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EXAMINING FACEBOOK AS A DIGITALLY IMMERSIVE LANGUAGE
ENVIRONMENT FOR FRENCH LANGUAGE LEARNERS

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Instructional Technology
in the College of Education and Human Performance
at the University of Central Florida
Orlando, Florida

Fall Term
2013

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ABSTRACT

This quasi-experimental study examined the impact of interactions with native French language Facebook posts on beginning French language learners' willingness to communicate (WTC) and their attitudes towards the target language and culture in a university setting. In addition, the degree of interaction, by participants, with the French language Facebook posts was recorded and analyzed. This study was conducted during the Spring 2013 semester at the University of Central Florida in Orlando, Florida. Participants in this study were recruited from two sections of FRE 1120, Elementary French Language and Civilization I. Native French language Facebook posts were "pushed" to participants' personal Facebook News Feeds over the course of four weeks, with posts pushed on weekdays only and Facebook polls asking for participant feedback on Fridays. Two instruments were used in this study to obtain participants' demographic information and to measure willingness to communicate as well attitudes towards the target language and culture. In addition, the researcher gathered observational data directly from Facebook.

Data were analyzed using a Split-plot ANOVA and descriptive statistics. A total of 26 participants completed the study, with 14 participants in the control group and 12 participants in the treatment group. Both sections of FRE 1120 were conducted in a traditional, face-to-face format and were taught by the same instructor. Results indicated that participants' willingness to communicate in French and their attitudes towards the target language and culture were not

significantly impacted by interaction with native French language Facebook posts. The level of Facebook-facilitated interactions in all areas, including “Liking,” “Sharing,” and “Commenting” was low. Self-reported interactions, including reading, viewing and translating of French language Facebook posts; Reading and viewing posts (such as simply viewing a photo) was the most frequently reported interaction, with “Commenting” and “Sharing” was the least common interaction. Opportunities for future research are numerous and include increasing the size of the sample, increasing the length of the study, and selected participants’ who are more advanced in their mastery of the target language. The potential of social network sites to serve as digitally immersive environments for foreign language learners should be explored in more depth and across various languages.

ACKNOWLEDGMENTS

I would like to thank Dr. Glenda Gunter, Dr. David Metcalf, Dr. Lea Witta, Dr. Edwidge Crevecoeur-Bryant, and Dr. Tammy Boyd who displayed such patience and provided so much during the conceptualizing, researching, and writing of my dissertation. Over the course of two years, Dr. Gunter, my committee chairperson, encouraged me to keep going even when personal challenges seemed to make completing my work nearly impossible.

Other important figures in my journey towards graduation include Dr. Elayne Reiss and Dr. Jeff Reiss, who served as my go-to resources on statistics, and Maureen Warman, my dissertation and life coach. Also, I appreciate very much the help I received from Dr. Mary Ann Lynn, my editor.

I want to thank my mother Diane and father Larry, who always encouraged me in my education and gave me so much love and support. My aunt Barbie, always my cheerleader, also deserves recognition, as she took such pride in telling people that I was “almost a doctor.” Dr. John Werner, my dear friend, also was tireless in supporting me through the revision process.

Finally, I would like to thank my friends and colleagues, especially Dean Dusty Maddox, for clearing my way, Dr. John Lutzyk, for his encouragement sense of humor, and Janet Daugherty, for just being herself.

Thank you one and all.

TABLE OF CONTENTS

LIST OF FIGURES	ix
LIST OF TABLES	x
CHAPTER 1 THE PROBLEM AND ITS CLARIFYING COMPONENTS.....	1
Background of the Study.....	1
Problem Statement	6
Purpose of the Study	7
Research Questions	9
Theoretical Foundation	10
Social Constructivist Theory.....	10
Clément’s Theory	10
Significance of the Study	11
Definitions of Terms.....	12
CHAPTER 2 LITERATURE REVIEW	14
Introduction	14
Second Language Acquisition	15
Immersion in the Target Language	17
Digital Immersion	21
Digital Immersion Defined	22
Social Network Sites as Digital Immersive Environments	23
The Nature of User-Driven Content.....	25
Facebook.....	26
The Facebook Economy	27
Challenges Associated with Facebook.....	29
Facebook Interactions.....	31
Willingness to Communicate (WTC)	33
Attitudes Towards the Target Language	35
CHAPTER 3 METHODOLOGY	38
Introduction	38
Research Questions	39
Design of the Study	40
Setting.....	41
Population and Sample Selection	42
Instrumentation.....	44
Student Demographic Information.....	45
Willingness to Communicate Scale.....	45
Language Orientation Questionnaire	46
Reliability and Validity Issues.....	49
Procedures and Data Collection	51

Facebook and Privacy.....	55
SurveyMonkey	57
Data Analysis.....	58
Summary	59
CHAPTER 4 ANALYSIS AND RESULTS.....	61
Introduction.....	61
Purpose of the Study	61
Study Design	61
Participants' Demographic Data	62
Statistical Analysis: Learners' Willingness to Communicate and Attitude.....	65
Research Question 1	65
Research Question 2	72
Statistical Analysis: Student Interaction	77
Research Question 3	77
CHAPTER 5 DISCUSSION AND CONCLUSION.....	83
Introduction.....	83
Brief Overview of Study	83
Research Question 1: Discussion.....	86
Research Question 2: Discussion.....	87
Research Question 3: Discussion.....	89
Theoretical and Practical Implications of the Study	89
Limitations of the Study.....	92
Conclusions	93
Recommendations for Further Research.....	94
APPENDIX A SAMPLE FACEBOOK PROFILE	99
APPENDIX B SAMPLE FACEBOOK NEWS FEED	101
APPENDIX C DESCRIPTION OF FRE1120 ELEMENTARY FRENCH LANGUAGE AND CIVILIZATION I.....	103
APPENDIX D CONSENT AND FORMS.....	105
APPENDIX E WILLINGNESS TO COMMUNICATE SCALE.....	111
APPENDIX F LANGUAGE ORIENTATION QUESTIONNAIRE (REVISED) .	116
APPENDIX G DEMOGRAPHIC AND FACEBOOK QUESTIONS	124
APPENDIX H INSTITUTIONAL REVIEW BOARD APPROVAL.....	126
APPENDIX I FRENCH LANGUAGE FACEBOOK MEDIA SOURCES.....	129

APPENDIX J	TYPES OF FACEBOOK POSTS USED IN STUDY	135
APPENDIX K	FRENCH LANGUAGE FACEBOOK POSTS USED IN STUDY	138
APPENDIX L	SAMPLE FACEBOOK STUDY POLL.....	172
APPENDIX M	FACEBOOK PAGES	174
APPENDIX N	FACEBOOK AND PUBLIC INFORMATION	176
REFERENCES	179

LIST OF FIGURES

Figure 1. Example of a French Language Facebook Post.....	52
Figure 2. Sample Facebook Profile	100
Figure 3. Sample Facebook News Feed	102
Figure 4. French Media Source - 20 Minutes.....	130
Figure 5. French Media Source - TV 5 Monde.....	130
Figure 6. French Media Source - Paris.....	131
Figure 7. French Media Source - Musee du Louvre	131
Figure 8. French Media Source - Paris Match	132
Figure 9. French Media Source - Slate France.....	132
Figure 10. French Media Source - France 24.....	133
Figure 11. French Media Source - France Culture	133
Figure 12. French Media - Lu, Vu & Entendu	134
Figure 13. French Media Source - France 3.....	134
Figure 14. Facebook Post Type – Link.....	136
Figure 15. Facebook Post Type - Photo	136
Figure 16. Facebook Post Type - Video	137
Figure 17. Facebook Study Poll.....	173

LIST OF TABLES

Table 1	Facebook Features That Support Interaction	33
Table 2	Factors of Language Orientation Questionnaire	47
Table 3	Data Captured by Facebook Insights.....	55
Table 4	Demographic Data Related to Gender, Age, and Facebook Usage	63
Table 5	Facebook Usage by Device	65
Table 6	Mean Willingness to Communicate Scores by Factors.....	66
Table 7	Within- and Between-Groups: Contrasts and Effects for Willingness to Communicate	68
Table 8	Between- and Within-Group Results: Overall Willingness to Communicate	71
Table 9	Split-Plot ANOVA for Overall Willingness to Communicate Score	72
Table 10	Mean Language Orientation Scores by Factors	73
Table 11	Within- and Between-Groups Contrasts and Effects for Language Orientation Questionnaire.....	74
Table 12	Facebook French Language Posts by Week and Type	77

CHAPTER 1 THE PROBLEM AND ITS CLARIFYING COMPONENTS

Background of the Study

Foreign language education in United States (US) colleges and universities has been undergoing a subtle but steady transformation, a result of changing perceptions of value related to some Romance languages versus Asian languages. Foreign language learning, as opposed to second language learning, takes place outside of the cultural and linguistic context of the target language being studied (Oxford, 2003; Oxford & Shearin, 1994). Although Spanish language programs enjoyed the highest enrollment in 2008-2009 (Snyder & Dillow, 2011), many institutions have added Chinese and Arabic, thus responding to student, as well as market-driven, demands (Glenn, 2011). Overall, enrollments in foreign languages in US colleges and universities increased by 6.6% between 2006 and 2009, with 2009 enrollments reaching a new all-time high (Modern Language Association, 2010).

Enrollments in foreign language courses and programs have driven a continuing effort to improve foreign language learner outcomes. Foreign language educators and researchers have long recognized the challenges faced by foreign language learners. These challenges include low levels of language mastery including vocabulary acquisition (Nation, 2001), lack of knowledge, and experience of “. . . discourse and socio-cultural patterns of the target language” (Demo, 2001, para. 1), and communicative competence (Bley-Vroman, 1990;

Yodkamlue, 2008). Another significant barrier to foreign language mastery is the motivational factor willingness to communicate (WTC), indicating the degree to which foreign language learners will seek out and engage in interactions with speakers of the target language (MacIntyre, Dörnyei, Clément, & Noels, 1998).

Adapted from first language acquisition research and applied to second language (L2) communication environments, WTC to communicate refers to the foreign language learner's readiness to enter into an L2 communication at a particular time and place (MacIntyre et al., 1998). MacIntyre et al. (1998) argued that creating an environment that increases WTC in the target language is a worthy goal for L2 education, extending the scope of communication beyond speaking to include writing and comprehension of written and spoken language.

The focus of study since the 1980s, the concept of WTC in a second language, has inspired studies that have been conducted to investigate how situational variables impact WTC (Baker & MacIntyre, 2000; Cao, 2011; Cao & Philp, 2006; Kissau, McCullough, & Pyke, 2010; Peng & Woodrow, 2010). Interactions with L2 speakers, along with exposure to L2 culture and media, have been shown to increase foreign language learners' WTC. Willingness to communicate may increase due to a rise in positive attitudes toward the target culture, as knowledge deepens and learners desire to “. . . come close psychologically to the other language community” (Gardner, 2001, p. 9). The motivational power of attitudes toward the target culture has been associated with the work of Gardner and Lambert (1985) who noted that superior L2

learning outcomes are associated with holding the target culture in positive regard. In addition, meaningful L2 interactions and cultural exposure need not be face-to-face or immediate but may consist of computer-mediated communications and media (CMCs) (Beauvois, 1998; Chun, 1994; Kelm, 1992; Kissau et al., 2010).

Ultimately, a significant challenge for foreign language learners has been to overcoming barriers in communicating in the target language, including a major motivational barrier to communication referred to as “willingness to communicate” (Jung & McCroskey, 2004; MacIntyre, Baker, Clément, & Donovan, 2003; McCroskey, 1997; McCroskey & Richmond, 1990). Foreign language learners, whose learning has been largely limited to the classroom, must overcome remoteness from the target language and culture, meaning that learners have limited opportunities to experience the language within an authentic context.

One of the traditional approaches to addressing problems related to communication and cultural knowledge of foreign language learners is participation in an immersion program, often also referred to as study abroad, within the target culture. Language immersion programs range in length from as little as four weeks to as long as an entire academic year (Milleret, 1990). Researchers on immersion programs have indicated that learners of foreign languages benefit from living in the country where the target language is spoken (Freed, 1998; Rivers, 1998). Jackson (2008) took simple language proficiency as

a measure of learner success a step further by arguing that “. . . sociocultural and intercultural competence are [also] essential element . . .” of linguistic competence (p. 4). Unfortunately, immersion programs within the target language and culture have often not been a practical option for most foreign language students due to the additional costs involved, including travel, room and board, and supplementary tuition and fees (Heitmann, 2007/8). Alternatives to traditional immersion experiences have been developed and evaluated as a way to provide some of the benefits of traditional immersion study but without leaving home, including virtual learning environments (VLEs) (Godwin-Jones, 2004; Kalish, 2005) and other digital immersion options, including Web 2.0 technologies.

Social networking sites (SNSs), of which Facebook was currently the most widely used, are a manifestation Web 2.0 technology: free of charge, user-driven, connected, and available anytime on a variety of devices. With 1.11 billion active users, on a monthly basis, as of March 2013, 79% of which resided outside of the United States and Canada, Facebook had become a global phenomenon (Facebook, 2013b). The current generation of college students can be accurately called the Facebook Generation, with 90% of students reporting regular use of Facebook, including nearly 60% who report logging in to the site multiple times a day (EDUCAUSE Center for Applied Research, 2011). More recently, the Pew Research Center reported that Facebook users aged 18 – 29 were the most active users, with 86% using this SNS; across age groups, women overall outpaced male users by 9% (Duggan & Brenner, 2013). Initially tentative,

educators in higher education have begun to recognize the pedagogical potential of SNSs. The “participatory culture” that has defined Web 2.0 technologies in general, and SNSs in particular, supports collaborative problem solving, information mining and knowledge sharing, and creative self-expression (Jenkins, 2006). Researchers in the area of L2 acquisition have already begun to recognize the potential of SNSs to enhance L2 learning; these initial studies explored Facebook’s potential to impact learner engagement, learner attitudes and motivation, as well as overall performance in their course (Aubry, 2009; Mills, 2011). There has been little focus yet, however, on the potential for L2 learners’ use of SNSs such as Facebook to impact learners’ WTC.

All types of immersive experiences, including watching a film, playing a video game, or reading a book, share in four common interrelated factors: interest, involvement, imagination, and interaction (Burbules, 2004). Digital immersion, as defined by Dede (2009), is “. . . the subjective impression that one is participating in a comprehensive, realistic experience” (p. 66). According to these criteria, SNSs such as Facebook qualify as a digital immersive environment, providing users with a virtual community that engages their interest, seeks their involvement, provides a platform for imagination and creativity, and offers opportunities for interaction. Digital immersion includes fully functioning virtual learning environments (VLEs). Virtual learning environments offer users a “computer-mediated simulation that is three-dimensional, multisensory, and interactive, so that the user’s experience is ‘as if’ inhabiting and acting with an

external environment” (Burbules, 2004, p. 162). All digital immersion shares some characteristics of virtual immersion – both foster “attention and quality of focus” (Nino, 2010, para. 1). The crucial difference between VLEs and other digital immersion is that there is no conceptual barrier to overcome; in other words, digitally immersive technologies generally exhibit modest learning curves (Nino, 2010). For example, Nino (2010) noted:

Facebook’s simple and can exhibit rapid immersion, because it’s so limited. It doesn’t really simulate or model anything. The concepts behind profiles, status updates, friends, fan pages, and the various apps and diversions are relatively trivial. It’s a dynamic so simple that few people don’t grasp within the first few minutes. (para. 12)

Digital immersion in SNSs has the advantage of ease of use as well as the quality of being ubiquitous; Facebook users can access their profiles from any device that has Internet access. This study focused on investigating the impacts of L2 digital immersion on foreign language learners’ WTC as well as their cultural attitudes (Boyd & Ellison, 2007; Nino, 2010; Oeldorf-Hirsch, 2011).

Problem Statement

Foreign language learners’ opportunity to interact with native speakers of the target language have been limited due to lack of access to native speakers and institutions as well as limited immersion opportunities. Limited opportunities to interact with native speakers of the target language, along with the target

culture, impact learners' WTC and limit opportunities to develop beneficial positive attitudes towards the target language and culture. An effective approach to increasing WTC, according to Clément, Baker, & MacIntyre (2003), is to provide frequent and high-quality opportunities for L2 learners to interact with the L2 group. In an earlier paper, Clément (1980) noted that positive and regular contact with the target language group increases confidence in learners' use of the language, which constitutes a component of WTC. This positive and regular contact also contributes to WTC in generating positive attitudes towards the target culture (Gardner, 1985). As previously indicated, meaningful interactions with the target language group can take the form of computer-mediated interactions as opposed to face-to-face interactions (Beauvois, 1998; Chun, 1994; Kelm, 1992). Facebook, an SNS, may display affordances that support digital immersion within the target language. The goal of this study was to investigate the functions of Facebook as a digital immersive environment that offers an authentic cultural and linguistic context for foreign language learners.

Purpose of the Study

The purpose of this study was to examine and analyze the affordances of Facebook as a digital immersive environment, thus offering foreign language learners the opportunity to interact with native speakers within a naturalistic, albeit computer-mediated, context. According to Osatshewski and Reid (2011), the Networked Learning Framework was developed in response to an increasing

use of Web 2.0 technologies for learning. In this framework, the learner is at the center of digital environment that includes opportunities for interaction. For users of SNSs, these interactions include other members of the SNS as well as various media embedded within the site, including advertisements, video, audio, and web links. Language acquisition has been the focus of several preliminary VLE studies, including integrating online game-oriented tasks into a VLE in order to provide Spanish learners with opportunities to practice their communication skills (Sykes, 2008), the use of Second Life by Japanese college students to learn English (Sadler & Nurmukhamedov, 2008), and the use of Second Life to support Chinese language learners' understanding of the Chinese language as well as culture (Zheng, Li, & Zhao, 2008).

The potential of SNSs to support foreign language learning has not escaped the attention of researchers; recent studies include investigating the impacts of instructor use of Facebook on learner motivation (Aubry, 2009) and using SNSs as an authentic learning context for Chinese learners of English living outside of an English speaking country (Kelley, 2010). Although each of these studies revealed improvements in perceived performance outcomes, there was not a clear focus on WTC or attitudes towards the culture. The core foreign language motivational concepts of WTC and attitudes toward the culture were evaluated in terms of how Facebook functioned as a digital immersion environment. In this study, the researcher explored the affordances of an online social network as they related to interaction between L2 learners and natives

speakers and native media; the tools made available by the user interface constituted tools for manipulating the individual site profiles.

Research Questions

The following research questions guided this study:

1. Was there a statistically significant change in foreign language learners' willingness to communicate in the target language as a result of exposure to and interaction with native language Facebook posts as measured by the pre-test and post-test using McCroskey's Willingness to Communicate Scale?
2. Was there a statistically significant change in foreign language learners' attitudes towards the target language and culture as a result of exposure to and interaction with native language Facebook posts as measured by the difference pre-test and post-test using Dörnyei and Clément's Language Orientation Questionnaire?
3. To what degree did foreign language learners interact with native language Facebook posts through sharing, liking, reading, viewing, translating and commenting?

Theoretical Foundation

Social Constructivist Theory

Social Constructivist Theory, like Constructivist Learning Theory, affirmed that knowledge was constructed by learners but added the need for group collaboration. Learners in a social constructivist environment participate in generating meaning and solving problems, by interacting with others and working collectively. According to Sivan (1986), “Replacing the individual as sole meaning-maker, social constructivists (especially the Soviet psychologists led by Vygotsky, Luria, Leontiev, and others) saw developing cognitive activity achieved by the internalization of cultural knowledge and norms and the use of tools and signs of the culture” (p. 211). The three major components of social constructivist theory, according to Sivan (1986), included “. . .cognitive activity, cultural knowledge, tools, and signs; and assisted learning” (p. 211). This theory suggests that learners are most positively impacted by instructional events when they, the learners, can shape the discussion and share their ideas and experiences (Jonassen, Davison, Collins, Campbell, & Haag, 1995).

Clément’s Theory

Clément’s Theory (Clément, 1980; Clément et al., 2003; Clément, Dörnyei, & Noels, 1994; Clément & Kruidenier, 1983) emerged from research conducted by investigators in Canada who were interested in motivation and L2

acquisition. In his theory, Clément stated that a language learner's self-confidence is driven by the quantity and quality of the contacts with the target language. Clément identified these factors, quality contacts with the target group along with contact of sufficient regularity, as major motivators and believed that they predicted the learner's identification with the target group as well as the desire to communicate (Clément & Kruidenier, 1985). Because not all foreign language learners could interact directly with members of the target language group, the question of secondary contact, through L2 media, arose. According to Clément et al. (1994), indirect contact with the target group, through L2 media, also improves motivation.

Significance of the Study

Studying abroad for the purpose of foreign language acquisition and cultural immersion has been an instructional answer to gaining self-confidence in speaking the language as well as deepening cultural understanding and acceptance. This tradition has its roots in the ancient world, continuing through the Renaissance tradition of apprenticeship at foreign courts to the present day. Positive interactions with native speakers of the target language, within an authentic L2 environment, support foreign language learners' self-perceived competency that leads to greater WTC. As a traditional study abroad experience is not feasible for all learners, virtual and digital immersion options offer at least some of the benefits of a real-world immersion experience. The affordances of

SNSs, such as Facebook, offer users a ubiquitous, digital immersive experience that is easy to use and boasts millions of users from around the world. The affordances of Facebook that support digital immersion and provide opportunities for foreign language learners to engage in L2 interactions with native speakers within an authentic context were investigated in this study. The results from the study can provide educators with some insights into how digital immersion may be achieved through ubiquitous Web 2.0 applications. More specifically, digital immersion through SNSs can enhance foreign language learners' opportunities to interact with native speakers of their target languages, thus increasing their understanding of the culture and their WTC. Furthermore, this study can guide instructors who wish to utilize SNSs to facilitate foreign language interaction and learning.

Definitions of Terms

Application: An Internet-based software product that allows users to access, store, manipulate and share information, including photos and videos files.

Digital Immersion: Web-based experience that exploits the inherent qualities of Web 2.0 applications such as Second Life and social networking sites such as Facebook to capture the attention of users and hold that attention for the purpose of social interaction.

First Language (L1): The first language an individual learns; also called native language

Foreign Language Learner: A learner of a second language who is not living in a country where the target language is spoken.

Second Language (L2): A language other than the native language spoken by an individual; this term may be interchangeable with Foreign Language

Second Language Acquisition: The study of individuals and groups who are learning a language following the acquisition of a first language as well as the process of learning that second, or subsequent, language or languages

Second Language Learner: A learner of a second language who is living in a country or community where the target language is spoken.

Social Network Site (SNS): A web-based service “that allows individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (Boyd & Ellison, 2007, p. 211).

Target Culture: A culture that is associated with the language or languages.

Target Language: A language that is learning goal of a second or foreign language learner

CHAPTER 2 LITERATURE REVIEW

Introduction

A rapidly globalizing economy has increased enrollments in foreign language courses across the United States and overseas; while English remains the world's most popular choice in language education, in the United States the language that tops the list in popularity is Spanish. Many institutions have also added languages that are in high demand by the federal government as well as international corporations (MLA, 2010; Glenn, 2011; Snyder & Dillow, 2011). Learning a second language as an adult, however, remains a very challenging prospect to most L2 learners (Bley-Vroman, 1990; Demo, 2001; Nation, 2001; Yodkamlue, 2008).

One barrier to mastering a second language is the motivational factor willingness to communicate (WTC) (MacIntyre et al., 1998) as well as its related motivational factor attitudes towards the target language and culture (Gardner, 2001; Gardner & Lambert, 1985). Opportunities to develop both WTC and positive attitudes towards the target culture have been associated with meaningful interactions with the target culture, either in person or through computer-mediated communications (CMCs) and media (Beauvois, 1998; Chun, 1994; Kelm, 1992; Kissau et al., 2010). As an extended study abroad experience is often too costly or is compatible with work and family obligations (Heitmann, 2007/8), so, for many L2 learners, CMCs and media may provide an opportunity

to become immerse in the language while staying in their home country. Social network sites (SNSs) such as Facebook may offer learners a quasi-immersive experience through its ubiquitous presence in the lives of many language learners as well as a gateway to authentic language communications (Aubry, 2009; Kelley, 2010).

Second Language Acquisition

Second language (L2) acquisition consists of “. . . informal [second language] L2 learning that takes place in naturalistic contexts, formal L2 learning that takes place in classrooms, and L2 learning that involves a mixture of these settings and circumstances” (Saville-Troike, 2006, What is SLA section, para. 1). Second and subsequent languages that are the focus of study are termed target languages. The focus of the present study was on foreign language learning, a subset of L2 learning that happens within a context that is outside of the target language; for example, a person learning French in the United States would be a foreign language learner, as French is not the language of the community in which the learner is immersed (Siegel, 2005). This distinction between L2 learners in general and foreign language learners in particular is significant. According to Oxford and Shearin (1994), learners of second languages benefit from increased opportunities to speak the language in a natural setting as the target language is the “main vehicle of communication”(p. 36) in the community. Conversely, Saville-Troike (2006) noted that a foreign language learner generally is learning

the language in a classroom without necessarily having an immediate practical application for the language.

The process of L2 acquisition, whether inside or outside the target language community, is a complex process that attracts researchers from multiple disciplines, including neurology, psychology, linguistics, and communications (Saville-Troike, 2006). There are approximately between 40 and 60 theories of L2 acquisition, although the field, as a distinct area of research, is only about 30 years old (Mishan, 2003). Yule (2006) made the distinction between acquisition, which is a gradual increase in ability to use the target language in natural settings, and learning, which refers to the conscious building up of the components of language, including grammar and vocabulary (Yule, 2006). This idea is not new: Krashen (1981) established his Monitor Theory of adult learning, noting that adults have “. . . two independent systems for developing ability in the second languages, a subconscious language acquisition and conscious language learning” (p. 1). Researchers have clarified some basic questions, including how different L2 acquisition is from first language acquisition (not very) and how important context is in the language acquisition process (Lightbrown & Spada, 1999; Regan, 1998). Still, there is a distinction worth noting: conscious language learning, like that experienced in a classroom, is fundamentally different from language acquisition which is grounded in meaningful interaction with speakers of the native language without concern for issues of rules or errors in grammar (Krashen, 1981). In addition, individual

learning differences, including aptitude, motivation, and attitude towards the target language, affect L2 learning as well as the quality and quantity of authentic language input (Freed, 1998; Krashen, 1981; Lightbrown & Spada, 2009; Saville-Troike, 2006).

Immersion in the Target Language

The question of immersion in the target language has only recently been the focus of robust research study. Blashki, Nichol, Jia, and Prompramote (2007) defined immersion as “. . . the active involvement of physical, emotional, and cognitive processes and further, the willingness of the user/student to sustain concentration” (p. 414). The authors also identified four elements that must be present for successful learning to take place: immersion, engagement, risk/creativity, and agency (Blashki et al., 2007). Freed (1998) noted that the basic assumption that immersion in the target language, coupled with competent classroom instruction, leads to superior L2 acquisition outcomes. The emphasis in immersion research on quantitative assessment of language proficiency led to studies in which foreign language learners benefited from immersion experiences (Carroll, 1967; Dyson, 1998; Magnan, 1986; Milleret, 1990; O’Connor, 1988).

One L2 acquisition theory that has supported the immersion approach to L2 acquisition is primacy of input. Surrounded by target language input, the language learner strains “. . . to fill the gap between his/her current knowledge and such input” (Mishan, 2003, p. 22) and in the process acquires the language.

In this way, language learners actively engage in negotiating meaning, employing various strategies to comprehend the input, including reading and re-reading, as well as asking questions (Jackson, 2008; Larsen-Freeman & Long, 1991; Mishan, 2003; Zhang & Yu, 2008). Researchers have indicated that increased interaction with the target language and culture also seems to increase learners' perceived communication competence and ameliorate communication anxiety (Baker & MacIntyre, 2000; MacIntyre, Clément, & Donovan, 2002; McCroskey & Richmond, 1987). As noted by MacIntyre et al. (2002), “. . . immersion was also associated with greater frequency of L2 use” (p. 4). In addition to increasing use of the target language, the experience of immersion in the target language and culture has the effect of developing receptive attitudes towards that language group (Freed, 1998; Kehl & Morris, 2008; Medina-Lopez-Portillo, 2004).

A related hypothesis is the natural approach to L2 acquisition. This approach emphasizes active participation in language-related activities and lowering of affective barriers (Krashen & Terrell, 1983). Taking this notion to its logical conclusion, researchers in the area of authenticity of input noted that designed materials such as L2 textbooks may be less useful than authentic texts due to the lack of culturally rich language (Crossley, McCarthy, Louwse, & McNamara, 2007; Leaver & Stryker, 2008; Leow, 1993; Mishan, 2003).

Closely related to the above hypotheses is the interaction hypothesis; Long (1996) promoted this hypothesis as follows: “modifications and collaborative efforts that take place in social interaction facilitate L2 acquisition

because they contribute to the accessibility of input for mental processing” (p. 151). Saville-Troike (2006) also supported this approach, commenting that:

L2 is acquired in a dynamic interplay of external input and internal processes, with interaction facilitating (but not causing) SLA: and the reasons that some learners are more successful than others include their degree of access to social experiences which allow for negotiation of meaning and corrective feedback. (Chapter 5, Intake to Cognitive Processing section, para. 2).

This process of interpersonal attraction between language learners and speakers with superior mastery of the target language generates a space where development of learners’ skills and abilities can take place; Vygotsky called this space the Zone of Proximal Development (Vygotsky, 1978). Clarifying the process of interaction, Gass (1997, 2005) proposed that learning can take place at any time during the interaction, including at the time of initiation of the interaction or during the interaction itself. It may also simply prepare the learner for future development. Taking the concept of interaction a step further, Dörnyei and Clément (2009) argued that interactions between language learners and their environment also matter.

Immersing the L2 learner in the target language is not without challenges; success in bilingual countries like Canada, Austria, and the Netherlands does not always translate equally well in developing countries or countries that meet learners with hostility or prejudice. According to Qiang, Huang, Siegel, and Trube

(2011), China has seen a substantial increase in interest in English language instruction and immersion for K – 12 learners over the last four decades. Second language education via immersion poses unique challenges in a country where English teachers are mostly native Chinese speakers. Fortune (2012) noted:

Chinese teachers whose educational experiences took place in more traditional, teacher-centered classrooms are aware of significant cultural differences and participant expectations. For example, US schools place a strong emphasis on social skills and language for communicative purposes. Children expect learner-centered activities with real-life tasks. Chinese teachers often hold a different of expectations for students and thus, they frequently need support for classroom management strategies and support. (p. 13)

In a 2009 study, Lee investigated the impacts of a six-week immersion experience in New Zealand on English teachers from Hong Kong. While visiting schools in New Zealand, the English teachers from China noted the use of positive reinforcement and the opportunities afforded to students to express their opinions and feelings. Marx and Pray (2011) explored the issue of empathy and English language education in US schools as part of a short term study abroad program that took White teacher education students to Mexico. Student teachers who participated in this program confronted experiences that built empathy for students living in the US for whom English was a second language (Marx & Pray, 2011).

Digital Immersion

Immersion in digital technologies has been identified as a core characteristic of the new generation of students entering colleges and universities in the 2000s. They have been called the “iGeneration” (Rosen, 2010). Mills (2010) notes that “. . . immersed and raised in the technology, the new generation of students is defined by their reliance on media, their technological multitasking capabilities, and their propensity toward all” (p. 1). Traditionally, immersive environments have been closely associated with virtual reality technologies, defined as providing simulated full-sensory input, including sights and sounds within a three-dimensional space (Winn, Hoffman, & Osberg, 1995). Developed by Linden Lab in 1999 and released in 2003, Second Life is the most popular general-purpose virtual world on the web today with one million users as of 2012 (Delaney, 2011; Oshry 2012).

Although initially met with cautious enthusiasm, Second Life has not emerged as a major force on college and university campuses (Ramaswami, 2011). According to the Pew Internet and American Life Project (2010), only 12% of teens and Millennials (ages 18-33) combined were likely to participate in any type of virtual world. Reasons for this problematic dispersion of VR technology include, most importantly for students and instructors, a steep learning curve that requires a significant up-front investment of time (Nino, 2010; Silva, Correia, Pardo-Ballester, 2010). Despite its power to capture and maintain user’s focus, for the average general-purpose virtual environment user, days, weeks, or even

months may pass before the new user “. . . overcome[s] the conceptual hump” (Nino, 2010, para. 4). Despite the steep learning curve, virtual worlds and online 3D environments have captured the interest of foreign language educators.

Digital Immersion Defined

With the rise of Web 2.0 applications, including virtual worlds such as Second Life and social network sites (SNSs) such as Facebook, the immersive quality of online experiences has emerged as a potential force in education. The term Web 2.0 is a relatively recent term that is most closely associated with Tim O’Reilly and the 2004 Web 2.0 Conference that was organized by O’Reilly Media. Web 2.0 applications, the software of the Internet, embrace eight basic design patterns, including the role of users as content creators, the phenomenon of lurkers who simply consume content but do not generate content, the continuous re-development of Web 2.0 applications, and the device non-specificity of those applications (Pew Internet and American Life Project, 2012; Rollett, Lux, Strohmaier, Dösinger, & Tochtermann, 2007).

The immersive power of Web 2.0 technologies builds on these design parameters; Web-based immersive environments exploit the inherent dynamism of the Internet. According to Armory (2010), “. . . immersive and pervasive environments are cyberspaces in which individuals need to work together to solve complex problems that cannot be solved individually” (p. 71). Additionally,

Schrader (2008) observed that, like social network sites, wikis can offer more than just the ability to connect:

It is possible to teach a student about a wiki, what it is, and how it works. But it is also possible to use a wiki as an immersive socially constructed space in which the level of interaction is observable through the changes tracked by software. (p. 468)

The author elaborated by describing digitally immersive environments as offering a lower level of control to the potential instructor who must embrace the rules and constraints that drive the application; the benefit to the instructor lies in the familiarity of the environment for students who regularly participate in these applications (Schrader, 2008). McGonigal (2003) added a slightly different perspective on digital immersion, writing that “. . . a network environment that includes collective and political actions . . .” (p. 71) qualifies as an immersive experience.

Social Network Sites as Digital Immersive Environments

A social network site (SNS) has been defined as a Web 2.0 application that allows individual users to generate public or semi-public profiles, make connections to other users who may be individuals or groups, and access additional connections through their own developed network of connections (Boyd & Ellison, 2008). Social network sites, as Web 2.0 applications, take various forms, from video posting and commentary (YouTube) to micro-blogging

(Twitter) to profile posting and sharing, including video and photos (Facebook, MySpace), as well as professional profiles for the purpose of networking for jobs (LinkedIn). Social networking as an activity, however, is not new; the desire to make and create links between the self and others is a core driver of human behavior. The meteoric rise in the popularity of SNSs such as Facebook, Twitter and LinkedIn is not so surprising considering the two main functions they serve: to share and to provide opportunities for human interaction (Thomas, 2008). What distinguishes SNSs from traditional websites is the concept of “push” technology; for example, users have content pushed to their Facebook News Feeds, eliminating the need to “pull” information. Large organizations, both public and private, have taken note of this trend, including colleges and universities. Finally, the lack of a voice component, apart from posting videos, does not hinder SNSs as immersive environments. A voice component incorporated into several mobile-assisted language learning studies did not generate learner engagement (Clooney & Keogh, 2007; Kukulska-Hulme & Shield, 2008; Stanford Center for Teaching and Learning, 2002).

From the student-user perspective, the most popular uses for SNSs included making social connections, relationship building, and developing an online identity; the sharing of personal preferences in terms of consumer products and preferences (Gooding, Locke & Brown, 2007; Hargittai, 2008; Kord, 2008). The Pew Internet and American Life Project (2011) reported that 65% of online adults participate in social network sites; the demographic aged 18-29

years were best represented as a group, with 83% using an SNS. According to Jaschik (2009), many institutions of higher learning continue to harness the power of SNSs to increase brand awareness, expand access to institutional services, apply new teaching and learning strategies, and increase student engagement. According to Thomas (2008), the major benefits of Web 2.0 technologies include “. . . learner motivation, collaborative learning environments, and social constructivist approaches to education” (p. 240). In terms of research into SNSs and learning, the social constructivism of Vygotsky has been identified as taking place using wikis as well as SNSs (Lavin & Claro, 2005).

The Nature of User-Driven Content

As previously noted, a defining characteristic of Web 2.0 applications, and SNSs in particular, is the role of users in generating content. According to Hampton, Goulet, Marlow, and Rainie (2012), in their Pew Internet and American Life report titled “Why Most Facebook Users Get More Than They Give,” observed:

There are segments of Facebook power users who contribute much more content than the typical user. Most Facebook users are moderately active over a one-month time period, so highly active power users skew the average. Second, these power users constitute 20-30% of Facebook users, but the striking thing is that there are different power users depending on the activity in question. One group of power users

dominates Friending activity. Another dominates “liking” activity. And yet another dominates photo tagging. (Overview section, para. 3)

Although recognized for its capacity for user content creation, social network sites such as Facebook in reality support content sharing more than content creation, or “user-distributed content” (Oeldorf-Hirsch, 2011, p. 5). The technology of Facebook offers users a blended model of status updates (“microblogging”) and sharing of these updates, along with photos, links, and video, allowing for “quick interaction with other users who can reply to or re-post others’ updates” (Oeldorf-Hirsch, 2011, p. 6).

Facebook

Facebook has become one of a number of popular SNSs, each with its own particular focus and flavor. Facebook has distinguished itself from other SNSs, in part, by its origins in academe. It appeared in 2004 as a Harvard-only online social network (Cassidy, 2006). A 2011 report from the Pew Internet and American Life Project reported that Facebook was currently the most popular SNS with 92% of SNS users participating, followed by MySpace at 29%, LinkedIn at 18%, and Twitter at 13%. As of mid-2012, Facebook had 955 million active users, with 552 million users logging in every day. Interestingly, 543 million monthly active users were accessing Facebook via a mobile device (Facebook, 2012b). A clear majority of adults in the United States use SNSs, including a large majority of young adults. What’s more, a slight majority of Facebook users

log in in every day (Hampton, Goulet, Rainie, & Purcell, 2011). Interestingly, according to Lampe, Ellison, and Steinfield (2008), “. . . over time, users found Facebook more useful and had embedded it into their routines to a greater degree” (p. 729). Pempek, Yermolayeva, and Calvert (2009) agreed, stating that “Facebook use was integrated into students’ daily lives, regardless of how busy they were” (p. 231). Among college students, Facebook has also become the most popular SNS, with between 85 and 99% of students participating (Hargittai, 2008; Junco, 2012; Smith & Carson, 2010). Junco (2012), in a study of Facebook and student engagement, found that participating college students spent a mean of 101.09 minutes on Facebook per day and logged in to the site a mean of 5.75 times per day. Pempek et al. (2009), in their study on college students’ use of social network sites, found that Facebook use varies wildly on any given day, with the amount of time students spent on Facebook ranging from 2.00 to 117 minutes per weekday and from 0.00 to 165 per day on weekends.

The Facebook Economy

Presence in the world of social networking sites has emerged as a necessary component of 21st century marketing, with Facebook leading the pack as the most popular platform. In 2012, virtually all of the top 500 retailers in the United States maintained a Facebook page, a significant increase from 57% in 2009. This online presence generated 477 million “Likes”, with mass merchants, such as Walmart and Victoria’s Secret, averaging more than two million fans

(Internet Retailer, 2013). Since 2010, the act of “liking” companies and brands on Facebook has been on the rise, a function of the ubiquitous nature of mobile devices and Facebook mobile applications as well as integration with other social media (Nelson-Field, Riebe, & Sharp, 2012). In June of 2012, Facebook launched its “ad retargeting platform” called Facebook Exchange (FBX):

[Facebook] . . . were given a new tool to bid in ads in real time. FBX ads were shown in the high profile right-hand sidebar and nearly accounted for 28% of all display impressions in the United States. Now Facebook has turned up the heat again by allowing FBX ads to appear within the coveted News Feed section, a more desirable location than the right-hand sidebar. (Zeevi, 2013, Are You Looking section, para. 1)

Ads that appear in users’ News Feeds generate a much higher return on investment (ROI), increasing ROI by as much as 197% as opposed to ads that appear in the right-hand sidebar (Zeevi, 2013). In addition, in their study of two Facebook fan bases, Nelson-Field et al. (2012) remarked that the benefits of Facebook marketing can yield significant market research through feedback as well as the valuable word-of-mouth advocacy of the target products.

Tellingly, U.S. marketers were predicted to “spend 1.6 billion dollars on social network advertising by 2013” (Kunz, Hackworth, Osborne, & High, 2013, p. 62). Still, most people who click the “Like” icon on a company’s Facebook page are not likely to visit that page again in the future. Rather, they will see company updates in their News Feeds and may take advantage of a special discount code

for Facebook fans. According to Zimmerman and Ng (2010), people become fans of a particular commercial Facebook page in order to (a) obtain a discount on product or services, (b) follow a recommendation, (c) be entertained, and (d) to satisfy curiosity or to receive an answer to a question.

Beyond its force as a marketing tool, Facebook has also generated revenue for application developers, content consultants, and agencies offering social network support services. According to the Center for Digital Innovation, Technology, and Strategy (2011), “more than 2.5 million websites have integrated with Facebook, and people on Facebook install 20 apps every day” (Introduction section, para. 1). In total, the “. . . overall compensation – the sum of wages and benefits earned in the app industry and in jobs created through the app industry – is estimated to be between 12.19 billion and 15.7 billion dollars” (Center for Digital Innovation, Technology, and Strategy, 2011, Economic Value section, para. 4).

Challenges Associated with Facebook

Facebook is a very large network; Jim Larus, a researcher employed by Microsoft, argued that Facebook was likely the largest network in existence in the first decade of the 21st century, if one excludes the web itself (Giles, 2011). Certainly, Facebook was the largest social network site at the time of the present study, with a reported 1.15 billion active users as of June 2013 (Facebook, 2013b, Statistics section, para. 1). As of March 2012, Facebook boasted “more

than 9 million apps and websites integrated” into its platform (Facebook, 2013c, Platform section, para. 2). Facebook, along with other popular social media networks such as Twitter, accounted for a steep increase in the amount of web media traffic. The data feed-based nature of these sites means that information is distributed efficiently. According to Jee, Lee, Shin, Yank and Park (2013), “. . . a large number of web services currently acquire fresh web information from feeds via a pull-based method that polls feeds or via a push-based approach using content distribution protocols” (p. 92). The major problem emerging from this emphasis on feed-based services has been “fetching delay,” defined as the amount of time between the publication of a new entry and its arrival at its destination, i.e., the publication rate exceeds the capacity of “fetching” resources to manage them (Jee et al., 2013). In addition to technical challenges, Facebook has also remained a prime target of spam. According to Wüest (2012), Facebook users are vulnerable to the hijacking of accounts, leading friends and family to believe the user is in danger and needs money sent immediately. Traditional scams associated with email accounts have also made their way onto social networking sites, e.g., phishing and the advertisement of fake products (Wüest, 2012).

Another challenge associated with Facebook, as well as other SNSs, is the ephemeral nature of user interest. For teens and young adults, the mainstreaming of SNSs such as Facebook render these formerly cool sites less appealing, driving younger users to other, new sites. Although largely anecdotal,

media reports indicate that Tumblr and Instagram are gaining ground in terms of teen activity (Foley, 2012; Geekwire, 2013). According to Forbes.com, Facebook founder Mark Zuckerberg disputes the notion that teens are abandoning Facebook in droves, saying that the number of teens user hasn't risen recently because "we've been fully penetrated in the teen demo for a while now" (Bercovici, 2013, para. 2).

Facebook Interactions

The nature of Facebook activity has been that of interaction, between users and between users and media content. The nature of this interaction has been, primarily, asynchronous in nature. The benefits of asynchronous interaction include providing time to reflect before responding, the convenience of anytime-anywhere communication, and the safety of posting with the option of deleting (Baglione & Nastanski, 2007). Facebook, as the world's largest social network, was also determined to be the largest asynchronous communication network in the world (Wu, Bieber, & Hiltz, 2008).

The basic unit of communication on Facebook has been the personal profile, containing personal information, photos, video, friends who also have profiles, as well as links to Facebook pages related to product, media and organizational preferences and affiliation. In addition to a personal profile (see Appendix A), each user has a "News Feed" (see Appendix B) that contains posts from other Facebook users who are friends and Facebook pages that are "Liked."

The Facebook News Feed is the cornerstone of the user's Facebook experience and serves as a home page. The "News Feed – the center column of [the] home page – is a constantly updating list of stories from people and Pages that one follows on Facebook. News Feed stories include status updates, photos, videos, links, app activity and Likes" (Facebook, 2013c, para. 1). Facebook users have a growing menu of features through which users may interact with content as well as with other members (see Table 1).

Another distinguishing feature of Facebook is its openness to outside developers who may develop and offer "applications" that users can use to personalize their profiles, play games, and organize personal information (Boyd & Ellison, 2008). The core relationship of Facebook is the friend relationship; two or more users extend their face-to-face relationship into the SNS. In 2011, Backstrom reported that 69 billion friendships were associated with the total Facebook membership of 721 million users. The researcher recalled, however, that the friend count is highly skewed, with the average friend count at 190 and the median friend count at 100 (Backstrom, 2011).

Table 1

Facebook Features That Support Interaction

Feature	Description
Post or Status Update	Users write original content and post it to their personal profiles; content is shared with other users depending on security level; posts may also be generated from Facebook pages maintained by a person, group or company.
Like	Users click a “like” link beneath posts that appear in their Facebook newsfeed; users also may “like” a page that is maintained by a person, organization, or company.
Share	Users click a “share” link beneath posts that appear in their Facebook newsfeeds; shared posts appear in the user’s friends’ newsfeeds.
Comment	Users may add a comment to posts that appear in their newsfeed; comments may be seen by other Facebook users who also have that post in their newsfeeds.
Translate	Users click on a “translate” link beneath foreign language posts that appear in their newsfeed.
Promote	Users may increase the reach of their posts by making it visible to more people.

Willingness to Communicate (WTC)

Willingness to communicate is a communication construct originally developed in reference to first language acquisition, specifically defined as the likelihood of engaging in verbal communication when presented with the opportunity to do so (McCroskey & Baer, 1985; McCroskey & Richmond, 1987). In addition, WTC was initially defined from the perspective of personality, a stable

trait consistent across various situations. Related researchers have determined that WTC is related to such stable attributes as introversion-extraversion, communication apprehension, and self-esteem along with more transient attributes as self-perceived communication competence (MacIntyre, Baker, Clément, & Donovan, 2002; MacIntyre & Charos, 1996; McCroskey, 1997; McCroskey & Baer, 1985; McCroskey & Richmond, 1991). The concept of WTC emerged from the earlier work of Burgoon (1976) whose research focused on unwillingness to communicate, and Mortensen, Arnston, and Lustig's (1977) study on likelihood of engaging in verbal communication.

The concept of WTC in its first language manifestation, as noted by MacIntyre et al. (1998), held application to L2 communication but only with revision. Specifically, a situational component was added to the stable transient variables of the first language construct, creating a more dynamic WTC appropriate for L2 learning. Other modes of communication were also added, including written communication (MacIntyre et al., 1998). MacIntyre et al. (1998) extended the original concept of first language WTC, clarifying WTC in an L2 context as “a readiness to enter into discourse at a particular time with a specific person or persons, using an L2” (p. 547). In addition, “. . . willingness to communicate” offered the opportunity to integrate psychological, linguistic, educational, and communicative approaches to L2 research that typically have been independent of each other” (MacIntyre et al., 1998, p. 564). The implications for L2 pedagogy were clear, as a major goal of second or foreign

language education is the ability to communicate in the target language, verbally as well as in writing (Dörnyei, 2001; MacIntyre et al., 1998).

Willingness to communicate has been associated with immersion in the target language, especially in the French immersion studies conducted in Canada (Baker & MacIntyre, 2000; MacIntyre et al., 2003). Clément et al. (2003) demonstrated, in their study, the importance of language learners' contact with the target language and culture, along with individual factors and social factors.

Attitudes Towards the Target Language

Attitudes towards the target language and culture are variables that are associated with second language (L2) learning and teaching and have been the focus of research, specifically in the area of learner motivation. Two major categories of motivation related to L2 acquisition: integrative and instrumental. Integrative motivation was "defined as the desire to be like valued members of the community that speak the second language" (Krashen, 1981, p. 22). Instrumental motivation, on the other hand, springs from necessity, including job requirements or academic requirements (Krashen, 1981). In the 1980s, the issue of social context as a driver of language learner motivation came to the attention of researchers (Clément, 1980; Gardner, 1985). Social context, in this case, was defined as a social environment that creates a feeling of belonging among its members. Creating this environment in a foreign language classroom even at the university level, is challenging but necessary "in the absence of any other direct

contact with the target language group. Therefore, [instructors] often adopt the role of ambassador of the target language group” (Aubry, 2009, p. 4). Gardner and Lambert (1972) created a foundation for this research in their work on L2 learning and attitudes towards the target culture and language. A language learner with positive attitudes towards the target language and culture was projected to exemplify stronger motivation and greater levels of language acquisition.

Closely linked to the importance of social context is the idea that contacts with the target language enhances language learners’ motivation and impacts learner attitudes (Clément et al., 1994). Clément (1980) noted in his research that for the L2 language learner, motivation increases along with the quality and quantity of the contacts with native speakers of the target language. Later, in their 1994 study, Clément et al. determined that this direct contact with members of the target language duplicated with contact with the target language media. Contact with L2 media and native speakers of the target language on Facebook, even if it is only with the instructor, has been shown to have an effect on L2 language learners’ motivation (Aubry, 2009; Kaliban, Ahmad, & Abidin, 2010; Kelley, 2010).

Willingness to communicate and language learners’ attitudes towards the target language have been linked in their focus on the situational variable of social context. Digital immersion may provide the optimal environment in which

language learners can benefit from authentic contact with the target language, thus increasing motivation and WTC in the target language.

CHAPTER 3 METHODOLOGY

Introduction

The purpose of this study was to investigate the capacity of Facebook as a potential digitally immersive environment for foreign language learners, impacting their willingness to communicate (WTC) in the target language as well as their attitudes toward the language. This study was conducted to investigate the impacts of foreign language digital immersion through Facebook – with exposure and interaction with native, foreign language posts – on students' WTC and attitudes towards the target language. This chapter presents the research design and procedures applied in this study. In addition to the population and sample selection, the survey instruments, data collection procedure, and statistical analysis used in this study are described with appropriate detail and clarity.

Willingness to communicate was defined by MacIntyre et al. (1998) as the likelihood of foreign language learners' engaging in communication in the target language when an opportunity to do so arises. Closely related to WTC are the attitudes of foreign language learners towards the target language. In this study, the development of a digital immersive environment for foreign language learners involved capturing and sharing native second language (L2) Facebook posts with participants (Dörnyei & Clément, 2001; Dörnyei, Csizér, & Németh, 2006). Digital immersion was defined by Dede (2009), as “. . . the subjective impression that

one is participating in a comprehensive, realistic experience” (p. 66). According to these criteria, social network sites (SNSs) such as Facebook qualify as a digital immersive environment, providing users with a virtual community that engages their interest, seeks their involvement, provides a platform for imagination and creativity, and offers opportunities for interaction.

Research Questions

The following three research questions were used to guide this study:

1. Was there a statistically significant change in foreign language learners’ willingness to communicate in the target language as a result of exposure to and interaction with native language Facebook posts as measured by the pre-test and post-test using McCroskey’s Willingness to Communicate Scale?
2. Was there a statistically significant change in foreign language learners’ attitudes towards the target language and culture as a result of exposure to and interaction with native language Facebook posts as measured by the difference pre-test and post-test using Dörnyei and Clément’s Language Orientation Questionnaire?
3. To what degree did foreign language learners interact with native language Facebook posts through sharing, liking, reading, viewing, translating and commenting?

Design of the Study

This study was conducted using a quasi-experimental, mixed-method design. Quasi-experimental design satisfies the conditions of the study in its accommodation of real-life settings as well as limited control of when participants interact with study-related stimuli. Specifically, Campbell and Stanley (1963) explain:

There are many natural social settings in which the research person can introduce something like experimental design into his scheduling of data collection procedures (e.g., the *when* and *to whom* of measurement), even though he lacks the full control over the scheduling of experimental stimuli (the *when* and *to whom* of exposure and the ability to randomize exposures) which makes a true experiment possible. (p.34)

The type of quasi-experimental design used in this study falls under the category of non-equivalent control group design, a widely-used design in educational research that involves an experimental and control group that receives a pretest and a posttest. The experimental and control groups do not have “pre-experimental sampling equivalence” (Campbell & Stanley, 1963, p. 34), instead are pre-assembled through such mechanisms as classrooms, clubs and tutoring groups. Threats to internal validity attached to non-equivalent control group design include maturation, described as change that takes place independent of treatment as well as the impact of pretest-posttest design that

involves taking the same survey or questionnaire multiple times (Campbell & Stanley, 1963).

A mixed-methods approach provides the appropriate mechanism for collecting data from closed-ended questions typically used in questionnaires as well as the capturing of spontaneous participant responses. According to Johnson, Onwuegbuzie, & Turner (2007), mixed-methods research is best applied to research questions that take place in real-world contexts and account for multiple perspectives and cultural influences. In this study, closed-ended questions were paired with an open-ended component expressed in the unconstrained commenting capacity in the treatment environment. The statistical test that was used to measure the potential impact of the treatment intervention on participants' WTC and attitudes towards the target language was a split-plot ANOVA, with one repeated measure.

Setting

This study was implemented at the University of Central Florida in Orlando, Florida. Originally founded as Florida Technological University in 1963, the University of Central Florida consisted of nine campuses with fall 2013 enrollment standing at 59,785 students, with 50,982 students enrolled at the graduate level (University of Central Florida, 2013). At the time of the study, the university offered 93 Bachelors of Arts and Bachelors of Sciences (B.A. and B.S.) degrees, 87 Masters of Arts and Masters of Science (M.A. and M.S.) degrees, 31

doctoral (Ed.D. and Ph.D.) degrees and one medical degree (M.D.) (University of Central Florida, 2012a). The University of Central Florida, within the department of Modern Languages and Literatures, offered French as a major, awarding the degree of Bachelor of Arts, and as a minor. The department also offered study abroad programs in France, Germany, Italy and Spain (University of Central Florida, 2012b).

Population and Sample Selection

The target population of the study was drawn from French language students at the University of Central Florida in Orlando, Florida enrolled in one of two sections of Elementary French I (FRE 1120). The original design of this study included two sections of Elementary French II (FRE 1121) as a source of comparison. Unfortunately, one section of FRE1121 was cancelled before the study began. A description of FRE 1120 is available in the 2012/2013 University of Central Florida Undergraduate Catalog (see Appendix C). At the University of Central Florida, the requirements for the degree of Bachelor in Arts (B.A.) included the successful completion of the equivalent of one year of foreign language study; this requirement was able to be met by taking a foreign language course at the university level, by passing the foreign language proficiency examination, or by achieving an appropriate score on the Advanced Placement exam of a foreign language (University of Central Florida, 2012a). According the University of Central Florida 2012/2013 College Catalog,

“Placement in foreign language courses is based on one year of high school language being equivalent to one semester of college work” (p. 71).

A benefit of selecting participants from a beginning French language course is the greater number of available sections from which to draw. Students who complete an introductory language course, or beginning sequence of two courses, may simply be fulfilling degree requirements and may not go on to take more advanced study. According to a 2010 report by Furman, Goldberg, and Lustin, 20% of non-English language enrollments in four-year colleges and universities in the United States were in advanced language classes: French, German, Japanese, Modern Hebrew, and Spanish.

In spring 2013, two sections of FRE1120 were offered at the University of Central Florida with a combined enrollment of 60 students who were eligible for participation in the study; one section of FRE1120 was assigned as the treatment group, and the other section was assigned as the control group. Ultimately, 12 students participated in, and completed, the study, in the treatment group; and 14 students participated in, and completed, the study in the control group.

Student participation in this study was voluntary, with an incentive of 10 extra credit points that were applied to the course homework grade. The relatively low value of the incentive, and participation in the study not serving as a course requirement, was a result of purposeful design; intrinsic motivation and non-course related interactions were the focus of the research. In addition to willingness to participate in the study, students were required to confirm having

regular access to the Internet via cell phone, laptop or desktop computer. Participants were asked to provide an effective email address for communication with the researcher. Prior to participation in the study, students were asked to review the informed consent letter (see Appendix D), which was imbedded in the online survey instrument. The consent form included the theme and procedures of the study and the human subjects' rights relating to the current study. Lack of participation in the study did not negatively impact students in terms of grades in the course, their relationship with the instructor, or their relationships with the researcher or the college. Participants' study-related activities, apart from the surveys, were available for public view as Facebook is an SNS. Visibility of activities varied based on the privacy settings of individual students. After the study was complete, participants in the control group were sent the link to the study Facebook page so they might review the treatment materials.

Instrumentation

Two instruments were used in this study to measure foreign language learners' WTC and attitudes toward the target language. Instruments were written in English as all students were native speakers of English or had a strong mastery of English; Elementary French I (FRE 1120) was not open to native speakers. All of the selected instruments were self-report scales. According to McCroskey (1997), self-report measures are effective in capturing perception and affect data, providing respondents are truthful in their answers. The researcher

collected student personal demographic information that included gender and age. The researcher also collected information related to Facebook usage. In addition, the last four digits of students' phone numbers were collected and used to identify student responses. The two instruments that were administered included the McCroskey WTC Scale (see Appendix E) that measures students' WTC in the target language in various social contexts (McCroskey & Baer, 1985). The second instrument that was administered was Dörnyei' and Clément's (2001) Language Orientation Questionnaire (see Appendix F), which employs 37 questions to measure students' attitudes towards the target language.

Student Demographic Information

In this research study, the demographic questionnaire consisted of four items to gather students' personal and background information (see Appendix G). Items included in the questionnaire to elicit this information were "Gender," "Age," "How long have you been using Facebook?" and "What electronic devices do you use to access Facebook?"

Willingness to Communicate Scale

The WTC Scale (see Appendix E) measures directly the "respondent's predisposition toward approaching or avoiding the initiation of communication" (McCroskey, 1992, p. 17). In other words, it measures the likelihood of a foreign language learner to initiate communicate in the target language when provided

with opportunities to do so. McCroskey and Baer (1985), who laid the groundwork for the WTC Scale, took inspiration from Burgoon's (1976) Unwillingness to Communicate Scale. In her initial development of the WTC construct, Burgoon (1976) identified and integrated two factors into her scale: approach-avoidance and reward. The WTC Scale consists of 20 items and serves to estimate the probability of foreign language learners' initiating communication in the target language. Analysis of the scale reveals the presence of four categories of communication contexts (public, meeting, group, dyad) and three categories of communication "receivers" (friends, strangers, acquaintances) (McCroskey, 1992). Selecting a number between 0 and 100, students participating in the study indicated the percentage of time they might engage in communication within a particular context when able to do so. An example of an item found in the WTC Scale is "Talk with a stranger while standing in line."

Language Orientation Questionnaire

The Language Orientation Questionnaire (see Appendix F) measures the respondent's attitudes towards their target language (L2) of study, attitudes towards the L2 community, contact with foreign languages through media, self-confidence in learning the L2, as well as demographic data. The questionnaire springs from the work of the founder of the field of social psychological research on L2 motivation, Robert Gardner (Dörnyei et al., 2006). The Language Orientation Questionnaire consists of 37 items, most of which are presented in

grid format. In addition to questions regarding the language learning environment and background information, respondents are asked to consider individually five languages. Drawing on the work of Dörnyei and Csizér (2005), the attitudinal and motivational items are grouped into seven multi-item factors (see Table 2).

Table 2

Factors of Language Orientation Questionnaire

Factor	Description
Integrativeness	Reflects L2 learners' motivation by desire to become like native speakers of the target language.
Instrumentality	Reflects L2 learners' motivation by belief that mastery of target language provides pragmatic benefits.
Attitudes towards L2 speakers	Indicates the attitudes of L2 learners toward interacting with L2 speakers and traveling to places where target language is spoken.
Cultural interest	Indicates the level of L2 learners' interest in cultural products of target language culture, including music, film and print media.
Vitality of L2 Community	Reflects L2 learners' motivation by perception of importance of target language country/countries.
Milieu	Indicates the level of importance attached to learning or knowing target language by L2 learners' immediate family, friends, school, and workplace.
Linguistic self confidence	Reflects L2 learners' motivation by degree of confidence that mastery of target language is possible and doable.

Of the 37 total items on the scale, 29 items are measured on a 5 point Likert-type scale with 1="Not at all," 2="Not really," 3="So-so," 4="Quite a lot,"

and 5="Very much." The remaining items are open-ended questions. Sample questions include "How important do you think these languages are in the world these days?" and "How much do you like the films made in these countries?"

For the purpose of this study, this instrument was a good fit; however, the researcher modified the instrument slightly without impacting its integrity. The first modification involved eliminating all of the possible language choices except the language associated with this study – French. The other modifications involved revision of grammar to reflect the focus on one language as opposed to five. Items 8 and 9 were eliminated from the questionnaire as they focused on parental mastery of French that was to be unlikely in this study population (Shin & Bruno, 2003). Items 25, 29, 32, and 33 were revised, replacing the term "school" with "university." Item 26 was eliminated due to its focus on satellite programming, a common feature in many homes and apartments in the United States. Item 28 required the replacement of the word "Hungarian" with "American." Item 30 was eliminated as it was not relevant to this study. The final modification involved revising item 31 to read "male" or "female" instead of "boy" or "girl." The researcher ran reliability statistics, but the reliability coefficient (Cronbach's alpha) was not as strong as intended because of a small sample size.

Reliability and Validity Issues

Validity and reliability are related concepts associated with research instruments and procedures related to data collection. Reliability refers to how consistently an instrument performs over time, and validity refers to how accurately an instrument measures the concept or construct it claims to measure (Perry, 2005). Both instruments that were used in this study are self-report measures; McCroskey (1997) observed that self-report measures are most effective when they are focused on issues of affect and/or perception under conditions in which the respondents do not fear any negative consequences associated with their answers. Dörnyei (2003) also noted that questionnaires are especially efficient “. . . in terms of (a) researcher time, (b), researcher effort, and (c), financial resources” (p. 9). A threat to the internal validity of the study involved the quasi-experimental nature of the study design. There was a chance that students in the treatment group would share information related to the treatment (Facebook page) with students in the control group. In the description of the research study, as well as in the presentation of the study to the treatment group by the researcher, students were asked to abstain from sharing this Facebook page with students from other classes.

Reliability estimates reported by McCroskey (1992) indicated that the WTC Scale was very reliable with an “. . . internal reliability of the total score [Cronbach alpha] . . . rang[ing] from .86 to .95”, with a “modal estimate of .92” (p. 20). In terms of validity, the WTC Scale satisfies the requirement that the scale

measures what it claims to measure (McCroskey, 1992). In addition, a positive association between WTC in a foreign language and the frequency of actual communication has been indicated in several significant studies (Baker & MacIntyre, 2000; MacIntyre et al., 2002; MacIntyre et al., 2003; MacIntyre & Charos, 1996).

In terms of reliability, the overall Cronbach's alpha of the Language Orientation Questionnaire was found to be .71; author Dörnyei et al. (2006) note that this score is “. . . admittedly not too high but still acceptable for short scales such as ours (ranging from 2 to 4 items)” (Kindle location 887). In addition, Okuniewski (2012) adapted the Language Orientation Questionnaire (Dörnyei & Clément, 2001) to “investigate the psycho-psychological motivation factors that influence the taking and learning of German in Polish second schools” (p. 54). The variables included in the final survey instrument included: integrativeness, instrumentality, cultural interest, attitudes to German speaking communities, parental support, language learning attitudes, linguistic self-confidence and motivation related to learning behavior. The Cronbach alpha coefficients of these variables varied from .71 to .83 (Okuniewski, 2012). Additional studies have been conducted supporting the validity of this instrument, including Clément et al.'s (1994) investigation of the motivation of Hungarian students learning English in their home country and Dörnyei's (1990) examination of foreign language learners' motivations and limited interaction with the target language community.

Procedures and Data Collection

Upon receiving the approval of the University of Central Florida Institutional Review Board (see Appendix H), this quasi-experimental study was implemented in the first half of spring term 2013. A total of two data collection instruments were selected, with two both instruments validated from the literature. Surveys were administered through an online survey site called Survey Monkey; the surveys were combined into one online survey document containing the consent documentation (see Appendix D) and the demographic questions (see Appendix G). Once participants read the consent documentation, they provided consent by continuing to the survey. This online survey site allowed users to create and disseminate electronic surveys and was optimized for use on most Internet browsers (Internet Explorer, Safari, Google Chrome, Mozilla Firefox, etc.) as well as iPhone, iPod iTouch and iPad. The recruitment procedure consisted of a 10-minute PowerPoint presentation by the researcher in the second to fourth week of the spring 2013 term. Information provided to potential participants included the research protocol, incentives related to study participation, and information regarding the Facebook page that was linked to the study. Students who agreed to participate in the study completed note cards with their names, email addresses and phone numbers that were collected by the researcher. Students received an email from the instructor within 24 hours that included a link to the surveys. Students in the treatment group also had access to a link to the survey in the study Facebook page.

Students were assigned to either the treatment group or the control group based on their registration in one of two selected sections of FRE1120, each taught by the same instructor. One section of FRE1120 was assigned to the treatment group and one section of FRE1120 was assigned to the control group. The students in the treatment group participated in short-term digital immersion via Facebook with French as the target language. Participants ‘Liked’ the Facebook page, developed by the researcher, which served as the source of French-language posts that appeared on individual students’ Facebook News Feeds. The researcher selected French language Facebook posts to share with participants over a period of four weeks. An example is provided in Figure 1.



Figure 1. Example of a French Language Facebook Post

There were six posts per day shared with participants covering a variety of topics, including news, sports, weather, and travel; the researcher selected these posts from ten French media sources that regularly release Facebook posts (see Appendix I). The researcher selected posts for sharing based on general interest criteria: timeliness, pop culture, national and international news, and the arts (see Appendix J). All of the Facebook posts used in this study are available for review via screenshots in the Appendix K. Participants who received these posts had the option of reading each post, viewing any videos included in a particular post, “liking” the post, “sharing” the post with their friends on Facebook, “translating” the post, and/or commenting on the post. Participants could also choose to do nothing in response to receiving the French Facebook posts. On each of the five Fridays, the researcher included a poll associated with three French language posts (for a total of six posts), asking participants how they interacted with the associated post (see Appendix L). The researcher did not interact with participants within the Facebook environment. The students in the control group completed the surveys associated with study at the beginning and end of the treatment.

Data collection consisted of recording and tracking activity on the Facebook study page and retrieving responses to the pretests and posttests for both the treatment and comparison groups. In addition to tracking and recording the activity of participants on the Facebook study page, Facebook recently added a data-tracking feature, Insights. The Insights function of Facebook “. . . provides

[Facebook] page admin[istrators] aggregated anonymous insights about people's activity on their page" (Facebook, 2013a, para 1). Facebook page administrators have access to this information due to the Data Use Policy of Facebook; page administrators do not have access to any Facebook user's personal information. A Facebook page must reach a minimum number of 30 "Likes" in order to trigger the Insights function (Facebook, 2013a). Because the study Facebook page was available to the general public, Facebook users who were not in the study were able to "Like" the page. The Facebook study page did reach the minimum of 30 "Likes," although not all fans of the page (those who "Liked the page") were study participants. In terms of metrics, and as shown in Table 3, Facebook Insights provides information regarding the number of people who like a specific Facebook page and how many people view or click on a particular post.

Facebook Insights did allow the researcher to generate data concerning activity related to the Facebook study page; Comments, Likes, and Shares were able to be reported because study participants were identified by name. Data and Reach data were not reported, because these data might include the activity of Facebook users not participating in the study.

Table 3

Data Captured by Facebook Insights

Metric	Description
Comment	This is the number of comments made to a particular post.
Likes	This is the number “likes” assigned to a particular post.
Share	This is the number “shares” associated with a post.
Engagement	This number reflects the interest generated by a post on a particular Facebook page based on actions performed by fans as well as visitors to a page. Actions include: Liking a page (and becoming a fan), Answering a question, Mentioning the page, and Tagging a photo.
Reach	This is the number of Facebook members who have seen a Facebook page within a selected date range. Members may see content on a Facebook page, and be counted, in three ways: Viewing content in their News Feeds (Organic), Viewing an advertisement that directed viewers back to the target page (Paid), Seeing a post that was talked about by a friend (Viral).

Facebook and Privacy

As one of the largest networks on the Internet (after the Internet itself), Facebook has been the focus of privacy and usage questions since its inception. As a result, it continually updates its privacy and data use policies (see Appendices M and N). As early as 2008, Boyd and Ellison highlighted concerns regarding privacy issues related to SNSs in general, including over-sharing, intentionally or unintentionally, of personal information; online bullying; and the

potential to damage one's reputation through lack of control of information posted. Facebook has responded to these concerns by implementing a series of privacy-enhancing controls at the user level. Facebook users can now determine who sees content they have posted or shared on their News Feeds (Facebook, 2012a, Public Information section, para. 1 – 10).

For this study, the researcher created a Facebook page and served as the administrator. Creating a Facebook page for this study was one of two options available, the other being using the group creation feature to manage the activities of the study participants. A major advantage of using a Facebook page, as opposed to a Facebook group, is that the researcher did not have to "Friend" the study participants and, as a result, eliminated some of the privacy issues that are part of using an SNS. Specifically, the researcher did not have access to any of the participants' personal Facebook home pages and the participants did not have access to the researcher's home page. In addition, participants were limited to interacting on the study's Facebook page and could not "push" content to the study's page. A limitation of this approach was a lower level of control on the part of the researcher; Facebook pages are available to anyone and may attract interest of Facebook users not directly related to the study (Facebook, 2012b, Pages section, para. 1 - 5).

SurveyMonkey

The surveys were administered through SurveyMonkey, an online survey delivery and analysis site. Founded in 1999, SurveyMonkey was, at the time of the study, the world's most widely used online survey site, with over 1.5 survey responses collected every day (SurveyMonkey, 2013b). According to the SurveyMonkey website, on its page titled "How Does SurveyMonkey Adhere to IRB Guidelines," SurveyMonkey (2013a) provides support for SSL encryption to protect sensitive data as it travels along digital pathways. According to the SurveyMonkey website,

SSL is short for Secure Sockets Layer, and it is a protocol initially developed for transmitting private documents or information via the Internet. It essentially works through a cryptographic system that secures a connection between a client and a server. Many websites use this protocol to obtain confidential user information and it supported by all modern browsers. (SurveyMonkey, 2013c, para. 1)

Automatic encryption is a service associated with upgraded accounts on SurveyMonkey. The researcher upgraded her account to benefit from automatic SSL encryption as well as other benefits, including unlimited questions and export format that are SPSS compatible.

Data Analysis

Research Question 1 sought to determine if there was a statistically significant change in foreign language learners' willingness to communicate in the target language as a result of exposure to and interaction with native language Facebook posts as measured by the pre-test and post-test using McCroskey's Willingness to Communicate Scale. Data to respond to this question were collected using McCroskey's WTC Scale in its entirety. This instrument identifies three different types of communication receivers within one of four possible communication contexts and measures the learner's "predisposition toward approaching or avoiding the initiation of communication" (McCroskey, 1992, p. 17). A Split-plot ANOVA was used to assess change in WTC in the target language between the pretest and the posttest. This statistical test accounts for both differences between subjects over time as well as differences between the treatment and control groups.

Research Question 2 sought to determine if there was a statistically significant change in foreign language learners' attitudes towards the target language and culture as a result of exposure to and interaction with native language Facebook posts as measured by the difference pre-test and post-test using Dörnyei and Clément's Language Orientation Questionnaire. The data for this question were collected using Dörnyei and Clément's Language Orientation Questionnaire, revised as previously described. This instrument assesses the learner's attitudes towards the target language as well as attitudes towards the

culture, degree of media exposure in the target language, and self-confidence regarding learning the L2 language (Dörnyei et al., 2006). A Split-plot ANOVA was used to assess change in WTC in the target language between the pretest and the posttest. This statistical test accounts for differences between subjects over time and differences between the treatment and control groups.

Research Question 3 was used to investigate the degree to which foreign language learners interacted with native language Facebook posts through sharing, liking, reading, viewing, translating and commenting. The data for this question consisted of observing and recording Facebook activities performed by the learners in the experimental group. Specifically, the researcher was able to capture statistics, through Facebook Insights, regarding how many times each participant “Likes,” “Shares,” or posts a comment on a French language post. The researcher also recorded any comments made by participants related to any specific French language Facebook post. Finally, the researcher recorded the responses to the weekly Facebook polls asking participants whether they read a particular post, viewed the video related to particular post, or translated the post.

Summary

A quasi-experimental research design was used in this study to evaluate an online social network, Facebook, as a digitally immersive environment for foreign language learners. The effectiveness of Facebook as a digitally immersive environment was assessed using motivational and attitudinal

variables. These variables were WTC and attitudes towards the target language and culture. The degree to which learners' shaped their experience with French language posts as part of the everyday Facebook feed was also be measured.

CHAPTER 4 ANALYSIS AND RESULTS

Introduction

This chapter contains the presentation of the analysis of the data collected and the results of the study. Included is a restatement of the purpose of the study, a brief review of the study's design, and demographic data related to participants. The analysis of the data has been organized around the three research questions that guided the study. The results of the analysis for each question are discussed in narrative form supplemented by tabular displays as needed for clarity.

Purpose of the Study

The purpose of this study was to investigate and evaluate the affordances of Facebook as a digital immersive environment for second language (L2) learners. Facebook News Feed posts in the target language might allow L2 learners who cannot take advantage of study abroad or other travel options to immerse themselves in the language, perhaps emulating some aspects of that interaction within this digital environment.

Study Design

The study design involved administration of surveys assessing WTC in the target language and attitudes toward the culture of native speakers. Volunteer students in a pair of introductory college-level foreign language classes received

regular instruction in the target language with one class designated the treatment group. Students in the treatment group were asked to “Like” the Facebook page created for the study, after which they received target-language posts in their Facebook News Feeds (see Appendix B).

Students were surveyed with a battery of questions assessing their WTC and cultural attitudes both prior to (pretest) and subsequent to (posttest) an interval of regular instruction (control group), or regular instruction plus target-language Facebook posts (treatment group). Facebook posts of interest to students were able to be Liked, Shared, or commented upon, and these data were collected as additional assessments.

Final implementation of the study utilized a pair of sections of introductory French (FRE 1120: Elementary French I) that met on Mondays, Wednesdays and Fridays and were taught by the same instructor at the University of Central Florida during the Spring term of 2013. From an initial pool of 60 qualified volunteers, the subset who completed the study from one section ($n = 14$) served as the control group, and the subset who completed the study from the other section ($n = 12$) served as the treatment group.

Participants' Demographic Data

Demographically, of the 26 students who completed the study, 20 were female and five were male, with one participant in the control group not responding to the gender question. Participants' ages ranged from 18 to 34, with

the majority (81%) of students falling within the 18 – 21 range. Finally, students' duration of experience with Facebook varied from 1 – 2 years to more than 6 years, with the majority (84%) of students indicating 3 – 6 years of experience. One participant in the control group did not respond to the Facebook usage question. Demographic data related to gender, age, and Facebook usage are presented in Table 4.

Table 4

Demographic Data Related to Gender, Age, and Facebook Usage

Demographics	Control (<i>n</i> =14)		Treatment (<i>n</i> =12)	
	<i>n</i>	%	<i>n</i>	%
Gender				
Male	4	30.80	1	8.30
Female	9	69.20	11	91.70
Age				
18-21	11	78.60	10	83.30
22-25	3	21.40	1	8.30
30-34	0	0.00	1	8.30
Facebook Usage				
1-2 years	1	7.70	0	0.00
3-4 years	3	23.10	6	50.00
5-6 years	6	46.20	6	50.00
More than 6	3	23.10	0	0.00

Note. One student in the control group provided no response on Gender or Facebook Usage.

McCroskey's WTC Scale (McCroskey & Richmond, 1987) and Dörnyei and Clément's LOQ (Dörnyei & Clément, 2001) were administered as a pretest and as a posttest to the student volunteers in each group, with the length of

classroom instruction between tests being four weeks. Within that four-week period, the treatment group received 101 French language Facebook posts in their News Feeds.

Facebook may be accessed using any electronic device with Internet access. Participants in this study reported that they used all of the devices identified in the survey: desktop computers, laptop computers, tablet computers, and cell phones/smart phones. Participants in both the control and treatment groups reported laptop computers (100% of participants) and cell phones/smart phones (100% of control group; 92% of treatment group) as the devices most likely to be used to access Facebook. As shown in Table 5, these two device types were also most likely to be described as being “used often” by students in accessing the site.

Table 5

Facebook Usage by Device

Device	Control (n=14)		Treatment (n=12)	
	n	%	n	%
Used Device				
Desktop Computer	3	21.40	3	25.00
Laptop Computer	14	100.00	12	100.00
Tablet Computer	2	14.30	3	25.00
Smart/Cell Phone	14	100.00	11	91.70
Often Used Device				
Desktop Computer	0	0.00	1	8.30
Laptop Computer	10	71.40	9	75.00
Tablet Computer	0	0.00	2	16.70
Smart/Cell Phone	11	78.60	9	75.00

Statistical Analysis: Learners' Willingness to Communicate and Attitudes

Research Question 1

Was there a statistically significant change in foreign language learners' willingness to communicate in the target language as a result of exposure to and interaction with native language Facebook posts as measured by the pretest and posttest using McCroskey's Willingness to Communicate Scale?

To assess the impact of French language Facebook posts on students' WTC, the WTC Scale was administered to both treatment and control groups as a pretest and posttest, with scores recorded. The WTC Scale was employed for seven different conversational contexts, assessing how likely the student would be willing to communicate in the target language with a stranger, an

acquaintance, a friend, within the context of a group discussion or meeting, in interpersonal relationships, or in public speech. This yielded seven factor scores for each student on both pretest and posttest (*Stranger, Acquaintance, Friend, Group Discussion, Meeting, Interpersonal, and Public Speaking*). A higher score on the WTC Scale indicated a greater level of willingness to engage in voluntary communication in the target language. Table 6 contains the pretest and posttest group means for each factor.

Table 6

Mean Willingness to Communicate Scores by Factors

Factor	Control (n=14)		Treatment (n=12)	
	Pretest Mean	Posttest Mean	Pretest Mean	Posttest Mean
Stranger	11.02	18.23	8.73	16.38
Acquaintance	23.59	35.00	20.96	28.63
Friend	21.45	30.80	21.31	30.29
Group Discussion	22.95	32.62	21.39	31.47
Meeting	16.14	30.88	16.35	23.69
Interpersonal	17.81	25.19	16.33	23.92
Public Speaking	17.83	23.36	14.11	16.12

For each of the seven factors, a split-plot ANOVA was performed to determine if any statistical differences existed in WTC between groups (control vs. treatment), or between administration times (pretest vs. posttest), or in interaction between the two effects. Under the hypothesis of exposure to French language Facebook posts fostering greater WTC, a significant difference was expected for the interaction and perhaps for main effects as well. Table 7 presents the results for all factors. Pretest and posttest data for each group were tested for deviation from normality due to skewness and kurtosis. Data conformed to the normality assumption of ANOVA without need for transformation.

Table 7

Within- and Between-Groups: Contrasts and Effects for Willingness to Communicate

Factor	Within		Between		Interaction	
	<i>F</i>	<i>df</i>	<i>F</i>	<i>df</i>	<i>F</i>	<i>df</i>
Stranger	10.81**	1, 24	.13	1, 24	.01	1, 24
Acquaintance	7.22*	1, 24	.24	1, 24	0.28	1, 24
Friend	11.81**	1, 24	—	1, 24	.01	1, 24
Group Discussion	11.42**	1, 24	.03	1, 24	.01	1, 24
Meeting	11.64**	1, 24	.18	1, 24	1.30	1, 24
Interpersonal	6.96*	1, 24	.02	1, 24	—	1, 24
Public Speaking	4.86*	1, 24	.17	1, 24	.08	1, 24

Note: * $p < .05$. ** $p < .01$. — $F < .01$

For the factor *Stranger*, the ANOVA results for within-subjects (pre-post), [$F(1, 24) = 10.81, p < .01, \eta^2 = .31$], indicated that there was a statistically significant difference between the pre ($M = 10.0, SD = 13.8$) and posttest ($M = 17.4, SD = 17.3$) results. This within-group variance accounted for 31% of total variance. There was no statistically significant difference between the control and treatment groups' results and no significant interaction (pretest vs. posttest).

For the factor *Acquaintance*, the ANOVA results for within-subjects (pre/post), [$F(1, 24) = 7.22, p = .01, \eta^2 = .23$], indicated that there was a statistically significant difference between the pre ($M = 22.4, SD = 21.5$) and

posttest ($M = 32.1$, $SD = 27.7$) results. Within-group variance accounted for 23% of total variance. There was no statistically significant difference between the control and treatment groups' results and no significant interaction (pretest vs. posttest).

For the factor *Friend*, the ANOVA results for within-subjects (pre/post), [$F(1, 24) = 11.81$, $p < .01$, $\eta^2 = .33$], indicated that there was a statistically significant difference between the pre ($M = 21.4$, $SD = 22.7$) and posttest ($M = 30.6$, $SD = 23.0$) results. Within-group variance accounted for 33% of total variance. There was no statistically significant difference between the control and treatment groups' results and no significant interaction (pretest vs. posttest).

For the factor *Group Discussion*, the ANOVA results for within-subjects (pre/post), [$F(1, 24) = 11.42$, $p < .01$, $\eta^2 = .32$], indicated that there was a statistically significant difference between the pre ($M = 22.2$, $SD = 20.3$) and posttest ($M = 32.1$, $SD = 23.0$) results. Within-group variance accounted for 32% of total variance. There was no statistically significant difference between the control and treatment groups' results and no significant interaction (pretest vs. posttest).

For the factor *Meeting*, the ANOVA results for within-subjects (pre/post), [$F(1, 24) = 11.64$, $p = .01$, $\eta^2 = .33$], indicated that there was a statistically significant difference between the pre ($M = 16.2$, $SD = 19.8$) and posttest ($M = 27.6$, $SD = 24.4$) results. Within-group variance accounted for 33% of total

variance. There was no statistically significant difference between the control and treatment groups' results and no significant interaction (pretest vs. posttest).

For the factor *Interpersonal*, the ANOVA results for within-subjects (pre/post) [$F(1, 24) = 6.96, p = .01, \eta^2 = .23$], indicated that there was a statistically significant difference between the pre ($M = 17.1, SD = 22.7$) results. Within-group variance accounted for 23% of total variance. There was no statistically significant difference between the control and treatment groups' results and no significant interaction (pretest vs. posttest).

For the factor *Public Speaking*, the ANOVA results for within-subjects (pre/post) [$F(1, 24) = 4.86, p = .04, \eta^2 = .17$], indicated that there was a statistically significant difference between the pre ($M = 16.1, SD = 17.0$) results. Within-group variance accounted for 17% of total variance. There was no statistically significant difference between the control and treatment groups' results and no significant interaction (pretest vs. posttest).

An overall WTC score was calculated for each group by averaging the sub-scores for *Stranger*, *Acquaintance* and *Friend*. As shown in Table 8, the control group had a pretest WTC mean score of 18.68 and a posttest mean score of 28.01; the treatment group had a pretest WTC mean score of 17.00 and a posttest mean score of 25.10. The posttest scores of the control group demonstrated a 50% increase in WTC over the course of the study while the treatment group posttest scores demonstrated a 48% increase in WTC.

Table 8

Between- and Within-Group Results: Overall Willingness to Communicate

Factor	Control (<i>n</i> =14)		Treatment (<i>n</i> =12)	
	Pre-Test Mean	Post-Test Mean	Pre-Test Mean	Post-Test Mean
WTC Score	18.68	28.01	17.00	25.10

Split-plot ANOVA of overall WTC scores, displayed in Table 9, yielded the same results as did the individual variables that comprised it. Posttest scores were significantly greater than pretest scores [$F(1,24) = 11.62, p < 0.01, \eta^2 = .33$], and there was no significant difference between groups and no significant interaction. Within-group variance accounted for 33% of total variance in overall WTC.

Table 9

Split-Plot ANOVA for Overall Willingness to Communicate Score

Source	<i>df</i>	<i>F</i>	η^2	<i>p</i>
Pre/Post	1	11.62**	.33	< .01
Interaction	1	0.06	—	.81
Within-group error	24	(84.44)		
Control/Treatment	1	0.09	—	.77
Between-group error	24	(781.93)		

Note. Values in parentheses represent mean square errors.

p* < .05. *p* < .01.

Research Question 2

Was there a statistically significant change in foreign language learners' attitudes towards the target language and culture as a result of exposure to and interaction with target language Facebook posts, as measured by the difference pretest and posttest using Dörnyei and Clément's Language Orientation Questionnaire?

To assess the impact of French language Facebook posts on students' attitudes towards the target language and the culture of its native speakers, the Language Orientation Questionnaire was administered to both treatment and control groups as a pretest and posttest. The Language Orientation Questionnaire utilizes questions that assess five factors related to the student's

attitude toward the target language and the culture of its native speakers. Group means for all five factors are shown in Table 10.

Table 10

Mean Language Orientation Scores by Factors

Factor	Control (n=14)		Treatment (n=12)	
	Pretest Mean	Posttest Mean	Pretest Mean	Posttest Mean
Integrativeness	3.67	3.74	3.81	4.16
Instrumentality	3.93	4.13	4.46	4.69
Attitudes	3.95	4.14	4.25	4.36
Cultural Interest	0.70	0.98	1.37	1.69
Linguistic Self Confidence	3.86	3.67	3.75	3.64

Integrativeness measures the degree to which the foreign language learners desire to be like speakers of the target language. *Instrumentality* measures the degree to which the student appreciates the practical benefits of learning the language. *Attitudes* measures the degree to which foreign language learners have positive regard for speakers of the target language and the prospect of visiting their country. *Cultural Interest* measures the degree to which foreign language learners are motivated by interest in the culture and cultural products associated with the target language. *Linguistic Self Confidence* measures the degree to which foreign language learners are motivated by the expectation that they will be successful in learning the target language. Pretest

and posttest scores were recorded for the five factors for all students in both groups. For each of the five factors assessed by the Language Orientation Questionnaire, a split-plot ANOVA was performed to determine if any statistical differences exist between groups (control vs. treatment), or between administration times (pretest vs. posttest), or in interaction between the two effects. Table 11 contains the results of the analysis for all factors.

Table 11

Within- and Between-Groups Contrasts and Effects for Language Orientation Questionnaire

Factor	Within		Between		Interaction	
	<i>F</i>	<i>df</i>	<i>F</i>	<i>df</i>	<i>F</i>	<i>df</i>
Integrativeness	4.72*	1, 24	1.14	1, 24	2.12	1, 24
Instrumentality	6.17*	1, 24	8.84*	1, 24	.04	1, 24
Attitudes	4.87*	1, 24	1.39	1, 24	.34	1, 24
Cultural Interest	3.20	1, 24	5.15*	1, 24	.01	1, 24
Linguistic Self Confidence	1.44	1, 24	.18	1, 24	.10	1, 24

Note. * $p < .05$. ** $p < .01$.

Under the hypothesis of exposure to French language Facebook posts fostering more positive attitudes towards the target language and the culture of its native speakers, a significant difference was expected for the interaction and perhaps for main effects as well. As with the WTC data, Language Orientation Questionnaire data were tested for deviation from normality prior to statistical treatment.

For the factor *Integrativeness*, the ANOVA results for within-subjects (pre/post), [$F(1, 24) = 4.72, p = .04, \eta^2 = .16$], indicated that there was a statistically significant difference between the pre ($M = 3.73, SD = .72$) and post test ($M = 3.94, SD = .73$) results. Within-group variance accounted for 16% of total variance. There was no significant difference between groups and no significant interaction (pretest vs. posttest).

For the factor *Instrumentality*, the ANOVA results for within-subjects (pre-post), [$F(1, 24) = 6.17, p = .02, \eta^2 = .21$], indicated that there was a statistically significant difference between the pre ($M = 4.17, SD = .57$) and post test ($M = 4.38, SD = .58$) results. Within-group variance accounted for 21% of total variance. The ANOVA results for between-subjects (Control/Treatment), [$F(1, 24) = 8.84, p = .01, \eta^2 = .27$], indicated that there was a statistically significant difference between the control and treatment results. Between-group variance accounted for 27% of the total variance. More specifically, although both the control and treatment groups showed similar increases from pretest to posttest, the means of the control group for pretest ($M = 3.93$) and posttest ($M = 4.13$) were significantly lower than the respective means for the treatment group pretest ($M = 4.46$) and posttest ($M = 4.69$). Overall, the treatment group indicated higher levels of instrumentality than did the control group. There was no significant interaction (pretest vs. posttest).

For the factor *Attitudes*, posttest scores were significantly greater than pretest scores [$F(1, 24) = 4.87, p = .04$]. Within-group variance accounted for

17% of total variance. There was no significant difference between groups and no significant interaction (pretest vs. posttest).

For the factor *Cultural Interest*, the ANOVA results for within-subjects (pre/post) indicated no significant difference. The ANOVA results for between-subjects (Control/Treatment), [$F(1, 24) = 5.15, p = .03, \eta^2 = .18$], indicated that there was a statistically significant difference between the control and treatment results. Between-group variance accounted for 18% of total variance. More specifically, although both the control and treatment groups showed similar increases from pretest to posttest, the means of the control group for pretest ($M = 0.07$) and posttest ($M = 0.98$) were significantly lower than the respective means of the treatment group for pretest ($M = 1.37$) and posttest ($M = 1.69$). Although both groups displayed low cultural interest, the treatment group indicated higher levels of cultural interest than did the control group. There was no significant interaction.

For the factor *Linguistic Self Confidence*, the ANOVA results for within-subjects (pre-post) and between groups (Control/Treatment) did not significantly differ. There was no significant interaction (pretest vs. posttest).

Statistical Analysis: Student Interaction

Research Question 3

To what degree do foreign language learners interact with native language Facebook posts through sharing, liking, reading, viewing, translating and commenting?

During the course of this study, participants received a total of 101 French language posts, with posts that showcased photos shared most often ($n = 58$), posts that featured links to other posts shared less often ($n = 30$) and posts that included videos shared least often ($n = 13$) by the study's dedicated Facebook page, Wyatt Research Study Group. These results are presented in Table 12.

Table 12

Facebook French Language Posts by Week and Type

Week	Link ($n = 30$)	Photo ($n = 58$)	Video ($n = 13$)
Week 1	8	14	5
Week 2	9	13	4
Week 3	8	17	2
Week 4	5	14	2

Participant Interaction with Facebook Posts – “Likes”

Data were analyzed using descriptive statistics to determine the degree of Facebook interaction related to the French language Facebook posts. These data were collected from Facebook Insights, an activity-tracking function that

allows the administrator of a Facebook page to track the activity of users who have “Liked” individual posts. For the purpose of analysis, French language posts used in this study have been categorized by type and grouped by week in which they occurred in the study (weeks 1 – 4).

Participants interacting with French language posts that featured links ($n = 30$) generated a total of four Facebook “Likes.” Three of the four “Likes” occurred in the first week, with the remaining “Like” in the third week. The ratio of “Likes” per post was 0.38 for the first week and 0.13 for the third week. No posts featuring links were “Liked” during the second or fourth weeks.

Participants interacting with French language posts that featured photos ($n = 58$) generated a total of five “Likes.” Four of the five “Likes” occurred in the third week, and the remaining “Like” entered during the first week. The ratio of “Likes” per post was 0.07 for the first week and 0.24 for the third week. No posts featuring photos were “Liked” during the second or fourth weeks. Participants interacting with French language posts that featured videos ($n = 13$) generated a total of one “Like” during the fourth week. The ratio of “Likes” per post was 0.50 for that week.

Participant Interaction with Facebook Posts – Comments

Data also were collected from Facebook Insights to track the activity of users who have added comments to individual posts associated with a particular page. For the purpose of analysis, French language posts used in this study

have been categorized by type (Link and Video) and grouped by week. The type of Facebook post featuring photos did not receive any comments.

Participants interacting with French language posts that featured links ($n = 30$) generated a total of one comment, which occurred in week one. The ratio of comments per link post was 0.17 for that week. Participants interacting with French language posts that featured videos ($n = 13$) generated a total of one comment, also in the first week. The ratio of comments per video post for the first week was 0.20. Participants did not add any comments to French language posts featuring photos.

A female student posted both of the comments associated with this study; she posted both comments during the first week. On February 26, 2013, the student commented on a French language post featuring a link, writing “I have not seen the film yet, but maybe I will.” On the same day, this student commented on a French language post featuring a video, writing in French “Tres bien tres bien! Elle est géniale.”

Participant Interactions with Facebook Posts – Sharing

As tracked by Facebook *Insights*, there was no participant interaction with native French language Facebook posts in terms of sharing. No participants shared with their Facebook friends any post associated with this study.

Participant Interaction with Facebook Posts – Polls

In order to obtain information that cannot be assessed with Facebook Insights, data were obtained from weekly Facebook polls that were posted by the researcher and completed by participants on a voluntary basis. These data concerned Facebook activity that could only be captured by surveying participants. Polls were posted in the same Facebook feed that contained the native French language Facebook posts. Polls were posted immediately after selected French language posts and asked whether the participant had read, viewed, translated, both read and viewed, or had read, viewed, and translated the accompanying French language post. Facebook polls were conducted on four consecutive Fridays, with three polls posted along with three related French language posts for a total of 12 polls. Facebook posts featuring links constituted four of the French language posts, posts featuring photos constituted seven, and posts featuring videos constituted one. Viewing posts emerged as the primary type of interaction, with a total of 27 responses. Reading emerged as the second most prevalent activity, with participants selecting this poll response 14 times. Both reading and viewing the posts occupied the third most popular category, with a total of 11 responses, and translating earning a total of nine responses. Participants selected “All” only four times, indicating that reading, viewing and translating articles was a rare combination of events Facebook poll responses by post type are displayed in Table 13.

Table 13

Facebook Poll Responses by Post Type

Type	Link (<i>n</i> = 4)	Photo (<i>n</i> = 7)	Video (<i>n</i> = 1)
Read	9	3	2
Viewed	12	15	1
Translated	3	6	-
Read & Viewed	2	7	2
All	-	3	1

Facebook *Insights* - Reach

Facebook *Insights* generates reports on activity related to a particular Facebook page; the data consists of visible activity such as “Liking,” “Sharing,” and “Commenting” as well as invisible activity consisting of viewing a page within a particular timeframe (in this case, daily). The total number of people who view a post within a particular timeframe is defined as the “Reach” of a post; a post is considered having “reached” a user when it appears in the News Feed of that user on any device (mobile or desktop) and the user views that News Feed within 28 days of posting (Facebook, 2013a).

As previously stated, in order to trigger the *Insights* feature, a Facebook page must have a minimum of 30 people “Like” that page. With a treatment group consisting of only 12 participants, the additional Facebook users who “Liked” the page associated with the study came from the Facebook community as a whole. These users likely consisted of Facebook members interested in

learning French. The data associated with the “Reach” score is therefore not statistically relevant to the research questions associated with this study. The minimum number of “Likes” was reached for the Facebook page associated with this study and the *Insights* function was triggered; the total number of “Likes” for the page was 31. The degree of “Reach” associated with this study was highest in week 1 ($M = 17$), declining in week 2 ($M = 15$), week 3 ($M = 14$) and week 4 ($M = 14$). The degree of “Reach,” then, was roughly 50%. Due to limitations in the *Insights* function, including the inability to identify all of the users who have like the study Facebook page (known as “Fans”) and individual users associated with the “Reach” function, the degree of “Reach” associated with study participants is not possible to determine.

CHAPTER 5 DISCUSSION AND CONCLUSION

Introduction

This chapter includes a brief overview of the study followed by a summary and discussion of the findings for each of the three research questions that guided the research. Theoretical and practical implications of the research are presented, followed by limitations, conclusions and recommendations for future research.

Brief Overview of Study

This study was designed to investigate the impact of native language Facebook posts on beginning-level foreign language learners' willingness to communicate (WTC) in the second language (L2) as well as their attitudes towards the target language (French). Data were collected from volunteers recruited from two sections of a beginning French course (FRE1120) at the University of Central Florida in Orlando, Florida in the spring of 2013. In addition, this study was designed to evaluate the degree to which foreign language learners interacted with the French language Facebook posts. Two online surveys, along with demographic questions, were conducted in a pretest/posttest design. Data were captured from the completed surveys as well as from Facebook Insights. An additional amount of qualitative data was recorded by the researcher by directly monitoring Facebook Comments. The data were then

analyzed using descriptive statistics, inferential statistics and a limited amount of qualitative data.

This study examined two particular components of learner motivation related to L2 learning: WTC and attitudes towards the language and culture. Both of these components have been linked to more successful student outcomes in terms of motivation and persistence (Aubry, 2009; Baker & MacIntyre, 2000; Clément et al., 1994; Clément et al., 2003; Dörnyei, 2001; Kaliban et al., 2010; Kelley, 2010; MacIntyre et al., 1998; MacIntyre et al., 2003). Instructors of college-level foreign language courses who seek to improve the willingness to communicate and foster positive linguistic and cultural attitudes face a difficult challenge: students typically lack opportunities to interact with native speakers of the target language or exposure to target language media unless there is a large population of native speakers living locally.

These challenges can be overcome through participation in study abroad opportunities. Benefits of studying abroad and immersion in the target language include increased motivation and positive regard for the target language and culture. Willingness to communicate in the target language has been shown to increase in association with increased interactions with native L2 speakers along with exposure to L2 media and culture (Clément et al., 2003; Dörnyei & Csizér, 2005). Positive attitudes towards the target language and culture, as identified by Gardner and Lambert (1985), also increases motivation in L2 learners and has

been correlated with meaningful L2 interactions and culture exposure (Beauvois, 1998; Chun, 1994; Kelm, 1992; Kissau et al., 2010).

Despite these benefits, for many L2 learners, traveling abroad for short-term or long-term study is an impractical option due to costs as well as scheduling conflicts with jobs or other responsibilities (Heitmann, 2007/8). An affordable alternative to study abroad might be found in digital immersive environments. Virtual learning environments and digital immersive environments can provide stimulating educational experiences that support learner motivation and self-confidence (Allison, 2008; Atkinson, 2009; Driscoll, 2005; O'Brien, Levy, & Orich, 2009; Silva et al., 2010; Sykes, Oskoz, & Thorne 2008). Digital immersion through social networking sites (SNSs) has been identified as a Web 2.0 technology that meets two of the core criteria for sensory-rich virtual learning environments (VLEs), including "attention and quality of focus" (Nino, 2010, para. 1) and interactivity. Using Facebook, the world's most popular SNS, meets these criteria and adds the affordances of ubiquity, a modest learning curve, and the dynamism that springs from fan pages, connections with friends, status updates, videos and photos, as well as various applications that can be added (Nino, 2012). This study was designed to investigate the impact of L2 Facebook posts on the willingness to communicate and attitudes towards the target language of L2 learners who lack local opportunities to immerse themselves in the target language through study abroad.

Native French language Facebook posts selected by the researcher were added to French language learners' personal Facebook news feeds, thus creating a digital immersive L2 environment designed to enhance learner willingness to communicate and encourage positive cultural attitudes. The researcher also measured the activity of L2 learners who received L2 Facebook news feed posts, including data extracted from Facebook Insights as well as self-reported activity. Both before (pretest) and after (posttest) four weeks of French language instruction, 26 students from two sections of a beginning French language course (FRE 1120 at the University of Central Florida) completed surveys measuring the WTC Scale and Language Orientation Questionnaire (LOQ), including 12 treatment group members who received the French-language posts in their Facebook news feeds and 14 others who served as a control group.

Research Question 1: Discussion

Was there a statistically significant change in foreign language learners' willingness to communicate in the target language as a result of exposure to and interaction with native language Facebook posts as measured by the pre-test and post-test using McCroskey's Willingness to Communicate Scale?

All measured factors of the Willingness to Communicate Scale yielded the same results statistically. No statistically significant outcomes were found for differences between groups as well as interactions between administration time

of the survey (pretest vs. posttest) and group membership. However, all factors showed that posttest scores were significantly greater than pretest scores. These results suggest that four weeks of foreign-language instruction in a classroom setting can increase students' willingness to communicate in the target language, with or without the immersive environments. The lack of any significant interactions means that French-language articles inserted into Facebook news feeds were not found to increase willingness to communicate among students beyond the improvement seen due to classroom instruction.

Research Question 2: Discussion

Was there a statistically significant change in foreign language learners' attitudes towards the target language and culture as a result of exposure to and interaction with native language Facebook posts as measured by the difference pre-test and post-test using Dörnyei Clément's Language Orientation Questionnaire?

As with WTC, all factors associated with the Language Orientation Questionnaire showed no significant interaction between administration time (pretest vs. posttest) and group membership. Once again, receipt of French-language Facebook posts was not found to have any effect on students' cultural and linguistic attitudes.

Results for main effects were more varied. Statistically significant differences between group means were found for two factors: *Instrumentality* and

Cultural Interest. In each case, treatment group means were greater than control means both before and after the trial period. Three possible explanations cannot be excluded at this time: (a) treatment group students may have been motivated by their more active participation in the study, (b) these results may have resulted from the potentially nonrandom nature of sampling (volunteerism), or (c) they may be attributed to chance deviation from equivalent populations (results were minimally significant, $.01 < p < .05$). The second of these possibilities is supported by a difference in gender composition between treatment and control groups. The control group was made up of nine females and four males (with one student unreported), whereas the treatment group consisted of 11 females and only one male.

With regard to within group differences (pretest vs. posttest), there was a significant difference in scores for the factors *Integrativeness*, *Instrumentality*, and *Attitudes*, with posttest scores uniformly greater than pretest scores. These results, combined with the lack of significant interactions, suggest that four weeks of classroom instruction can improve (a) the desire of students to be more like target language speakers, (b) their perceptions of the advantages of L2 acquisition, and (c) their general attitudes towards target language speakers and their native country, either with or without ancillary Facebook news feed posts. However, no significant improvement was seen in *Cultural Interest and Linguistic Self-Confidence*; hence, instruction was not found to affect students' interest in

the products of the culture of the target language or their degree of motivation derived from expectation of mastery of the language.

Research Question 3: Discussion

To what degree do foreign language learners interact with native language Facebook posts through sharing, liking, reading, viewing, translating and commenting?

Overall, the level of student interaction via Facebook captured by Facebook Insights was very low. Only 10 of the 101 articles posted received “Likes” from any of the twelve students in the treatment group. Only two articles were commented upon. No articles were shared.

For interactions that were self-reported by students via surveys, frequencies of interaction were somewhat greater. Students reported that they either viewed, read, or translated nearly half of the posts, on average. It cannot be determined if the discrepancy between the frequencies of interaction between self-reported and electronically captured results arose from the differing nature of the interactions or from inflated self-reports of accomplishment.

Theoretical and Practical Implications of the Study

Virtual learning environments as well as digital immersive environments can provide stimulating educational experiences that support learner motivation

and self-confidence (Allison, 2008; Atkinson, 2009; Driscoll, 2005; O'Brien et al., 2009; Silva et al., 2010; Sykes et al., 2008). This study consisted of merging instructor-selected native French language Facebook posts with French language learners' personal Facebook News Feeds, thus creating a digital immersive L2 environment to enhance learner WTC and encourage positive cultural attitudes. Both WTC and positive attitudes toward the target language and culture have been linked to more successful student outcomes in terms of motivation and persistence (Aubry, 2009; Baker & MacIntyre, 2000; Clément et al., 2003; Dörnyei, 2001; Clément et al., 1994; Kaliban et al., 2010; Kelley, 2010; MacIntyre et al., 1998; MacIntyre et al., 2003).

In this study, two particular components of learner motivation related to L2 learning were investigated: WTC and attitudes toward the language and culture. Immersion, through exposure to the target language and culture outside of the traditional classroom environment, in the context of an SNS, did not significantly change learners' WTC in the target language. Learners' attitudes toward the target language and culture did increase slightly for two variables, *Instrumentality* and *Cultural Interest*, but the researcher was unable to distinguish the influences that were driving this difference.

Social constructivist theory makes a strong connection between learning, the generating of meaning, and interaction with others (Vygotsky, 1978). One of the theoretical perspectives selected for this study, social constructivist theory, supports the use of SNSs for learning because of the characteristics of these

sites: collaborative, reliant on users to generate and share content, authentic, and capable of solving problems. The low level of interaction may reflect the low level of French language mastery associated with beginning French learners. Clément's theory is related to social constructivist theory in its emphasis on the quality and quantity of contacts with the target language, via native speakers or media, as a driver of identification with the target language (Clément et al., 1994; Clément & Kruidenier, 1985;). The French language Facebook posts met the criteria of native-language media. Ultimately, however, the limited amount of detail and wide variety of subject matter may have failed to engage the participants.

Although the results of this study were not statistically significant, the research was valuable in applying a methodology, in this case digital immersion, to SNSs in the context of L2 motivation. Although much of the research on digital immersion centers on virtual learning environments that offer 3-D visual experiences, SNSs have received attention for their immersive qualities (Armory, 2010; Nino, 2010). This study contributes to the literature by having applied a mixed-method, quasi-experimental design to answer a question of how native language Facebook posts impact learner motivation as well as how L2 learners interact with those posts.

Limitations of the Study

The design and results of this study were impacted in several ways. First, sample sizes were small, with 14 students in the control group and 12 in the treatment group. Each class met three times a week, and class time was quite limited. Thus, the chance of meeting all potential participants was also limited. Second, students enrolled in two beginning French courses at the University of Central Florida were selected as a convenience sample, negatively impacting broader implications for these results. Results of this study may not apply to students studying French at other colleges or universities or those who are studying other languages. Third, participants received an incentive of 10 extra credit points. External motivation to participate in the study may have skewed the findings by including participants who may not have been interested in actually performing the tasks associated with the study. Fourth, the Facebook treatment design involved establishing a Facebook page for participants to “Like,” thus avoiding the necessity of participants “Friending” the researcher. The limitation of this design was that the page was available to be “Liked” by anyone who had a Facebook account at that time. The possibility of non-students “Liking” the page precluded the use of the Facebook Insights tools, Reach and Engagement. In addition, administrators of Facebook pages who have been “Liked” by account holders did not have access to the Facebook pages of those account holders, limiting tracking and accountability.

A final limitation of the study involved the previously noted elimination of the two sections of FRE 1121, Elementary French II, as a result of one section being cancelled at shortly before the spring 2013 semester. As two sections of this course were necessary for comparison purposes, the design of the study was simplified to include two sections of FRE 1120 only. The inclusion of two sections of Elementary French II would have provided a powerful point of comparison between treatment groups and became a limitation of the study. The elimination of the two more advanced sections beginning French also narrowed the theoretical lens of social constructivism; slightly more advanced learners would have had more opportunities to collaborate.

Conclusions

There was no significant relationship between exposure to, and interaction with, native language Facebook posts on participants' WTC. This was consistent across all seven factors associated with the WTC Scale as well as with the total WTC score.

There was no significant relationship between exposure to, and interaction with, native language Facebook posts on participants' linguistic and cultural attitudes. Two factors (*Instrumentality* and *Cultural Interest*) were significantly different between groups, but yielded no significant interaction, indicating possible differences in group characteristics rather than the influence of the posts.

Participant interaction with native language Facebook posts was sparse. Reading and viewing native language Facebook posts emerged as the most common interaction, and commenting and sharing emerged as the least common.

The use of SNSs to create immersive digital environments for foreign language learners remains in its infancy. The need to develop options for foreign language learners to immerse themselves in the target language of study continues to present language instructors and researchers with an ongoing challenge. Digital environments beyond total traditional electronic immersion presents some of the most promising options available at the time of the present study.

Recommendations for Further Research

Based upon related research and findings in this study, the following recommendations are suggested for further research:

1. The initial decision to deliver the native French language Facebook posts to participants' Facebook News Feeds via a Facebook page undermined the tracking capability of Facebook's Insights function. Future studies might utilize Facebook's function to create groups from which posts may be delivered to participants' News Feeds. The benefits to this approach include tracking all activity and limited interferences from individuals not part of the study.

2. This native French language Facebook treatment was conducted over a period of four weeks. An area for future research includes extending the period of the study, perhaps even extending it over the course of one to two semesters and gathering data throughout the experience.
3. The research design used for this study was mixed method and quasi-experimental; the qualitative element was not strong. An area for future research may include incorporating qualitative design elements, including face-to-face interviews or focus groups, to gain a better understanding of participants' reactions to the native French language Facebook posts. If face-to-face interviews are not feasible, live streaming video or conference calling might serve as possible effective alternatives.
4. Participants in this study were drawn from two sections of a beginning French course. Soliciting participants from a more advanced level of French language learners may generate more significant results, as participants would have a higher level of language mastery. Native language Facebook posts would be more accessible.
5. The sample size of this study was small, with only 26 participants completing the study. It would be beneficial to run this study with a

much larger population as it is challenging to find significant results within such a small group.

6. The nature of Facebook's Insights function is continually changing, meaning that new features and capabilities can be made available to researchers. There is still a need for a study that investigates social media as a source of free interaction for language learning.
7. The number of Facebook posts pushed, per day, to participants' Facebook News Feeds was six. A future study might increase the number of Facebook posts per day for the purpose of enhancing exposure to, and interaction with, the Facebook treatment.
8. Although this study was designed to examine motivation for language learning outside of a particular French course or curriculum, a potential area of future research involves integrating the Facebook treatment into the course content. This integration will likely provide a stronger incentive for participants to engage with the French language posts in their News Feeds. Also, the constructivist approach was applied as part of the theoretical framework in this study; a future study, while incorporating the Facebook treatment into the course requirements would also provide an opportunity to ask learners to solve a problem or complete an assignment in small groups. In addition, a rich area of future research might be found in applying the Facebook treatment to French classes in other

modalities; French language students taking the course online or in blended format may respond differently than a traditional, face-to-face group.

9. Although Facebook is currently the most widely used social network site (SNS) in the world, other SNSs may also provide powerful, sustained immersive experiences for foreign language learners; currently those sites include Twitter, YouTube, and Instagram. The ephemeral nature of SNS's popularity is an indicator of the tension between acceptance of an SNS (such as Facebook) leads to rejection by young and college-age users who want to use the "latest and newest" that is not co-opted by parents, employers and school administrators.
10. Related to social network sites for language learning is the question of purpose-built sites for language learning purposes, such as Babbel.com. What role might these sites have in supporting language learners and exposing learners to authentic language?
11. Institutions of higher learning continue to grapple with the impacts on learning, safety, and privacy, as well as other issues, related to SNSs. Another area of research related to this study involves investigating the practice or policy recommendations related to use of SNSs in the classroom and across the institution as a whole. Cultural

lag continues to challenge scholars of higher education policy studies
as well as administrators.

APPENDIX A
SAMPLE FACEBOOK PROFILE

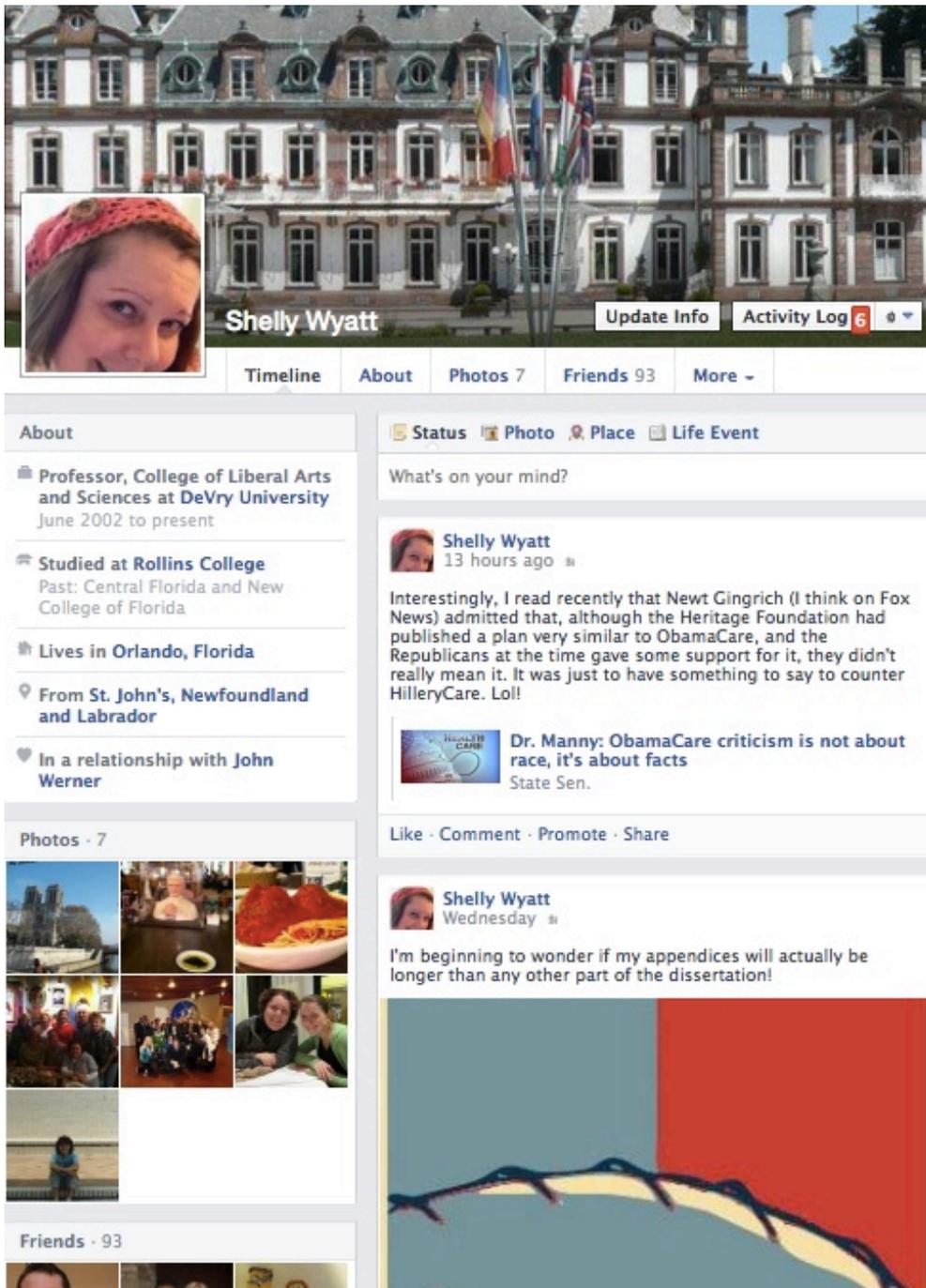


Figure 2. Sample Facebook Profile

APPENDIX B
SAMPLE FACEBOOK NEWS FEED

 **Shelly Wyatt**
Edit Profile

FAVORITES

-  News Feed
-  Messages 7
-  Events
-  Photos
-  Find Friends

GROUPS

-  Glioblasto... 20+
-  John & Shellv 2
-  Create Group...

PAGES

-  Wvatt Research S...
-  Pages Feed 20+
-  Like Pages 1
-  Create Ad

APPS

-  App Center 2
-  Gifts
-  Match.com
-  Pokes
-  Games Feed 20+
-  Places Editor

MORE.



 Update Status  Add Photos/Video

What's on your mind?

SORT

 **Karen C. Davis** likes a photo.

RELATED POST

 **Society's Choice**

Can we give these Fantastic Kids 1000 Likes?

 Like Page



Like · Comment · Share ·

👍194,867 🗨️1,584 📷5,243 · 23 hours ago · 🌐

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Like · Comment · Share · 🗨️3 · 🌐 · Sponsored

 **Pookie's Pet Nutrition & Bow Wow Bakery**

Big Boy George is very camera shy :)



Figure 3. Sample Facebook News Feed

APPENDIX C
DESCRIPTION OF FRE1120
ELEMENTARY FRENCH LANGUAGE AND CIVILIZATION I

FRE 1120

CAH-LANG

4(3,1)

Elementary French Language and Civilization I:

Introduces the student to French culture through the major language skills:

Listening, speaking, reading and writing. Open only to students with no

experience in the language. *Fall, Spring.*

APPENDIX D
CONSENT AND FORMS

Please Review the Consent Form Below and Click “NEXT” at the Bottom of the Page to Begin the Survey

Examining Facebook as a Digital Immersive Language Environment for French Language Learners
Informed Consent

Principal Investigator(s): Shelly Wyatt, M.L.S.

Faculty Supervisor: Glenda Gunter, PhD

Investigational Site(s): University of Central Florida, Department of Modern Languages and Literatures

Introduction: Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study that will include about 80 people studying French at the University of Central Florida. You have been asked to take part in this research study because you are a student in a French language class. You must be 18 years of age or older to be included in the research study.

The person doing this research is Shelly Wyatt of the University of Central Florida, College of Education. Because the researcher is a graduate student, she is being guided by Glenda Gunter, Ph.D., a UCF faculty supervisor in the College of Education, Department of Instructional Technology and Design.

What you should know about a research study:

- Someone will explain this research study to you.
- A research study is something you volunteer for.
- Whether or not you take part is up to you.
- You should take part in this study only because you want to.
- You can choose not to take part in the research study.
- You can agree to take part now and later change your mind.
- Whatever you decide it will not be held against you.
- Feel free to ask all the questions you want before you decide.

Purpose of the research study: The purpose of this study is to examine and analyze the features and capacities of Facebook as a digital immersive language environment, thus offering foreign language learners the opportunity to interact with native speakers with a naturalistic, albeit computer-mediated, context. The goal of this study is to investigate the functions of Facebook as an immersive environment that offers an authentic cultural and linguistic context for foreign language learners.

What you will be asked to do in the study: Two classes have been selected to participate in this study, with one class serving as the treatment group and the control group serving as the comparison group. Upon your consent to participate in the study, you will be asked to provide your name and telephone (or cell phone number) to the researcher.

- Participants in the treatment group will complete an online survey. Participants in the study will "Like" the Facebook page associated with this study. Participants will then receive between six and eight French language Facebook posts in their Facebook newsfeeds from ten selected French media outlets. Participants will then treat the French language posts as they would treat any other post; they can "like" it, "share" it, "translate" it, "comment" on it, read it, or ignore it. Once a week participants will also receive polls in their Facebook feeds related to the French language posts. This study will take place over a period of four weeks, with French language Facebook posts appearing in participants' newsfeeds only during the workweek and not weekends. At the end of the study, participants will re-take the original survey.

- Participants in the comparison group will take the survey at the beginning of the study and will retake the survey four weeks later.

- Timeline of Study

- o Week 7 of the term: The researcher provides an overview of the study to potential participants in the study.

- o Participants in treatment and control groups consent to take part in the study by clicking on the online survey and completing a two-part online survey.

- o Week 8 of the term: Participants in the treatment group "like" the Facebook page for the study; these participants begin to receive French language posts.

- o Weeks 8 – 11 of the term: Participants in the treatment group receive approximately six to eight French language Facebook posts in their personal Facebook account newsfeeds. On Fridays, these participants will receive polls in their Facebook newsfeeds related to their interaction with French language posts associated with the study.
- o Week 11 of the term: Participants in both groups will retake the online survey that they completed in week 7.
 - Participants may interact with other participants in the study as well as subscribers to the Facebook media sites selected for the participants' Facebook newsfeed.
 - The study will take place in spring 2013.
 - Experimental procedures include the following:
 - o The researcher will meet with the two selected sections of Elementary French I (FRE 1120) and will explain the study to each class of potential participants. The researcher will identify the incentive to participate in the study.
 - o One section of Elementary French I (FRE 1120) will be selected as the treatment group and one section will be selected as the comparison group. The comparison group will receive no treatment.
 - o Informed potential participants who agree to participate in the study will provide to the researcher their names and phone numbers.
 - o Participants will take a two-part survey using Survey Monkey.
 - o Participants in the treatment groups will "like" the Facebook page associated with the study using their personal Facebook accounts.
 - o The researcher will identify and "push" between six and eight French language Facebook posts to participants in the treatment group using the Facebook study page.
 - o Participants in the treatment group will receive these posts as part of their personal Facebook newsfeeds.
 - o Participants in the treatment group may interact with the French language Facebook posts by reading them, "liking" them, "sharing" them, or "commenting" on them. Participants may also read them, translate them, view any video content associated with a particular post, or click on the post to read a related extended article.
 - o The researcher will record visible interactions with the French language Facebook posts, including "liking," "sharing," and "commenting."
- o Participants in the treatment group will receive an additional series of polls associated with the French language Facebook posts on one day each week. These polls will ask participants about their interactions with the French language posts, including reading, translating, viewing video content, or viewing extended articles. The researcher will record the results of these polls.
- o Participants will take the two-part survey again.
- o At the end of the study, participants in the treatment group may "unlike" the study Facebook page and will receive no more Facebook posts from this page.
 - The procedures will be conducted during the week (Monday – Friday) over a period of four weeks.
 - The participants in the treatment and comparison groups will be required to complete a two-part survey using Survey Monkey at the beginning and end of the study. Participants in the treatment group will be asked to "Like" the Facebook page associated with the study using their personal Facebook account.
 - You do not have to answer every question or complete every task. You will not lose any benefits if you skip questions or tasks.

Location: The researcher will meet with you in class. There are no other requirements to meet with the researcher. The research activities will be completed using the participants' computer (desktop or laptop) or mobile device (cell phone, tablet) that has Internet connectivity.

Time required: We expect that you will be in this research study for four weeks. This study involves receiving between six and eight French language posts Monday through Friday. Participants in both treatment and comparison groups may expect to spend approximately 15 minutes completing the survey; the survey will be completed twice for a total time commitment of 30 minutes. Participants in the treatment group may expect to spend five to 15 minutes a day interacting with the French language Facebook posts (weekdays only). Please note that participants are free to spend as much time as they wish interacting with these posts and that this time will not be noted or measured.

Risks: There are no reasonably foreseeable risks or discomforts involved in taking part in this study.

Benefits:

The researcher cannot promise any benefits to you or others from your taking part in this research. However, possible benefits from participation in this study include the increased opportunities to experience authentic French language media. This increased exposure may lead to heightened motivation to learn French as well as increased cultural knowledge. Participants may benefit from integrating learning into everyday activities such as checking social network sites, thus becoming more aware of how technology can be harnessed for the purposes of formal and informal learning. Participants may also deepen their understanding of the research process by participating in this study.

Compensation or payment:

Participants who complete the study will receive 10 extra points by their course instructor. Partial completion of the study will result in partial credit being awarded, reflecting the percentage of participation. In order to receive the extra points, you will need to complete the initial survey and the follow up survey, as well as "Like" the Facebook page devoted to this study if you are assigned to the treatment group. If you choose not to participate but still wish to earn extra credit, you may ask your instructor and ask for an alternative assignment of equal effort for equal credit. Students who are not 18 years of age at the time the study begins may also ask the instructor for an alternative extra credit assignment. There will be no penalty for withdrawing from the study.

Confidentiality: We will limit your personal data collected in this study to people who have a need to review this information. We cannot promise complete secrecy.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you, talk to: Shelly Wyatt, Graduate Student, Instructional Technology Program, College of Education, (407) 463-6316, swyatt@knights.ucf.edu or Dr. Glenda Gunter, Faculty Supervisor, Instructional Technology Program by email at glenda.gunter@ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

Withdrawing from the study:

If you decide to leave the study, please contact the researcher: Shelly Wyatt. Graduation Student, Instructional Technology Program, College of Education. (407) 463-6316 or swyatt@knights.ucf.edu.

By Clicking “NEXT” (below) to Begin the Survey, You Are Providing Your Consent to Participate in this Study.

APPENDIX E
WILLINGNESS TO COMMUNICATE SCALE

***1. Please provide the phone number (cell or landline) you provided to the researcher at the beginning of this study. Please do not use dashes. For example, 4074636316.**

Survey Part 1

Directions: Below are twenty situations in which a person might choose to communicate or not communicate in French. Presume you have completely free choice. Indicate the percentage of times

you would choose to communicate in French in each type of situation. Indicate the the box below the

percentage of time you would choose to communicate in French. 0 = never, 100 = always

2. Talk with a service station attendant (in French)

0 = never, 100 =
always

3. Talk with a physician (in French).

0 = never, 100 =
always

4. Present a talk to a group of strangers (in French)

0 = never, 100 =
always

5. Talk with an acquaintance while standing in line (in French).

0 = never, 100 =
always

6. Talk with a salesperson in a store (in French)

0 = never, 100 =
always

7. Talk in a large meeting of friends (in French).

0 = never, 100 =
always

8. Talk to a police officer (in French).

0 = never, 100 =
always

9. Talk in a small group of strangers (in French)

0 = never, 100 =
always

10. Talk with a friend while standing in line (in French)

0 = never, 100 =
always

11. Talk with a waiter/waitress in a restaurant (in French).

0 = never, 100 =
always

12. Talk in a large meeting of acquaintances (in French)

0 = never, 100 =
always

13. Talk with a stranger while standing in line (in French).

0 = never, 100 =
always

14. Talk with a secretary (in French).

0 = never, 100 =
always

15. Present a talk to a group of friends (in French).

0 = never, 100 =
always

16. Talk in a small group of acquaintances (in French).

0 = never, 100 =
always

17. Talk with a garbage collector (in French).

0 = never, 100 =
always

18. Talk in a large meeting of strangers (in French).

0 = never, 100 =
always

19. Talk with a spouse (or girl/boy friend) (in French).

0 = never, 100 =
always

20. Talk in a small group of friends (in French).

0 = never, 100 =
always

21. Present a talk to a group of acquaintances (in French).

0 = never, 100 =
always

Scoring: The WTC permits computation of one total score and seven sub-scores. The sub-scores relate to willingness to communicate in each of four common communication contexts and with three types of audiences. To compute your scores, merely add your scores for each item and divide by the number indicated below.

Sub-score Desired	Scoring Formula
Group discussion	Add scores for items 8, 15, and 19; then divide by 3
Meetings	Add scores for items 6, 11, and 17; then divide by 3
Interpersonal Conversations	Add scores for items 4, 9, and 12; then divide by 3
Public speaking	Add scores for items 3, 14, and 20; then divide by 3
Stranger	Add scores for items 3, 8, 12, and 17; then divide by 4
Acquaintance	Add scores for items 4, 11, 15, and 20; then divide by 4
Friend	Add scores for items 6, 9, 14, and 19; then divide by 4

To compute the total WTC scores, add the sub-scores for stranger, acquaintance, and friend. Then divide by 3.

APPENDIX F
LANGUAGE ORIENTATION QUESTIONNAIRE (REVISED)

Survey Part 2

In the following section, please answer each question by simply selecting from the list of answers below.

5 = very much

http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_TH...OLLECTION&sm=triFdRjkTD%2fL6J2UOKE6848rm5xrAU41ccv8DjsQrF0%3d Page

URVEY PREVIEW MODE] French Language Facebook Study (Group A) Survey

5/29/13 1

4 = quite a lot

3 = so-so

2 = not really

1 = not at all

22. How much do you like the French language?

5 - Very much

4 - Quite a lot

3 - So-so

2 - Not really

1 - Not at all

23. How much do you think knowing French will help you to become a more knowledgeable person?

5 - Very much

4 - Quite a lot

3 - So-so

2 - Not really

1 - Not at all

24. How important do you think the French language is in the world these days?

5 - Very much

4 - Quite a lot

3 - So-so

2 - Not really

1 - Not at all

25. How important do you think learning French is in order to learn more about the culture and arts of French speakers?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

26. How much effort are you prepared to expend in learning the French language?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

27. How much do you think knowing the French language would help you when traveling abroad in the future?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

[p://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_TH...OLLECTION&sm=trIFdRjkTD%2fL6j2UOKE6848rm5xrAU41ccv8DjsQrF0%3d](http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_TH...OLLECTION&sm=trIFdRjkTD%2fL6j2UOKE6848rm5xrAU41ccv8DjsQrF0%3d) Page

RVEY PREVIEW MODE] French Language Facebook Study (Group A) Survey

5/29/13 12

28. How much do you think knowing French would help your current career?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

29. How much would you like to become similar to the people who speak French?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

30. How much would you like to travel to France?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

30. How much would you like to travel to France?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

31. How rich and developed do you think France is?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

32. How important a role do you think France plays in the world?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

33. How much do you like meeting people from France?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

34. How much do you like the films (movies) made in France? Select N/A if you don't know any.

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all N/A

35. How much do you like TV programs made in France? Select N/A if you don't know any.

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all N/A

36. How much do you like the people who live in France?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

37. How often do you see films/TV programs made in France?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

38. How much do you like the magazines made in France? Select N/A if you don't know any.

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all N/A

39. How often do you meet French people (e.g., in the street, restaurants, public places)?

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all

40. How much do you like French pop music? Select N/A if you don't know any.

5 - Very much 4 - Quite a lot 3 - So-so 2 - Not really 1 - Not at all N/A

Survey Part 3

In the following section, please answer each question by simply selecting from the list of answers below. We would like to know to what extent they describe your own feelings and situation.

5 = absolutely true

4 = mostly true

http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_TH...OLLECTION&sm=triFdrJkTD%2fL6j2UOKe66848rm5xrAU41ccv8DjsQrF0%3d Page 6 of

[SURVEY PREVIEW MODE] French Language Facebook Study (Group A) Survey

5/29/13 12:38

3 = partly true, partly untrue

2 = not really true

1 = not at all true

41. I am sure that I will be able to learn French well.

5 - Absolutely true

4 - Mostly true

3 - Partly true, partly
untrue

2 - Not really true

1 - Not at all true

42. I think I am the type who would feel anxious and ill at ease if I had to speak to someone in French.

5 - Absolutely true

4 - Mostly true

3 - Partly true, partly
untrue

2 - Not really true

1 - Not at all true

43. People around me tend to think that it is a good thing to know a foreign language.

5 - Absolutely true

4 - Mostly true

3 - Partly true, partly
untrue

2 - Not really true

1 - Not at all true

44. My parents do not consider foreign languages important university subjects.

5 - Absolutely true 4 - Mostly true 3 - Partly true, partly untrue 2 - Not really true 1 - Not at all true

45. Learning a foreign language makes me fear that I will feel less American because of it.

5 - Absolutely true 4 - Mostly true 3 - Partly true, partly untrue 2 - Not really true 1 - Not at all true

46. Learning a foreign language is a difficult task.

5 - Absolutely true 4 - Mostly true 3 - Partly true, partly untrue 2 - Not really true 1 - Not at all true

http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_TH...OLLECTION&sm=trifdRjkTD%2fL6j2UOKE6848rm5xrAU41ccv8DjsQrF0%3d Page 7

SURVEY PREVIEW MODE] French Language Facebook Study (Group A) Survey

5/29/13 12:00

Finally, please answer a few personal questions:

47. What is your gender?

Female

Male

48. What foreign language(s) are you learning at university? Please select all that apply

- French
- German
- Spanish
- Chinese
- Italian
- Japanese
- Latin
- Portuguese
- Russian

49. Have you learnt any foreign languages outside university? Please write your answer in the box below. If your answer is none, write "none" or skip the question.

50. At what age did you start learning French language? Please write your answer in the box below.

51. Have you ever been abroad for longer than six months (e.g., when your parents

://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_COLLECTION&sm=trIFdRjktD%2F%2UOKE6848rm5xrAU41ccv8D)sQrF0%3d

(VIEW PREVIEW MODE) French Language Facebook Study (Group A) Survey

5/29/1

worked there)? If yes, please tell us where in the box below. If not, please leave this answer box blank.

APPENDIX G
DEMOGRAPHIC AND FACEBOOK QUESTIONS

52. Your current age falls within which of the following ranges?

18 - 21

22 - 25

26 - 29

30 - 34

35 +

53. How long have you been using Facebook?

Less than one year

1 - 2 years

3 - 4 years

5 - 6 years

More than 6 years

54. Which electronic devices do you use to access Facebook? Please select all that apply.

Desktop computer

Laptop computer

Tablet computer

Smart phone or cell phone

55. Which electronic devices do you use to access Facebook MOST OFTEN? Please select all that apply.

Desktop computer

Laptop computer

http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_TH...OLLECTION&sm=trifdrjkTD%2fL6J2UOKE6848rm5xrAU41ccv8DjsQrF0%3d Page 9 of

SURVEY PREVIEW MODE] French Language Facebook Study (Group A) Survey

5/29/13 12:38

Tablet computer

Smart phone or cell phone

APPENDIX H
INSTITUTIONAL REVIEW BOARD APPROVAL



University of Central Florida Institutional Review Board
 Office of Research & Commercialization
 12201 Research Parkway, Suite 501
 Orlando, Florida 32826-3246
 Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: UCF Institutional Review Board #1
 FWA00000351, IRB00001138

To: Shelly A. Wyatt

Date: February 14, 2013

Dear Researcher:

On 2/14/2013, the IRB approved the following human participant research until 2/13/2014 inclusive:

Type of Review: UCF Initial Review Submission Form
 Project Title: Examining Facebook as a Digital Immersive Language Environment for French Language Learners
 Investigator: Shelly A Wyatt
 IRB Number: SBE-13-09112
 Funding Agency:
 Grant Title:
 Research ID: N/A

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30 days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form cannot be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

If continuing review approval is not granted before the expiration date of 2/13/2014, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewska, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 02/14/2013 02:29:15 PM EST

IRB Coordinator



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: UCF Institutional Review Board #1
FWA00000351, IRB00001138

To: Shelly A. Wyatt

Date: March 27, 2013

Dear Researcher:

On 3/27/2013 the IRB approved the following minor modifications to human participant research until 02/13/2014 inclusive:

Type of Review: Submission Response for IRB Addendum and Modification Request Form
Modification Type: Protocol revision, Survey revision
Project Title: Examining Facebook as a Digital Immersive Language Environment for French Language Learners
Investigator: Shelly A. Wyatt
IRB Number: SBE-13-09112
Funding Agency:
Grant Title:
Research ID: N/A

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30 days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

If continuing review approval is not granted before the expiration date of 02/13/2014, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewska, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Patria Davis on 03/27/2013 12:15:47 PM EST

APPENDIX I
FRENCH LANGUAGE FACEBOOK MEDIA SOURCES

1. 20 Minutes

 20 Minutes shared a link.
7 hours ago

Bertrand Delanoë, le maire de Paris, entend bien vous faire quitter votre véhicule...

[See Translation](#)



TÉMOIGNAGES – Franciliens, êtes-vous prêts à abandonner votre vieille voiture à l'entrée de Paris?
www.20minutes.fr

Figure 4. French Media Source - 20 Minutes

2. TV 5 Monde

 TV5MONDE
October 24

TV5MONDE + DOCUMENTAIRE : Le gratuit du mois "Cent Regards sur le Monde" dresse l'état des lieux du Québec ! <http://goo.gl/vr3oO>

[See Translation](#)



Figure 5. French Media Source - TV 5 Monde

3. Paris

	<p>La Ménagerie sous la neige</p> <p>Les orangs-outans de la Ménagerie, le zoo du jardin des Plantes jouant dans la neige</p>
<p>Like · Comment · Share</p>	

Figure 6. French Media Source - Paris

4. Musée du Louvre

 Wyatt Research Study shared Musée du Louvre's photo.
March 19

Entrée Porte Saint-Germain-l'Auxerrois



Figure 7. French Media Source - Musee du Louvre

5. Paris Match

 Paris Match shared a link.
3 hours ago near Paris, Ile-de-France 🌐

	<p>Critique ciné. "L'Attentat". Ma femme est kamikaze – Paris Match www.parismatch.com</p> <p>«L'attentat», de Ziad Doueiri –une adaptation du livre de Yasmina Khadra– pose l'insoutenable</p>
---	--

Figure 8. French Media Source - Paris Match

6. Slate France

	<p>Alcool: quel exemple donner à ses enfants? Slate www.slate.fr</p> <p>Quel impact leurs comportements peuvent-ils</p>
---	--

Figure 9. French Media Source - Slate France

7. France 24

Scandales, effondrement du catholicisme, dialogue inter-religieux: autant de dossiers que Benoît XVI a eu du mal à faire avancer et auquel le nouveau pape François va devoir s'atteler. Revue de détails. <http://f24.my/ZphpAb>



Figure 10. French Media Source - France 24

8. France Culture

Wax Tailor "The Sound"

Session enregistrée le 11 septembre 2012 au studio 108 de la Maison de Radio France.

Wax Tailor était l'invité de Laurent Goumarre dans l'émission Le RenDez-Vous avec le réalisateur Michel GONDROY et Erwan BOUROLLEC.



Figure 11. French Media Source - France Culture

9. Lu, Vu & Entendu



Figure 12. French Media - Lu, Vu & Entendu

10. France 3



Figure 13. French Media Source - France 3

APPENDIX J
TYPES OF FACEBOOK POSTS USED IN STUDY



Figure 14. Facebook Post Type – Link



Figure 15. Facebook Post Type - Photo

 **Wyatt Research Study** shared a link via **PARIS**.
March 14 

 **La Ménagerie sous la neige**
Les orangs-outans de la Ménagerie, le zoo du jardin des Plantes jouant dans la neige

Like · Comment · Share

Figure 16. Facebook Post Type - Video

APPENDIX K
FRENCH LANGUAGE FACEBOOK POSTS USED IN STUDY



Wyatt Research Study
30 likes

University
This page has been created to support the research into online social networks conducted by Shelly Wyatt, B.A., M.L.S. Shelly Wyatt is currently a doctoral candidate in the college of

About

Photos Likes SurveyMonkey

Wyatt Research Study asked a question.
March 27

I liked this page

Yes +7
Hell yes +2

Like · Comment · Share

125 people saw this post

Wyatt Research Study shared a link via Slate.fr.
March 20



Alcool: quel exemple donner à ses enfants? | Slate
www.slate.fr

Quel impact leurs comportements peuvent-ils

Like · Comment · Share

21 people saw this post

Share this Page with more friends

Wyatt Research Study shared a link.
March 24

French Language Facebook Study Participants Only!

As the final step in this study, please take the survey below. I so appreciate your time in helping me with study! :-)

<https://www.surveymonkey.com/s/7QP8XML>

Please note: If you are not a participant in this study, please do not take this survey. Thanks!

French Language Facebook Study (Group B) – Retake Survey
www.surveymonkey.com

Like · Comment · Share

25 people saw this post

Wyatt Research Study shared FRANCE 24's photo.
March 20

Sur Les Observateurs de France 24 – Témoignage d'un djihadiste tunisien en Syrie : "Dans mon unité, il y a plusieurs nationalités : des Tunisiens, des Kosovars, des Tchétchènes" <http://f24.my/XU9fEo>



Like · Comment · Share

22 people saw this post

Wyatt Research Study shared PARIS's video.
March 19

La Tour Eiffel ne sera pas détruite
Gustave Eiffel sauve la Tour Eiffel en proposant d'en faire une antenne radiophonique



Like · Comment · Share

20 people saw this post

Wyatt Research Study shared Paris Match's photo.
March 19

Dennis Rodman assure que le dictateur nord-coréen Kim Jong-Un est papa d'une petite fille
<http://petitlien.fr/DennisRodmanCoree> (Photo : Reuters/KCNA)



Like · Comment · Share

19 people saw this post

Wyatt Research Study shared PARIS's photo.
March 19

Le bassin de la villette. © Sophie Robichon/Mairie de Paris





Wyatt Research Study shared FRANCE CULTURE's video.
March 19

Wax Tailor "The Sound"

Session enregistrée le 11 septembre 2012 au studio 108 de la Maison de Radio France.
Wax Tailor était l'invité de Laurent Goumarre dans l'émission Le RenDez-Vous avec le réalisateur Michel GONDREY et Erwan BOUROLLEC.



Like · Comment · Share

20 people saw this post



Wyatt Research Study shared Musée du Louvre's photo.
March 19

Entrée Porte Saint-Germain-l'Auxerrois



Like · Comment · Share

18 people saw this post



Wyatt Research Study shared 20 Minutes's photo.
March 19

[EN IMAGES] Les Bains-Douches: Un jour un artiste

Le lieu mythique des nuits parisiennes, les Bains-Douches, est fermé depuis 2010. Cet endroit, propriété de Jean-Pierre Marois, va être transformé en hôtel en 2014. Mais d'ici là pour, ne p... See More





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18 people saw this post



Wyatt Research Study shared a link via 20 Minutes. March 18



Un hacker condamné à trois ans de prison pour avoir exploité un bug www.20minutes.fr

HIGH TECH - Andrew

Like · Comment · Share

16 people saw this post



Wyatt Research Study shared PARIS's photo. March 18

Un jour, une photo. Aujourd'hui ©Lise Marie / http://on.fb.me/118GrIM . Pour proposer à votre tour une photo, rendez-vous sur / To submit a photo, go to Paris à l'Oeil Ouvert



Like · Comment · Share

1

22 people saw this post



Wyatt Research Study shared Clémentine Mélois's album. March 18

Rêve d'évasion (Dreaming of escaping) (18 photos)



Like · Comment · Share

15 people saw this post



Like · Comment · Share

16 people saw this post



Wyatt Research Study shared Paris Match's photo.
March 18

Adriana Karembeu lance le rallye Aicha des gazelles
(Photo: Edouard Bernaux/News Pictures)

<http://petitlien.fr/AdrianaKarembeuRallye>



Like · Comment · Share

18 people saw this post



Wyatt Research Study shared TV5MONDE's photo.
March 18

À l'occasion de la semaine de la langue française,
TV5MONDE Info a rencontré la linguiste et sémiologue
Marie Treps pour qui, jouer avec la langue est une
manière de garder un français vivant.
<http://bit.ly/143knjB>



Like · Comment · Share

15 people saw this post



Wyatt Research Study shared TV5MONDE's photo.
March 18

Rencontre avec Sheryl Sandberg, directrice générale de
Facebook, avec Terriennes <http://bit.ly/14358qy>





Wyatt Research Study asked a question.
March 15

Study participants: Please respond to the following poll regarding this French language Facebook post: Les animaux de la semaine, c'est en images par ici: <http://bit.ly/NhgomD>

- (A) I read this post in French
- I viewed the photo associated with this post +1
- I translated this post into English or another Language
- Both A and B
- All of the above

Like · Comment · Share

33 people saw this post



Wyatt Research Study asked a question.
March 15

Study participants: Please respond to the following poll regarding this French language Facebook post: Du porc décelé dans des produits halal en Norvège et en Grande-Bretagne

- (B) I viewed the photo associated with this post +1
- (A) I read this post in French
- (C) I translated this post into English or another language
- 2 More...

Like · Comment · Share

32 people saw this post



Wyatt Research Study shared a link via FRANCE 24.
March 15

Du porc décelé dans des produits halal en Norvège
f24.my



I FAN IN

Like · Comment · Share

18 people saw this post



Wyatt Research Study shared 20 Minutes's photo.
March 15

[EN IMAGES] Le bébéte show

Les animaux de la semaine, c'est en images par ici: <http://bit.ly/NhgomD>



Like · Comment · Share

20 people saw this post

Like · Comment · Share

17 people saw this post

 **Wyatt Research Study** shared Musée du Louvre's photo.
March 15

Le feu aux poudres (avant 1778), Jean-Honoré Fragonard, aile Sully, 2e étage, salle A.
Ce peintre fut un grand spécialiste des petites scènes sensuelles, si caractéristiques du XVIIIe siècle en France, qui montrent beaucoup, à la fois par l'image et par le titre. Cette scène libertine est le pendant d'une autre composition conservée au Louvre, « La chemise enlevée ».

Photo © 2013 Musée du Louvre / Niko Melissano



Like · Comment · Share

17 people saw this post

 **Wyatt Research Study** shared a link via PARIS.
March 14

 **Wyatt Research Study** asked a question.
March 15

Study participants: Please respond to the following poll regarding this French language Facebook post: Le feu aux poudres (avant 1778), Jean-Honoré Fragonard, aile Sully, 2e étage, salle A.

- (A) I read this post in French
- (B) I viewed the photo associated with this post +1
- (C) I translated this post into English or another language
- Both A and B +2
- All of the above

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48 people saw this post

 **Wyatt Research Study** shared a link via 20 Minutes.
March 14



Avec le Galaxy S IV, Samsung ne change pas un smartphone qui gagne 20min.fr

HIGH TECH – Disponible à

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 **Wyatt Research Study** shared a link via 20 Minutes.
March 14



La présentation du Galaxy S IV de Samsung à suivre en direct à partir de minuit www.20minutes.fr

HIGH TECH – Samsung défie

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16 people saw this post



La Ménagerie sous la neige

Les orangs-outans de la Ménagerie, le zoo du jardin des Plantes jouant dans la neige

Like · Comment · Share

17 people saw this post



Wyatt Research Study shared FRANCE 24's photo.
March 14

Scandales, effondrement du catholicisme, dialogue inter-religieux: autant de dossiers que Benoît XVI a eu du mal à faire avancer et auquel le nouveau pape François va devoir s'atteler. Revue de détails. <http://f24.my/ZphpAb>



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16 people saw this post



Wyatt Research Study shared a link via 20 Minutes.
March 13



Les défis qui attendent Jorge Mario Bergoglio
www.20minutes.fr

RELIGION - Le nouveau pape aura notamment pour charge

Like · Comment · Share

16 people saw this post



Wyatt Research Study shared Musée du Louvre's photo.
March 14

Que fait-il ? De quelle œuvre s'agit-il ?
What is he doing? Do you know this work?



Like · Comment · Share

16 people saw this post



Wyatt Research Study shared FRANCE 24's video.
March 14

"Syrie : aux origines de l'horreur"

"Syrie : aux origines de l'horreur" - Pourquoi, après deux ans de guerre et plus de 70 000 morts, le pays est-il toujours à feu et à sang ?

Un documentaire à ne pas manquer ce soir à 19h00 (heure de Paris) sur les antennes de FRANCE 24.



 Wyatt Research Study shared Musée du Louvre's photo.
March 13

Reconnaissez-vous cette œuvre d'art ?
Qui est l'auteur ?
¿Reconoce a esta obra de arte? ¿Quién es el autor?



Like · Comment · Share

21 people saw this post

 Wyatt Research Study shared TV5MONDE's photo.
March 13

Ce soir, rendez-vous à 20h TU sur la page Facebook de TV5MONDE Info pour une émission spéciale MALI, en compagnie de Laurent Fabius et Tiéman Coulibaly !

Réagissez avec #TV5MALI sur les réseaux sociaux !



Like · Comment · Share

19 people saw this post

 Wyatt Research Study shared a link via PARIS.
March 13



Paris sous la neige - Paris.fr
www.paris.fr

Après l'épisode neigeux de mardi sur Paris et sur l'Île-de-France, le verglas recouvre de

Like · Comment · Share

21 people saw this post

 Wyatt Research Study shared FRANCE 24's post.
March 13

[SPORT] David Beckham est le footballeur le plus riche du monde avec une fortune estimée à 200 millions d'euros... Retrouvez le Top 50 avec notamment Eto'o, Drogba et bien évidemment Messi & Cristiano Ronaldo
<http://f24.my/ZKco7t>



Like · Comment · Share

22 people saw this post



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19 people saw this post

Wyatt Research Study shared Paris Match's photo.
March 12

Le nord de la France piégé par la neige
<http://petitlien.fr/NeigeFrance> (Photo : Pascal Bonniere/La Voix du Nord/PhotoPQR/MaxPPP)



Like · Comment · Share

1

Wyatt Research Study shared a link via Lu, Vu & Entendu.
March 13

Comment choisir le bon siège à table? | Slate
www.slate.fr

Cela vous est déjà arrivé: vous allez à un dîner, la moitié des convives vont

Like · Comment · Share

19 people saw this post

Wyatt Research Study shared France 3's photo.
March 12

Un petit bonjour de Paris où l'équipe Facebook a bravé la neige... Bonne journée à toutes et à tous ❤️



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22 people saw this post

Wyatt Research Study shared PARIS's album.
March 12

Ch

21 people saw this post



Wyatt Research Study shared Paris Match's photo.
March 12

Les cardinaux dans la basilique Saint-Pierre de Rome avant le début du conclave. Photo REUTERS / Stefano Rellandini



Like · Comment · Share

1

20 people saw this post



Wyatt Research Study shared PARIS's photo.
March 12

Jusqu'au 17 mars, dernières glissades pour les grands et les plus petits ><http://bit.ly/Vf5Elq>

Crédit: Louison / www.louison2.com



Il neige à Paris ! (24 photos)
Neige à Paris

12/03/2013 Jean-Baptiste Gurliat



Like · Comment · Share

22 people saw this post



Wyatt Research Study shared a link via Lu, Vu & Entendu.
March 12



Vos «like» sur Facebook disent beaucoup de votre personnalité | Slate
www.slate.fr

Ce que vous faites est ce que vous

Like · Comment · Share

10



Like · Comment · Share

15 people saw this post



Wyatt Research Study shared 20 Minutes's photo.
March 11

[EN IMAGES] Le Japon rend hommage aux victimes du 11 mars 2011 <http://bit.ly/XDkTAZ>



Like · Comment · Share



13 people saw this post

16 people saw this post



Wyatt Research Study shared FRANCE 24's photo.
March 11

MALI - Fermé durant deux mois, peu après le début de l'intervention militaire française au Mali, le lycée français de Bamako a rouvert ses portes. Signe que la vie reprend dans la capitale malienne... avec un dispositif de sécurité en conséquence. <http://f24.my/Y4W7JS>



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15 people saw this post



Wyatt Research Study shared Paris Match's photo.
March 11

"Good Morning Damascus": Syrie, état des lieux (la chronique de Jean-Pierre Duthion @halona sur Twitter) <http://www.parismatch.com/Actu-Match/Monde/Actu/Good-Morning-Damascus-Syrie-etat-des-lieux-470221/>



Wyatt Research Study shared Paris Match's photo.
March 11

Miss Russie au secours des Pussy Riot
<http://petitlien.fr/PussyRiots> (Photo : Maxim Shemetov/Reuters)



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16 people saw this post

Wyatt Research Study shared PARIS's photo.
March 11

Un jour, une photo. Aujourd'hui @Quentin Che /
<http://on.fb.me/hqcp0E> . Pour proposer à votre tour une
photo, rendez-vous sur / To submit a photo to your turn,
go on to Paris à l'Oeil Ouvert
Pyramide du Louvre



Like · Comment · Share

15 people saw this post

Wyatt Research Study shared Musée du Louvre's
album.
March 11

37e Concours de dessins d'enfants (10 photos)
Concours de dessins d'enfants de Sumitomo Life 2013

37^{ME} CONCOURS DE DESSINS D'ENFANTS DE SUMITOMO LIFE

APPRENDRE
L'apprentissage est une aventure. C'est découvrir, c'est apprendre à vivre ensemble, à partager, à respecter, à s'entraider. C'est apprendre à être responsable, à être citoyen. C'est apprendre à être heureux.

APPRENDRE AU LOUVRE
Le Louvre est un lieu unique, un lieu où l'on apprend à aimer, à respecter, à s'entraider. C'est apprendre à être responsable, à être citoyen. C'est apprendre à être heureux.

LETTRE, COULEUR, PAYS, REGIONS
Apprendre à vivre ensemble, à partager, à respecter, à s'entraider. C'est apprendre à être responsable, à être citoyen. C'est apprendre à être heureux.

A QUI S'ENVAIENT-IL EN VOYAGE ?
Apprendre à vivre ensemble, à partager, à respecter, à s'entraider. C'est apprendre à être responsable, à être citoyen. C'est apprendre à être heureux.

APPRENDRE À SES PARENTS QUI EST SUMITOMO
Apprendre à vivre ensemble, à partager, à respecter, à s'entraider. C'est apprendre à être responsable, à être citoyen. C'est apprendre à être heureux.

Attention ! Rendez-vous au plus tard le mardi 17 septembre 2013

LE CONCOURS SE TIENDE DU 10 AU 17 SEPTEMBRE 2013



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1 Ch



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1

17 people saw this post

Wyatt Research Study shared a link via 20 Minutes. March 9



«SimCity», le dernier fiasco des DRM
www.20minutes.fr

JEU VIDEO – Avec son système antipiratage misant sur le

Like · Comment · Share

18 people saw this post

Wyatt Research Study shared a link via PARIS. March 8



Le 8 mars : Journée Internationale des Femmes – Paris.fr
www.paris.fr

A l'occasion de cette Journée

Like · Comment · Share

16 people saw this post

Wyatt Research Study shared Paris Match's photo. March 8

16 people saw this post

Wyatt Research Study asked a question. March 9

Study participants: Please respond to the following poll regarding this French language Facebook post: «SimCity», le dernier fiasco des DRM http://www.20minutes.fr/high-tech/111497... JEU VIDEO – Avec son système antipiratage misant sur le toujours connecté, le titre d'Electronic Arts s'est pris les pieds dans son propre piège...

- (B) I viewed the photo associated with this post +5
- (A) I read this post in French +1
- (C) I translated this post into English or another language
- 2 More...

Like · Comment · Share

93 people saw this post

Wyatt Research Study asked a question. March 8

Study participants: Please respond to the following poll regarding this French language Facebook post: Le 8 mars : Journée Internationale des Femmes

- (A) I read this post in French +2
- (B) I viewed the photo associated with this post +4
- (C) I translated this post into English or another language
- Both A and B +1
- All of the Above

Like · Comment · Share

105 people saw this post

Wyatt Research Study asked a question. March 8

Study participants: Please respond to the following poll regarding this French language Facebook post: Droit des femmes en Iran, le combat de Shirin Ebadi

10 C

16 people saw this post

Wyatt Research Study shared Paris Match's photo.
March 8

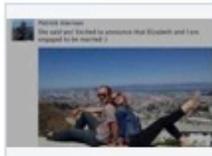
Droit des femmes en Iran, le combat de Shirin Ebadi
<http://petitlien.fr/ShirinEbadi> (Photo : Arne Dedert/DPA/MaxPPP)



Like · Comment · Share

15 people saw this post

Wyatt Research Study shared a link via 20 Minutes.
March 7



Facebook: La présentation du nouveau news feed à suivre en direct à partir de 19h
www.20minutes.fr

WEB – Mark Zuckerberg devrait

Like · Comment · Share

14 people saw this post

Wyatt Research Study asked a question.
March 8

Study participants: Please respond to the following poll regarding this French language Facebook post: Droit des femmes en Iran, le combat de Shirin Ebadi
<http://petitlien.fr/ShirinEbadi> (Photo : Arne Dedert/DPA/MaxPPP)

- (A) I read this post in French
- (B) I viewed the photo associated with this post +2
- (C) I translated this post into English or another language. +2
- Both A and B +1
- All of the above +1

Like · Comment · Share

1

124 people saw this post

Wyatt Research Study shared 20 Minutes's photo.
March 7

La DGCCRF annonce qu'lkéa a vendu 6.000 tartes au chocolat en France pouvant contenir des matières fécales... <http://bit.ly/ZgGOZY>



Wyatt Research Study shared Paris Match's photo.
March 7

Syrie. Cet enfant est-il victime d'armes chimiques ?
<http://bit.ly/Zri8ke>



Like - Comment - Share

16 people saw this post

Wyatt Research Study shared Musée du Louvre's album.
March 7

Exposition David d'Angers, dessins des musées d'Angers (2 photos)
Exposition
David d'Angers au Louvre
Dessins des musées d'Angers



Like - Comment - Share

15 people saw this post

Wyatt Research Study shared PARIS's album.
March 7

Des cours de cuisine gratuits sur les marchés (12 photos)
©François Grunberg/Mairie de Paris



Like - Comment - Share

17 people saw this post

Wyatt Research Study shared 20 Minutes's photo.
March 6

Qui pour remplacer Hugo Chavez? <http://bit.ly/10fBKwv>





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18 people saw this post

Wyatt Research Study shared a link via 20 Minutes.
March 6



Vingt observateurs de l'ONU détenus par des Syriens au Golan
www.20minutes.fr

Like · Comment · Share

16 people saw this post

Wyatt Research Study shared FRANCE CULTURE's video.
March 6

Live de Rich Aucoin « It »
Live de Rich Aucoin « It ». Enregistré dans l'émission le RenDez-Vous sur France Culture le 26 octobre 2012. Programmation musicale de Matthieu Conquet.



Like · Comment · Share

21 people saw this post



Like · Comment · Share

18 people saw this post

Wyatt Research Study shared Paris Match's photo.
March 6

Info Match. Une enquête a été ouverte dès 2009 sur la viande de cheval qu visait déjà le trader néerlandais Jan Fasen <http://petitien.fr/ViandeCheval> (Arnaud Dumontier/Le Parisien/Photo PQR/MaxPPP)



 Wyatt Research Study shared a link via FRANCE 24.
March 6



Nicolas Sarkozy évoque son éventuel retour dans l'arène politique
f24.my

Like · Comment · Share

16 people saw this post

 Wyatt Research Study shared a link via Lu, Vu & Entendu.
March 5



La pomme de terre de la Grande Famine irlandaise remise en vente | Slate
www.slate.fr

La pomme de terre dont la pénurie a

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14 people saw this post

 Wyatt Research Study shared a link via Lu, Vu & Entendu.
March 5



Porno, sextoys et yoga: le faux évêque qui a perturbé le conclave est connu pour ses excentricités e
www.slate.fr

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13 people saw this post

 Wyatt Research Study shared a link via PARIS.
March 5

Tout Gratuit! Que faire à Paris sans un rond ? - Que faire à Paris ?



Like · Comment · Share

15 people saw this post

 Wyatt Research Study shared Musée du Louvre's photo.
March 6

Happy birthday to Michelangelo Buonarroti born today in 1475 !
Living forever in our hearts

Captifs ("l'Esclave rebelle" et "l'Esclave mourant"),
Michelangelo Buonarroti dit Michel-Ange © Musée du Louvre, dist. RMN / Raphaël Chipault



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19 people saw this post

Quelqu'un à Paris ?
agenda.paris.fr

Festival artistique étudiant Ici et Demain
2013 (musique, spectacle, arts vivants, ...)

Like · Comment · Share

17 people saw this post



Wyatt Research Study shared FRANCE CULTURE's photo.
March 5

Kibera, entre déchirement et réconciliation
<http://bit.ly/13tNXhE>
Plongée dans le bidonville emblématique du Kenya avant le vote de ce lundi. Des élections générales sous tension après les terribles violences de 2007, lors du précédent scrutin. Un Magazine de Claude Guibal, avec Laurent Grout.



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16 people saw this post



Wyatt Research Study shared a link via France 3.
March 4



Le Pariteur
appli-parite.nouvelles-
ecritures.francetv.fr
ApplicationFTV - La Parité

Like · Comment · Share



Wyatt Research Study shared Paris Match's photo.
March 5

Jérôme Savary. La disparition d'un clown blanc
<http://www.parismatch.com/Culture-Match/Theatre/Actu/Jerome-Savary.-La-mort-du-clown-blanc-468996/>



Like · Comment · Share

19 people saw this post



Wyatt Research Study shared FRANCE CULTURE's video.
March 5

Carolina Chocolate Drops "Booble Be Bum Bum"
Live de CAROLINA CHOCOLATE DROPS "Booble Be Bum Bum" enregistré à Radio France le 15 octobre 2012 dans l'émission le RenDez-Vous de Laurent Goumarre. Programmation musicale assurée par Mathieu Conquet.



14 people saw this post

 Wyatt Research Study shared a link via Lu, Vu & Entendu.
March 4



Pourquoi les meilleures idées nous viennent-elles sous la douche? | Slate
www.slate.fr

Une idée créative, c'est-à-dire une

Like · Comment · Share

16 people saw this post

 Wyatt Research Study shared PARIS's photo.
March 4

Exhibition: haute couture showcased at the Hôtel de Ville
<http://bit.ly/XNXLIX> ©Marc Verhille/Mairie de Paris



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17 people saw this post



Like · Comment · Share

25 people saw this post

 Wyatt Research Study shared a link via Lu, Vu & Entendu.
March 4



Israël met en circulation des bus réservés uniquement aux Palestiniens | Slate
www.slate.fr

Depuis ce lundi 4 mars, deux

Like · Comment · Share

15 people saw this post

 Wyatt Research Study shared 20 Minutes's photo.
March 4

Haute-Savoie: Une fillette de dix ans se tue en ski
<http://bit.ly/ZWIKdI>





Wyatt Research Study shared a link via FRANCE24.
March 4

L'eau à la bouche : Recette oeufs pochés sauce Morilles

La recette du chef Olivier Perez de "La Brindille" à Paris. Retrouvez l'intégralité de la recette sur le site L'eau à la bouche. <http://eaualabouche.blogs.france24.com/>

Like · Comment · Share

24 people saw this post



Wyatt Research Study shared TV5MONDE's photo.
March 1

Avec Terriennes – La population du Moyen-Orient et du Maghreb se déplacent au Liban pour consulter Sandrine Atallah, la première sexologue libanaise. Dans un pays où la sexualité est un sujet tabou, la jeune femme s'est fait connaître sur YouTube dans l'émission "Lezim taaref" (Tu dois savoir). <http://bit.ly/ZSHGmP>



Like · Comment · Share

17 people saw this post



Like · Comment · Share

21 people saw this post



Wyatt Research Study asked a question.
March 2

Study participants: Please respond to the following poll regarding this French language Facebook post: Avec Terriennes <http://bit.ly/ZSHGmP>

- (A) I read this post in French +1
- (B) I viewed the photo associated with this post +5
- (C) I translated this post into English or another language
- (D) Both A and B +2
- (E) All of the above

Like · Comment · Share

209 people saw this post



Wyatt Research Study asked a question.
March 1

Study participants: Please respond to the following poll regarding this French language Facebook post: Night Yourself! Les Nuits Capitales 2013

- (A) I read this post in French +2
- (B) I viewed this video associated with this post +1
- (C) I translated this post into English or another language.
- (D) Both A and B +2
- (E) All of the Above +1

Like · Comment · Share

185 people saw this post



Wyatt Research Study shared a link via PARIS.
March 1



Wyatt Research Study asked a question.
March 1

Study participants: Please respond to the following regarding this French language Facebook post: Un médicament qui réduit l'envie de boire bientôt disponible <http://goo.gl/bW3AD>

(B) I viewed the photo associated with this post. +4

(C) I translated this post into English or another language. +1

(D) Both A and B +1

2 More...

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105 people saw this post

Wyatt Research Study shared a link via Trophées Parisiens de la Glisse.
February 28

 **TPG édition 2010**
Un petit rafraîchissement de mémoire avec le teaser de 2010. Enjoy

Like · Comment · Share

16 people saw this post

Wyatt Research Study shared a link via PARIS.
February 28

La glisse s'invite à Paris
www.paris.fr

Les « Trophées Parisiens de la Glisse » vous donnent rendez-vous à partir du 03 mars 2013. Les meilleurs "riders" en roller, skate et BMX, se distingueront dans

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14 people saw this post

LES NUITS CAPITALES
Night Yourself ! Les Nuits Capitales 2013

Pour leur troisième édition depuis 2010, les Nuits Capitales deviennent « Night Yourself »

Like · Comment · Share

22 people saw this post

Wyatt Research Study shared 20 Minutes's photo.
March 1

Un médicament qui réduit l'envie de boire bientôt disponible <http://goo.gl/bW3AD>



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16 people saw this post

Wyatt Research Study shared Paris Match's photo.
February 28

Steven Spielberg présidera le jury du Festival de Cannes 2013 <http://petitlien.fr/StevenSpielberg> (Photo : Sébastien Micke)

1 · C



Wyatt Research Study shared a link via Paris Match.
February 28



Benoît XVI, les Français en pèlerinage

A l'occasion de la démission historique de Benoît XVI, des milliers de pèlerins venus du

Like · Comment · Share

16 people saw this post



Wyatt Research Study shared TV5MONDE's photo.
February 28

Photo du jour – Un agriculteur indien parmi les pastèques à Hyderabad. (© 2013 AFP)



Like · Comment · Share

13 people saw this post



Wyatt Research Study shared a link via FRANCE 24.
February 28



Like · Comment · Share

18 people saw this post



Wyatt Research Study shared FRANCE 24's photo.
February 28

IRAN / USA – Quand l'Iran et les États-Unis luttent côte à côte <http://f24.my/15QGgBO>

Alors que le Comité international olympique a décidé de supprimer la lutte du programme des JO-2020, les athlètes américains et iraniens s'unissent pour ... See More



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Poutine à Hollande : "Une bouteille de vin et de vodka pour y voir clair en Syrie"
f24.my

Like · Comment · Share

13 people saw this post

 Wyatt Research Study shared 20 Minutes's photo.
February 27

[EN IMAGES] Le prince Harry au Lesoto

Le 27 février, le prince Harry s'est rendu au Lesoto, dans le sud de l'Afrique, dans des lieux fondés par son association caritative Sentebale qu'il a créée avec le prince Seeiso. Cette ONG vient en aide aux victimes de la pauvreté et des épidémies mais en priorité ces aides vont aux enfants orphelins: <http://bit.ly/Xidy8g>



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February 27

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Le charmant secret marocain d'une star de la NBA |
Slate Afrique
www.slateafrique.com

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February 27

[EN IMAGES] La foule de la place Saint-Pierre

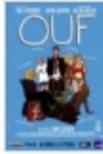
Le pape Benoît XVI a adressé ses adieux place Saint-Pierre, un jour avant son renoncement:
<http://bit.ly/ZIVbNU>



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1 ● C



Ouf - France Culture
www.franceculture.fr

Ouf Un film de Yann Coridian avec Eric Elmosnino, Sophie Quiton, Valerie Golino...au cinéma le 27 février 2013A 41

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Wyatt Research Study shared PARIS's photo.
February 27

L'exposition Paris Haute Couture ouvre ses portes à l'Hôtel de ville dans 3 jours. Tout notre dossier sur l'expo >> www.paris.fr/haute-couture
© Marc Verhille/Mairie de Paris



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February 26

A l'occasion de la sortie au cinéma de «Hansel & Gretel: Witch Hunters», tentez de remporter un séjour aux États-



Wyatt Research Study shared FRANCE 24's album.
February 27

FOTOFOCUS : DES AFRICAINS SUR LA LUNE (7 photos)
THE AFRONAUTS CIRCULATIONS © Cristina de Middel
<http://f24.my/Wi1abs>

FOTOFOCUS : DES AFRICAINS SUR LA LUNE

En 1964, la Zambie acquiert son d'indépendance et lance un programme spatial pour que les Africains aussi posent un pied sur la lun... See More



Photo © Cristina de Middel



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Wyatt Research Study shared FRANCE CULTURE's video.
February 26



Unis et partez dégommer de la sorcière à Salem (Massachusetts)!

Rendez-vous demain à 12h sur la page Facebook de 20 Minutes pour jouer!



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Highlight



Wyatt Research Study shared PARIS's photo.
February 26

La vie parisienne, dans le Marais © François Grunberg/Mairie de Paris



La pianiste coréenne HJ Lim joue l'adagio cantabile de la...

HJ LIM en LIVE dans l'émission "Le RenDez-Vous" de Laurent Coumarre. Enregistrée à Radio France le 18 octobre 2012. Présentation de Matthieu Conquet. Elle joue l'adagio cantabile de la sonate n°8, la "Pathétique" de Beethoven.



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Wyatt Research Study shared a link via FRANCE 24.
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EGYPTE – Dix-neuf personnes tuées dans l'explosion d'une montgolfière à Louxor

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Un important prix de photojournalisme a-t-il été gagné avec une photo mise en scène? | Slate
www.slate.fr

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Oscars 2013. Le triomphe d'Argo... et du cinéma - ParisMatch.com
www.parismatch.com

Au terme d'une soirée riche en

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Wyatt Research Study shared France 3's video.
February 25

Feb 25, 2013 11:16am

France 3 primé aux César et aux Oscar: découvrez le clip



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Wyatt Research Study shared TV5MONDE's photo.
February 25

Photo du jour - Une jeune femme du Bangladesh décore

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February 26

Faut-il classer les scientifiques en fonction de leur apparence physique? | Slate
www.slate.fr

Siobhan Pattwell a 29 ans, elle aime le shopping, la course à pied, les petits animaux, la cuisine et la

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Wyatt Research Study shared Musée du Louvre's photo.
February 25

Avez-vous rencontré l'AMOUR au Louvre ?

L'Amour (1802, 1817), Antoine-Denis Chaudet / Pierre Cartellier, musée du Louvre. Marbre acquis de sa veuve par Louis XVIII.

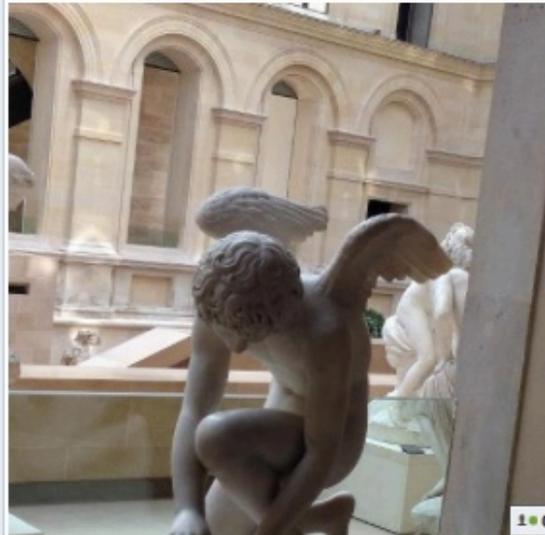


Photo du jour - Une jeune femme du Bangladesh décore de fleurs un mémorial à Dhaka, en hommage aux martyrs d'une révolte, en 1952, à l'université. (© 2013 AFP)



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Wyatt Research Study shared PARIS's photo.
February 25

Un jour, une photo. Aujourd'hui ©Basile Ducournau / <http://bit.ly/XvNQhL> . Pour proposer à votre tour une photo, rendez-vous sur Paris à l'Oeil Ouvert



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Des fatwas en Iran contre un opérateur de téléphonie 3G | Slate
www.slate.fr

Rightel, le troisième opérateur iranien de téléphonie mobile, est victime

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February 25

Elections italiennes: ni gauche, ni droite, blocage? | Slate
www.slate.fr

Ingovernabilità. Près de quatre heures après la fermeture des urnes de l'autre côté des Alpes, on

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February 25



URGENT - Oscars 2013 : "Amour" de Michael Haneke reçoit l'Oscar du meilleur film étranger
f24.my

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18 people saw this post



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21 people saw this post



Wyatt Research Study asked a question.
February 24

Hello study participants! Facebook does not allow me full access to the list of people who have "liked" this page. So, might you be able to simply click on the poll answer below so I can record your participation? Thank you so much for all of your help!

- I have liked this page +14
- (filler answer - please ignore) +0

Like · Comment · Share 1

240 people saw this post



Wyatt Research Study asked a question.
February 23

Study participants: Please respond to the following regarding this French language Facebook post: [Bientôt un vrai remède contre la gueule de bois? | Slate www.slate.fr](http://www.slate.fr)

- (A) I read this post in French +6
- (C) I translated this post into English or another language. +3
- (B) I viewed the photo associated with this post. +2
- 2 More...

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151 people saw this post



Wyatt Research Study shared a link.
February 23



Bientôt un vrai remède contre la gueule de bois? | Slate
www.slate.fr

Yunfeng Lu, professeur de génie chimique et biomoléculaire à

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20 people saw this post



Wyatt Research Study shared a link.
February 22

If you haven't been able to complete the survey associated with the study, please click the link below to access and complete the survey.

French Language Facebook Study Survey
www.surveymonkey.com



27 people saw this post

 Wyatt Research Study asked a question.
February 22

Study participants: Please respond to the following poll regarding this French language Facebook post: Les César 2013 <http://goo.gl/wxbr5> Quelques heures avant la 38e cérémonie des César qui aura lieu le vendredi 22 février, les films des réalisateurs nommés : bandes annonces, émissions de France Culture à écouter ou réécouter, nominations. (photo © MaxPPP C. Clovis)

- (A) I read this post in French +1
- (B) I viewed the photo associated with this post +1
- (C) I translated this post into English or another language +3
- (D) Both A and B +1
- (E) All of the above +1

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136 people saw this post

 Wyatt Research Study asked a question.
February 22

Study participants: Please respond to the following poll regarding this French language Facebook post: À la Française: À l'occasion de la Semaine de la langue française et de la Francophonie (16 – 24 mars 2013), mesurez-vous au quiz des mots semés au loin...

- (A) I read this post in French +2
- (B) I viewed the photo associated with this post +1
- (C) I translated this post into English or another language
- (D) Both A and B
- (E) All of the Above

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64 people saw this post

 Wyatt Research Study shared a link via Paris Match.

 Wyatt Research Study shared FRANCE CULTURE's photo.
February 22

Les César 2013 <http://goo.gl/wxbr5> Quelques heures avant la 38e cérémonie des César qui aura lieu le vendredi 22 février, les films des réalisateurs nommés : bandes annonces, émissions de France Culture à écouter ou réécouter, nominations. (photo © MaxPPP C. Clovis)



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25 people saw this post

 Wyatt Research Study shared France 3's photo.
February 22

À l'occasion de la Semaine de la langue française et de la Francophonie (16–24 mars 2013), mesurez-vous au quiz des mots semés au loin...

Pour jouer : <https://apps.facebook.com/mots-semes-au-loin/>



February 21



Israël: le "prisonnier X" dévoile ses secrets - ParisMatch.com
www.parismatch.com

La semaine dernière, la chaîne

Like · Comment · Share 1

Wyatt Research Study shared a link via Musée du Louvre.
February 21



Les Médusés. Un parcours chorégraphique de Damien Jalet au Louvre

Dernière nocturne au Louvre, vendredi 22 février 2013 à

Like · Comment · Share 1

Wyatt Research Study shared a link.
February 21



Des Saoudiennes à l'Assemblée : "Une avancée significative mais minime"
www.france24.com

ARABIE SAOUDITE - Pour la

Like · Comment · Share 1

Wyatt Research Study shared 20 Minutes's status.
February 21

[EN DIRECT] Les sept otages français - trois adultes et quatre enfants - enlevés mardi matin dans le nord du Cameroun ont été retrouvés sains et saufs au Nigeria...

>> Plus d'infos à venir sur 20minutes.fr ->
<http://goo.gl/ryqJY>

Like · Comment · Share



Like · Comment · Share

23 people saw this post

Wyatt Research Study shared a link via Lu, Vu & Entendu.
February 21



Le style, principal problème des lunettes Google ? | Slate
www.slate.fr

Google a lancé mercredi 21 février un site Internet

Like · Comment · Share 1

Wyatt Research Study shared Paris Match's photo.
February 21

Aimée, la soeur courage d'Oscar Pistorius
<http://www.parismatch.com/Actu-Match/Monde/Actu/Aimee-la-soeur-courage-d-Oscar-Pistorius-466117/>





Wyatt Research Study shared a link.
February 19

Participants in Facebook Study - Complete the Survey
Click on Survey Monkey application (above) or click
<https://www.surveymonkey.com/s/WyattFBStudy>

French Language Facebook Study Survey
www.surveymonkey.com

Like · Comment · Share

1

Like · Comment · Share

APPENDIX L
SAMPLE FACEBOOK STUDY POLL

 **Wyatt Research Study** asked a question.
March 15

Study participants: Please respond to the following poll regarding this French language Facebook post: Le feu aux poudres (avant 1778), Jean-Honoré Fragonard, aile Sully, 2e étage, salle A.

- (A) I read this post in French
- (B) I viewed the photo associated with this post +1
- (C) I translated this post into English or another language
- Both A and B +2
- All of the above

Like · Comment · Share

48 people saw this post

Figure 17. Facebook Study Poll

APPENDIX M
FACEBOOK PAGES

Pages

Facebook Pages are public pages. Companies use Pages to share information about their products. Celebrities use Pages to talk about their latest projects. And communities use pages to discuss topics of interest, everything from baseball to the opera.

Because Pages are public, information you share with a Page is public information. This means, for example, that if you post a comment on a Page, that comment may be used by the Page owner off Facebook, and anyone can see it. [Learn more](#).

When you "like" a Page, you create a connection to that Page. The connection is added to your timeline and your friends may see it in their News Feeds. You may be contacted by or receive updates from the Page, such as in your News Feed and your messages. You can remove the Pages you've "liked" through your timeline or on the Page.

Some Pages contain content that comes directly from the Page owner. Page owners can do this through online plugins, such as an iframe, and it works just like the games and other applications you use through Facebook. Because this content comes directly from the Page owner, that Page may be able to collect information about you, just like any website.

Page administrators may have access to insights data, which will tell them generally about the people that visit their Page (as opposed to information about specific people). They may also know when you've made a connection to their Page because you've liked their Page or posted a comment.

(Facebook, 2012b, Pages section, para. 1 - 5)

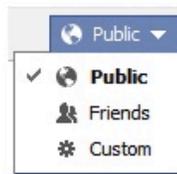
APPENDIX N
FACEBOOK AND PUBLIC INFORMATION

Public information

When we use the phrase "public information" (which we sometimes refer to as "Everyone information"), we mean the information you choose to make public, as well as information that is always publicly available.

Information you choose to make public

Choosing to make your information public is exactly what it sounds like: anyone, including people off of Facebook, will be able to see it.



Choosing to make your information public also means that this information:

- can be associated with you (i.e., your name, profile pictures, cover photos, timeline, User ID, username, etc.) even off Facebook;
- can show up when someone does a search on Facebook or on a public search engine;
- will be accessible to the Facebook–integrated games, applications, and websites you and your friends use; and
- will be accessible to anyone who uses our APIs such as our [Graph API](#).

Sometimes you will not be able to select an audience when you post something (like when you write on a Page's wall or comment on a news article that uses our comments plugin). This is because some types of stories are always public stories. As a general rule, you should assume that if you do not see a [sharing icon](#), the information will be publicly available.

When others share information about you, they can also choose to make it public.

Information that is always publicly available

The types of information listed below are always publicly available, and are treated just like information you decided to make public.

- **Name**

This helps your friends and family find you. If you are uncomfortable sharing your real name, you can always [delete](#) your account.

- **Profile Pictures and Cover Photos**

These help your friends and family recognize you. If you are uncomfortable making any of these photos public, you can always [delete](#) it. Unless you [delete](#) them, when you add a new profile picture or cover photo, the previous photo will remain public in your profile picture or cover photo album.

- **Network**

This helps you see whom you will be sharing information with before you choose "Friends and Networks" as a custom audience. If you are uncomfortable making your network public, you can [leave the network](#) .

- **Gender**

This allows us to refer to you properly.

(Facebook, 2012a, Public Information section, para. 1 – 10)

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