition, there was a mandatory national test of English from which we gained access to the learners' results.

Data from the language diary revealed that these 5th-graders on average spent 9.4 hours per week on EE activities (with a standard deviation of 7.9, indicating large individual differences), of which 2.6 hours were spent on playing computer games (SD = 4.3). Computer gaming was the only EE activity which yielded a significant gender difference: the girls spent 1.1 hours per week on gaming, compared with 4.4 hours for the boys (p = .000). Our data further indicated that already in grade 5 there is a difference in the types of computer game girls and boys choose to play. The girls preferred *The Sims*, a single-player offline simulation game, whereas the boys more often opted for first-person shooter games (e.g. *Call of Duty*) or MMORPGs (e.g. *WoW*). Regarding the vocabulary test, there was a statistically significant gender-related difference, with the boys achieving a mean score of 21 compared to the girls' 17 (p = .028). In the results from the listening and reading comprehension tests of the national

test of English, significant positive correlations with the total amount of EE were revealed for both boys and girls.

In sum, there are many similarities between the findings in this study on young L2 learners and those obtained in Sylvén (2004) and Sundqvist (2009). For instance, the boys consistently scored higher than the girls on the vocabulary tests in all three studies. Furthermore, it was possible to identify a gender pattern with regard to role-play and computer gaming: the boys were more interested in role-playing games than the girls; i.e., the boys and the girls preferred different types of game genre. In addition, the boys spent significantly more time on computer game-related activities.

Even though research about the relationship between computer gaming and L2 acquisition is still in its infancy, there are some studies relevant to our topic. In a study of *EverQuest 2*, also an MMORPG, it was found that five intermediate and advanced L2 English students increased their vocabulary by 40% thanks to game-play interactions (Rankin, Gold & Gooch 2006). Another study involving two 13-year-old Finnish boys revealed that playing *Final Fantasy X* (a role-playing game), led to a positive development of their L2 English linguistic and interactional competence thanks to the repetitive features integrated in game design (for example, repetition of words and prosodic features) (Piirainen-Marsh & Tainio 2009). Next, an undergraduate study among Swedish 15- and 16-year-olds (N = 90) (Astrén 2010) revealed that the learners who were frequent players of *WoW* (12 boys, 2 girls) outperformed non-*WoW*-players (N = 76) on all parts of the national test of English. The differences were particularly salient with regard to listening and reading comprehension. Follow-up interviews revealed that the *WoW*-players attributed their positive performances overall to their involvement in *WoW*. We would like to point to the fact that the vast majority of the *WoW*-players in this study were boys (86%). Results in the same vein are reported in Olsson (2011), who also investigated Swedish EFL learners (N = 37; aged 16) but with a focus on the correlation between EE (including computer gaming) and writing proficiency. In Sundqvist (2009), where it was found that playing computer games correlated positively with L2 English vocabulary as well as oral proficiency, *WoW* was the most popular game among the boys and *The Sims* among the girls. In Belgium, Kuppens (2010) examined incidental foreign language acquisition from media exposure. For the informants in that study (374 Dutch-speaking 6th-graders), it was found that extramural playing of English computer games had a positive influence on English-to-Dutch translation skills. It is stressed that no distinction was made between game genres in the study, but also hypothesized that multiplayer online games would be more beneficial for L2 acquisition than other game genres (Kuppens 2010: 79). Kuppens' hypothesis is one that we have suggested ourselves (Sundqvist & Sylvén in press). In sum, the MMORPG genre holds great promise as an L2 English learning tool.

4 Inventory of learning principles in *WoW* and CLIL

On the surface, playing *WoW* and CLIL may not seem to have much in common. For instance, *WoW* belongs to an extramural, out-of-school informal setting, whereas CLIL is the opposite; that is, set in a formal in-school context. In addition, participation in *WoW* is entirely voluntary, but going to school is mandatory, even though applying to particular schools, such as a school offering CLIL classes, must be considered as voluntary. Another difference between *WoW* and CLIL relates to ownership. There are huge financial interests at stake in the computer game industry, which includes *WoW* (Stenberg 2011: 113–118), and even though some CLIL schools might be run by educational companies that also have an interest in making a profit, the situations do not really seem to be comparable. Despite apparent differences such as these there are also similarities between playing *WoW*, a computer game, and CLIL, an approach in L2 teaching.

Regarding L2 acquisition, its relationship with playing computer games is a fairly recent topic of interest in SLA theory. James Paul Gee was among the first researchers to highlight the language learning potential of computer games. In his seminal work *What video games have to teach us about learning and literacy*, Gee (2007b) identifies no less than 36 learning principles at play in computer gaming. With those as a theoretical point of departure for analyzing similarities between playing *WoW* and CLIL, we made an inventory of the presence of particular learning principles in *WoW* and CLIL respectively (see Table 1). The purpose was to identify learning principles shared by *WoW* and CLIL. As our own first-hand experiences of playing *WoW* are limited, we used Stenberg's (2011) ethnographic in-depth study of life in the virtual worlds of *WoW* as our main source of reference when making decisions about the presence of particular learning principles in *WoW*. Thus, we rely heavily on Stenberg's work, but have also received important additional advice from Peter Wikström (personal communication), experienced *WoW*-player and university lecturer in English. In addition to these two sources, we have drawn information from our experiences as teachers. Over the years, we have had several encounters with *WoW*-players, from young learners in primary school to students at university level. As for identifying the learning principles in CLIL, we base our arguments on CLIL literature and personal experience. It is important to bear in mind that the focus here is on CLIL in Sweden. Moreover, in terms of methodology, it should be stressed that at times it was difficult to say whether a learning principle was indeed *present in* or *absent from* the virtual worlds of *WoW* or the real worlds of CLIL classrooms. However, for the purpose of analysis, a dichotomous description is helpful. Since CLIL varies greatly between countries (Sylvén 2011), our findings regarding the learning principles present in CLIL (Table 1) are not necessarily generalizable to any CLIL context.

Table 1. Inventory of the presence (+) of J. P. Gee's (2007b: 221-227) 36 learning principles in *WoW* and CLIL.

No.	Learning principle	*WoW*	CLIL
1	Active, Critical Learning Principle	+	+
2	Design Principle	+	–
3	Semiotic Principle	+	–
4	Semiotic Domains Principle	+	–
5	Metalevel Thinking about Semiotic Domains Principle	+	–
6	"Psychosocial Moratorium" Principle	+	+
7	Committed Learning Principle	+	–
8	Identity Principle	+	+
9	Self-Knowledge Principle	+	–
10	Amplification of Input Principle	+	–
11	Achievement Principle	+	–
12	Practice Principle	+	+
13	Ongoing Learning Principle	+	–
14	"Regime of Competence" Principle	+	+
15	Probing Principle	+	–
16	Multiple Routes Principle	+	–
17	Situated Meaning Principle	+	–
18	Text Principle	+	–
19	Intertextual Principle	+	–
20	Multimodal Principle	+	–
21	"Material Intelligence" Principle	+	–
22	Intuitive Knowledge Principle	+	–
23	Subset Principle	+	+
24	Incremental Principle	+	–
25	Concentrated Sample Principle	+	–
26	Bottom-up Basic Skills Principle	+	–
27	Explicit Information On-Demand and Just-in-Time Principle	+	–
28	Discovery Principle	+	–
29	Transfer Principle	+	+
30	Cultural Models about the World Principle	–	+
31	Cultural Models about Learning Principle	–	+
32	Cultural Models about Semiotic Domains Principle	–	+
33	Distributed Principle	+	–
34	Dispersed Principle	+	–
35	Affinity Group Principle	+	+
36	Insider Principle	+	–

After examining the thirty-six learning principles, we found that eight out of eleven principles present in CLIL also apply to *WoW* (see Table 1): the Active, Critical Learning Principle (No. 1), the "Psychosocial Moratorium" Principle (No. 6), the Identity Principle (No. 8) the Practice Principle (No. 12), the "Regime of Competence" Principle (No. 14), the Subset Principle (No. 23), the Transfer Principle (No. 29), and the Affinity Group Principle (No. 35) (Gee 2007b: 221–227) (see also Sundqvist & Sylvén in press). In other words, most of the learning principles in CLIL can also be found in *WoW*, which underscores the similarities between these on the surface very different settings. As for the twenty-eight learning principles that are *not* shared by *WoW* and CLIL, we would like to point out that some were more difficult to categorize than others, such as the three culturally related principles (No. 30–32). In some CLIL contexts, all three would be applicable, whereas in others, such as Swedish CLIL, they are generally not. Similarly, the Probing Principle (No. 15) was also difficult to classify. Furthermore, it is possible to argue that the learning principles identified as present in CLIL might very well also be present in regular EFL (i.e. non-CLIL) classrooms. Suffice here to say that our focus is on CLIL classrooms; it is beyond the scope of the present paper to include comparisons with EFL classrooms.

5 Discussion of learning principles, fundamental factors, and gender-related findings

In the following, we discuss the eight principles that are shared by both *WoW* and CLIL. In our discussion, the three fundamental L2 learning factors (immersion, authenticity, motivation) are interwoven. The section ends with a few words on gender in relation to language learning, EE, *WoW*, and CLIL.

First, as the name suggests, The Active, Critical Learning Principle (No. 1) entails that computer games make players active and critical rather than passive. Undoubtedly, *WoW*-players are extremely active and critical to the tasks at hand (Stenberg 2011). In a similar fashion, CLIL-instruction favors critical thinking and strives to make learners active, for instance by the use of authentic material (Sudhoff 2010: 33–34). Active and critical engagement in tasks heightens the level of perceived authenticity, and the expectations put on players/learners will enhance their motivation to perform well.

Second, the "Psychosocial Moratorium" Principle (No. 6), has to do with the fact that gamers/learners dare to take risks in games, because the real-world consequences are lowered. Consequently, in a game such as *WoW*, players do not mind *guessing* what to do or say; guessing is known to be an important L2 language learning strategy and it is closely linked with good language learners (Naiman, Frölich, Stern & Todesco 1996). Moreover, feedback on guesses is immediate, something which also facilitates learning.

The "Psychosocial Moratorium" seems to have much in common with the Identity Principle (No. 8), the third shared principle. It "involves taking on and playing with identities" (Gee 2007b: 222). Playing with identities is clearly part of *WoW*, since gamers create their own avatars (virtual game personas) and play various roles in groups or guilds. As for CLIL and identity, a clear purpose is to create an atmosphere in the classroom where learners feel safe; in other words, an atmosphere resembling the one found in *WoW*. Similarly, speaking another

language entails taking on, at least slightly, a different identity than one's real L1 self, possibly striving for an "Ideal L2 Self" (cf. Dörnyei 2005: 103). In both contexts, it is possible that letting oneself become immersed is facilitated by the fact that one takes on a role which, to various degrees, differs from the real-life, L1 personality of the individual. For instance, the identity of the avatar (or avatars) is chosen by the individual player and can be, and often is, radically different from the real-life identity of the player (Gee 2007b: 45–54; Stenberg 2011: 33–39). Thus, the game design makes it possible for players to hide their real-life person behind the mask of an avatar. Gee (2007b: 63) argues that players will learn and acquire new perspectives "based on the powerful juxtaposition of their real-world identities […] and the virtual identity at stake in the learning". Indeed, this is what some scholars claim also happens in the CLIL classroom. Maillat (2010), for instance, argues that that students take on a different role, or put on a mask, when using another language than their L1, thus permitting themselves to try out new ways of expressing themselves.

The fourth shared principle between *WoW* and CLIL, the Practice Principle (No. 12), means that gamers have several chances to use the TL in a virtual environment that is anything but boring (such as a battleground in *WoW*), experiencing ongoing success (success inevitably comes to *WoW*-players who do their fair share of in-game activities such as raiding etc.), and simply spending a great deal of time on a task, such as collaborating and interacting with co-players in order to obtain an object crucial for game success. These examples can be compared with task-based language learning in the CLIL-classroom (cf. Ellis 2003; Reinders 2006). Studies show that on-task activities in immersion school contexts indeed encourage students to use the TL (Broner & Tedick 2011). As mentioned above, online gaming has a high degree of authenticity. Similarly, in CLIL classrooms authentic materials are preferably used, even though it may prove difficult to find relevant and suitable material due to a mismatch between L2 and content level. That is, the language may be at an adequate level for the learners, but the content too simplistic, and vice versa.

Next, the "Regime of Competence" Principle (No. 14) has to do with gamers/learners operating within but at the outer edge of their resources. Game challenges are perceived as "'doable'" (Gee 2007b: 223). Learners' operating at the outer edge bears a strong resemblance with Krashen's (1985) input hypothesis and Vygotsky's (1926/1999) ZPD, both of which are generally viewed as very important concepts in explaining L2 development (see, e.g., Ellis 1994; Hedge 2000). As pointed out above, the theoretical underpinnings of CLIL build on both Krashen's and Vygotsky's theories (Dalton-Puffer 2007). In both contexts, motivation is heightened by the fact that content is challenging at an appropriate level.

As for the Subset Principle (No. 23), it states that from the very beginning learning "takes place in a (simplified) subset of the real domain" (Gee 2007b: 225). For example, novice players in *WoW* start learning the game mechanics in rather simple quests in a constrained environment, generally on their own using a trial and error approach, before moving on to collaboration with others in more challenging endeavors. There is an incremental design in terms of game mechanics, which thus aids players who lack previous computer game experience to advance in the game (Peter Wikström, personal communication). Similarly, CLIL teachers will let their learners start from the level they are at and gradually introduce more difficult tasks (cf. the ZPD). In a gaming environment,

once started, participation builds on the motivation to make progress. In order to do so, it is necessary for gamers to collaborate, socialize, and become members of guilds. Players are expected to perform various tasks which are necessary for the guild to advance. Paradoxically, Stenberg (2011: 158) points out how these often seemingly boring and repetitive chores in fact form much of the virtual online life, and in so doing create an important social basis leading to a feeling of belonging. He claims that "the core of online role-playing games lies in the players' mundane, often repetitive, work-like everyday life. As social laborers they produce what makes the world livable through their doings." This thus triggers a need to contribute to mutual endeavors; i.e., players participate not only for their own sake, but also for the sake of their co-players within the guild (cf. the Affinity Group Principle). The same argument can be used for students in a CLIL class. CLIL students often perceive themselves as belonging to a select group at their respective schools (Sylvén 2004: 50), and as has been shown elsewhere (Swezey, Meltzer & Salas 1994), group motivation can be very strong.

The seventh shared principle, the Transfer Principle (No. 29), suggests that gamers/learners are given many chances to practice transferring what they learn from game-related problems to solve new problems that arise in the game – or elsewhere, such as in a CLIL classroom. The Transfer Principle is highly relevant also to CLIL (Darn 2006), since what is learned in terms of the TL in the CLIL classroom should also be possible to use in extramural, real-world contexts.

Finally, the Affinity Group Principle (No. 35) focuses on the social and cognitive sides of gaming. *WoW* offers a virtual reality directly – all of it – to any player entering *WoW*; i.e., while the game mechanics are introduced incrementally (see above), the social world is immediately made available in its entirety (Peter Wikström, personal communication). The tight relationship that emerges among players sharing mutual goals in *WoW* is emphasized by Stenberg (2011). In Gee's (2007b) terminology, Stenberg in fact attributes much of the popularity of *WoW* to the Affinity Group Principle. Again, this can be applied also to CLIL students who, as pointed out above, often seem to have a feeling of being somewhat special in comparison to students in regular, non-CLIL classes.

To summarize this section, we have shown that eight are jointly shared by *WoW* and CLIL. This list is by no means exhaustive, and we would once again like to emphasize the fact that we chose the dichotomous (+/–) format of presentation for methodological reasons and for the sake of clarity. Admittedly, there is rather a continuum to be considered in most learning principles.

Before ending this discussion, we would like to address the issue of gender and language. Girls are generally considered to be more apt to (Carr & Pauwels 2006) and interested in (Darn 2006) foreign language learning than boys. As for Sweden, which is where our studies were carried out, girls consistently obtain higher grades than boys in language arts (http://www.skolverket.se/sb/d/1637). However, our three studies showed that the boys scored higher on the vocabulary tests and were on par with the girls regarding listening and reading comprehension (5th grade). We believe that these gender-related observations at least partially can be explained by the type and amount of EE activities that the boys and girls are engaged in. Moreover, in most CLIL classes, girls are in the majority (which is in line with findings that girls are generally more interested in languages). Thus, as expected, girls more often opt for language-intense CLIL programs. Conversely, engaging in playing

games such as *WoW* seems to cater more to boys, and it appears as though this involvement is highly conducive to boys' L2 English acquisition.

6 Concluding remarks

In the present article, we have outlined and discussed similarities between playing *WoW* and CLIL. Gee (2007b: 21) points out that many people who are not gamers view computer gaming and/or sitting at the computer as "a waste of time". In an international longitudinal study spanning 30 years, Rosén (2011) concludes that increased amount of time spent at the computer correlates significantly with reduced L1 reading comprehension. She points out, though, that it is not necessarily the use of the computer per se that explains the decline in results but rather the fact that the time left for pastime reading is reduced. In line with Gee (2007b) and others, we would like to challenge the view that spending time at the computer is detrimental for learning, and language learning in particular. Based on what has been presented here, we claim that playing *WoW* is a form of content and language integrated learning.

However, from the perspective of L2 acquisition it is important to consider *what* the computer is used for, and with regard to computer games, *what types of game* learners play. There is a plethora of computer games available and this article has pointed to some perceived benefits from a L2 learning perspective of MMORPGs (more specifically *WoW*) in comparison with single-player offline strategic life-simulation games (such as *The Sims*). MMORPGs seem to offer a broader range of features that enhance L2 acquisition, such as opportunities to produce output, both written and oral, and to interact and collaborate with other players. However, it is worth pointing out that single-player games such as *The Sims* may also involve players in collaboration, for instance on websites and in chat rooms, often produced by the players themselves (Gee 2007a: 133). But still, when compared, there is a crucial difference: in *WoW*, *social interaction is an integral part of the game itself*. This is a qualitative aspect of *WoW* that definitely makes it stand out in terms of offering an informal arena for language learning (Sundqvist & Sylvén in press).

In light of the fact that girls are generally higher achievers in languages than boys, the results from our three studies are intriguing, as are the results from some other studies accounted for (Astrén 2010; Olsson 2011). In all these studies, the boys' scores on various L2 English proficiency tests have been either on par with the girls', or higher. In other words, the results contradict the general picture of boys lagging behind girls in languages. When such slightly bewildering results come to light, there is always a need for caution in terms of interpreting the results; there can be inherent validity problems in the research design, the measuring tools, etc. However, no such problems have been detected in this case. Thus, it certainly seems as if the boys benefit from their EE involvement in computer gaming, in particular since they favor playing MMORPGs such as *WoW*.

This article has shown that almost all (eight out of eleven) learning principles identified in CLIL are also present in *WoW* (see Table 1) Furthermore, we have proposed three language learning fundamentals – immersion, authenticity, motivation – that are indeed also present in and shared by both

WoW and CLIL. While all this is interesting per se, further in-depth investigations are needed in which the results presented here can be compared to findings regarding the presence of language learning principles in regular (i.e., non-CLIL) L2 English classrooms. In other words, do CLIL and non-CLIL classrooms differ in this respect? And if so, in what way do they differ? Answers to such questions are imperative in order to understand what type of L2 classroom is best equipped to meet current demands on bridging the gap between English in school and English outside of school (cf. Skolinspektionen 2011). As for methodology, future studies could consider the use of a continuum rather than a dichotomous format when identifying learning principles in various contexts.

Our conclusion is that *WoW* and possibly other MMORPGs resemble a CLIL learning environment in that they facilitate L2 use, encourage L2 interaction and communication, and may lead to improved L2 proficiency, in particular with regard to vocabulary. Finally, we claim that playing such games forms an emerging new learning context and conclude that what CLIL claims to do intramurally, that is, in the language classroom, *WoW* does extramurally.

Acknowledgements

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