

Virtual Field Trips for Active, Personalized Foreign Language Learning

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Submitted to the Graduate Faculty of the
School of Education in partial fulfillment
of the requirements for the degree of
Doctor of Education

University of Pittsburgh

2021

UNIVERSITY OF PITTSBURGH

SCHOOL OF EDUCATION

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University of Pittsburgh, 2021

This mixed-methods study involved implementation of virtual field trip (VFT) projects in an online undergraduate foreign language (FL) course, with a close focus on four student participants' use of VFTs over four weeks. Participants explored an Italian city using desktop virtual reality; narrated their experiences, and created an annotated digital VFT exhibit. This study sought to determine whether VFTs increased students' opportunities for active, experiential FL learning; evaluated student perceptions of choice, personalization, and authenticity of the VFT activity; and examined the role of instructional design for VFTs. Data were derived from participant surveys, interviews, classroom observations, participant VFT use recordings and learning artifacts. Analysis of recorded VFT sessions revealed participants spoke significantly more in the target language (TL) when using VFTs than during other course activities. Significant personalization was observed in students' VFT learning artifacts. Surveys and interviews indicated participants valued the realism of the virtual environment and responded positively to the opportunity for personalized exploration of the city. The findings suggest that options for personalization contributed to students' level of interest in the VFT and motivated increased TL communication with peers. Participants reported the VFT activity supported learning both *from* and *about* their peers. Interestingly, all participants reported structuring their VFT design around relationships with family and friends whom they envisioned accompanying them on the virtual visit. This study's findings will be useful to instructors interested in VFTs as a strategy to increase opportunities for active, personalized learning in their courses.

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Preface

“The Web we know now, which loads into a browser window in essentially static screenfuls, is only an embryo of the Web to come. The first glimmerings of Web 2.0 are beginning to appear, and we are just starting to see how that embryo might develop. The Web will be understood not as screenfuls of text and graphics but as a transport mechanism, the ether through which interactivity happens.” (DiNucci, 1999)¹.

¹ DiNucci, D. (1999). Fragmented future. *Print*, 53(4), 32.

1.0 Chapter 1: The Problem of Practice in Context

This chapter begins with a description of my problem of practice and its context. This is followed in chapter two by a review of pertinent areas from the literature. Based on the Improvement Science inquiry framework, chapter three outlines the improvement goals targeting specific areas related to my problem of practice; plans for implementation of a new instructional approach, and the methods and instruments used in this study. Findings are presented in chapter four, followed by a discussion of key points and their implications in chapter five.

1.1 Problem Statement

I work as a French, German, and linguistics instructor at a regional state university, and I often teach first- and second-year foreign language (FL) courses. In my view, the ideal course learning outcome is for students to feel both interested in, and capable of continuing to learn the target language (TL) and engage with the target culture, even after they complete their two-semester FL requirement.

My institution's longstanding approach to early-level FL teaching and learning tends to be teacher-centered and textbook-driven. My problem of practice concerns how best to implement the lessons from the literature on the benefits of active, contextualized, individualized learning for early-level undergraduate FL learning.

1.2 Problem of Practice

At the university where I teach, enrollment in FL courses is trending downwards, mirroring national trends.² Commenting on this nationwide phenomenon, the authors of the Modern Language Association report of 2007 argued that persistent reliance on a traditional, one-size-fits-all instructional and curricular approach is part of the problem. Lomicka and Lord (2019) noted that this reliance still lingers and in response to declining enrollment numbers, called for innovation in FL teaching approaches.

These instructional trends can be seen in my own context of practice as well. In class surveys and informal needs assessments I have conducted, exploring learning satisfaction among my early-level FL students, many expressed a desire for more experiential, interest-led, active FL learning opportunities, and seemed disappointed in their experiences of existing textbook-based methods. Many students reported they desired more frequent opportunities for interpersonal communication in the TL on topics of personal interest. And finally, while many of our early-level FL students stated that the desire to travel abroad was a key motivator for their language study, very few of our early-level FL students reported having had the opportunity to do so. This could be due to the financial and familial responsibilities these students face. The student demographic at our institution is described more fully in the following section.

² In fact, in June 2020, our existing FL department was merged into the English department.

1.3 Context

1.3.1 Institutional Background

This section describes the larger context for our students' FL learning: who our learners are, and how our FL courses have typically been structured. Compared to peer institutions³, the urban, commuter university where I teach has a below-average overall student rate of six-year degree completion (32.9%), and a particularly low rate for African-American students (7.8%) (U.S. Dept. of Education, National Center for Education Statistics, 2018). According to 2018 student engagement survey data, our students' rate of engaging in practices such as collaborative learning, or intercultural learning, was significantly lower than at peer institutions.

1.3.2 Our Students' Typical Early-Level FL Course Experiences

Our early-level FL students are heterogenous in experience, preparedness, and initial proficiency, and nearly half could be described as first-generation or non-traditional. At our institution, two semesters of foreign language (FL) instruction are required for every B.A. degree. However, nearly 25% of students in first-year FL courses earn the lowest passing grade (C) or drop / fail / withdraw. Colleagues hear reports that some students fear taking their required language courses, sometimes delaying until late in their course of study. Students report being advised by their advisors that FL courses are difficult, onerous, and may jeopardize their GPA. It is also troubling that many students who initially report feeling motivated and interested in FL

³ These statistical peers are other regional, mid-sized state universities ("Peer institutions", 2019).

study do not maintain these attitudes as the semester wears on. Taken together, these indicators are not favorable for the long-term prospects of FL instruction at our institution, and suggest our present approach to early-level FL teaching and learning is not well-adapted to our students.

1.3.3 Early FL Courses: Our Existing Instructional Approach

An examination of our standard early-level course syllabi and instructional approaches reveals that many of our early-level FL courses are teacher-centered, and most lack the active, experiential, contextualized learning approaches known to be particularly effective for student populations with many non-traditional and first-generation students. Instead, our early-level FL students enter the classroom and encounter a textbook-driven, pre-packaged instructional sequence that is recycled semester after semester. By means of grammar-oriented projection slides and textbook-based classroom speaking exercises, perhaps punctuated by one graded skit or group presentation per semester, instructors endeavor to cover the material packaged in the course textbook. There is pressure to inculcate an extensive foundation of grammar structures, so that later courses can move on to advanced grammar structures, literary and cultural content.

Our reliance on these FL teaching methods may stem from a belief that the investment of faculty time needed to learn and adopt new pedagogical methods outweighs their perceived value. Furthermore, many FL faculty are not very well-acquainted with new methods of technology-enhanced FL instruction. These factors help explain why our institution's longstanding approach to early-level FL teaching and learning has not kept pace with gradual changes in our students' level of initial preparation, students' FL learning preferences and goals, recent developments in FL pedagogy theory, and students' increasingly digitally-mediated media consumption habits. A

causal or “fishbone” diagram (see Appendix A) offers an expanded overview of the set of factors contributing to my problem of practice.

1.4 Seeking Research-Based Pedagogy to Address my Problem of Practice

Before beginning this study, I had long been reflecting on different ways to address my problem of practice. Of the new instructional approaches I considered and tried, the use of virtual field trips for FL and culture learning stood out for its relative ease of implementation, for its potential to develop students’ digital literacy, and for the students’ positive initial responses to the learner agency and authentic resources it appeared to offer. While these initial forays into using VFTs in my courses appeared promising, I was curious about what students actually did when working with VFTs: how they used the tools, and how they learned. This motivated me to undertake a systematic study.

Seeking to better understand how this type of digital learning approach might be effective in addressing my problem of practice, I reviewed recent research on uses of technology to enhance learning, virtual field trips, standards for quality FL teaching, active learning, and the use of authentic resources. This review of literature is presented in the next chapter.

2.0 Chapter 2: Review of the Literature

This review is divided into four parts. Part one includes a review of pertinent literature on national FL teaching standards, active learning, and authentic learning resources, topics that also inform the discussion of literature reviewed in subsequent sections of the literature review. Part two is focused on benefits and challenges of technology-enhanced instruction (TEL), technology-enhanced language instruction (TELL), the use of virtual reality (VR), and virtual field trips (VFTs) in classroom learning. Part three is focused on student responses to the use of VR and VFTs for instruction, and the effects of these tools on students' approach to learning. Part four reviews literature that offers descriptions and analysis of the teacher's role in VFT creation and use.

2.1 Part One: FL Standards, Active Learning and Quality FL Learning

2.1.1 National Standards for Quality FL Learning

2.1.1.1 What Standards?

National FL standards, published by the American Council on the Teaching of Foreign Languages (ACTFL), help set benchmarks for quality FL teaching and learning and can offer rationales for change. The ACTFL standards emphasize *contextualized* language instruction, offer a benchmark for measuring improvement in FL learning, and can assist teachers in measuring improvement in their teaching practices (Shrum & Glisan, 2010). Shrum and Glisan defined

“context” in FL teaching as “the degree to which meaning and situations from the world outside the classroom are present in an instructional approach, method, or classroom activity, thus engaging learners in constructing meaning and in using the L2 to communicate and acquire new information” (p. 47).

Magnan et al. (2014) conducted a survey study of 16,000 American college students in FL courses, asking the students which of the ACTFL FL standards were the most aligned with students’ personal goals for language learning. The authors found students most valued using the target language for social interaction, and for creating social relationships with members of the target culture.

2.1.1.2 Challenges to Standards Alignment.

Glisan (2012) found shortcomings in classroom implementation of the FL standards, noting a predominance of grammar- focused activities in classroom instruction, with too little emphasis on larger communicative goals or interpersonal speaking. She concluded that the discipline (as a whole) was “still faced with the challenge of prying teachers away from the comfort of a grammar-driven curriculum and textbook and helping them to reexamine their belief system about the bigger picture of language education.” (p. 518).

In an ACTFL progress report, Phillips and Abbott (2011) noted common challenges to adoption of standards-aligned FL instruction, including: “Teacher reluctance to change with concerns on those who are unwilling to abandon a primarily grammatical syllabus, focus on textbook coverage, consider standards a waste of time, want classroom autonomy not collaboration, rely on discrete-point/pencil-paper tests, see language as the outcome not communication” (p. 9). The authors found the standards had exerted a significant influence on K-12 FL teaching, but noted that the standards had had the weakest effect on instruction “in the areas

of assessing students' ability to interact with target-language communities and providing opportunities for students to communicate with others via technology.” (p. 11).

2.1.2 Active Learning

Active learning can be divided into subcomponents in different domains of learning. In this section, I will present accepted definitions and recent viewpoints on how it is manifested in FL learning, how it can be measured, as well as arguments for its efficacy. Aspects of active learning that are particularly relevant for my problem of practice include experiential learning, and student-centered learning. Active learning is defined in the SAGE Encyclopedia of Educational Research, Measurement, and Evaluation (2018) partly by what it is not:

Unlike the teacher-centered approach where students simply listen to lectures and take notes, in active learning, students engage with the course material, participate in the class, and collaborate with others. The process affords students the opportunity to explore and develop new concepts through meaningful discussions and problem-solving situations. In active learning, students become autonomous and self-directed learners. (Active learning, pp. 39-40)

In a review of research on the prevalence and measurement of active learning approaches, Carr et al. (2015) noted that the terms student control, autonomy, self-regulation and self-directed learning were often associated with active learning.

2.1.2.1 Experiential Learning.

This type of learning, which is often self-directed, is considered a form of active learning. Kolb's (1984) foundational experiential learning model theorized that learning is a cyclic process, beginning when a person observes or takes part in a novel experience. Next, through a process of

reflection, they create a mental model of their perceived experience. Finally, the learner tests and adapts their model when they next encounter a similar experience. Kolb noted that many students in higher education have become accustomed (from previous experience) to be passive learners. He argued that teachers who include experiential learning elements in their approach to teaching could enhance student learning: “Making space for students to take control of and responsibility for their learning can greatly enhance [students’] ability to learn from experience.” (2015, p. 220).

2.1.2.2 Active Learning as Quality FL Learning.

Leo van Lier, a key theorist in the field of FL teaching and learning, emphasized the unique affordances of technology for active, student-centered FL learning and peer collaboration (2002). Van Lier framed the shift from a teacher-centered dynamic, towards an ecological language teaching approach in terms of striving for “quality language learning”, defined as increasingly complex language use, growth in learner autonomy, and positive social relationships within the classroom (2002, p. 61). This definition of quality FL learning is useful for my problem of practice intervention, because it helps set instructional objectives for using VFTs and technology.

Van Lier outlined ways digital technology could support these goals in the classroom by enabling students to use language to do things they value in workshop-style learning environments (2002; 2004; 2010). Van Lier’s ecological approach contextualizes the activities and processes of teachers and learners within a multi-layered network of social-relational, physical and symbolic levels; while aiming for quality, value, critical perspective, diversity, and learner agency (2010).

2.1.3 Evaluating Active Learning in Postsecondary Settings

Various observation protocols have been developed to evaluate levels of active learning in higher education settings. One active learning assessment tool, designed to capture qualitative data related to the use of technology and pedagogies in active learning classrooms, is the Active Learning Classroom Observation Tool (ALCOT) (Birdwell et al., 2016). The ALCOT checklist was developed for Indiana University's center for teaching and learning to evaluate students' learning experience, and to measure an instructor's success in combining the physical and technological affordances of the classroom with active learning pedagogies.

2.2 Part Two: Technology-Enhanced Learning

2.2.1 Inclusion Criteria for Literature on Technology

Digital technology, particularly virtual reality technology for education, encompasses new and rapidly developing fields. Empirically oriented articles quickly become outdated as technology evolves. Therefore, I focused primarily on scholarly articles from the past ten years, plus a small set of foundational and conceptual studies from 2000 to 2010. In addition, I included some recent handbook articles and white papers that defined the terms, trends, and uses of technology (particularly, virtual reality and augmented reality) in relation to education.

As there is still only a limited body of literature concerned with the use of digital technology and VFTs for classroom FL teaching, I also included articles on the use of this technology for social studies and geography instruction. These are relevant to FL teaching because

learning about the target culture is a national standards-aligned FL course objective. For the part of this literature review that focused on technology tools, my primary search terms were: technology-enhanced language learning, virtual reality, augmented reality, virtual field trips, and foreign language pedagogy. The key criterion for inclusion was the relevance of the publication's information or findings for the study of FLs and cultures in an undergraduate classroom setting.

In this section, I begin by briefly reviewing the background and taxonomy of the tools and concepts found in the literature on technology-enhanced instruction. Next, I discuss articles and research on the advantages, affordances, and potential challenges associated with classroom implementation of these technologies. Lastly, I include findings from the literature on how the challenges posed by these technologies were addressed in the classroom.

2.2.2 Background of the Field

2.2.2.1 Defining Areas of Focus.

Since the 1980's, the Internet has played an ever-greater role in shaping both everyday life, and education. More recently, the turn of the millennium coincided with a broad expansion in the Internet's general accessibility, as well as its technical capacity to serve as an interactive social tool. VFTs are a relatively new tool in the field of technology-enhanced learning, and as yet there is only a limited body of research on their use. To understand the background of this literature, therefore, I first reviewed sources on the successes and affordances of their larger contexts, including VR, multimedia, and technology-enhanced learning in general. Definitions for a set of six interrelated terms that are central to this literature are provided below.

2.2.2.1.1 Information and Communication Technologies (ICT).

These have been defined as “a diverse set of technological tools and resources used to transmit, store, create, share or exchange information. These ... tools and resources include computers, the Internet (websites, blogs and emails), live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting, audio and video players, and storage devices) and telephony (fixed or mobile, satellite, video-conferencing, etc.)” (United Nations Educational, Scientific and Cultural Organization [UNESCO] Learning Portal, 2009).

2.2.2.1.2 Computer-Assisted Language Learning (CALL).

Computer-Assisted Language Learning (CALL) is a sub-domain of technology-enhanced learning and refers to the use of visual, audio, text, and graphic formats accessed via technology and used for language learning. It allows for self-directed exploration and practice, teacher-guided instruction, and peer collaboration (Smith & Craig, 2013).

2.2.2.1.3 Technology-Enhanced Language Learning (TELL).

In TELL, the goal is to harness ubiquitous digital technologies to support learning. Considered the next phase of technology use in FL teaching (after CALL), TELL is characterized by utilization of multimedia, Internet, and other ubiquitous digital technologies as learning tools, with less emphasis on using an actual computer (Jahromi, 2005).

2.2.2.1.4 Multimedia.

Multimedia may be described as a complex mix of text, audio, images, animation, video, and interactive content. Generally, the term refers to a digitally mediated combination of media including video, pictures, audio, and text, offered in an interactive format. Multimedia is the term for various types of interactive digital content that may also be incorporated in a virtual field trip.

2.2.2.1.5 Virtual Reality (VR).

This is a digital tool used to extend the sensorial and experiential environment of an individual by mediating reality through technology. VR offers an alternative presentation of reality, for example: 360-degree videos, desktop 3-D simulations, or 3-D video games. Virtual reality (VR) is a digitally mediated or generated facsimile of reality that extends the sensorial and experiential environment of an individual. Desktop VR is a simpler version, experienced through a desktop computer screen (Gandolfi, 2018).

2.2.2.1.6 Virtual Field Trip (VFT).

VFTs are field trips conducted virtually, by means of digital technology such as websites, virtual gaming platforms, or video teleconferencing equipment, that enable students to learn directly from authentic environments or distant experts without physically leaving the classroom (Kenna & Potter, 2018). Teachers may use VR as the basis of a VFT, providing students with the digitally-mediated, virtual experience of a real-world location in which to explore, experience, and learn. VFTs are often augmented with a set of multimedia resources, curated by a teacher or guide, that relate to and provide opportunities to work on the VFT's learning objectives.

2.2.2.2 Terminology in Context.

To understand the relationships between the different types of educational technology and learning tools discussed in this literature review, a conceptual diagram (Figure 1) is provided to show VFTs in the context of larger technologies used for learning, defined in the preceding pages. The figure shows that information and communication technology (ICT) is the overarching domain for all the subtypes of digital technology that form part of a VFT. Both computer-assisted language learning (CALL) and technology-enhanced (language) learning (TEL / TELL) harness digital

technology for learning purposes, but TELL is a less limited term, since computers (as physical objects) are no longer a prerequisite to access digital technology. Students

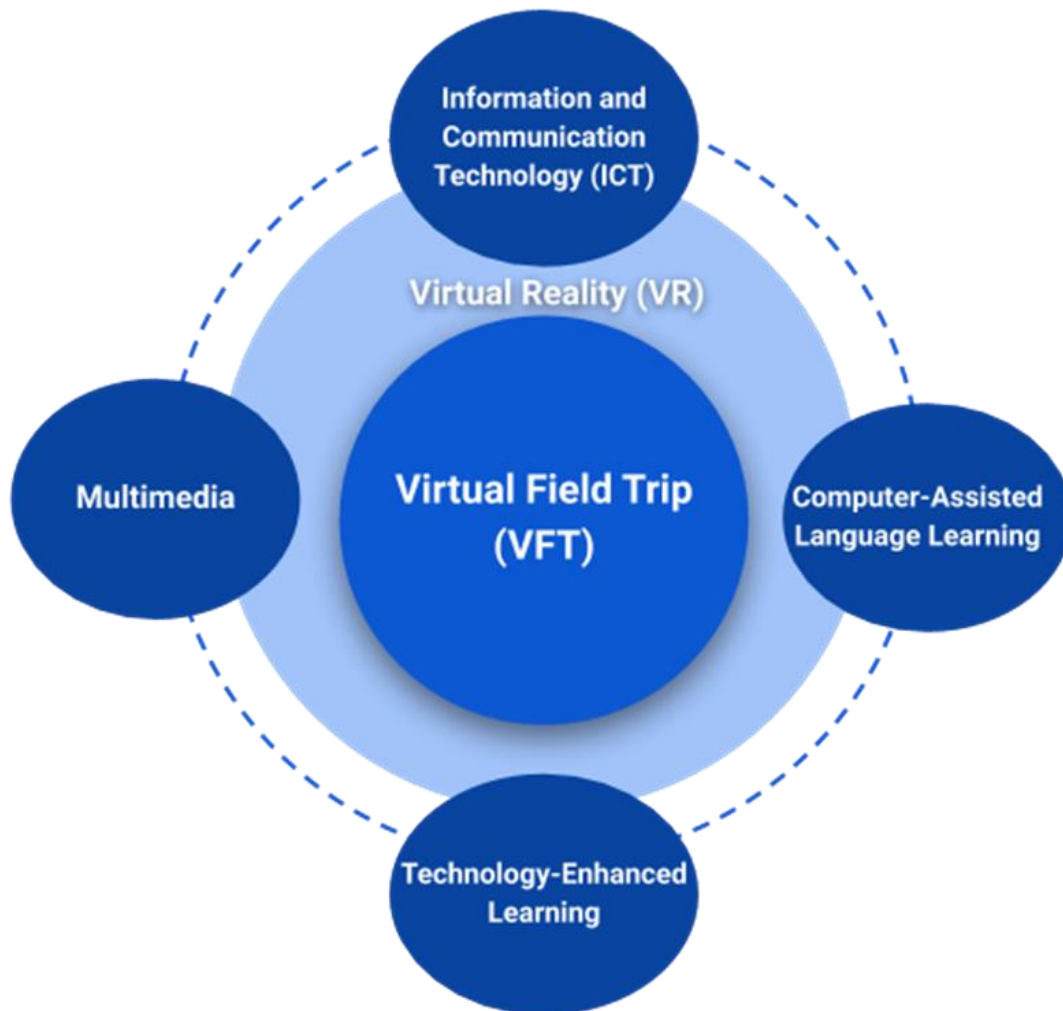


Figure 1 Technological Context of a VFT

2.2.3 General Characteristics and Affordances of the Technology

In the following section, I review sources that describe the characteristics, successes and affordances of technology-enhanced [language] learning.

2.2.3.1 Concepts and Research Trends.

To identify trends and commonalities in the topics, methods, and findings of research on language learning in VR environments, Lin and Lan (2015) carried out a meta-analysis of 29 empirical articles published between 2004 - 2013 in four leading CALL journals. They identified three frequent research topics: (1) interactive communication / learner differences, (2) learner behaviors, emotions, and beliefs, and (3) task-based instruction. In these studies, the authors found frequent use data collection focused on informal learning activities. Common challenges when using VR in the classroom included technical issues such as downtime, connectivity lags, and high equipment costs, as well as the need for significant investments of time and energy to create educational adaptations for the VR tools. Lin and Lan's meta-analysis revealed that the authenticity of VR learning environments, and the collaborative elements of its use, supported learner participation, engagement, and communicative negotiation.

Based on their comprehensive meta-analysis, Lin and Lan (2015) noted a dearth of empirical research on (1) the ways instructors' roles change in a VR classroom, (2) teachers' decision-making processes as they adapt VR tools to the language classroom; and (3) how to provide effective support for teachers' use of virtual learning environments. They called for more empirical research on these topics. Lin and Lan's meta-analysis helps establish the research context for my potential problem of practice intervention.

2.2.3.2 Contextualization and Complex Activity.

Blyth (2018) traced the historical development of CALL, culminating in today's VR and augmented reality (AR). AR is a technology emerging from VR in which digital concepts can “interact with a person's real-world environment, giving the impression that the digital world and real-world surroundings have combined” (Gajanan, 2017, n.p., as cited in Blyth, 2018). Blyth analyzed the ways emerging technologies have shifted language educators' concepts of immersion and, in turn, of language learning. Echoing van Lier (2002; 2010), Blyth argued that as language-learning technologies become more immersive, FL learning is increasingly understood as a complex social activity: heavily contextualized, thoroughly embodied, and highly experiential.

Blyth (2018) called for new FL teaching practices and research priorities to promote the development of 21st-century skills (defined as technological abilities, fostering a global perspective, that enable students to access, analyze, manage, create, and share information via different formats and media [McNeil, 2015]). In particular, Blyth recommended developing multiliteracy pedagogy for the FL classroom, seeking to answer the question: “How can teachers most effectively relate the students' lifeworlds to the lifeworlds of foreigners?” (2018, p. 229). He proposed that technology-enhanced FL instruction could narrow the gap between classroom learning environments and students' increasingly Internet-mediated life experiences.

As an example, Blyth discussed VFTs, and described how FL teachers could use Google Expeditions, a free Internet application, as a VFT tool: by combining 360-degree videos with Google Street View, it creates an immersive experience of a real-world setting, and enables teachers to take students on a “virtual reality field trip” (Blyth, 2018, p. 309). Blyth's thinking offers an interesting intersection with my problem of practice, and supports VFT use for improving FL instruction.

2.2.3.3 Authentic Contexts.

One of the affordances of technology-enhanced learning is that it can make authentic resources more accessible. Authenticity in FL learning can refer to different domains: texts, participants, the social or cultural situation and the purposes of communication (Gilmore, 2007). The ACTFL website provides this definition: “Authentic texts are defined as “written by members of a language and culture group for members of the same language and culture group” (Galloway, 1998, p. 133, as cited in Glisan, 2012). Warford and White (2012) described the affordances of TELL such as “smart classrooms. . .which offer nearly unlimited access to authentic media in ways that foster connections between the L2, its literacies, and cultural perspectives.” (p. 407).

2.2.3.4 Multimedia: Deep or Surface Learning?

Andresen and van den Brink’s (2013) curricular guide for classroom multimedia use suggested that multimedia could be considered a way to improving learning effectiveness because it enhances motivation, as a result of its capacity to promote more engagement within the learning situation. They cautioned, however, that despite multimedia’s potential to foster deep learning, some approaches to classroom application have led to surface learning, without developing an understanding of the material’s underlying structure. They pointed to van den Brink and Slack’s (2000) findings that teachers’ and students’ own attitudes towards learning and classroom multimedia use (either for quantity -- as a way to cover a lot of material quickly-- or for quality, as a way to learn a specific content in greater depth) were decisive in terms of learning outcomes. For my problem of practice, these findings suggest that the multimedia component of a VFT can promote deep content learning if students and instructors alike view it as a tool for deep investigation, rather than quick surface overview. To ensure students share this view of the tool, an explicit orientation to its purpose may be helpful.

2.2.3.5 Personalized Learning.

Petersen and Markiewicz (2008) defined personalization as an approach that enables people to have learning experiences in diverse locations, to collaborate with others in areas of personal interest, and to access learning in ways that suit their language skills, abilities and individual preferences. Their goal in developing mobile digital language-learning applications was to find a way to adapt to the skills, resources and interests of the learner, and provide access to learning outside the classroom. Furthermore, they argued that personalized learning could be seen as an outcome of the contextualization afforded by technology.

Feist and Reid (2017) conducted a school-wide, teacher-directed action research project in a Canadian high school with a diverse student population. They sought to understand (1) the successes and challenges of technology-diverse school environments; (2) the types of support needed for successful technology-enhanced, student-centered learning; (3) what pedagogical interventions supported increased technology use and student-centered learning, and (4) strategies to successfully shift to more student-centered technologically enhanced learning. Their study underlined the benefits of using classroom technology to facilitate differentiated learning. Similarly, Tate and Warschauer (2017) described a need for customizable technology-enhanced learning that engages students in authentic environments. They called for teachers to integrate technology in a way that combined customized, interest-led, creative, authentic learning opportunities with the benefits of classroom-based instruction, where a teacher can scaffold the use of technology.

2.2.4 Technology: Challenges and Recurring Problems

In the literature I reviewed on technology-enhanced [language] learning (TEL / TELL), I noted certain recurring themes among the challenges to successful implementation. These included (1) how instructors viewed these tools; (2) the amount of time needed on the part of both teachers and learners to master the tools; (3) the potential for distraction if the focus shifts to the tool rather than the lesson content; (4) inequitable distribution of technology resources; and (5) ethical risks that could accompany the use of technology tools.

2.2.4.1 How Teachers Conceptualize TELL.

Patron, Ellis, and Barret (2009) conducted a qualitative study on the attitudes of 21 university faculty members from different countries about the use of a ready-made, VFT software tool. Using questionnaires and a focus group, the authors investigated the types of beliefs and practices faculty participants held regarding effective technology-mediated learning, and found significant differences among faculty attitudes. While some faculty members focused on the quality and unique types of learning students could engage in using technology, others emphasized technology's capacity to save time and reduce instructional workload by providing students with a lot of information very quickly.

Referring to seminal research on effective technology implementation in instruction (Biggs, 2007; Ramsden, 2002), Patron et al. (2009) suggested that faculty members' emphasis on the technology itself, rather than its learning purpose, could reduce the quality of learning, and argued that maintaining a student-centered, learning-focused course design and teaching approach would help achieve a high quality of student learning. This supports arguments that firstly, how TELL is conceptualized makes a difference to outcomes (Andersen & van den Brink, 2013; Blyth,

2018) and secondly, that technological tools must not be allowed to overshadow learners or content (Tuthill & Klemm 2002; Childs et al., 2012; Lin & Lan, 2015; Ritz & Buss, 2016; Rupp et al., 2019; Makransky et al., 2017; Tate & Warschauer, 2017).

2.2.4.2 Time-Consuming.

Tate and Warschauer (2017) named three significant challenges to successful educational use of digital technology. Namely, (1) workability (inconvenience and time lost to technical glitches and maintenance), (2) complexity (the difficult task of designing effective technology integrations, and helping students learn to use new digital literacy tools), and (3) performativity (the need to prevent technology from upstaging learning content). Tate and Warschauer emphasized the important role of the teacher in choosing effective implementations for digital technology.

2.2.4.3 Cognitive Overload.

In their meta-analytical study of recent CALL research, Lai and Morrison (2013) attempted to answer the question: what support do FL learners from diverse backgrounds need to learn successfully in technologically enhanced classroom environments? They found that while technology-enhanced FL teaching and learning practices gave students a central role in managing their own learning, successful learning outcomes were jeopardized if classroom technology became overwhelming for students. Furthermore, the authors found that even technologically experienced students could not be assumed to possess the technological, metacognitive, and social learning skills needed to be active digital learners, and called for teachers to offer extra support to develop these skills.

2.2.4.4 Digital Divide.

Many researchers and practitioners discussed issues related to what is known as the digital divide (i.e., inequitable access to digital technology resources and know-how among different socio-economic groups). Feist and Reid's (2017) teacher-directed, action research study addressed the question of how -- and why-- teachers could effectively adopt new digital technologies at a Canadian high school with a diverse student population in terms of academic abilities, family supports, and socio-economic status. Focused on improving the implementation of technology-enhanced learning for classroom learning in general (not specifically for FL learning), Feist and Reid investigated the challenges and changes teachers and students faced upon integration of new digital tools for learning, and what instructional supports would be most effective for students.

Feist and Reid's (2017) analysis indicated found that effective use of Internet-based resources and new technologies was accompanied by changes fundamental classroom dynamics, including shifts in the teacher's role. In particular, they focused on differentiation of learning as a central and potentially transformative affordance of technology for classrooms with diverse students. They found that TEL permitted students to engage with the content to an individually challenging degree, while minimizing the learner's risk of losing face in a group setting. Feedback from teachers and students involved in the study suggested that adopting a less teacher-centered, more differentiated and student-centered pedagogy increased engagement and learner satisfaction. Teachers in Feist and Reid's study found that greater implementation of TEL facilitated more flexible use of instructional strategies such as combined whole class work, small group work, and one-on-one attention. This study of the teacher's role in managing learning technology adoption relates to my problem of practice because it described digital technologies' effects on classroom teaching and learning in a context with uneven student access to technology.

2.2.4.5 Ethical Concerns.

In their article, Childs et al. (2012) analyzed their experiences teaching in an undergraduate setting using VR and virtual worlds, as well as two related case studies. Based on this analysis, they emphasized the importance of considering ethical questions when using VR in the classroom. The authors described risks posed by virtual environments, such as compromising students' digital privacy, exposure to distressing content and experiences, and that time-consuming technical glitches may "waste" limited classroom learning time. On the other hand, Childs et al. argued that these risks needed to be weighed against the risks of denying students the opportunity to develop VR skills and experiences, which they characterized as an important, expanding medium.

In a curricular guide for classroom multimedia use, Andresen and van den Brink (2013) described further ethical concerns. For example, what biases may have informed the choices made by media creators, and what societal groups were included or excluded from the material? They urged practitioners to consider the ethical aspects inherent in multimedia materials, and to pay attention to copyright issues when utilizing multimedia sources.

2.2.5 Common Approaches and Solutions to these Challenges

Along with listing the challenges of technology-enhanced learning, the literature offered ideas on how to address them. There was a consensus on the need for active, informed teacher support to successfully manage these issues.

2.2.5.1 Orientation to the Tools.

Patron et al.'s (2009) qualitative study of faculty attitudes towards a VFT tool emphasized the decisive role played by instructors' orientation towards technology in the classroom. To

maximize the benefits of classroom digital tools, the researchers recommended providing conceptual support and orientation to instructors. Specifically, they recommended helping faculty develop a view of technology-enhanced learning not as a tool for efficiency and automatization of learning, but rather as a tool for categorizing knowledge creatively, for developing problem-solving abilities, and to permit learning in authentic environments.

2.2.5.2 Addressing Cognitive Overload and Classroom Time.

Feist and Reid (2017) suggested using classroom technology to make learning more self-guided, thus freeing up time for teachers to provide more one-on-one attention to students needing help. Childs et al. (2012); Lai and Morrison (2013); Feist and Reid (2017), and González-Lloret (2017), all stressed that using technology for FL learning simply because it is new, exciting, and available, is a mistake: learning how to use complex tools has a cost (it uses learning time and increases the cognitive load). Overall, there was a consensus that careful instructional planning and adapting the technology to the learners could help prevent these problems.

2.2.5.3 Supporting Learners with Training.

Based on their meta-analysis of CALL studies finding that learning outcomes were impaired when students could not manage classroom technology tools, Lai and Morrison (2013) emphasized the need to scaffold learner use of technology in the FL classroom by providing ongoing learning training. The authors defined learner training as a combination of technical support, support for self-regulated learning, as well as affective and attitudinal support. In practical terms, they suggested regularly allocating classroom time for learning to use technology tools, and building opportunities for learner self-evaluation into the curriculum.

2.2.5.4 Task-Based Teaching: a TELL Instructional Approach.

In a handbook on the evolution of CALL and task-based language teaching (TBLT), Chapelle (2014) described the ways TBLT has evolved along with the technology, and argued that carefully structured TBLT was ideal for technology-mediated learning environments. TBLT is a FL teaching approach that uses meaning-based, communicative tasks as the basis to define language learning needs, set curricular goals, create classroom activities, and assess FL competencies (International Association for Task-Based Language Teaching, n.d.). To prevent learners from becoming overwhelmed by technology, Chapelle advised following a step-by-step process of first carrying out needs analyses, then setting student learning outcomes, and finally, aligning the learning tasks, evaluations, and assessments to the instructional design plan.

2.2.5.5 TBLT Implementation Advice.

Noting its roots in Dewey's (1938) theory of "learning by doing" and Kolb's theory of experiential learning (1984), González-Lloret (2017b) also recommended TBLT as an ideal teaching and learning approach to pair with technology for active, student-centered learning. González-Lloret (2017a) advised basing technology-mediated FL tasks on real-world applications, to reflect students' desires and needs for language use. She called for teachers to explicitly define and operationalize the learning tasks; to choose carefully among the abundance of technological tools, and managing the challenges of fast-paced technological change. González-Lloret (2017b) suggested managing technological change was to incorporate FL learning technology skills as a learning objective. For assessment using a TBLT approach, she recommended prioritizing task goal fulfillment over the accuracy of discrete language items. Chapelle's (2014) and González-Lloret's (2017a; 2017b) strategies for implementing TBLT (aligned with students' desires and needs for FL learning) could be helpful in addressing my problem of practice.

2.2.5.6 Addressing the Digital Divide and Other Ethical Issues.

Blyth (2019) pointed out a growing gap between classroom learning environments and students' Internet-mediated life experiences, and called for FL teachers to evolve their pedagogical approaches to help narrow it. Childs et al. (2012) emphasized the need for instructors to keep ethical questions and students' safety in mind when using technology and VR in the classroom. Andresen and van den Brink (2013) emphasized the need for teachers to be knowledgeable about the different ways classroom technology and multimedia could introduce ethical problems, and to explicitly address problematic ethical issues with their classes. The ethical issues they referred to included employing technology to help bring change to disadvantaged communities; the role the Internet plays in social inclusion or exclusion, the importance of keeping technology accessible for learners with disabilities, and the question of equitable access to information.

2.2.6 Research Specific to VR for Learning

In this section, I focus specifically on studies related to the use of VR learning, as well as successes, and challenges, and solutions documented in the literature about their use. Findings from these studies on VR use are of interest for my problem of practice intervention because VR (as a simulated, or virtual representation of a real environment) is the essential factor in a VFT.

2.2.6.1 VR-Based Learning: a Meta-Analysis of Empirical Studies.

Merchant et al. (2014) carried out a comprehensive meta-analysis of forty (pre-2012) empirical studies on instruction based in virtual reality environments, and on the use of virtual games in teaching. They carried out statistical analysis of these studies' findings to evaluate the effectiveness of VR for learning, and identify the role played by instructional design elements.

Inclusion criteria for the sample were: (1) a K-12 or higher education setting; (2) use of experimental or quasi-experimental research designs; and (3) use of a learning outcome measure to gauge the effects of the virtual reality-based instruction. Merchant et al.'s analysis indicated that VR environments produced statistically significant positive effects on learning in K-12 and higher education settings, leading them to conclude that the instructional benefits of using VR justified the time and effort needed to use them. Their findings support the effectiveness of VR as a tool in teaching contexts similar to my own.

2.2.6.2 VR Increased Learning Satisfaction.

Pinto et al.'s (2019) study involved twelve middle-school English learners and investigated the effectiveness of a VR-based FL learning tool. The authors tested for differences in learning outcomes of FL learning comprehension lessons delivered using VR vs. a conventional method (listening to audio only). Students' sense of virtual presence and learning satisfaction were also queried. Data were gathered via a multiple-choice, post-treatment test, and a post-test questionnaire. While levels of presence and satisfaction were higher in VR, the authors found that the knowledge retention score remained the same for both experimental conditions. Overall, Pinto et al. (2019) found VR tools to be effective for FL learning comprehension outcomes, and the students who used VR reported increased satisfaction with their learning.

2.2.6.3 The Need for User-Friendly Design.

Huang and Liaw's (2018) study of 308 college students investigated learner attitudes towards VR technology. The authors measured users' perception of the usefulness of the technology, their perception that it would be easy to use, and the level of interaction learners felt the technology would provide. Huang and Liaw collected data on student perceptions of a three-

dimensional VR learning system via post-use surveys, and carried out a statistical analysis. They found that learners who felt confident that they could manage the VR learning technology, and who considered the VR system interesting and interactive, had more positive attitudes about learning with it. To prevent students from feeling overwhelmed by difficult-to-use technology, Huang and Liaw emphasized the importance of instructional planning and support.

The authors emphasized the importance of instructional planning and classroom support to prevent students from feeling overwhelmed by difficult-to-use technology. Their analysis revealed the most important factor determining student attitudes towards using the learning technology was the degree to which students considered the technology to be useful (Huang & Liaw, 2018). The results of this study confirmed the importance of taking steps to prevent students from feeling overwhelmed by difficult-to-use technology.

2.2.6.4 Technology's Potential to Distract.

Some researchers warned of potential pitfalls associated with VR use for learning. Makransky et al. (2017) found that students who reported feeling distracted by the novelty of the VR tool, and who felt a greater sense of virtual presence during a simulation, recalled fewer details about the educational content. They concluded that VR may have been overloading or distracting the learners, keeping them from obtaining the learning objectives. Rupp et al.'s (2019) study of student learning outcomes with VR also suggested that the novelty of the most immersive forms of VR or its demands on students' attention could distract from learning. While both Makransky et al.'s and Rupp et al.'s studies supported the use of virtual technology for student learning satisfaction, these studies also underscored the potential for immersive technology to distract learners from lesson content.

Likewise, Pinto et al.'s (2019) found that students using VR to learn a FL experienced a sense of virtual presence, and their overall learning satisfaction was increased. However, Pinto et al.'s study did not find lessened learning outcomes for students using VR. Compared to Makransky et al.'s project, Pinto et al.'s study was much smaller, and the participants were younger. While students report that they enjoy learning with VR, it appears the question of VR's potential to distract learners from content is still open.

2.2.6.5 Distraction and the Novelty Effect.

Rupp et al. (2019) conducted an empirical study to determine how using immersive, 360-degree, VR videos affected student learning outcomes and learning satisfaction, namely: (1) Did more immersive forms VR distract more from content learning? and (2) How did users' attitudes towards VR affect their learning outcomes? In this study, 63 university students were divided into three groups, and asked to learn and retain as much information as possible from a 360-degree educational video. The groups used devices from three levels of technology: a smartphone, a Google Cardboard VR viewer, or an Oculus Rift DK2 device. Participants were then surveyed to determine how much virtual presence they felt, their affective responses to the VR experience, and whether the VR induced feelings of motion sickness. No motion sickness was reported. However, both the set of students who reported feeling distracted by the novelty of the VR tool, and those who felt a greater sense of virtual presence during the simulation, recalled fewer details about the educational content.

To problems with distraction, Rupp et al. (2019) suggested that VR should be designed for simplicity, and that content retention could be increased if students could pause and review parts of the experience. In my teaching context, we do not have access to the most immersive forms of VR technology, so we may avoid this problem entirely.

2.2.6.6 Distraction, and VR's Cognitive Load.

In Makransky et al.'s (2017) study of 52 university students, participation in a simulated science lab was compared, using a desktop computer or an immersive, VR headset. Students engaged in both procedural, and content-knowledge learning activities. Electroencephalogram (EEG) measurements recorded participants' brain activity as they participated. Afterwards, participants' knowledge gains were measured via multiple-choice tests. They were also surveyed on their perceptions of virtual presence, their learning beliefs, and learning satisfaction.

Students in the VR group reported feeling more "virtual presence", but they had lower test scores than the non-VR group. EEG measurements showed learners engaged in the VR simulation experienced a higher cognitive load than those learning with the desktop computer. Makransky et al. (2017) concluded that VR might have been overloading or distracting the learners, keeping them from obtaining the learning objectives. On the other hand, this study's findings supported the use of virtual technology for student engagement and continuation with learning tasks.

2.2.7 Research Specific to VFTs for Learning

In this section, I focus specifically on studies related to the use of VFTs for learning, as well as successes, and challenges, and solutions documented in the literature about their use.

2.2.7.1 Early VFT Adopters.

Tuthill and Klemm's (2002) pioneering paper described their use of VFTs for K-12 for science and geography students. The authors' ideas presaged many of the key points later researchers investigated. Compared to traditional field trips, the authors noted VFTs' unique benefits, stemming from virtual technology's capacity to surmount barriers of space, time, and

geography. For example, Tuthill and Klemm noted that VFTs could give students access to environmentally fragile sites of interest, or remote, potentially hazardous locations. They described pedagogic benefits such as learner-centeredness, student control of the pace of a VFT, the incorporation of multiple modes of learning, and freeing up instructor time to work with smaller groups of students while a VFT was used (rather than real-time, teacher-led content presentation). Alone among all the articles and studies included in this review of the literature, Tuthill and Klemm felt that the technology involved in a VFT was unlikely to pose significant difficulties for students and teachers.

2.2.7.2 Comparing Traditional and Virtual Field Trips.

Kenna and Potter (2018) defined VFTs as field trips conducted using digital technology such as websites, virtual gaming platforms, or video teleconferencing equipment, that enable students to learn directly from authentic environments or distant experts without physically leaving the classroom. They called this affordance of VFTs “geographic autonomy” (Kenna & Potter, 2018, p. 268). Their case study, written from the perspective of social studies education, cited evidence that real-world field trips, as a learning tool, can provide benefits for student motivation and learning achievement. Nevertheless, the authors reported that in K-12 education, real-world field trips are not often used, and the usage trend is downward. Real-world field trips entail logistical difficulties (legal liability, costs, lack of time, transport, ADA accessibility) that inhibit their use. In light of the present dearth of real-world field trip opportunities, the authors proposed that using VFTs could be a way to make up that gap.

2.2.7.3 Subtypes of VFTs.

Kenna and Potter (2018) categorized types of VFTs as either synchronous or asynchronous, and pre-developed (as ready-made lesson material), or teacher-created. Based on their own experience, they recommended a mixed approach, in which teachers use pre-developed VFTs but supplement them with their own pre- and post-learning materials. The authors noted that some researchers found pre-made VFTs to be inferior to teacher-made ones. Pre-made VFTs were seen as less customized to the class, and potentially more commercially influenced.

Although Kenna and Potter (2018) approached VFTs from a teacher-education and K-12 social studies perspective, their work is relevant to FL teaching and learning. There is a significant overlap between social studies content and learning objectives (culture and geography) and the cultural component of undergraduate FL teaching and learning. I have not found any equally comprehensive source specifically addressing VFTs in my own field.

2.2.7.4 Unique VFT Affordances.

Blyth (2018) described ways that VFTs support classroom multiliteracy pedagogy. He proposed that teachers could use VFTs as a tool to enable students to explore the “lifeworld of foreigners” and compare it to their own life contexts (Blyth, p. 229). He described how FL teachers could use Google Expeditions, a free Internet application, as a VFT tool, by combining 360-degree videos with Google Street View to create an immersive experience of a real-world setting, thus enabling teachers to take students on a “virtual reality field trip” (Blyth, 2018, p. 309). Blyth suggested that within the authentic, multidimensional cultural and linguistic environment of a VFT, which he recommended the teacher structure as an “open Internet environment” (2018, p. 309), students could carry out learning tasks and adapt the process to their own interests and goals.

Blyth's perspective on VFTs echoes van Lier's (2002) criteria for "quality" FL learning, which emphasized positive classroom relationships, complex language use, and active learning.

Ritz and Buss (2016) described significant learning affordances of VR and AR, including the ability to assume multiple perspectives, the opportunity for contextual learning, and transfer of classroom knowledge and skills to real-world situations. Another unique affordance of FL classroom-based VFT use is its potential to combine what Reinders and Benson (2017) termed "language learning and teaching beyond the classroom" with the presence of a teacher, who can help guide the students' use of the tool, as advocated by Lai, Li, and Wang (2017), and Sanchez (2006).

2.2.7.4.1 VFTs as Active Learning.

Poland et al.'s (2003) practitioner-generated case study focused on a high-school science class of ten students for whom teachers created and implemented a virtual learning environment as a VFT. Using a mixed-methods approach, the VFT's effects on student learning were evaluated based on data gathered from interviews, participant logbooks, student work samples, and practice exams. Research questions queried the extent to which VFTs were an effective substitute for real field trips, and whether using VFTs to learn targeted skills and content produced different outcomes than traditional instruction. In this study, most students reported that learning with VFT was an enjoyable process. They appreciated the learner autonomy it afforded, finding it a convenient, low-risk, and efficient way to explore the learning site. In terms of participants' exam scores, their outcomes were comparable to those who learned the material via traditional methods.

2.2.7.4.2 VFTs as Experiential Learning.

Referencing Kolb's (1984) foundational experiential learning model, Kenna and Potter (2018) noted that VFTs tapped into experiential learning's potential to increase intrinsic

motivation, which may lead to improvement in learning outcomes and increased learner agency. They recommended teachers offer students authentic tasks and experiences that offer high-quality, varied representations of content.

Tutwiler et al. (2013) found that learners afforded autonomy to explore independently in a VFT environment gained a greater motivation to learn more about the field trip site. Similarly, Lai et al. (2017) found that students who engaged in self-directed use of technological resources for FL learning beyond the classroom were more likely to keep learning independently than students who passively followed a teacher's guidance through the VFT materials. These studies suggest the active, experiential learning approach of the VFT tool, and its capacity to digitally transport users to authentic linguistic and cultural settings, could improve student learning outcomes because it supported, and at times increased students' interest in the material.

2.2.7.4.3 VFTs For Individualized, Authentic Learning.

The results of Feist and Reid's (2017) classroom study on technology-enhanced learning highlighted ways TEL could provide the "flexible strategies with a variety of materials, time, and space" needed to support individualized learning (Feist & Reid, 2017, p. 72). Kenna and Potter's (2018) classroom study of VFT use found the approach effective for their diverse student population. They argued that VFTs tapped into experiential learning's potential to increase intrinsic motivation, and recommended teachers offer students authentic tasks and experiences that include high-quality, varied representations of content.

2.3 Part Three: How VR and VFTs Affect Students

This section includes studies dealing with the effects of VR and fully-developed VFTs on student learning, as well as student opinions about using these digital tools. These studies investigated how using technological learning tools changed students' approach to language learning, and to what extent using these tools was found to increase, or decrease interest in learning.

2.3.1 Student Responses to Virtual Reality and VFTs

2.3.1.1 Self-Directed Language-Learning Technology.

Lai et al. (2017) carried out a study of learners' self-directed use of technological resources outside the classroom. In this study of 418 undergraduate FL learners in two countries, the authors used structural equation modeling to analyze learner survey responses. Noting that autonomous use of technology for learning had been found to support FL development by enabling language exposure and use in authentic contexts, and citing literature supporting the affective aspects of language learning (Lai, Zhu & Gong, 2015; Palviainen, 2012; Sundqvist, 2011; as cited in Lai et al., 2017), the authors aimed to better understand the roles of teacher practices and other psychosocial influences on students' intentions to use technology independently for the purpose of language learning outside the classroom. Lai et al. (2017) found that teachers' in-class modeling of, and support for using technology as a language learning tool was consistently the most influential factor on students' attitudes towards / desire to use technology tools for independent language learning. They concluded that teachers needed to structure their classroom instruction to help students gain the skills and confidence needed for TELL.

2.3.1.2 VFT Autonomy Supported Interest in Learning.

In Tutwiler et al.'s (2013) empirical study, the authors attempted to understand the effects of VFTs on students' motivation to learn more about the lesson content. Eighty-two Taiwanese high-school science students participated in the study. Survey responses of students who navigated VFTs in small groups were compared with those of students who were guided through the VFT by their teacher as a whole class group. Data were collected via pre- and post-intervention knowledge assessments, and user satisfaction questionnaires. These response data were analyzed via logistical regression analysis.

Tutwiler et al. (2013) found different effects on the learning motivation of students who used VFTs to navigate educational sites in small groups, and students who merely followed along in the VFT, guided by their teacher. Students in self-guided groups were more likely to want to visit the site in person to continue their learning than teacher-led groups. Learners in this study who were given autonomy to explore independently in the VFT environment gained a greater motivation to learn more about the field trip site. Tutwiler et al. found that learners afforded autonomy to explore independently in a VFT environment gained a greater motivation to learn more about the field trip site. Similarly, Lai et al. (2017) found that students who engaged in self-directed use of technological resources for FL learning beyond the classroom were more likely to keep learning independently than students who passively followed a teacher's guidance through the VFT materials.

2.3.1.3 VFT Supported Authentic Communication.

Bai and Lavin's (2014) study investigated the use of VFTs with undergraduate nursing students. Twenty nursing students were randomly assigned to engage in nursing-skills role play using text-chatting only, or using an interactive, virtual online simulation. The research questions

were: (1) How do students respond to and learn in virtual trips? and (2) Do learners acquire such knowledge and skills differently? Data were collected via participant surveys and analysis of role-play transcripts and recordings. The researchers found that compared to the text-chatting group, the virtual simulation group was more emotionally involved in the role-play, and their conversation was more authentic, including more details. Overall, the virtual simulation group showed significantly increased participation in the VFT. Students using the virtual simulation engaged in more negotiation of meaning and co-construction of knowledge, and produced more detailed, authentic types of communication. In contrast, the group interacting via text chat performed better at knowledge sharing, but engaged far less in other higher-level social interactions, such as negotiation of meaning and co-construction of knowledge. Bai and Lavin's study supports the effectiveness of VFTs for learners to practice authentic communication, and to promote affective engagement with the content.

2.3.1.4 Case Study: Active VFT Learning.

Poland et al.'s (2003) practitioner-generated case study focused on a high-school science class of ten students. In this class, teachers created and implemented a virtual learning environment for a VFT. Using a mixed-methods approach, the VFT's effects on student learning were evaluated based on data gathered from interviews, participant logbooks, student work samples, and practice exams. Research questions centered on the extent to which VFTs were an effective substitute for real field trips, and whether using VFTs to learn targeted skills and content produced different outcomes than traditional instruction. In Poland et al.'s study, students reported that the VFT learning tool was very enjoyable, because they appreciated having the freedom to actively explore the material in the VFT. Participants commented that the VFT was a very convenient, low-risk,

and efficient way to explore the learning site. In terms of participants' exam scores, their outcomes were comparable to those who learned the material via traditional methods.

2.4 Part Four: The Teacher's Role in VFT Creation and Use

Several studies emphasized the role teachers' careful instructional planning plays in support of successful VFT implementation. In what follows, we will review what may be found in the literature on VFTs in terms of what teachers can and should do when implementing VFTs.

2.4.1 Practical Advice on VFT Design

Jacobson et al.'s (2009) case study described how they painstakingly created their own, multilayered VFT for three undergraduate geography courses, detailing the didactic process they used to implement their VFT as well as the difficulties they encountered. Data collected included student questionnaires, learner self-evaluations, and teacher observations. The authors' experiences and student responses indicated that students enjoyed using the VFT and engaged in thorough observations and analyses of complex settings. Based on their study, Jacobson et al. (2009) advised teachers to plan and prepare content well, but keep the VFT design flexible, and remain open to serendipitous outcomes. They urged teachers not to underestimate the amount of time needed to find and adapt multimedia content, to prioritize the creation of core content, and to use open access (or personally collected) materials whenever possible to avoid issues of copyright access.

2.4.2 Create Materials

Tuthill and Klemm (2002) made a distinction between "teacher-created VFTs" and "pre-made VFTs," arguing that teacher-created VFTs constituted a better pedagogic tool. Their advantages included full teacher control over the language and content presented, and the option for teachers to customize the content, linking it with relatable elements from the students' home environment. Ultimately, their experience implementing VFTs led them to recommend teacher-created VFTs over commercially available ones, because the former could be customized to the interests of the teacher's own students. Sixteen years after Tuthill and Klemm's work, however, Kenna and Potter (2018) recommended a mixed approach, in which teachers use pre-developed VFTs but supplement them with their own pre- and post-learning materials.

2.4.3 Plan for Systemic Alignment

Patron et al. (2008) emphasized the need for teachers to keep assessment goals in mind from the very beginning of planning to use a VFT tool. Their qualitative study of faculty beliefs revealed some faculty did not fully integrate the VFT tasks into the overall goals and stated learning outcomes of their courses. For effective learning design, the authors emphasized the importance of structuring VFT activities to be meaningful building blocks for overall course learning goals. To this end, echoing Chapelle's (2014) and Gonzalez-Lloret's (2017) instructional design advice for TBLT with technology, Patron et al. (2008) proposed creating a template of learning outcomes and aligning the VFT activities to it from the beginning.

2.4.4 Balance Autonomy with Teacher Guidance

Sanchez (2006) created and implemented a VFT in a primary school to compare its effectiveness with traditional, text-based approaches for learning vocabulary. Data were collected from 123 participants via learner surveys, artifacts, post-intervention vocabulary tests, and teacher observations. Qualitative and quantitative analysis of survey responses and writing samples indicated the VFT was more effective, in terms of students' use of new vocabulary in new semantic contexts. Overall, participants reported that learning vocabulary via a VFT was more fun than with the traditional method, and indicated they wished to keep using VFTs. Based on her experiences implementing the VFT, though, Sanchez found young learners easily became distracted within the open virtual environment, and advised teachers to build structure into the VFT to keep learners on track. To this end, Sanchez recommended offering more teacher guidance while learners used the VFT, or building a "storyline" into the VFT (p. 72), and proposed that increasing the amount of guided instruction might result in increased learning and deeper processing.,

2.4.5 Keep Tech in Check

Ritz and Buss (2016) created a framework for instructional design of VR and AR lessons to minimize problems with their use. They discussed VR and AR's potential constraints (lack of teacher expertise in its use, learner distraction from cognitive overload or novelty effect) and suggested strategies to reduce the likelihood of triggering cognitive overload and reducing overall learning. These included careful pre-orientation of students, careful consideration of content, differentiation, interactivity, presentation of materials, virtual / physical spaces, and the level of technical difficulty when creating VR lessons.

One of Tuthill and Klemm's (2002) early observations (how simple the technology of VFTs was for students and teachers to use) posed a significant contrast with the conclusions of many later researchers, who found VFTs often employed overly complex VFT technology that risked impairing content learning overall (Childs et al., 2012; Lin & Lan, 2015; Ritz & Buss, 2016; Rupp et al., 2019; Makransky et al., 2017; Tate & Warschauer, 2017). Conceivably, the technology available for VFTs in 2002 (mainly, simple web-browsing and videos) was inherently easier to manage than more advanced technology developed afterwards. Overall, though, a consensus emerged that teachers should maintain a balance between the level of complexity in the technology used for VFTs, and the possible learning benefits offered by the technology.

2.4.6 Adapt Technology

A commonality emerging from literature on TELL in general, and VFTs in particular, is the view that for maximum effectiveness, instructors must keep the technological aspect from overwhelming the learning aspect in terms of cognitive load, novelty effect, and investment of instructional time. In practice, this involves teachers' using their understanding of their students' context to adapt the VFT material to the learners.

To be effective, the literature suggests technology implementation must be planned carefully, the focus should be on deep rather than surface learning, and the instructional focus must remain on students' learning experience and the stated course objectives, not the technology tool itself (Childs et al., 2012; Lin & Lan, 2015; Makransky et al., 2017; Patron et al., 2009; Ritz & Buss, 2016; Rupp et al., 2019; Tate & Warschauer, 2017; Tuthill & Klemm, 2002). Otherwise, students may pay too high a cost in regard to class time spent learning how to manage the technology (Childs et al., 2012).

Nevertheless, Jacobson et al. (2009), creators of a complex, multilayered VFT-based undergraduate geography course, urged instructors using VFTs to maintain a flexible instructional approach, even when they had created extensive plans. They considered it important to maximize the unforeseen learning opportunities that arose as their students navigated the VFT (Jacobson et al.). Many researchers suggested teachers must carefully balance levels of structure and learner autonomy in VFT design. Tutwiler et al.'s (2013) findings linking autonomous VFT use and improved learner motivation align with Reinders and Benson's (2017) discussion of the ways technology-facilitated independent learning can support the development of self-regulated learning. Together, these findings suggest teachers should not impose excessive control over the way students use and progress through a VFT.

2.4.7 Scaffold Effective TELL Use

The literature reviewed in this chapter offered ideas on how to address problems with complex learning technology. There was consensus on the need for active, informed teacher intervention to successfully manage these issues. Approaches included offering ongoing training to students and instructors so they could develop a productive orientation towards the use of technology (Andresen & van den Brink, 2013; Lai & Morrison, 2013; Patron et al., 2009). Some researchers advocated the use of a task-based language teaching approach for technology-enhanced learning environments (Chapelle 2014; González-Lloret, 2017).

2.4.8 Address Ethical Issues; Consider the Digital Divide

To address ethical issues introduced by TELL, Childs et al. (2012) and Andresen and van den Brink (2013) recommended allotting instructional time to discuss ethical questions in the classroom and using careful planning time to minimize their occurrence. Others described the need for teacher support and modeling of dispositions towards technology use, finding it effective in helping students adopt technology and students bridge the digital divide (Feist & Reid, 2017; Huang & Liaw, 2018; Lai et al., 2017). Taken together, these findings suggest it will be important to plan the implementation of VFTs in a way that supports students' development as thoughtful, critical users of digital technology. I will need to allocate class time to address these issues with students, and possibly help them analyze and problematize inherent biases they may encounter in digital VFT resources.

2.4.9 Use VFTs for Differentiation and Authentic Learning

Tate and Warschauer (2017) described a need for customizable learning that engages students in authentic environments. Feist and Reid (2017) stressed technology-enhanced learning's capacity to provide the "flexible strategies with a variety of materials, time, and space" needed to support differentiated learning (Feist & Reid, 2017, p. 72). VFTs are a key example of using technology to this end, because their purpose is to allow students to expand the range of time, space, and resources they can access for classroom learning. This lends support to using VFTs as part of my problem of practice intervention, since it appears that differentiation, and promotion of learner agency, are key pedagogical affordances of VFTs. Blyth's (2018) perspective on VFTs echoes van Lier's (2002) criteria for "quality" FL learning, which emphasized positive classroom

relationships, complex language use, and active learning. Blyth suggested that within the authentic, multidimensional cultural and linguistic environment of a VFT, which he recommended the teacher structure as an “open Internet environment” (2018, p. 309), students could carry out learning tasks and adapt the process to their own interests and goals.

2.4.10 Assessment of Learning

No standard approach to assessing student learning outcomes resulting from TELL and VFT experiences emerged from the literature. Modes of learning documentation and assessment ranged from traditional and teacher-centered, such as assigning quizzes and homework essays (Jacobson et al., 2009, Sanchez, 2006), to a task-based teaching approach (Chapelle, 2014; González-Lloret, 2017), to a mix of methods, combined with portfolio evaluation (Andresen & van den Brink, 2013; Chapelle, 2014; Lai & Morrison, 2013; Poland et al., 2003; Smith & Craig, 2013). In light of Shute et al.’s (2016, 2017) arguments for new “high-quality, ongoing, unobtrusive assessments” (2016, p. 52), digitally integrated into technology-rich learning environments, it is interesting that there were no reports in the VFT literature of using the VFT itself as an assessment tool. Instead, VFTs were typically positioned as an environment in which to discover content, or to practice it.

2.4.11 Summing Up the Teacher’s Role

Collectively, the studies reviewed here stress the teacher’s critical role in effective implementation of technology for FL learning. Commonly reported approaches for addressing practical VFT implementation challenges include careful instructional planning (Jacobson et al.,

2009; Kenna & Potter, 2018; Ritz & Buss, 2016; Tuthill & Klemm, 2002) as well as keeping the complexity of VFT technology to a minimum so as not to interfere with learning (Childs et al., 2012; Lin & Lan, 2015; Ritz & Buss, 2016; Rupp et al., 2019; Makransky et al., 2017; Tate & Warschauer, 2017). Many warn that using technology for FL learning simply because it is new, exciting, and available, is a mistake (Childs et al., 2012; Feist & Reid, 2017; González-Lloret, 2017; Lai & Morrison, 2013). Lai et al.'s (2017) study found that teacher practices and promotion of TELL in the classroom were the most influential contributing factor in students' desire to use technology for independent language learning.

2.5 What the Literature Suggests for my Problem of Practice

This final section highlights a set of important connections that can be made between the literature reviewed here, and practical applications related to my problem of practice. The importance of technology-enhanced learning for students like mine is highlighted in recent scholarship calling for teachers to innovate and narrow the gap between students' increasingly digitally mediated lives, and classroom practices (Andresen & van den Brink, 2013; Blyth, 2018; Shute et al., 2017). Laird and Kuh (2005) found that using digital technology tools at the college level was positively associated with student engagement when combined with active and collaborative learning approaches.

A number of studies found that the use of VR technology changed the nature of the work students did, making it more emotionally engaging, more extensive, more detailed, and more realistic (Bai & Lavin, 2014; Lin & Lan, 2015; Lai et al., 2017; Pinto et al., 2019; Rupp et al., 2019). Some studies, however, found that overly complex forms of VR technology could distract

students from content learning and potentially hinder attainment of learning objectives (Childs et al., 2012; Huang & Liaw, 2018; Makransky et al., 2017; Rupp et al., 2019).

Many of the studies reviewed here pointed to a significant connection between effective pedagogical approaches that promote learner autonomy, experiential learning, and active learning; and learner satisfaction associated with the use of VFTs (Poland et al., 2003; Smith & Craig, 2013; Bai & Lavin, 2014; Tutwiler et al., 2013; Lai et al., 2017). For FL students, the literature reviewed here indicates that VFTs can provide FL students an opportunity for active, effective FL learning within a digitally-mediated, authentic, multidimensional cultural and linguistic context. (Blyth, 2018; Jacobson et al., 2009; Kenna & Potter, 2018 ; Poland et al., 2003; Tuthill & Klemm, 2002).

VFTs are a key example of using the affordances of technology for active, personalized FL learning in authentic contexts, because of the way the approach expands the range of time, space, and resources students can access for classroom learning (Feist & Reid, 2017). Survey responses and feedback from my FL students suggest that they want to use their developing FL skills as a tool to support interest-guided exploration of the target culture. Ideally, these students want their language skills to equip them to personally experience target-language countries, and create real links between the target culture and their own lives. Taken together, the lessons from this review of the literature suggest that using VFTs could be a promising instructional strategy to address my problem of practice.

3.0 Chapter 3: Applied Inquiry Plan

In this chapter, I will first describe how I applied the methodology and tools of Improvement Science to structure a six-week inquiry project intended to address an enduring problem of practice at the university where I teach. This includes a section on of key factors underlying my problem of practice, a set of rationales for the potential of the VFT approach to address the problem, and a list of targeted improvement outcomes.

Addressing my problem of practice involved finding a way to increase students' opportunities to engage in active, personalized, and authentic language and culture learning in an undergraduate FL course. As a focal strategy to increase these types of learning, I implemented VFT-based learning activities project with a group of students in an intermediate Italian course. The inquiry questions that motivated this study are:

3.1 Three Inquiry Questions

1. In an intermediate-level Italian class, to what extent does VFT use increase students' active learning?
2. To what extent do the four undergraduate Italian learners in this study consider VFT-based learning to be personalized and based on authentic resources?
3. As a FL teacher and designer of VFTs, what was my role in facilitating students' VFT learning experiences? What stories of students' Italian language and culture learning experiences emerge from this study of VFT use in an undergraduate Italian class?

After the section on methodology, in the second part of this chapter I have provided an overview of how the study was carried out. This includes information on how the COVID-19 pandemic influenced the study's instructional context, a description of the procedures that were followed, information on data collection instruments and tools for analysis.

3.2 Methodology: Improvement Science

3.2.1 Rationale and Background

The University of Pittsburgh's EdD program has adopted Improvement Science (IS), an emerging inquiry approach for addressing complex problems of educational practice. It differs from other research frameworks in that it aims towards a desired improvement target. IS may be defined as a "data-driven change process that aims to systematically design, test, implement, and scale change toward systemic improvement, as informed and defined by the experience and knowledge of subject matter experts." (Lemire et al., 2017, p. 25).

With the IS approach, practitioners carry out repeated small tests of change to identify and refine interventions (i.e., "changes" / potential solutions) that lead to the desired improvement outcome for a problem of practice in a given context (Bryk et al., 2015). This model for improvement is paired with a framework called the plan-do-study-act (PDSA) cycle, to collect evidence via carefully planned and measured changes in practice, study the results, and act on what is learned (Hannan & Russel, 2018).

3.2.2 Understanding Causality to Initiate Change

In the IS model, Langley (2009) specified three framing questions for improvement inquiry projects: *What are we trying to accomplish? What change can we make that will result in improvement?* and: *How will we know that a change is an improvement?* To answer these questions, the factors underlying a given problem must be identified. In IS, these factors are known as problem drivers. What follows is my analysis of key factors contributing to my problem of practice, illustrated with a driver diagram chart (Appendix B). The driver diagram shows ways the problem drivers are interconnected.

3.2.2.1 Primary Drivers.

Problem drivers are divided into primary and secondary areas of influence. Primary drivers are defined as: “A representation of a community’s hypothesis about the main areas of influence necessary to advance the improvement aim.” (Carnegie Foundation website, 2018). Practitioner experience and a review of the literature suggest three primary drivers to focus on: (a) a student-centered, active FL teaching and learning approach; (b) personalized, authentic materials and resources for contextualized learning, and (c) affordances of digital technology for active, experiential learning.

3.2.2.2 Secondary Drivers.

Secondary drivers are defined as “a small set of system components that are hypothesized to activate each primary driver.” (Carnegie Foundation website, 2018). I have focused on four secondary drivers that appear most likely to support the effectiveness of the primary drivers. These are: (a) alignment to ACTFL standards, (b) technology-enhanced language learning, (c) student

access to authentic materials, and (d) support for instructional innovation via training and technology.

The following section outlines a plan to intervene in the system of drivers underlying my problem of practice, a set of short and long-term improvement goals, the steps planned to attain these goals, and rationales supporting the effectiveness of this plan. These steps and goals form a framework called a “Theory of Improvement”.

3.2.3 Theory of Improvement

A theory of improvement is a working plan that “articulates a hypothesis, outlining exactly how you see changes in practice sparking improvement and providing a conceptual bridge from your analysis of the problem to action in the real world” (Milder & Lorr, 2018, p. 46). The core concepts underlying my theory of improvement and action include: valuing student-centered learning, closer alignment with ACTFL standards, incorporating active learning and authentic resources, and increasing access to the affordances of technology-enhanced language learning.

In Improvement Science, changes in practice undertaken to address a problem are called “change ideas”, defined as “an alteration to a system or process that is to be tested through a PDSA cycle to examine its efficacy in improving some driver(s) in a working theory of improvement.” (Carnegie Foundation website, 2018). This involves creating a strategy for intervention and represents a potential answer to Langley’s (2009) framing IS inquiry question, “What change can we make that will result in improvement?”

An analytic deflection focused on Langley’s (2009) two outcome-oriented Improvement Science inquiry questions (What are we trying to accomplish? & How will we know that a change is an improvement?). yielded indicators of improvement linked to core concepts underlying my

theory of improvement and action: *active learning*, *personalized learning*, and *learning with authentic resources* in an undergraduate Italian course.

3.2.3.1 Active Learning.

In the context of this study, evidence of active learning could include: when VFTs are implemented, students spend more class time on interpersonal TL communication than before. Students report learning with the VFT offers more opportunities to learn things that align with their interests.

3.2.3.2 Personalized Learning.

Petersen and Markiewicz (2008) argued that language learning embedded in authentic digitally mediated contexts facilitates personalized learning. I consider this central to VFT-based learning, if personalization (adapting to specific learners) can be seen as a corollary of contextualization (meaning, moving away from generalized). In the context of this study, significant diversity of student VFT work artifacts and communication topics can serve as indicators that students have personalized what they learn according to their interests.

3.2.3.3 Learning with Authentic Resources.

Contextualization has been defined as “the degree to which meaning and situations from the world outside the classroom are present in an instructional approach,” allowing learners to use the TL to explore, communicate, and learn (Shrum & Glisan, 2010, p. 47). I consider texts, cultural products and environments that are generated within the target culture to be authentic resources. In this study, indicators for authentic learning could include: students use (and report using) a wider range of authentic materials and resources during VFT lessons than during traditional

lessons. Students discover, learn, and speak about cultural features that go beyond the basic VFT lesson plan.

3.2.4 An Idea for Change: Virtual Field Trips

Evidence from the literature suggests that implementing VFT-based teaching and learning could be an effective step towards improving instruction in an undergraduate FL class. VFTs are amenable to active, personalized FL learning, since teachers create VFT-based tasks and activities for their classes to provide a digitally mediated, authentic context for learning. Students can adapt the way they work on VFT-based tasks to their personal interests. This approach has the potential to support instructional alignment with national FL standards for communication, cultures, and communities.

Furthermore, our students' feedback and informal survey responses in previous years suggests they want their language skills to equip them to experience authentic linguistic and cultural resources, and create real links between the target culture and their own lives. While actual immersion in the target culture and language remains a remote aspiration for many of these students, VFTs offer a way for students to transcend geographic, financial, temporal, and even pandemic-related constraints to access authentic contexts for learning.

3.3 Overview: How the Study Was Conducted

This section begins by providing a description of the special instructional context in which this study took place. This is followed by information on how the study was carried out: the

sequence of procedures and instruments used for data collection, the types of data that were collected, and a table that links the instruments, procedures, and data sets back to the inquiry questions they were used to address.

3.3.1 Context of the Study: Pandemic Effects

Due to the COVID-19 pandemic, all FL courses at our university in fall 2020 took place via remote, synchronous videoconference. This new teaching and learning environment meant that every interaction and communication between students, peers, and instructors was mediated by online technology such as email, online videoconference, and the institutional learning management system.

In the Italian course that was the setting for this study, the students and instructor kept webcams turned on for all class meetings. Even so, the participants' comments indicated they did not consider the pandemic-induced, remote learning modality to be an improvement over in-person instruction. Three participants mentioned the pandemic had forced the cancellation of their long-awaited, summer study abroad plans in Italy. The turmoil and feelings of isolation students faced in 2020 formed part of the background of this study, and its effects are reflected in this participant comment:

Like, for my other courses for Education, the teacher checks in, we say hello. And then we turn off our camera and we're muted. And we have no video for like the rest of the class unless we answer questions. I'm not enjoying this at all. And to be honest, I'm not learning anything.

3.3.2 Preliminary Steps

Before the study began, I received an IRB exemption for this project from my institution and the University of Pittsburgh. I visited the class in which my study took place via videoconference, explained about my study, and invited the students to participate. Consent forms were administered and signed electronically. I set up a VFT activity based in Venice, Italy for students in the class to use, which is described in greater detail in the next section.

3.3.3 Data Collection

3.3.3.1 Instruments and Data Types.

Table 1 shows the instruments used in this study to collect both open-ended qualitative data and quantitative data. This table indicates the week in which the instruments were used, and the inquiry questions to which each instrument and data source were linked. Those instruments that are included in the appendices are also indicated.

Table 1 Instruments and Data

Instrument	Data Collected	When Used	Informed Inquiry Question	Appendix
Videoconference recording software	All class and VFT session observations	Every session, weeks 1 - 6	1, 2, 3	<i>n/a</i>
Digital Research Journal	Class observation notes, participant comments	Every session, weeks 1 - 6	1, 2, 3	<i>n/a</i>
Digital VFT Exhibit Platform	Participant VFT artifacts	Weeks 2 - 6	1, 2, 3	I
Audio transcription software	Transcripts of class and VFT session audiorecordings	Weeks 1 - 6	1, 2, 3	<i>n/a</i>
Survey 1	Open-ended and Likert-Scale responses	Week 2	1, 2	C
Survey 2	Open-ended and Likert-Scale responses	Week 4	1, 2, 3	D
Survey 3	Open-ended and Likert-Scale responses	Week 6	1, 2, 3	E
Semi-Structured Interviews	Spoken participant responses	Weeks 4, 5	1, 2, 3	G
Focus Group Discussion	Spoken participant responses	Week 6	1, 2, 3	J

A total of three surveys (see Appendices C, D, & E) were administered to participants via email, in weeks two, four, and six of the study. I collected a set of video and audio screen-recordings of every class session during the six-week study, and kept a digital research journal in which I recorded observation notes on each class and each session of student VFT use. A videoconference tool and screen-recording software were used to record participants' VFT work sessions, semi-structured interviews, and a final Focus Group discussion. Transcriptions of the spoken data were made using an online audio transcription application. Participant learning artifacts (VFT exhibits) were collected in digital format and as PDF files for backup.

3.3.4 Description and Sequence of Inquiry Intervention

3.3.4.1 Collecting Observation Data on VFT Use.

During the six weeks of this study, the Italian class had eleven regularly scheduled (50-60 minute) videoconference class meetings. In cooperation with the course instructor, I implemented VFT-based activities in four of the online videoconference Italian course meetings. Due to technical limitations on screen-sharing via the instructional videoconferencing system, I also conducted and recorded eight approximately 30-minute videoconference sessions with participants outside of class time. These included four single-participant VFT sessions, and four two-participant VFT partner activities. Complete information on dates, duration, and type of these observation sessions may be found in Appendix F (Table 11).

3.3.4.2 What Took Place in VFT Sessions.

The full set of VFT instructions and materials provided to students are included in the appendices. Some of the activities are described more fully in the Findings chapter.

3.3.4.2.1 Session One.

For the first VFT activity, an orientation session in week three of the study, all six students and the course instructor were provided with individual online VFT exhibit platforms set in Venice, Italy. I pre-loaded the VFT platforms with three user guidance sections and seven open-ended activity prompt sections to help scaffold the virtual visit to Venice.

During the 30-minute orientation, I showed students how to use digital tools to construct a two-day virtual visit to Venice, and responded to their questions. Students were asked to use a digital streetscape mapping and imaging tool to wander through the streets and buildings of the Venice; and to find Italian-language websites to explore cultural and tourist offerings in the city.

They were asked to document their discoveries and plans by posting screenshots and links in their VFT framework, and to annotate their posts with written Italian explanations for each choice. This was followed by a 10-min. workshop session for students to begin their VFT projects in class.

3.3.4.2.2 Sessions Two and Three.

In weeks four and five of the study, I conducted two additional 25-min. in-class videoconference workshops. This allowed all the students to use class time to build their VFTs and have access as needed to one-on-one instructor guidance. The course instructor offered assistance with language and culture questions, and I offered help with digital tools and suggested ways students could further develop their VFT projects.

3.3.4.2.3 VFT Sessions Recorded Outside Class Time.

Sessions outside of class time were scheduled only with the four study participants. There were two steps: a solo VFT session, and a partner VFT session. Once these remote videoconference meetings were underway, I stepped away from the computer that was hosting the videoconference so that participants could work on their own (though they knew all sessions were recorded). When participants signaled via email that they were done, I returned to my computer, and concluded each session with a brief semi-structured interview (see Appendix G) to discuss how the session had gone.

3.3.4.2.4 Solo VFT session recordings.

I asked each participant to continue building their VFTs for 30 minutes, and to narrate their ideas and choices out loud in Italian. Participants were aware that in the next session, they would present their VFT plans to a fellow participant. Though it was not required, participants reported spending an additional 1-2 hours finalizing and editing their VFT projects on their own time before their partner presentations.

3.3.4.2.5 Partner VFT Session Recordings.

I set up four approximately 30-minute partner VFT videoconferences with pairs of participants, but permitted them to continue working longer if they wished. Each participant used the TL to present their VFT projects to their partner, explain their choices, and provide background. Paired participants met twice so each could present to the same partner. The non-presenting partner's role was to comment and ask questions in Italian about their partner's VFT. To facilitate this, I provided a set of TL question phrases (Appendix H), but participants were free to ignore them and ask other questions.

3.3.4.2.6 Final In-Class Presentation.

In the final week of the study, a full class session was dedicated to in-class student presentations of final VFT projects. Students shared their screens and gave approximately 10-minute presentations of their VFTs, in Italian, to the entire class. Links to digital copies of completed participant VFTs may be found in Appendix I. After the student presentations were complete, I conducted a final Focus Group discussion (questions in Appendix J) with the students and instructor to learn more about participants' responses to seeing all the completed VFT projects.

3.3.5 Data Analysis

3.3.5.1 Analytical Tools.

This section describes some of the analytical tools (digital and conceptual) used to understand the data collected during the study.

3.3.5.1.1 Use of Transcription.

To transcribe the samples of audio-recorded participant speech I collected, I used an automated online transcription tool that generated full, time-stamped transcriptions. I added

punctuation as appropriate, and omitted repeated filler words (e.g., like, um) from the participant comments used in this report. For the semi-structured interviews and the focus group discussion, I was interested primarily in participants' ideas and perceptions of how they learned with the VFT. For the audio-recordings of class sessions and participants' VFT activities, I was also interested in the amount and type of spoken communication participants produced.

3.3.5.1.2 Research Journal.

I used a digital logbook both to collect observational data, and as a tool for inductive and recursive data analysis throughout the six-week data collection period. I reviewed my research journal notes on classroom observations to identify possible connections between what I observed, and participant survey, interview, and focus group responses. These results were then compared to data collected via video recordings of class sessions and VFT use sessions.

3.3.5.1.3 Conceptual Tools.

As a framework for organizing and understanding levels of active learning in learning artifacts and observational data I collected in regular class sessions and VFT use sessions, I applied a set of active learning questions as an analytical tool. I adapted these questions from Birdwell et al.'s (2016) active learning checklist and the ACTFL standards for FL teaching.

To help identify aspects of authentic learning in the observational data, participant comments and student work artifacts I collected, I drew upon Ozverir et al.'s (2016) list of 11 design principles for authentic FL learning. While the authors conceived of the list as a design guide, I found it to be a useful analytical tool as well. This process is described in further detail in the Findings chapter.

3.3.5.2 Quantitative Data.

Quantitative data sources for this study were drawn from audio and video recordings of class sessions, observation data collected in the Research Journal, Likert-scale items in Surveys 1-3, participant VFT learning artifacts, and audio and screen-recordings of students' VFT work. I used Microsoft Excel to compile descriptive statistics from Likert-scale and score data. Quantitative data and observational data from the research journal video recordings were sorted by type into tables. These data were then compared with the qualitative data set.

3.3.5.3 Qualitative Data.

Qualitative data sources for this study included the Research Journal, Surveys 1-3, semi-structured interviews with participants, and the Focus Group discussion. To transcribe the samples of audio-recorded participant speech, I used an online transcription tool. To begin analysis of the qualitative data, I organized the transcriptions, and open-ended student survey responses in a word processing document. Using a form of inductive thematic analysis described by Braun and Clarke (2006), I combed through and coded the written data multiple times to identify potential patterns and relationships in the data. Via this recursive process, I developed a set of themes, and counted the codes that were associated with the themes I found. To interpret these themes, in relation to the quantitative and observational data I collected, I considered possible connections to the three inquiry questions.

3.3.5.4 Trustworthiness and Credibility.

To establish a level of trustworthiness for my data analysis and findings, I relied on techniques recommended by Lincoln and Guba (1985) including triangulation, persistence of

observation, maintaining a recording trail (audio and video recordings, and transcripts), and a member check.

In this context, triangulation meant I collected and compared multiple sources and types of data to answer the inquiry questions. To create prolonged engagement, I observed every Italian class meeting throughout the six-week study, including the first two weeks of the study when I essentially did not intervene, only observed. I considered plausible alternative interpretations of my findings and discussed these with my dissertation advisor, and with colleagues at my institution, including the Italian course instructor in whose class the study took place.

After the study had been carried out, I conducted a member check with the participants. I gave the participants access to an online copy of the study's preliminary findings and discussion, and invited them to provide feedback on the accuracy of my interpretations. The participants' feedback aligned with my representation of the findings. Interestingly, one participant reported they had already shared what they learned about using the VFT approach with classmates in their FL teaching methods class.

4.0 Chapter 4: Findings

The three inquiry questions motivating this study are restated below. Following the inquiry questions, I present the findings for inquiry questions one, two, and three, organized around data sources and analysis. The last section of this dissertation in practice will discuss the meaning of findings and implications for instruction and the use of virtual field trips.

4.1 Three Inquiry Questions

1. In an intermediate-level Italian class, to what extent does VFT use increase students' active learning?
2. To what extent do the four undergraduate Italian learners in this study consider VFT-based learning to be personalized and based on authentic resources?
3. As a FL teacher and designer of VFTs, what was my role in facilitating students' VFT learning experiences? What stories of students' Italian language and culture learning experiences emerge from this study of VFT use in an undergraduate Italian class?

4.2 Scope of Project

In this six-week study, I implemented VFT-based learning activities in an intermediate-level undergraduate Italian class as a focal strategy to increase active, personalized language and culture learning using digitally-mediated authentic resources. For these activities, the VFT students

first used a digital map application and a digital exhibit curation tool to create, document, and annotate a virtual trip to Venice (see Appendices F & G). Next, pairs of participants presented their VFT plans to one another. For the final step, each participant presented their VFT to the entire class.

The purpose of this study is to monitor this innovation to the Italian language program; to prompt students to reflect on their prior language learning experiences and their experience with this approach; and to document any notable differences in student reactions and participation related to this approach, and previous Italian language learning.

To this end, the first two inquiry questions focus on discovering how these students' experience using VFT activities, in terms of *active, personalized, and authentic resource-based learning*, compared to their previous classroom Italian learning experiences. The third inquiry question has two connected parts. Namely: (1) describing and understanding my role as a teacher who designs and implements VFT activities; and (2) recounting representative stories of language and culture learning participants shared as they used and reflected on the new digitally-mediated approach to learning Italian language and culture.

4.3 Participants

Six students were invited to join the study. Four volunteered: three women and one man, ranging from 20-23 years old⁴. All participated fully throughout the study. Background

⁴ In this paper, following APA 7 style I will refer to students and the instructor using the pronouns “they” and “their” to support confidentiality (American Psychological Association, 2020, p. 121).

information about these four Italian learners may be seen in Table 2. Participant codes will be abbreviated as P1, P2, P3, P4 in the findings.

Table 2 Participant Characteristics

<i>Characteristics</i>	<i>Participant 1</i>	<i>Participant 2</i>	<i>Participant 3</i>	<i>Participant 4</i>
Italian major or minor	Major	Major	Minor	Minor
Years of high school Italian?	4	4	0	0
Undergraduate TL credits	16	26	28	19
Previously visited Italy?	Yes	Yes	No	Yes
Previously studied in Italy?	No	Yes	No	No
Heritage learner? *	No	No	No	Yes
<i>Instructor estimate of TL proficiency**</i>	<i>Advanced Low</i>	<i>Intermediate High</i>	<i>Intermediate Mid</i>	<i>Intermediate Low</i>

*Heritage learner defined as hearing Italian spoken at home.

**TL proficiency based on ACTFL oral proficiency guidelines.

4.4 Details of Data Collection and Analysis

The first two inquiry questions asked if students' use of VFT activities increased the amount of active, personalized, authentic-resource-based learning they experienced. The findings are organized around three specific aspects of learning posed in the questions: a) active learning, b) personalized learning, and c) learning grounded in authentic resources.

To address the first inquiry question concerning *active learning*, I analyzed participant survey and interview responses, as well as six weeks of class observation notes and video recordings from VFT activity sessions that occurred both during and outside of class. Complete information on dates, duration, and types of observation sessions are shown in Appendix F (Table 11). To answer the second inquiry question, I analyzed participant survey and interview responses

and examined participants' VFT work artifacts to evaluate the extent to which the work could be considered *personalized* and based on *authentic resources*. Data were derived from e-mail surveys, semi-structured interviews, and one in-class focus group.

4.5 Inquiry Question One: Did VFT Activities Increase Active Learning?

Active learning is defined as a process offering students the opportunity to explore and develop new knowledge through meaningful discussion and problem-solving, in a way that helps students become autonomous, self-directed learners. This section first presents the outcome of the active learning question analysis, with related findings from participant interviews. This is followed by a description of active learning themes and codes that emerged from participant responses.

4.5.1 Active Learning Questions

To compare observation data and artifacts collected from regular class sessions with data collected on the VFT activities, I applied a set of active learning questions as an analytical tool. These questions were based on Birdwell et al.'s (2016) active learning checklist and the ACTFL FL standards. Table 3 includes active learning questions that focused on identifying learning objectives (Question 1), comparing the amount of meaningful Italian discussion participants engaged in (Questions 2 & 3), and opportunities for students to use Italian to collaborate and share their learning with peers (Questions 4 & 5). These features are key indicators of active language learning.

Table 3 Active Learning Comparisons

1. What were the overall learning objectives?	
VFT Activities	Regular Class Sessions
<ul style="list-style-type: none"> • Use Italian to interpret digital media. • Write, narrate and present a personalized set of virtual travel activities in Venice, Italy. • Use digital tools to explore, document, and curate authentic resources from the target culture in Italian. • Gain personal experiences of the target culture and reflect on those experiences orally and in writing in Italian. 	<ul style="list-style-type: none"> • Use Italian to interpret Italian modernist literature and films. • Learn about historical and literary context and discuss the material in Italian. • Improve writing and speaking skills, build vocabulary related to literature, and improve mastery of advanced grammar structures. • Develop students' ability to think critically about Italian literature.
2. How much spoken Italian communication did each student produce per session?	
Three VFT Sessions:	Regular Class Sessions:
Minutes of Speech (a, b, c)	Minutes of Speech (d)
<p>(a) Solo VFT narration</p> <p>(a) P1: 35 (a) P2: 41 (a) P3: 60 (a) P4: 28</p> <hr/> <p>(b) Paired VFT conversation</p> <p>(b) P1: 38 (b) P2: 36 (b) P3: 42 (b) P4: 34</p>	<p>(d) Of 414 total mins. regular instruction, each participant spoke: (approx. total mins.)</p> <p>(d) P1: 9 (d) P2: 15 (d) P3: 14 (d) P4: 8</p>

<p>(c) Final VFT presentation</p> <p>(c) P1: 10 (c) P2: 10 (c) P3: 8 (c) P4: 7</p>	
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3. How much written Italian was produced in selected tasks?

VFT Activities 1 – 3

6 Weeks Regular Class Sessions

<p>Each participant added links, images, and original written text to complete a VFT framework.</p> <p>Word count for student text: P1: 288 words P2: 238 words P3: 634 words P4: 207 words</p>	<p>During the observation period, students completed two take-home written assignments.</p> <p>Word count for student text: P1: between 400 - 500 P2: between 400 - 500 P3: 477 P4: 413</p>
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4. With whom did students communicate?

VFT Activities 1 – 3

Regular Class Sessions

<ul style="list-style-type: none"> • Solo narration: One recorded VFT talk. • Student partner: Two partner conversations about the VFT. • Whole class, including instructor: One final VFT presentation (each 7 - 10 mins) 	<ul style="list-style-type: none"> • Students listened to classmates, but did not converse with peers. • With instructor: Students responded to direct questions or asked content questions. • Whole class, including instructor: Outside the observation period, students gave three 5-min. in-class presentations.
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5. Who was the audience for students' written work?

VFT Activities

Class Sessions

<p>Digital VFT exhibit shown to:</p> <ul style="list-style-type: none"> • Student partner • Whole class and instructor 	<p>Two Assignments shown to:</p> <ul style="list-style-type: none"> • Instructor only
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4.5.1.1 Increased Interaction in Italian.

In Table 3, the data following active learning question 2: “How much spoken Italian communication did each student produce per session?” show participants spent significantly more time speaking and interacting in Italian when using the VFT activity than during the regular class meetings. Notes from the six-week observation period indicated the instructor spoke (specifically: lectured, asked review and comprehension questions, moderated class activities, explained new grammar, asked questions on grammar and vocabulary) for at least 80% of each 50-minute regular course activity session. During the same six-week period, in any individual class meeting, *none of the participants spoke more than 4 minutes in Italian*. By contrast, during three recorded VFT sessions (solo narration, partner presentation, final class presentation), *no participant spoke for less than 65 minutes in Italian*.

4.5.1.2 Broadened Scope of Communication.

Active learning questions 4 and 5 in Table 3 focus on how much opportunity to communicate and interact with people other than the instructor is available to learners within a given activity. When the participants spoke Italian in class, they mainly directed their communication to the teacher, and did not converse directly with one another. The side-by-side comparison in Table 3 shows that the VFT activity provided a broader audience for students’ written and spoken Italian communication. In contrast, for regular course instruction, the instructor was essentially the sole interlocutor for students during class time, and was the sole audience for participants’ written Italian communication (quizzes, essays, homework).⁵

⁵ Aside from limited written text in students’ 3 in-class presentations, outside the 6-week study period.

4.5.1.3 Related Participant Comments.

Two participants commented that when carrying out the VFT activities, they spoke much more Italian than they were used to. P4 said: “Some benefits were speaking more Italian than just in the classroom setting, learning more about your classmate and looking at things in Italy that interest us.” In the following quote, P3 describes that experience:

I was just shocked that I was able to speak that much because I never thought I could. So I feel more confident in myself, not really so much in the classroom but at least in myself. Knowing that I could possibly speak more, because I've been taking Italian for like three years now and I thought, well, I tell people I can speak it maybe at a 3-year-old, 5-year-old level at best. But with this experience it was pretty good.

Participants also commented on gaps they noticed in their language skills while using the VFT, and took steps to address the gaps, which indicates active learning processes. In an interview, P3 and P4 reported noticing they needed new vocabulary and grammar constructions, such as the conditional verb tense, to present their trip plans to one another, explain the rationales for their choices, and make appropriate comments on their VFT partner's presentation. P3 explained that as a result, they made a set of notecards with conversational vocabulary to use in the subsequent VFT session.

4.5.2 Analysis of Active Learning Themes and Codes

To understand the participants' active learning experiences with the VFT activity, instances when participants used active language (e.g., experience, find, think, choose, explore) to describe using the VFT were coded and analyzed. Participants' open-ended responses indicate VFT-based activities supported active learning in several ways. With 56 instances, “Seeing and Experiencing”

was the most prevalent theme, which suggests participants viewed their activities with the VFT as first-hand, experiential learning. Codes related to exploration, agency, and challenge also appeared frequently in the data. Table 4 presents themes and codes related to active learning processes that emerged from participant responses, with representative quotes.

Table 4 Codes and Student Comments Related to Active Learning

Active Learning Themes and Codes: Frequency & Selected Participant Comments

SEEING AND EXPERIENCING: 56 Instances
experience, see, look

P1 “[With this] approach to learning Italian culture, you get to actually **see** it and move around with it.”

P2 “It’s really nice to be able to **explore** the city and see things that you never would. Especially if you’re on a trip you normally have a pretty organized schedule. You don’t really go off and **see** different things”

P3: “I just wanted to **experience** like, the actual city, what it had to offer, you know, its historical background stuff”

REFLECTION AND MEMORIES: 16 Instances
remember, I wonder, thinking

P2 “And I do plan on going [to Venice] in the future, so now I have even more like, “Oh, if I’m over there, what if I **remember** this hotel or something? I wonder if I should stay there because kind of **remember** that from the VFT.”

P3: “I was like, am I doing this [VFT] right? Can I even plan a trip like this? And I was **thinkin too much** into it.”

P4: “[The hard part of the VFT was] more the conversation part, like trying to **think** of what to say in Italian.”

EXPLORING AND FINDING: 15 Instances
explore, find, navigate

P1 “The best thing was just seeing it all, being able to **navigate**.”

P2 “I’ve learned how you can take the language and apply it to realistic scenarios. For instance, taking food vocab and then **finding** a restaurant using StreetView, and then reading the menu.”

P4 “Best [thing was] exploring the city and what I was interested in **finding**, like restaurants and places to do things, according to my interest.”

P4 “I think it went well. You gave us enough guidance that I was able to like do it myself. And just **explore** the city. And do what I wanted to do.”

AGENCY: 12 Instances
choose, choice, decide, design, freedom, figure out

P2 “[The VFT] allows me to see things that I am interested in and I got great suggestions from my partner for when I **choose** to go visit Venice.”

P3: “[My VFT reflected my interests] because you gave us that **freedom** of like being able to choose what we want to do.”

P4 “I like using the Google Maps to go around the city and just explore and **figure out** what interests me.”

CHALLENGE: 7 Instances
frustrating, difficult, hard, couldn’t

P1 “The worst thing was probably where you were navigating there were some things that you **couldn’t** see. Like if you’re trying to look inside a building and maybe you know they don’t let you get up close.”

P2 “It is **hard** to learn language through only virtual experiences and this style of teaching would best coincide with instruction from a teacher about various topics for me personally.”

P3 “I think the **hardest** part for me is sometimes like syntax and like, trying to place it. I feel like I’m struggling so much.” [during the VFT partner work]

P3 “Well, where am I going to go [in my VFT]? How am I going to get there? Are we going to walk? Are we going to bike? Do I have to stay in a certain area? Like, kind of stupid, but also not stupid, because when you’re planning out a trip, it’s important.”

In sum, participants’ open-ended responses in Table 4, together with interview responses and the active learning question analysis indicate VFT-based activities engaged students in active learning

in more than one respect. For all four participants, when engaged in the VFT activity, the amount of time they spent speaking Italian was dramatically increased.

4.6 Findings for Inquiry Question Two

Inquiry question two asks: To what extent do the four undergraduate Italian learners in this study consider VFT-based learning to be *personalized* and *based on authentic resources*? Findings related to the use of authentic resources will be presented first, followed by the findings on personalization.

4.6.1 Student Perceptions of Authenticity in VFT-Based Learning

4.6.1.1 Identifying Authenticity.

To what extent did the study participants consider VFT-based learning to be based on authentic resources? According to Shrum and Glisan (2010), use of authentic resources means using situations from the world outside the classroom for instruction and as the basis for learners to use the target language to explore, communicate, and learn.

Certainly, the use of literary works, as in the Italian literature class that was the setting for this study, represents authenticity of material. Beyond the curriculum and content, though, how materials are used and the design of the learning activities also determine authenticity, as described in the following list of design principles for authentic FL activities proposed by Ozverir et al. (2016). These principles, highly pertinent to the design of authentic FL activities, will be used for the analysis of student comments.

4.6.1.2 Design Principles for Authentic FL Activities

1. Authentic activities have *real-world relevance*.
2. Authentic activities are *complex and ill-defined*.
3. Authentic activities provide the opportunity for students to examine the task from *different perspectives*, using a *variety of resources*.
4. Authentic activities provide the *opportunity to collaborate*.
5. Authentic activities provide the *opportunity to reflect*.
6. Authentic activities *lead beyond domain- and skill-specific outcomes*.
7. Authentic activities are *seamlessly integrated with assessment*.
8. Authentic activities *yield polished products valuable in their own right* rather than as preparation for something else.
9. Authentic activities *allow competing solutions and diversity of outcome*.
10. Authentic activities are *conducive to both learning and communicating*.
11. Authentic activities *provide motivational factors*.

4.6.1.3 Participant Responses on Authenticity.

Table 5 provides evidence of student perceptions of the authentic nature of their learning experience using the VFT. A brief analysis and a reference to Ozverir et al.'s (2016) design principles for authentic language learning activities accompany each participant comment.

Table 5 Student Perceptions of Authenticity, Authentic Design Principles

<p>Comment A</p>	<p><i>“I’ve never had a class where we’re studying a language, and we do a virtual field trip. So this is like innovative, in my opinion. And so by doing this, and if you can zoom in with different restaurants and seeing different menus, or seeing different signs, these are things you might not see in a textbook, but you would see [in Italy] and like in a real, realistic, non-textbook-y kind of way.” P1</i></p>
<p>Analysis</p>	<p>P1 contrasts previous experiences of textbook-based learning with their VFT experience, and judges the VFT more authentic. Characterizing the VFT activity as “innovative,” P1 observes that it allows people to see and read authentic texts (street signs, restaurant menus in the window) in a “real, realistic, non-textbook-y kind of way.”</p> <ul style="list-style-type: none"> • Activity Principle 1: Real-world relevance. • Activity Principle 3: Different perspectives, uses a variety of resources.
<p>Comment B</p>	<p><i>“I think [using the VFT] is a better way to learn about like the realistic things. I didn’t really explain it in my virtual field trip at all. But it’s something that a teacher can definitely use in the classroom to like, show students a realistic picture, not from a textbook that was published eight or nine years ago when things weren’t updated.” P2</i></p>
<p>Analysis</p>	<p>P2 expresses the opinion that the VFT is “a better way to learn about realistic things” and compares it favorably to looking at textbook images published “years ago when things weren’t updated.”</p> <ul style="list-style-type: none"> • Activity Principle 1: Real-world relevance. • Activity Principle 3: Different perspectives, uses a variety of resources.
<p>Comment C</p>	<p><i>“When I went to Italy, the thing is, when you’re surrounded by the language, it’s different compared to being here. If you see the signs, and you see them in realistic context, you learn much quicker. And so I think that by using these virtual field trips, it’s more culturally accurate, because you can see it, you can see what people are wearing, you can see what these restaurants look like, what the food looks like. So that’s important.” P1</i></p>
<p>Analysis</p>	<p>P1 notices similarities between using the VFT and their experience of visiting Italy in person. They consider it “important” that the virtual visit might support language and culture learning in similar ways, such as seeing material aspects of Italian culture in an authentic context.</p> <ul style="list-style-type: none"> • Activity Principle 1: Real-world relevance. • Activity Principle 3: Different perspectives, uses a variety of resources. • Activity Principle 5: Provides opportunity to reflect. • Activity Principle 11: Provides motivational factors.
<p>Comment D</p>	<p><i>“It’s just the realistic aspect of it. Definitely being surrounded by the language. That’s definitely how I learn a lot quicker. Like, now I know anything that I would</i></p>

	<i>see, like a train schedule. I'm like, Oh, I know what that means. It's not just something you learned in the classroom. So, when I was looking [in the VFT] at the stazione Venezia Santa Lucia, and it shows the [train schedule] board I was like, OK, I know the train schedule. I can understand this, I know where if I were there where to go, because each of the logos has a different type of train to it. So you know what train you're taking, the number, the platform it's on. Like, that's not something you learn in the classroom.” P2</i>
Analysis	<p>P2 relates their use of the VFT to their previous, real-life studies in Italy, characterizing VFT learning as “not just something you learn in the classroom”. P2 mentions looking at the train schedule display inside a train station in Venice as part of their VFT experience, and observes that they understood the symbols they saw thanks to a previous, real-life visit to Italy.</p> <ul style="list-style-type: none"> • Activity Principle 1: Real-world relevance. • Activity Principle 3: Different perspectives, uses a variety of resources. • Activity Principle 6: Leads beyond domain- and skill-specific outcomes.

In Table 5, what emerges from the analysis of participant comments is that students were quite aware of the authentic nature of their work with the language and the VFT activities in which they were engaged. They responded positively to the authenticity offered by the new approach and considered it important and helpful for their Italian learning.

While all eleven of Ozverir et al.’s (2016) authentic design principles were not touched upon in participant comments in Table 5, the effects of authentic design principles are also reflected in student perceptions of personalized learning, which will be presented next. The design principles most clearly linked to student perceptions of personalized learning with VFT activities in the section that follows are (#2) the complex and ill-defined nature of the task; (#4) the opportunity to collaborate; (#6) connections beyond domain and skill-specific outcomes, and (#10) activities conducive to both learning and communicating.

4.6.2 Student Perceptions of Personalized VFT Learning

Personalized learning is an approach that enables people to have learning experiences in diverse locations, to collaborate with others in areas of personal interest, and to access content in ways that suit their language skills, abilities, and individual preferences (Petersen & Markiewicz, 2008). For inquiry question two, I examined students' perceptions of personalization of learning with the VFT from the standpoint of learning choice and adaptability of the material to learner interests. In the following section, an analysis of (a) survey and interview responses and (b) learning artifacts of the four participants will be presented.

4.6.2.1 Surveys.

The surveys included questions to elicit participant feedback on the degree of personalization they noted in their learning experiences in terms of choice and level of interest.

4.6.2.1.1 Perceptions of Choice.

In Surveys 2 and 3, participants responded on a scale of 1 (not at all) to 4 (very much) to the following question: "In the process of creating your virtual visit to Venice, how much were you able to choose how you learn and what you learn?" Participants indicated that the VFT activity offered them more choice in how and what they learned than in their traditional language classes. Table 6 shows the findings from the two Likert-scale surveys for four students.

Table 6 Surveys 2 & 3: Learning Choice in VFT and Regular Coursework

Participant	Surveys 2, 3: In the process of creating your virtual visit to Venice, how much were you able to CHOOSE how and what you learn?	
P1	very much 4	very much 4
P2	very much 4	somewhat 3
P3	very much 4	very much 4
P4	somewhat 3	very much 4
	Survey 3: Overall in your Italian courses, how much have you been able to CHOOSE how and what you learn?	
P1		somewhat 3
P2		somewhat 3
P3		a little 2
P4		somewhat 3

Note: Likert scale ranged from 1 (Not at all) to 4 (Very much)

As Table 6 shows, the students found that they had greater freedom to choose how and what to learn during the VFT compared to learning in a traditional class.

4.6.2.1.2 Perceptions of Interest.

Participants gave strikingly different responses when asked to compare their level of interest in the VFT with their current Italian course. In Survey 3, all students rated their level of interest in the VFT at **4** (very much) while their level of interest in the activities of their current Italian course was rated as **2** (a little). Asked about their level of interest in the Italian course curriculum overall, most rated this somewhat higher (an average score of 3). Table 7 presents the four participants' Likert-scale responses to three questions about their levels of interest.

Table 7 Surveys 1 - 3: Participant Reports of Interest in Course and VFT Activities

Participant	Surveys 2 + 3: In creating your virtual visit to Venice, how much do the activities you've done with connect to what you're really interested in?	
P1	very much 4	very much 4
P2	very much 4	very much 4
P3	very much 4	very much 4
P4	somewhat 3	very much 4
	Survey 1: In this literature class, how much do the activities you've done so far connect to what you're really interested in?	Survey 3: Overall in your Italian courses, how much have the class activities you've done connect to what you're really interested in?
P1	a little 2	very much 4
P2	a little 2	somewhat 3
P3	a little 2	a little 2
P4	a little 2	somewhat 3

Together, Tables 6 and 7 show clearly that the students reacted to the VFT more positively in terms of personalized learning than compared to their traditional Italian courses. That is, the VFT allowed the students greater freedom to explore their own interests, compared to their other Italian courses where course content was decided by the program and with no student input.

4.6.2.2 Personalization of VFT Learning Artifacts.

The features students chose for their VFTs served as talking points and visual supports for the conversational guided tour participants carried out with their partners and later presented to the entire class. Though based on the same starting framework and fulfilling the same set of seven tasks, participants' completed VFT projects reflected their makers in different ways. In the following paragraphs, brief descriptions of the four participants' final VFT learning artifacts illustrate how they were personalized. Links to digital copies of these learning artifacts are found in Appendix I.

4.6.2.2.1 Participant 1

Participant 1 added 21 posts and included 288 written words in their VFT. Unique aspects included screenshots and commentary comparing features of Venetian dwellings to American ones, StreetView screenshots of boutiques they found interesting, and an idea for how they would learn new words while shopping in those boutiques (by writing them in a notebook).

4.6.2.2.2 Participant 2

Participant 2 added 18 posts and included 238 written words in their VFT. Personalized features included interior screenshots from a visit to a gondola workshop, the train station, and the city's professional soccer team stadium. P2 opted to embed six short audio-recorded narratives within their VFT. In one recording, P2 retold an origin story they had learned about the city of Venice.

4.6.2.2.3 Participant 3

Participant 3 added 38 total posts and included 634 written words in their VFT. Unique features included 14 annotated StreetView screenshots of public art and statues they discovered while wandering the city, and two annotated posts about a street they found with the name of their favorite cheese (Asiago). P3 sought out and included specific restaurants and cafés they thought their family members would enjoy.

4.6.2.2.4 Participant 4

Participant 4 added 14 total posts and included 207 written words in their VFT. P4 included a StreetView screenshot of a Venetian bookstore with a written reflection on how it looked different from bookstores they had seen in the USA. P4 explained that their VFT visit to St. Mark's cathedral in Venice was motivated by the name (St. Mark's) it shares with their hometown church

in the USA, and remarked that the famous Venetian cathedral did not resemble their hometown church at all.

4.6.2.3 Personalized Learning Themes and Codes in Student Comments.

Table 8 shows codes and themes related to personalization in participant response data, organized in descending order of frequency. There are representative participant comments for each theme.

Table 8 Personalization: Codes, Themes, and Student Comments

PERSONALIZATION: Comments in Survey, Interview, and Focus Group Responses Frequency and Selected Quotes
LEARNER INTEREST: 9 Instances interest/ing
P1 “It allows me to see things that I am interested in and I got great suggestions from my partner for when I choose to go visit Venice.”
P2: “So that was really interesting for me to just pull on that past experience [connect VFT to prior learning]”
P3: “I did go looking around, and showed my partner through the streets or buildings and the things that I thought were really interesting .”
P4 “Best [thing was] exploring the city and what I was interested in finding, like restaurants and places to do things, according to my interest .”
LIKING: 8 Instances I love, cool, beautiful, I like
P1: “You have like the entire world at your fingertips using this [VFT]. You can put them anywhere. I think that's a really cool thing, especially just doing this for the first time.”
P2: ““With this trip that I designed specifically, in regard to myself, I love train travel. That's why I put here that I wanted to ride by train from another Italian city that had a high speed train.”
P3 “My sister and I, we love boats. So . . . this is the airport I came through [in the VFT plan]. So, then we would just take a boat to go over to the ferry.

Lastly, frequent references to fellow participants, family, personal experiences and other ways their identity and relationships with others influenced how they learned emerged as a significant theme in the four participants' responses on VFTs and personalization. This connection between relationships and learning with VFTs is echoed in the participant stories presented in the following section on the findings for inquiry question three.

4.7 Findings for Inquiry Question Three

Inquiry question three has two parts: (1) As a FL teacher and designer of VFTs, what was my role in facilitating students' VFT learning experiences? and (2) What stories of students' Italian language and culture learning experiences emerge from this study of VFT use in an undergraduate Italian class?

4.7.1 Part One: The Role of the Researcher in Facilitating VFT Use

To clearly understand my role in designing and teaching with VFTs vis-à-vis students and colleagues, I collected participant and instructor feedback via surveys, interviews, and a focus group. In my research journal, I kept track of how and when I guided students' work with the VFT activity and saved copies of the instructional materials I created.

4.7.1.1 Guiding Student Activity.

The observation notes and VFT activity recordings showed that my main role in facilitating student learning with VFTs consisted of content preparation and learner guidance. My activities

included setting up the VFT framework, creating materials, helping students learn to use the digital tools, helping students understand the different types of target language and target culture resources they could access using the digital tools, along with encouraging and supporting the students to do more with their VFT plans.

4.7.1.1.1 Teaching the Digital Tools.

Showing the class how to use the digital tools used to construct a VFT exhibit was more difficult in the completely remote, videoconference-based teaching environment than in previous semesters. I spent a full 30 minutes of the first in-class workshop showing the class how to navigate with the StreetView digital map, add things to the digital VFT exhibit, and take screenshots. Under normal circumstances, I introduce the digital tools gradually over a period of several weeks, so the students are already familiar with them when they start a VFT project.

4.7.1.1.2 Providing Encouragement and Support.

Because the VFT activity was relatively open-ended, compared to traditional assignments, students asked many questions about how much they needed to do or whether they could approach the tasks in a creative way. I reassured them that they could customize their VFTs however they liked, as long as they made at least 13 posts across the seven tasks. Once the students started building their VFTs, at times they discussed their plans with me. I suggested ways to find what they were looking for in Venice, and ways to elaborate on their initial plans. Potential VFT features I suggested students look for included live-video weather webcams, interactive target language train scheduling chatbots, and 360-degree virtual tours inside various museums.

4.7.1.1.3 Creating Materials.

Table 9 shows the instructional materials I created to guide the students in this study, in the order they were provided. Copies of these materials can be found in Appendices.

Table 9 Teacher-Created Instructional Materials

VFT Guidance Material	Format	Purpose
Orientation / Reference VFT Framework	Online multimedia exhibit.	Orientation and reference for students. Includes links to digital tools and how-to videos.
VFT Activity Overview (<i>Appendix K</i>)	Document available to participants online.	Provides step-by-step guidance on completing the VFT project. Explains the learning objective.
VFT framework for each class member to complete (<i>Appendix I</i>)	Customizable digital exhibit platform, also PDF copy.	Provides a blank framework for students to fill, structures students' VFT activity around open-ended tasks, includes links to digital tools.
VFT Partner Questions in Italian (<i>Appendix H</i>)	Document available to participants online.	Support Italian conversation about VFTs between student partners.

4.7.1.2 Summary of VFT Teaching Role.

In their survey responses, all four participants indicated they had received adequate instructional support while using the VFT activity. In the final focus group discussion, P4 said: “I really have no suggestions, because I just think it went well. You gave us like enough guidance that I was able to do it [the VFT] myself. And just explore the city. And do what I wanted to do.” Nevertheless, areas for improvement in supporting student learning with VFT activities became clear from other types of data. These will be presented later, in the Discussion chapter.

4.7.2 Part Two: Participant Stories of Learning with VFTs

The second part of this inquiry question required listening carefully to the stories of learning experiences and challenges participants shared as they used, reflected on, and responded to the VFT approach. I found that students referred often to collaboration and interaction when

discussing the VFT activity. Their stories fall into two general categories: (a) stories describing ways participants' relationships and personal characteristics shaped their VFT design choices, and (b) stories reflecting participants' metacognition about how and what they learned while using the VFT activities.

4.7.2.1 Relationships Influenced VFT Design Choices.

In interview responses and recorded VFT use sessions, all four participants told stories referring to ways their relationships and personal characteristics shaped how they used the VFT activity. Participant explanations of what they produced for their VFT included many references to people from outside the university, including parents, siblings, grandparents, an aunt, a former Italian teacher, significant others, Italian friends, and Italian ancestors. They also talked about ways the VFT activity allowed them to learn *from* and *about* their classmates who participated in the study.

4.7.2.1.1 Participants Wove Relationships into their VFTs.

The fact that participants gave so many VFT design explanations featuring the imagined future company of friends and family suggests that students want to include people who are important to their real-life identity in their exploration of Italian culture. After the first, solo VFT session, P3 described how relationships affected their unfinished decision-making process for designing their virtual trip: "I haven't decided where I would arrive and how I would get around. Or what I would like to eat or drink, but today I'm back on it. Now I'm thinking of this place, depending who [mother, sister, or friends] I would go to Venice with. I haven't decided."

4.7.2.1.2 Connecting Family with Their VFTs.

Every participant made comments while discussing their VFT with their partner, or in interview and survey responses, linking their experiences using the VFT with positive memories

of shared family experiences and heritage. For example, during their solo VFT work session, P1 explained: “And this is my favorite part [of my VFT]. I have chosen this pizzeria to eat in because this is where I ate two years ago in Venice with my aunt, and I ordered my dinner in Italian for the first time ever, so I really remember this.” This comment illustrates how the VFT provided P1 an opportunity to commemorate a personally important experience from their language-learning history, in the context of their relationship with their aunt.

Despite never having visited Italy in real life, during P3’s recorded solo VFT narration, they linked their rationale for choosing a particular restaurant for their VFT plans with stories heard from their grandparents.

But seafood is important to my family on the [Italian] side. They’re from the Puglia region. And they lived right on the coast before emigrating in the 1900s, you know, the sea was just all around them. And they ate *baccalat* [cod] which is also really important to a lot of Italian-Americans here. But my grandpa, and my great-grandfather would eat this fish that he caught because he emigrated when he was like 12. Yeah, so I would definitely eat at this seafood restaurant [in the VFT].

4.7.2.1.3 VFT Users Learned From and About Classmates.

After each participant had given their partner a 30 - 40 minute videoconference tour of their VFTs, I asked them about what they learned while touring and discussing one another’s VFTs. Participants reported that showing their VFT plans to one another, explaining the rationales for the choices they made while designing their VFTs, and discovering differences and similarities in those choices helped them get to know one another better. Participants also reported learning new information about Venice from their activity partner. This is shown in the comments in Table 10.

Table 10 Participant Comments: VFT Learning and Fellow Participants

Learning and Fellow Participants

These comments describe ways students learned *from* and *about* their VFT partners.

P1 “When I saw my partner’s trip, a lot of theirs was more of a personal experience, like restaurants they’ve been to, things they’ve seen there. And they definitely used different links than I did for where to stay, things to see. So it was cool to see things that I missed. But definitely educational to me as well, just because I’ve never been there. And I do plan on going, in the future, so now I have even more ideas, like, “Oh, if I’m over there, what if I remember this hotel or something? I wonder if I should stay there because I kind of remember that from the VFT?”

P2 “Yeah, my partner referred to the soccer there. And, you know, I was only in Venice for a day. So I would have never known that they even had a soccer team or that they had a stadium where they could play. And so by like looking at their trip, I could see that obviously, it's something that interests them because they said their favorite Italian soccer team was from Venice.”

P3 “Yeah, I learned that my partner plays soccer, since they were seven. I learned a little bit about their grandparents. And from the start, we learned about each other’s likes and dislikes. And we both found out that visiting Venice would not be our first place to go. But rather, we would visit where our families are from in Italy.”

P4 “Yeah. Like I learned, like, more about my partner and what they like. I have similar interests, like we don't like shopping. But we also do like going to museums, and stuff like that.”

Participants Reflect on VFT Learning. In the following learning-reflection narrative, P3 made an explicit link between their personal characteristics, their individual way of learning with the VFT activity, and their learning motivation. They stated that despite not being “a historical kind of person,” successfully learning about Italian history will be worthwhile “if I can go there and experience it,” and envisioned their knowledgeable future self in Italy, feeling smart and confident thanks to the learning they were doing now.

I wonder if there's something that I missed [in my VFT]. A lot of my stuff that I planned was super simple. I'm not one to go do big things I guess when I travel. I like to do the small things and really get to know the city and really look at the history even though I

really don't like history. I'm not like a historical kind of person. But I guess if I can go and *be* there and experience it then it's pretty cool. But I do like learning about it beforehand. And then going and thinking oh yeah, I learned about that. It makes me feel smart.

4.7.2.1.4 How and What They Learned.

Some participant stories showed how they became aware of gaps in their own learning while engaged in the VFT activity. In an interview, P3 said:

In Italian class, you really learn, like the present and the past tense. But you know, so the difficulty is those other ones. And with our professor, we constantly work with the conditional and like, future, right? Because it's not always used when you're speaking. But in a talk about a trip that you would like to take if you could someday in the future, you're using future and conditional, right?

4.7.2.1.5 Creativity.

While navigating in Venice from the bird's-eye view of the digital maps, P2 noticed the fish-like shape of the island-city's outline. They were reminded of an origin story recalled from a previous Italian course. In an interview, P2 commented they had emailed their former teacher to try and get the full details of this half-remembered story, but received no response. Nevertheless, P2 decided to add an audio recording to their VFT in which they retold an origin story about Venice from memory. This story illustrated one way the open-ended VFT activities sparked uniquely creative, original details in student work.

4.7.2.1.6 Reading the Graffiti.

All the participants spent time reading the signs and interpreting symbols they encountered as they used StreetView digital maps to explore the streets of Venice. Many included screenshots of signs, street menus, memorial plaques, and graffiti in their finished VFT exhibits. P1

commented: “One thing I really enjoyed doing in the VFT was trying to read all these things that were written on the buildings. I could learn a lot about sort of negative slang words, but well, swear words are very important in learning a foreign language!” These comments demonstrate participants’ curiosity about the authentic Italian texts they found in Venice’s linguistic landscape.

4.7.2.1.7 Learning Reflected in Completed VFTs.

To support the curricular objectives of my colleague’s course (the study of modern Italian literature), I included a related task in the VFT framework: “*Trova una scena dalle nostre letture.*” As they explored Venice, students were asked to include a place or an image that evoked a literary work from the course curriculum in their VFT, and explain the connection. After the participants had presented their completed VFT projects to the class, the course instructor commented:

I was surprised by the amount of work they put in and how eager they were to show off what they'd mapped out. From seeing my students’ productions, I learned more about what they took out of our literature lessons and how they could relate it to going to a different place in the world and applying what they learned. They were looking for cues from our literature lessons on the streets of Venice. That was really eye opening for me, it really touched me. And it taught me a little bit more about what I didn't see when I went to Venice.

4.7.2.2 Key Findings from VFT Stories.

The fact that every participant wove stories of personal relationships into their descriptions and plans for their VFT activity struck me as surprising and significant. None mentioned friends or family during the regular class activities that I observed. It suggests the participants were able to bring their own identities, including friends and family, into the VFT activity. Furthermore, the participant stories about how and why they made various VFT design choices showed that this

activity enabled participants to envision themselves in the digitally mediated city, making choices and pursuing their personal interests.

4.7.3 Concluding Inquiry Question Three

This study provides a re-examination of the use of VFT approach from the perspective of a new language, culture, and students. Having reviewed the steps I took to introduce the VFT activity to new students in my colleague's class, I would describe my role as a creative facilitator and guide who sets up VFT activities to function as a student-centered platform for learning. Overall, the participants' feedback suggests that engaging in the VFT positioned them to collaborate, learn about each other, and use Italian to access, talk about, and share the aspects of the target culture they found most interesting.

Close consideration of stories participants told over the course of the study helped identify *how* and *what* participants learned from using the VFT activities, and pointed towards ways the effectiveness of VFTs for language learning could be improved (to be discussed in the next chapter). Synthesizing all three inquiry questions' findings provides ways to use VFTs as part of a broader strategy to foster active learning in language and culture courses. These implications will be presented in more detail in the Discussion chapter.

5.0 Chapter 5: Discussion

In this study, participants in an undergraduate Italian course used the VFT framework to plan and document a personalized set of cultural activities and share them with fellow students. The previous chapters showed how the VFT activity leverages digital tools to provide students with a virtual framework to explore authentic culture and language resources. Data on participant responses to implementation of the new activity were presented in Chapter 4.

The study's focus on participant learning narratives brought to light a mix of expected and unexpected learning stories and rationales. These narratives serve to illustrate this chapter's findings related to key aspects of active learning with VFTs, including authenticity, personalization, and positive learning relationships. In what follows, these points are discussed and considered in relation to the existing literature. A synthesis of these findings and potential implications leads to a discussion of possible improvements for the VFT approach. The chapter concludes with a reflection on the rapidly shifting professional context for my own work as a FL instructor, followed by ideas for adopting and employing VFTs as part of a strategy to integrate digital tools, authentic resources, interest-led cultural exploration, and increased communication into existing courses.

5.1 Starting Points for VFT-Based Learning

This first section connects insights from this study, existing literature, and practitioner experience to discuss what teachers can expect from VFTs, and a reflection on what VFT-based learning looked like in this study's undergraduate FL course setting.

5.1.1 VFT Learning is Not Cut and Dried

What can FL teachers expect from VFTs? It is not unusual for FL teachers to feel pressure to cover a large number of textbook chapters in a semester; to adhere to a grammar-based approach, and to assess learning using traditional quizzes and tests that are quick to grade; a phenomenon noted in national surveys of FL teaching practices (Phillips & Abbott, 2011; Glisan, 2012). Teachers who face these pressures might question whether participants “learn as much” from an hour of VFT-based learning use as they would from an hour of coverage-oriented instruction. This study was not designed to answer that question. The activities students engage in when learning with different approaches are not the same. Different activities and different objectives are likely to result in different learning outcomes. Instead, this study focused on how participants learned with an activity (the VFT) that was new to them, one designed to support active, personalized, authentic language learning. As a partial answer to the hypothetical question, the findings of this study suggest the two groups of students would learn different things.

In a study of faculty attitudes towards VFT use, Patron et al. (2009) argued that those who think of VFTs as a tool for efficiency and automatization of learning are missing the mark. Instead, Patron et al. proposed that VFTs are best understood as a tool that helps students learn to categorize knowledge creatively, develops problem-solving abilities, and permits learning in authentic

environments. Finally, considering the differences in the nature and potential outcomes of VFT-based learning and other approaches, teachers can expect that measuring the different dimensions of VFT-based learning will require different forms of assessment.

5.1.2 How Virtual Reality Was Used

In this study, participants used their personal computers, desktop virtual reality and a digital mapping service to navigate 360° streetscape images of the city of Venice. Virtual reality (VR) refers to a digitally mediated or generated facsimile of reality that extends the sensorial and experiential environment of an individual, with the simple “desktop” form of VR accessed via a regular computer screen. Studies of other educational applications of VR have found that its use changes the nature of the learning students do, making it more emotionally engaging, more extensive, more detailed, and more realistic (Bai & Lavin, 2014; Lin & Lan, 2015; Lai et al., 2017; Pinto et al., 2019; Rupp et al., 2019). This study’s participants also reported that using desktop VR to experience an Italian city was rewarding and stimulating, and described this new type of learning as “interesting,” “innovative,” “realistic,” and “important.”

5.1.3 Interpreting the Active Learning Findings

In this section, participants’ responses to learning with the VFT are discussed, with a focus on the findings related to the VFT’s effects on active learning, student perceptions of authenticity, and personalized learning.

5.1.3.1 Participants Valued Autonomy.

Thematic analysis of participants' VFT use descriptions along with Likert-scale survey responses indicated students found VFT-based learning interesting and believed it offered them more choice than they were accustomed to (see Tables 5 & 6 in the Findings). P1 explained that with the VFT “approach to learning Italian culture, you get to actually see it and move around with it.” This comment and others reflect the sensation of tangible, location-based exploration students experienced while exploring the city environment, as well as the value students placed on the freedom to make interest-led choices in their VFT projects.

Participants' appreciation of the autonomy and interest-led learning available in the VFT activity relates to Leo van Lier's explanation of technology's affordances for active, student-centered foreign language learning. Van Lier emphasized technology's potential to contribute to quality language learning by supporting a shift away from a teacher-centered dynamic, and by enabling students to use language to do things they value in workshop-style learning environments (2002; 2004; 2010). The VFT's student-centered focus is reflected in this participant comment: “[My VFT reflected my interests] because you gave us that **freedom** of like being able to choose what we want to do.” (P3).

5.1.3.2 Effects of Learners' Active VFT Role.

In his work on experiential learning, Kolb (1984) noted many students in higher education have grown accustomed to being passive learners. Advocating for active, experiential learning, he argued that “making space for students to take control of and responsibility for their learning can greatly enhance [students'] ability to learn from experience.” (Kolb, 2015, p. 220). All four participants in this study reported that VFT-based learning felt different, more experiential than their prior classroom learning experiences. P1 commented: “I think that by using these virtual field

trips, it's more like culturally accurate, I would say... if you see the signs, and you see them in realistic context, you learn much quicker.”

5.1.3.2.1 Interest.

While it is not clear whether the increased level of choice, novelty, and virtual cultural immersion students reported in their VFT experiences enhanced their ability to learn, participants’ strikingly high Likert-scale ratings for their interest in the VFT activity (Table 7 in Findings) indicate the approach engaged and sustained their attention, an indispensable prerequisite for learning.

5.1.3.2.2 Challenge.

In this study, the open-ended design of the VFT activity made room for students to take a more active learning role by giving students significant responsibility for planning their learning. While participants reported feeling challenged by their greater design responsibility in the VFT, they did not view this challenge negatively. In the recorded solo VFT work session, all four participants could be heard talking themselves through the decision-making process and discussing what they wanted to do next, and one (P3) commented that learning about the history of Venice made them feel smart. Learning activities like these, designed to prompt students to spend time thinking through challenging hypothetical scenarios, seemed to support participants’ engagement in the project.

5.1.3.2.3 Reflecting on Their Learning.

Some participant comments hinted that the VFT activity did provoke some movement towards a more student-centered learning dynamic, an outcome both Van Lier (2002; 2004; 2010) and Reinders and Benson (2017) suggested appropriate use of digital technology could promote. For example, P2 recommended students be given even more choice about the setting of the VFT,

and explained how they thought such a change would lead to more in-depth cultural learning.⁶ Others experimented with different online language resources and discussed how these were useful for their VFT projects in our semi-structured interviews.

5.1.3.3 Adding Authenticity.

Learning with authentic resources and in authentic contexts is closely linked to experiential learning. As Blyth (2018) noted, ever-more-immersive language learning technologies [such as the digital tools used to create a VFT] support an understanding of FL learning as a complex social activity that is heavily contextualized and highly experiential. In this study, the VFT offered participants two kinds of authenticity. First, participants explored the digitally mediated, *authentic cityscape*, an activity which in turn generated an *authentic communicative purpose* for subsequent peer conversations and presentations.

5.1.3.3.1 The Realistic Aspect.

Participant responses made it clear that they prized the experiential, contextualized nature of the VFT activity. This is seen in numerous participant comments on how “realistic” (authentically contextualized) the VFT was, compared to the activities they were used to. As P2 explained: “It's just the realistic aspect of it. Definitely being surrounded by the language. That's definitely how I learn a lot quicker.”

⁶ P2: “Something I don't agree with, I guess, was choosing like a single city. Maybe teach a class having students do different cities. Because Venice is a northern city, it has a different culture to it, a different way of life. If a student, say, wanted to choose Milan, or Turin, those are other northern cities, but the culture is so different. Signs sometimes are even written different as you go like more south, things change, the way of life changes, how to get around. So it would be nice also to explore places like that.”

5.1.3.3.2 Experiential Learning Augmented Authenticity.

In this study, participant accounts of learning with the VFT align with the literature on the nature of experiential learning and its potential to promote authentic learning. Kolb's (1984) foundational experiential learning model proposed that learning begins when a person observes or takes part in a novel experience; then creates a mental model of their perceived experience, and finally tests and adapts their model when they next encounter a similar experience.

Several participant accounts of how they learned with the VFT reflect stages in Kolb's (1984) experiential learning process. For example, P2 anticipated testing their mental model of Venice: "And I do plan on going [to Venice] in the future, so now I have even more like, Oh, if I'm over there, what if I remember this hotel or something? I wonder if I should stay there because I kind of remember that from the VFT." Such comments suggest these *virtual experiences* created memories like those resulting from *real-life experiences*. Moreover, the students believed these virtual learning experiences could inform their future real-life actions. Participant accounts of intersection between virtual and real-life experiences was noted in other aspects of this study, and will be taken up again in this chapter's discussion of personalized learning.

5.1.4 Personalization

5.1.4.1 Adapting to the Learner.

Petersen and Markiewicz (2008) described how the authentic learning contexts made available by digital technologies could help personalize FL learning by adapting to the skills, resources, and interests of the learner; and by providing access to learning outside the classroom. To construct their VFTs, participants accessed a rich variety of digital resources and differentiated their experiences of the virtual city according to their own interests and background (see

comparison of participants' learning artifacts in the Findings). Students explained their VFT design choices in light of their personal interests, commented on the personalization they noticed in classmates' projects, and noted the differences from their own work. Numerous comment such as these offered evidence of learner self-reflection, and made it clear that participants learned from one another thanks to the personalization.

5.1.4.2 Bring the Family.

The influence of family ties, and family stories about Italy was a striking aspect of personalization in participants' VFT design choices. For example, P3 and P4 both related stories about their Italian emigrant grandfathers as part of their rationales for specific VFT restaurant choices in Venice. Both P2 and P3 reported that they designed their virtual visits to accommodate the interests of the friends and family members they envisioned accompanying them. The frequency with which this study's participants mentioned the influence of relationships on their VFT design and learning was noteworthy, and is discussed in the following section.

5.1.5 Learning and Interpersonal Relationships

5.1.5.1 Relationships.

Van Lier's (2002) criteria for quality FL learning emphasized positive social relationships within the classroom, complex language use, and active learning. In participants' interviews, survey responses, written VFT annotations, and spoken VFT narratives, they included numerous references to relationships with classmates, faculty, family and friends. All four participants spoke of getting to know their classmates better by discussing and sharing their VFTs, and referred to this as an unexpected positive outcome. It appears, therefore, that the connection between the

virtual world and the real world of the students and their relationships in it is a feature of the VFT that was not anticipated, but that emerged as students explored the virtual spaces. In retrospect, perhaps this should not be surprising, given that the VFT took place in a virtual social space and the students' activity using the VFT was in part a hybrid social experience with one another, and with imagined social relationships in the virtual world.

5.1.5.2 Family in Context.

Interestingly, when describing their VFTs and explaining their choices and design rationales, all four participants referred frequently and extensively to family and friends from outside the university. That is, *the students were eager to make important personal relationships part of the virtual context of their VFT projects*. This finding also suggests interesting implications. Personal relationships are part of one's identity. Perhaps these students wanted to envision their full, authentic identity in the context of their virtual exploration of Italian culture and language. Or perhaps the students simply wanted to include their loved ones in a virtual environment they viewed as exciting and appealing. The ease with which participants could envision important personal relationships from the real world "at home" as an important component of the VFT environment suggests these students felt at home in the virtual, "foreign" learning space.

5.2 Implications for VFT Design and Implementation

The issues of limited access to other countries, limited personal experience of other cultures, and financial constraints on study abroad are problems many foreign language teachers and learners struggle to solve. We also face the difficulty of creating authentic communicative

situations in the classroom, ones that motivate students to speak freely and do not feel artificial. As a learning activity, VFTs are an example of how digital tools and student-centered design can be used as part of the solution. The following section presents a discussion of ways teachers can design and use VFTs effectively, and offers suggestions for their implementation in specific settings.

5.2.1 Practitioner Role: Tech Tools

5.2.1.1 Plan the Technology.

The fact that technology is essential for successful VFT learning does bring inherent challenges. Tate and Warschauer (2017) cautioned that teachers must make careful plans for managing three issues related to classroom technology use: (1) inconvenience and time lost to technical glitches and maintenance, (2) the complex task of designing effective technology integrations, and helping students learn to use new digital literacy tools, and (3) the need to prevent technology from upstaging learning content.

5.2.1.2 Teach the Technology.

While I did not observe that the technology detracted from participants' learning with the VFT in a significant way, I did observe difficulties related to the first two issues. Teaching the students how to use the VFT tools in a fully remote, videoconference-based class setting was somewhat time-consuming. Every participant reported experiencing occasional frustration when the tech tools seemed glitchy, or were unable to provide students as much access to the virtual city as they desired. As a teacher, I find that responding to students' occasional tech glitches with patience and flexibility helps allay student worries about using new tools. The task of teaching

students to use new digital tools can be managed by introducing the tools to students over time, in steps, as recommended by Lai and Morrison (2013).

5.2.2 Practitioner Role: Designing Effective VFTs

As an instructor who plans lower-level FL course sequences and their day-to-day instruction, I choose or create materials and activities that help students attain the language and culture learning objectives. Even before undertaking this study, I began using VFTs with my FL students, slowly elaborating and refining my approach. Now, based on what I have learned from this study in addition to my earlier experiences, I can offer some suggestions for VFT design and use.

5.2.2.1 Guidelines.

What are the principles of effective VFT design? While there are few recent studies on VFT implementation, this study's findings and insights from the broader literature on technology-enhanced language learning offer some ideas. Jacobson et al. (2009) recommended teachers plan and prepare VFT content thoroughly, but keep the design flexible and open to serendipitous learning. Blyth recommended the teacher structure VFT activities as an "open Internet environment" (2018, p. 309), in which students carry out learning tasks and adapt the process to their own interests and goals. Accordingly, in this study, the VFT was designed to *leave space* for students to choose, navigate, and personalize how they learn the material.

5.2.2.1.1 Some Design Principles.

Ozverir et al.'s (2016) list of 11 design principles for authentic FL learning (see full list in Findings) were meant to guide language teachers in creating authentic learning activities for

students. While I discovered Ozverir et al.'s work after the VFT for this study had already been designed, I found the list of principles useful as an analytical tool to understand participants' responses to the VFT. In my view, the principles would also be helpful to instructors who wish to design a VFT for their classes.

In this study, all four participants reported they valued the VFT activity's "realistic" feel, the opportunities for interpersonal communication it offered, and the level of choice and personalization it afforded. For successful VFT design, I would therefore recommend teachers pay attention to the following principles from Ozverir et al.'s (2016) list: (a) activities have real-world relevance, (b) activities are complex and ill-defined, (c) activities offer an opportunity to examine the task from different perspectives, (d) activities create opportunities for collaboration and reflection, (e) allow diversity of outcome, and (d) are conducive to both learning and communicating.

5.2.2.1.2 Advantages of Open-Ended Tasks.

Ozverir et al. (2016) use the terms "complex and ill-defined" to denote open-ended learning activities and tasks that are open to learner interpretation. This means creating tasks that essentially allow learners to finish and customize the activity design in a way that inspires them. Findings from studies of VFTs in non-FL courses suggested allowing learners more autonomy in their use of the VFT increased their motivation and persistence in the activity (Tutwiler et al., 2013; Lai et al. 2017).

For VFT design, "ill-defined" tasks also have practical advantages over highly specific, tightly defined tasks. The virtual environment in which students carry out VFT tasks is fluid, uncontrolled, and rich in unexpected details and complexity. As it is hard for teachers to anticipate

exactly what learners will encounter in the open-ended, multifaceted VR environment, leaving students room to improvise and adapt is more efficient.

5.2.2.2 Designing for Personalization.

In this study, the important but unanticipated role personal relationships played in participants' imagined virtual plans suggests another reason teachers should build virtual space into their VFT design. Refraining from over-specifying the details of the VFT project tasks leaves room for students to build in connections between the virtual environment and their relationships in the real world.

Being able to personalize their VFTs in this way appeared to support participants' interest and sparked target language conversation among students. For example, P2 made the unique choice to record several audio clips (instead of written annotations) in their VFT, including a short fable about the origin of Venice. This story, and the personal history behind it, sparked a great deal of Italian-language conversation with the student's VFT partner and the course instructor. In general, I observed that the more personalized a given item in a participants' VFT was, the more it required (or inspired) conversation.

As noted in the Findings (Table 3), the four participants produced a great deal more spoken Italian conversation while using the VFT than during their other course activities. While the quality of that speech was not formally assessed, it was of sufficient accuracy that students easily understood one another during their guided-tour partner conversations and final whole-class presentations. This finding raises the question of *how* the VFT activity encouraged participants to speak so much Italian. This will be discussed in the following section.

5.2.2.3 Designing for Communication.

A challenge I have faced in designing effective VFT activities for language learning is finding ways to make them interpersonally communicative. The VFT activity sequence used in this study, for example, began by giving students a set of tasks and digital tools to explore an authentic cultural environment, and provided students with a digital exhibit platform in which they curated and annotated a kind of digital travel log and scrapbook. On its own, this first step in the sequence involves no interpersonal communication. For this study, I asked the participants to narrate their solo VFT work session, which resulted in a great deal of solo Italian speech (see Table 3 in the Findings).

The next task -- sharing their VFT experiences and providing explanations for their choices -- occurred in the context of a natural information-gap scenario. This scenario provided the motive for an extended Italian language conversation between paired participants. In turn, this conversation prepared students for the final presentation to the whole class. Having all students explore the same city ensured that all developed familiarity with the material before listening to one another's presentations.

5.2.3 Implementing VFTs to Support Active Learning

This section gives examples of ways VFTs can be situated in different virtual contexts to support specific classroom learning goals, and touches on implications for VFT use in online instructional settings. For the cases that follow, an effective approach can be for the teacher to create a single, shared digital VFT platform and give editing access to everyone in the class. One advantage of instantly displaying all the students' VFT work on a single shared platform is that the ideas, unique discoveries, and written target language annotations that each student contributes

can serve as inspiration and textual models for peers. For a single class session, the number of tasks in the VFT should be limited.

5.2.3.1 VFTs for Different Settings and Objectives.

For an elementary FL class, teachers can create a virtual “scavenger hunt” in a city or small town. Examples of target language task prompts could be: *Where can you eat? What will you buy? Where could you do sports? Find a person and describe what they are doing!* Depending on the learning objectives, tasks can be elaborated to elicit different uses of language. Students can also be asked to make written or spoken comments on one another’s VFT posts, or to discuss them face-to-face with a partner.

For the Italian literature course in which this study took place, I included an open-ended task, “Find a scene from our readings,” in the larger VFT project. This type of task could easily be adapted as a brief, imaginative, stand-alone VFT activity in many different settings. This task prompted students to make one creative post linking the image of a place or scene they encountered in Venice to any of the course readings. For example, a scene that reminded students of something in the course readings, a place they thought the author would have liked, a place that evoked a similar emotion, or another connection. Students added a short written or audio-recorded explanation in Italian to explain how they felt the scene or location connected to the course reading.

5.2.3.2 Using VFTs for Remote Learning.

This study took place in the context of a remote, videoconference-based language course. Like many colleagues, I noticed a lower level of student participation and interaction in online, videoconference-based FL courses than I am accustomed to in face-to-face FL classes. This findings of this study on the ways that the VFT approach engaged students in personalized learning

and motivated abundant interpersonal communication in the online environment are therefore of interest for those who design and teach remote or hybrid FL courses. Participant reports of getting to know one another better as a result of the personalized, communicative nature of the VFT activity suggest this approach could help to foster a sense of community in the online FL class setting.

5.2.3.3 Using VFTs To Increase Access.

An important part of my problem of practice involved finding ways to provide the undergraduate FL students I teach *more access to the experiences and resources of the target culture*. So many students express the desire to use the FL they are studying to visit and explore and countries where it is spoken, yet few have the time, opportunity, or financial resources to travel abroad. Facilitating learner exploration of the target culture *virtually* could serve as a first step on the path towards later, face-to-face experiences with the target culture.

The VFT approach applied in this study was designed to make authentic, interest-led exploration of the target culture available to students, without the need for expensive virtual reality (VR) equipment, by leveraging free digital tools and desktop VR. While this form of virtual experience is not as immersive as more advanced types of VR, the participants in this study responded to the approach with excitement, and chose to spend more time engaging in the VFT activity than was asked of them for this project. Participants' comments on the realism and experiential nature of the VFT approach suggest it could indeed help provide students with a way to use the language they are learning to facilitate virtual exploration of authentic, target-culture environments.

5.2.4 Summing Up

Teachers' decisions on the use of VFTs should be informed by a reflection on these basic questions: (1) What do we consider important for our students to learn about other languages and cultures? and (2) To what extent does the *way* our students learn support attainment of the desired learning outcome? If we want students to begin forming their own impressions of the target culture, and if we see value in the diverse range of outcomes inherent in a personalized, experiential learning approach, then the VFT is a good choice. This digitally mediated approach is not a substitute for other forms of classroom learning, but rather a way to broaden and personalize the ways that students can learn about language and culture.

5.2.4.1 What Can be Done with VFTs?

For the undergraduate students of Italian in this study, the VFT activity framework facilitated a great deal of spoken target language communication among peers; allowed classmates to get to know one another better; and enabled participants to explore aspects of Italian culture that related to their personal identity and interests. The VFT activity also positioned participants in an active role vis-à-vis their peers, as both co-explorers, and as newly knowledgeable guides who were eager to share what they had discovered with the class.

5.2.4.2 What Makes VFTs Effective?

Overall, the points discussed in this chapter suggest three key features contributed to the VFT activity's effectiveness. These were (a) using digital tools in a way that supported learner agency, (b) capturing learner interest via authentic resources and extensive options for personalization, and (c) using a design that both built in ample time, *and* created an authentic

purpose for target language communication among students. Ultimately, VFTs are just one example of an activity that relies on these important points. The design features that contribute to the effectiveness of the VFT for active, personalized learning have the potential to be incorporated into other kinds of learning activities as well.

5.2.4.3 What This Means.

We have seen that VFT activities are not terribly difficult to design, and the digital tools students and teachers need to create them are simple and free. Instructors can design VFT activities to suit their students and course learning objectives. In this study, the VFT activity served as a springboard for students to further customize how and what they learned. The personalized, communicative nature of what participants did as they worked with the VFT showed that the approach can help develop positive relationships among students.

What participants did with the VFT in this study, and how they responded to the approach, aligns with Van Lier's (2002) criteria for quality FL learning, namely: a framework that emphasizes positive social relationships within the classroom, complex language use, and active learning. For these participants, the VFT was an effective way to increase active, personalized learning; interest-led cultural exploration; and interpersonal communication. As part of a broader strategy working towards those same goals, the VFT approach has the potential to enhance and diversify existing undergraduate language and culture course curricula.

5.3 Limitations, and Questions for Future Study

5.3.1.1 Limitations.

Some limitations of this study, such as the small sample size, may be linked to the COVID-19 pandemic context. Course enrollment was lower than usual, and only four of the six students enrolled in the Italian class volunteered for this study. All were Italian majors or minors, thus not fully representative of the range of students enrolled in a typical FL class.

The boredom, stress, and travel restrictions participants reported experiencing due to the pandemic may have contributed to their positive response to the novelty of the VFT activity. Likewise, the unfamiliar online instructional modality may partly account for students' less positive response to other course activities.

5.3.1.2 Questions for Further Study.

This study focused on responses to the VFT activity among four students who were majoring or minoring in Italian. As a next step, it would be useful to study how students in a required 1st year FL course, who tend to have varying levels of motivation and less extensive linguistic knowledge, would respond to VFT-based learning.

Another question for future inquiry relates to one of Ozverir et. al.'s (2016) design principles: "Authentic activities are seamlessly integrated with assessment." How should the language learning that takes place via a VFT be monitored and evaluated? For students learning with VFTs, what type of feedback from the instructor and peers would most effectively help students to increase their language proficiency? In follow-up activities, how should potential language improvement and learning progress be measured?

5.4 Conclusion

This study was motivated by the desire to address my problem of practice. Interpreting the findings of this inquiry project, identifying what lessons the study could offer and considering how they might be applied led me back to review the study's starting points. The Improvement Science methodology calls for a thorough understanding of context in order to solve problems that arise within a given system. In this final section, I first describe what I have come to realize about the system within which I work, then revisit my initial description of the causes and context surrounding my problem of practice. The section concludes with dissemination plans for the lessons from this study -- plans that take into account the challenges posed by my changing professional landscape.

5.4.1 A Shifting Context

Improvement Science is an approach to improving problems in the context of larger systems. My goal, and the motivation of this study, is to offer FL students more opportunities for active, personalized, authentic learning. However, the system within which I work -- foreign language education at a regional state university -- is undergoing a great deal of change. In the first pages of this dissertation (pp. 5-6), I noted the Modern Language Association's (2007) and Lomicka and Lord's (2019) concerns about declining enrollment trends in FL courses nationwide. These problems have recently become more acute, in my own context as well.

5.4.1.1 The System I'm In.

At the university where this study took place, I have taught as contingent faculty for the past six years. Long-term trends of budgetary pressures and changing priorities have led the university to reduce the number of permanent faculty, and to rely increasingly on contingent faculty (who teach nearly 50% of all course hours, according to recent institutional assessment data). In the six years I have taught there, two elective language options have been discontinued. Two years ago, the French major was discontinued. One year ago, the former FL department was merged into English, and no longer has a separate department chair or coordinator. One month ago, the administration earmarked the Italian major for termination. Within such a system, and in my position as contingent faculty, what are my options for improving FL teaching and learning on a systematic level?

5.4.1.2 A Broader Context.

Because of these rapid changes in the larger landscape of higher education and at the university where I teach, I have come to see the context differently. Based on what I have learned, I have created an updated system diagram (Figure 2) with additional factors I now consider important, factors that add to my original understanding of both the problem context (see Appendix A, original fishbone diagram) and potential avenues for improvement, or system drivers (see Appendix B, original driver diagram).

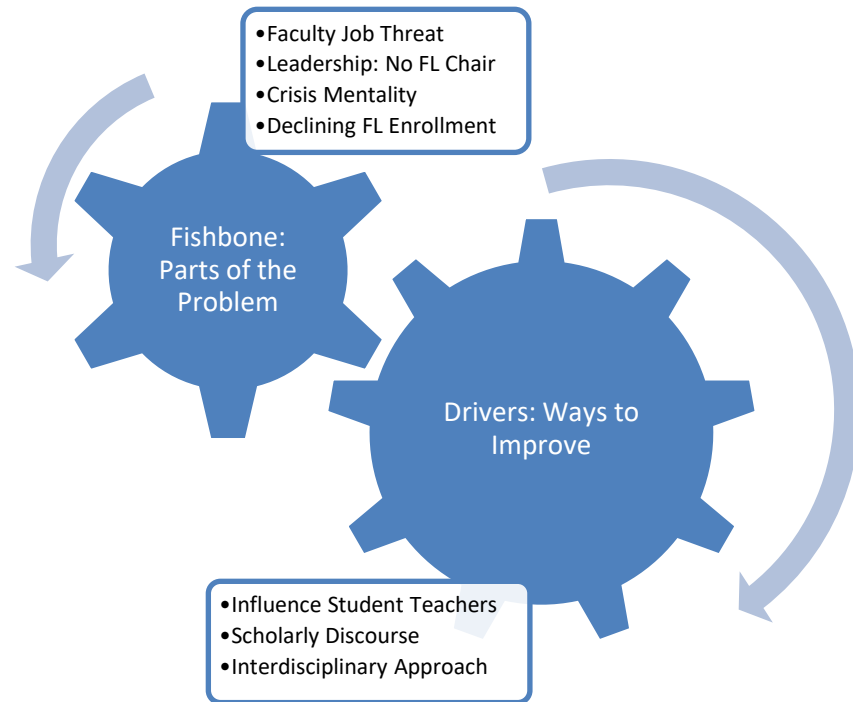


Figure 2 Updated Diagram: New Parts of the Problem, New Ways to Improve

5.4.2 Dissemination Plans: Where to Plant the Seeds of Change?

Addressing my problem of practice involves identifying factors that contribute to the problem, as well as those parts of the system in which improvement is possible. Figure 2 reflects my new analysis of problem factors and system drivers, and illustrates how the system within which I work may be viewed in a larger context than I first thought. The updated diagram in Figure 2 points towards some new options for disseminating, refining, and implementing what I have learned about VFTs and designing for active learning.

5.4.2.1 Future FL Teachers and Present Colleagues.

In this study, two of the participants were future teachers. They responded to the new VFT approach with interest and were eager to adopt and elaborate on the approach. In their comments and interviews, they reported that they would use VFTs in their future classrooms. I also shared the VFT approach with students in the FL Teaching Methods courses I taught last year, and found the student teachers were receptive and eager to adopt it. These experiences prompted me to expand my concept of problem drivers and ways to improve, to include not only my current colleagues, but also the future teachers I help educate. They represent a way to reach “beyond” my department.

In addition to influencing future teachers, I can share the findings of this study with current colleagues and local teachers by giving professional development presentations. At my current institution, I will present a professional development seminar open to faculty from all departments on ways to use VFTs, and other ways to use digital tools to support active, personalized learning.

5.4.2.2 Interdisciplinary Approach.

Figure 2 illustrated some recent, growing pressures on the study of FLs and on FL faculty at my institution: there is no longer a FL department, a FL chair or even a FL coordinator. Course offerings are being cut. Yet I have heard countless anecdotes from our students, who say a foreign language is their most personally rewarding course, and who appear very engaged in their FL learning. For many students at my institution, learning about other languages and cultures is a fulfilling and inspiring part of their intellectual and personal development. How can FL instruction continue to play a role in the future, despite the pressures our discipline faces?

I believe an interdisciplinary approach is the way forward. Jones (2010) emphasized the capacity of an interdisciplinary approach to address individual differences and to develop

important life-long learning skills such as critical thinking, analytical thinking, and communication on abstract topics. In the course of this study, I learned that VFTs are an effective tool for this type of interdisciplinary learning. The ways I observed students engage in personalized learning with VFTs, within authentic, digitally mediated contexts, show how other subject areas could be integrated into the approach.

5.4.2.3 Interdisciplinary Examples.

Foreign language faculty could collaborate with their colleagues in other disciplines to align the content of VFTs with key topics students are learning in another course, and simultaneously enable their students to use their developing FL skills to explore, interpret, document, and converse in the TL about what they learn in the virtual environment. This need not be limited to students with advanced FL proficiency, because instructors can adjust the level of the FL communication tasks they ask students to do. Here are three examples of potential interdisciplinary VFT learning projects:

- For a sociology course with students planning for real-life study abroad in Rwanda, students can explore the parts of the capital city they will visit in real life, document and discuss their findings using simple or advanced French, based on the students' level. These experiences will then serve in the sociology course as the basis for planning and discussion of the study-abroad learning objectives.
- In an economics course studying aspects of urban vs. rural economic environments, ask students to explore a part of a big city versus a small town, and gather information on what types of economic activity they see. This may be documented using simple target language for the FL course. Then, in the economics course, the students can write in their native language

comparing what they observed first-hand (virtually in the VFT) with the economic development theories they are studying.

- For an art or history course, students can visit the interior of national museums in foreign countries and use the target language to describe what they see and their responses to it (for the FL course). In the art or history course, these experiences will then serve as the basis for discussion that is grounded in recent, shared personal experiences of the cultural artifacts, thanks to the virtual field trip.

5.4.2.4 Scholarly Discourse.

Looking beyond my immediate context of practice, participating in the larger scholarly conversation on new approaches to FL teaching offers a way to effect changes and address my problem of practice. This dissertation represents a first step towards participation in the larger scholarly discourse. As a next step, conference presentations and working towards publication of research articles on the use of VFTs and other active learning approaches are a way to share what I have learned and refine it with input from other scholars. I will submit a presentation proposal on ways to use VFTs for FL and culture teaching and learning to the 2022 national ACTFL conference. Also, I will try to publish articles derived from this study in the *Foreign Language Annals* and in a journal focused on technology-enhanced language learning.

5.5 Final Comments

Just as VFTs represent a new opportunity for students to see and experience faraway locations and cultures, this study introduced me to the possibility of conducting remote, interactive

human research. Due to the pandemic context, I learned how to carry out an applied, classroom-based study in a completely virtual learning space -- no one involved in this study shared the same real-world space at any time. I observed and facilitated activities, communicated, and conducted interviews 100% remotely via videoconference and email. In the future, I can use these new skills again. Given an on-site faculty collaborator and IRB approval, I can gain access to a larger and more diverse pool of potential research settings without regard to geographic constraints -- perhaps even without putting participants to the inconvenience of leaving their homes.

Appendix A Fishbone Diagram

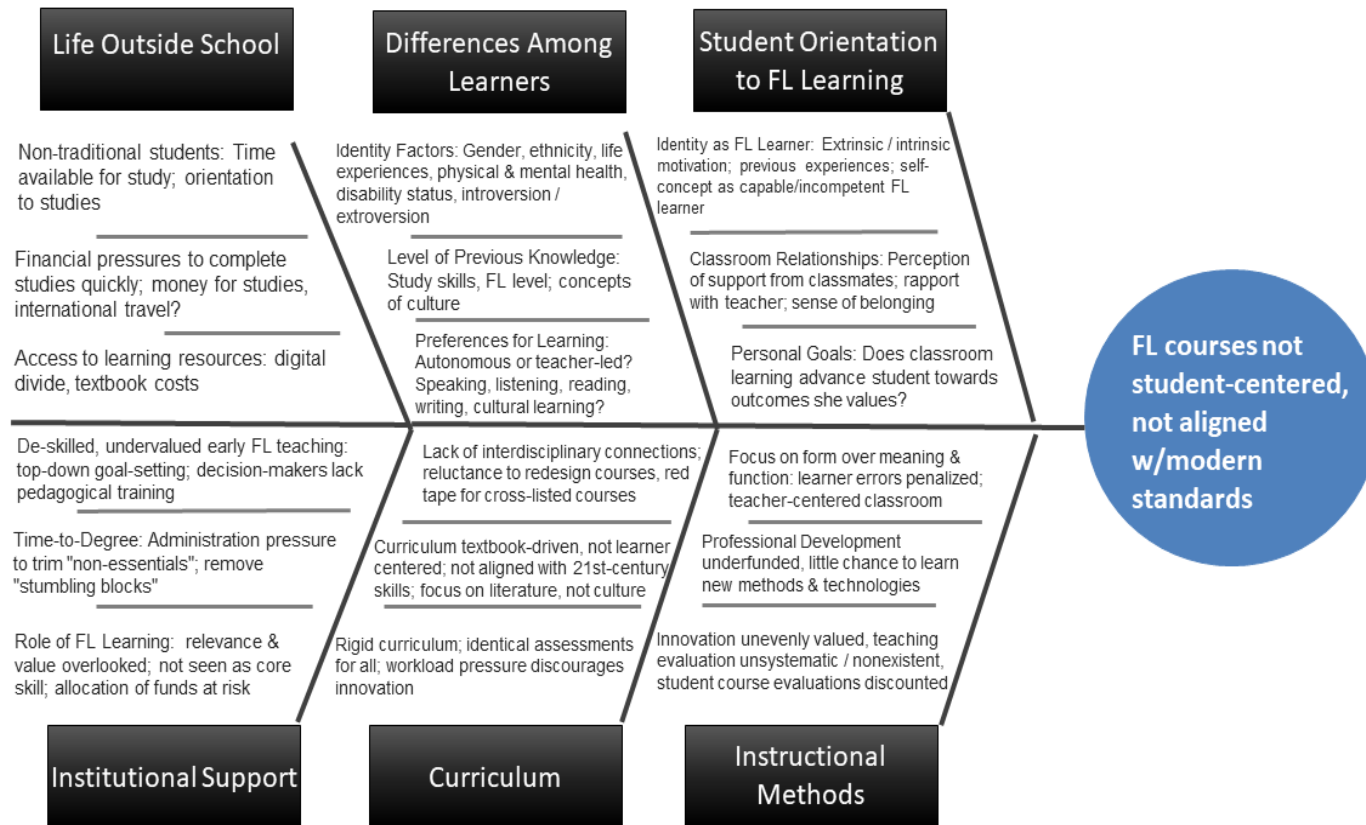


Figure 3 Fishbone Diagram

Appendix B Driver Diagram

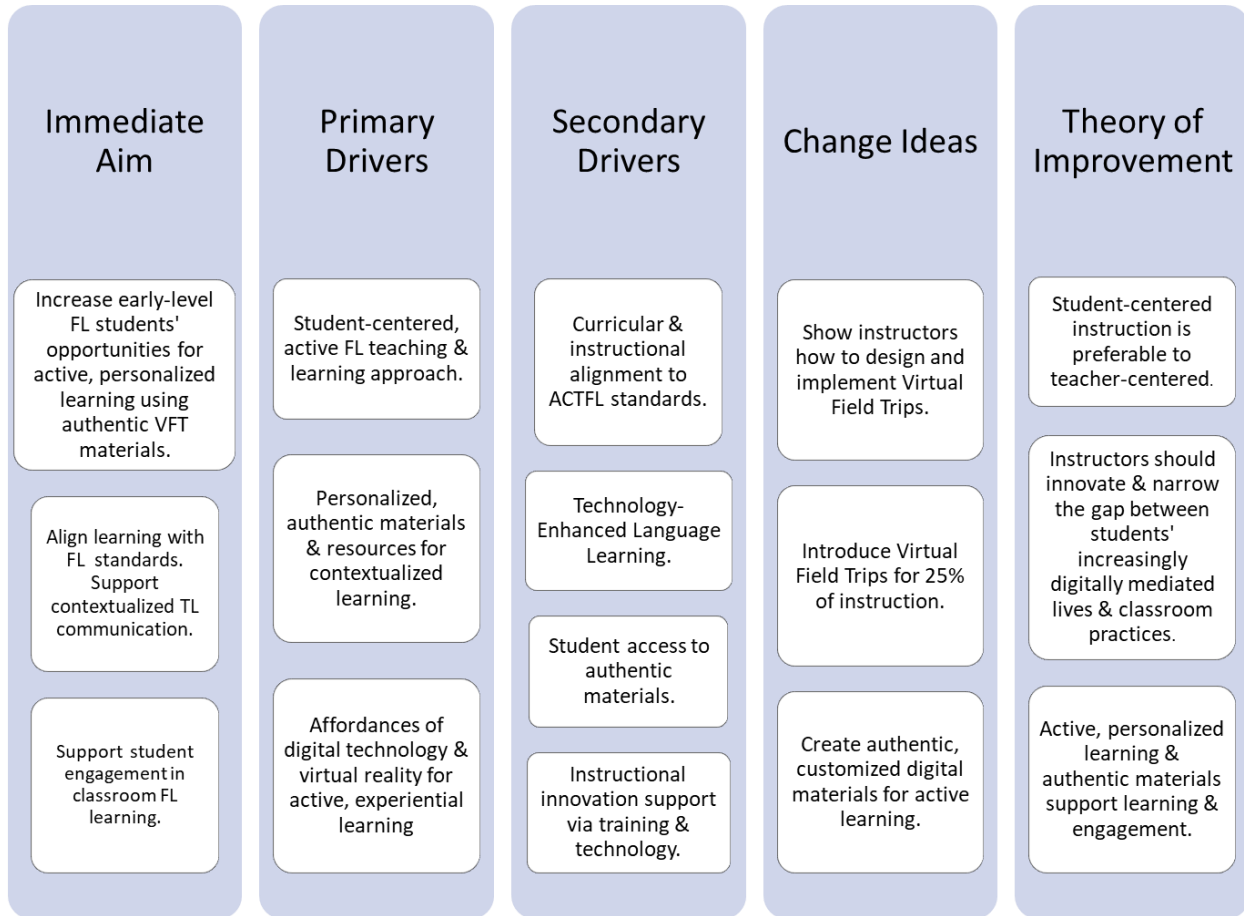


Figure 4 Driver Diagram

Appendix C Survey 1: Baseline

1. How many years of Italian classes (if any) did you take in high school? 0 / 1 / 2 / 3 / 4

years

2. How total credits of Italian coursework have you taken in college?

3. Have you visited or studied in Italy? For how many weeks or months?

4. How much time (if any) do you spend each week outside of class learning about Italian culture in the ways listed below?

Options: none / 0-30 minutes / 30 minutes to 1 hour / 1-2 hours / more than 2 hours

- Listening to Italian music
- Watching Italian shows and movies
- Speaking Italian for fun
- Learning about Italian culture by using the Internet
- If you do other Italian cultural activities in your free time, please name them and state approximately how much time you spend weekly on them _____

5. Name the two most interesting kinds of activities you've done in any Italian class!

- _____ and _____

6. Name the two least interesting kinds of activities you've done in any Italian class!

- _____ and _____

7. In this class, how much do the activities you've done so far connect to what you're really interested in?

Likert options: (1) not at all / (2) a little / (3) somewhat / (4) very much

Appendix D Survey 2

1. In the process of creating your virtual visit to Venice, how much were you able to CHOOSE how you learn things, and what you learn about?

Likert options: (1) not at all / (2) a little / (3) somewhat / (4) very much

2. In creating your virtual visit to Venice, how much do the activities you've done with connect to what you're really interested in?

Likert options: (1) not at all / (2) a little / (3) somewhat / (4) very much

3. In the past two weeks, how much time (if any) have you spent outside of class learning about Italian culture in the ways listed below?

Options: none / 0-30 minutes / 30 minutes to 1 hour / 1-2 hours / more than 2 hours

- Listening to Italian music
- Watching Italian shows and movies
- Speaking Italian for fun
- Learning about Italian culture by using the Internet
- If you do other Italian cultural activities in your free time, please name them and state approximately how much time you spend weekly on them _____

4. What (if anything) have you learned from your experience of creating the virtual visit, so far?

5. Thus far, for creating your virtual visit, what guidance or preparation would you have needed from me or other faculty that you did NOT receive?

Appendix E Survey 3

1. In the past two weeks, how much time (if any) have you spent outside of class learning about Italian culture in the ways listed below?

Options: none / 0-30 minutes / 30 minutes to 1 hour / 1-2 hours / more than 2 hours

- Listening to Italian music
- Watching Italian shows and movies
- Speaking Italian for fun
- Learning about Italian culture by using the Internet
- If you did other Italian cultural activities in your free time, please name them and state approximately how much time you spend weekly on them.

2. In the process of creating your virtual visit to Venice, how much were you able to CHOOSE how you learn things, and what you learn about?

Likert options: (1) not at all / (2) a little / (3) somewhat / (4) very much

3. In the process of creating your virtual visit to Venice, how much do the activities you've done with connect to what you're really interested in?

Likert options: (1) not at all / (2) a little / (3) somewhat / (4) very much

4. Overall in your Italian courses at YSU, how much have the class activities you've done connect to what you're really interested in?

Likert options: (1) not at all / (2) a little / (3) somewhat / (4) very much

5. Overall in your Italian courses at YSU, how much have you been able to CHOOSE how you learn things, and what you learn about?

Likert options: (1) not at all / (2) a little / (3) somewhat / (4) very much

6. Do you think there are any benefits or unique advantages (for your Italian learning) from creating virtual visit to an Italian place and presenting your trip to a classmate?

7. Do you think there are any downsides or specific pitfalls (for your Italian learning) to creating a virtual visit to an Italian place and presenting your trip to a classmate?
8. What guidance, learning supports, or preparation would have been helpful for creating and presenting your virtual visit that you did NOT receive?
9. What (if anything) have you learned from your experience of creating the virtual visit, so far?

Appendix F Full Observation Sample

Table 11 Sessions Included in Active Learning Observation Sample

Regular Instruction Sessions		VFT-Based Sessions		
Date	Minutes	Date	Activity	Minutes
9/28	50	10/26	In-class introduction, demonstration, guided workshop	40
10/5	54	10/28	In-class guided workshop	25
10/7	50	11/2	In-class guided workshop	25
10/19	50	11/3	P4 solo	30
10/21	50	11/3	P1 solo	40
10/26	10	11/4	P2 solo	43
10/28	25	11/10	P3 solo	65
11/2	25	11/11	P3-P4 partner	42
-	-	11/13	P4-P3 partner	34
-	-	11/15	P2-P1 Partner	38
11/4	50	11/15	P1-P2 Partner	36
11/9	50	11/16	Five final in-class VFT presentations	56

Note: Times rounded up to next full minute.

Appendix G Semi-Structured Interview Talking Points

(Conducted via videoconference)

- How has your work on the VFT been going?
- What do you think about what you saw of Venice during this session?
- What, if anything, did you learn while touring and discussing your partner's VFT?
- What difficulties have you had, thus far?
- Please tell me about showing your partner your VFT. How did that go? How did you feel about it?
- What did you think about your "guided tour" of your partner's VFT?
- What was the most interesting or surprising thing about your partner's VFT?
- Please describe what (if anything) was different about your partner's VFT compared to yours.

Appendix H VFT Partner TL Questions

Sample, optional questions (you can use others)!

Can you explain more about what that *is*?

That activity / tourist attraction / restaurant looks intriguing / weird / fun

- Why did you choose it?
- What do you think _____ will be like?

Where is that activity / tourist attraction / restaurant located exactly?

What did you think about _____?

At the end

What part of your itinerary is your favorite?

Do you foresee any difficulties with your planned visit?

Now that you visited virtually, would you still like to visit Venice in real life?

Domande facoltative di esempio (puoi usarne altre)!

Puoi spiegare di più di cosa si tratta?

Quell'attività / attrazione turistica / ristorante sembra intrigante / strano / divertente

- Perché l'hai scelto?
- Come pensi che sarà _____?

Dove si trova esattamente quell'attività / attrazione turistica / ristorante?

Che cosa hai pensato di _____?

Alla fine

Quale parte del tuo itinerario è la tua preferita?

Prevedi qualche difficoltà con la tua visita programmata?

Ora che hai visitato virtualmente, ti piacerebbe ancora visitare Venezia nella vita reale

Appendix I Links to Completed Participant VFT Projects & Sample Framework

Participant 1: [Virtual Trip Project](#)

Participant 2: [Virtual Trip Project](#)

Participant 3: [Virtual Trip Project](#)

Participant 4: [Virtual Trip Project](#)

Appendix I.1.1 Image of Sample VFT Framework

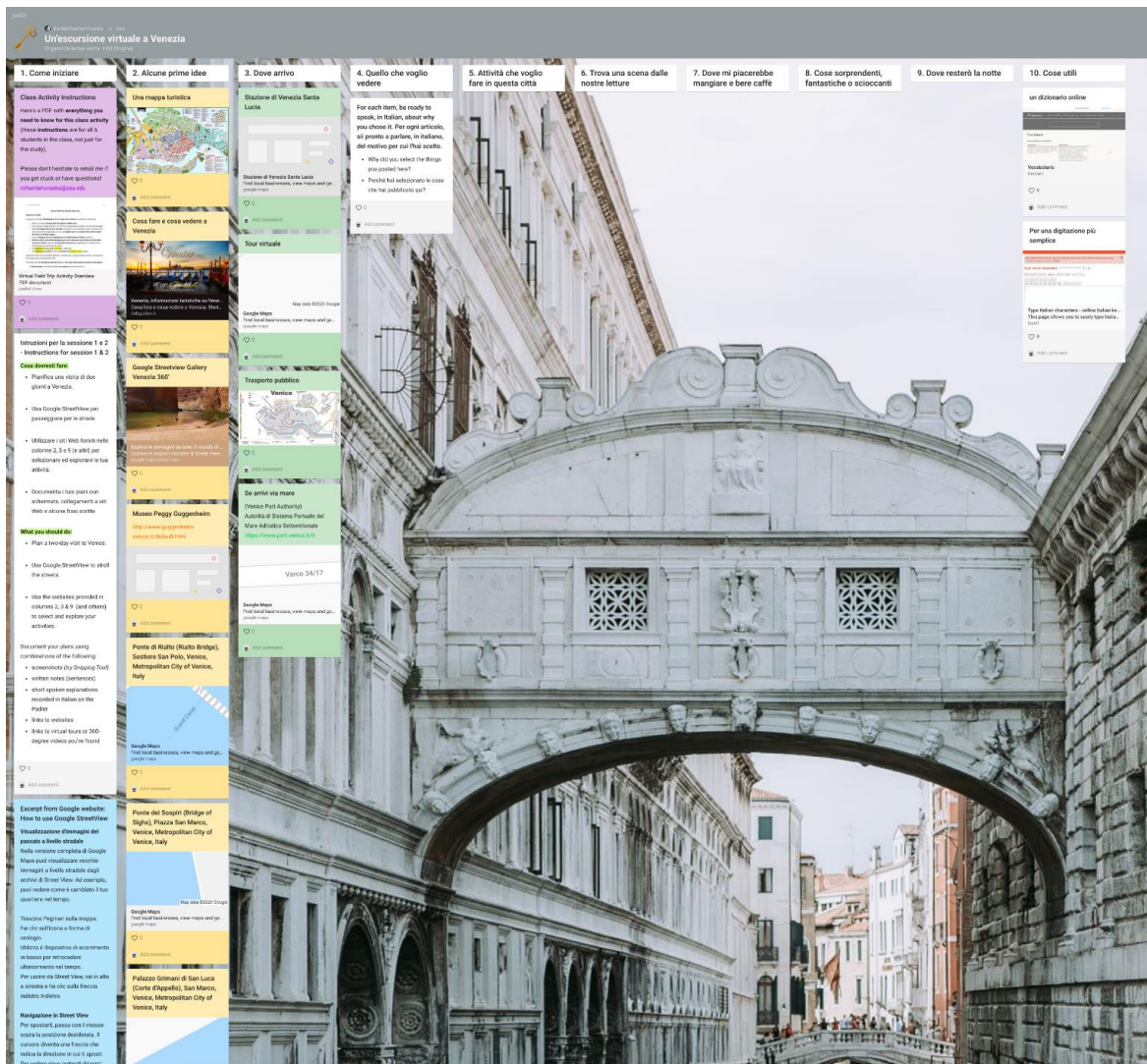


Figure 5 Image of Sample VFT Framework

Appendix J Focus Group Questions

(Conducted with entire class and its instructor, via videoconference)

1. How important do you think it is, in a foreign language class, to be interested in the topics that you're studying?
2. Can you tell me you learned, if anything, learn from this experience of making a virtual visit to Venice?
3. What were the best and worst things about using the virtual visit approach?
4. What kind of help, guidance or digital tools could I have provided, or trained you with, that would have helped you to learn more effectively with this approach?
5. Is there anything else (that I didn't ask), that you think would be worth mentioning?

Appendix K Virtual Field Trip Activity Overview (abbreviated)

Your goal is to make **detailed plans for a 2-day visit to Venice** you'd like to undertake.

- Since it's virtual, **you can pick the season and the time.**
- You can even imagine there is no Coronavirus pandemic and plan your trip accordingly.
- **You can imagine you're rich** and plan to stay in the best hotels and eat at the most expensive restaurants, or you can **imagine you're a student who needs to plan the trip on a limited budget.**
- You can **imagine you're travelling solo or with friends or family** members.
- **All the written and spoken language you use to document your plans on the Padlet must be in Italian.** You can **use the online dictionary** & typing tools in column 10 to quickly look up new words you need.

Open the Padlet virtual field trip platform I emailed you, using a computer (not a smartphone). The Padlet has **10 numbered columns** (below). **You only need to post in columns 3 through 9.**

1. *Come iniziare* – Includes detailed **instructions** and video how-to's.
2. *Alcune prime idee* – Includes a plain map, a tourist website for starter ideas, and some jumping-off points (like Google Map links) in the city. Get city visit ideas here.
3. *Dove arrive* – Includes some **possible starting points** for your visit. Post where and how you plan to arrive in this column.
4. *Quello che voglio vedere* – Create 3 posts here with things you would like to SEE in and around the city. This could be museums, historic sites, famous buildings, beautiful views, etc. Include links or images, and explain why.
5. *Attività che voglio fare in questa città* - Create 3 posts here with activities you would like to DO in and around the city. It could be anything – sporting events, nightlife, shopping, going swimming, attending an opera, renting a bike, etc. Include links or images, & explain why.
6. *Trova una scena dalle nostre letture* – Create one post that links a place or scene you encounter in Venice to a course reading you've been studying in class. It can be a scene that reminds you of something in the course readings, a place you think the author would have liked, a place that evokes

a similar emotion in you, or another creative connection. Include a quote from the readings, if you like. **Post an explanation (in Italian) of 4 or 5 sentences, written or spoken**, to make it clear how you feel the scene or location connects to the course reading.

7. *Dove mi piacerebbe mangiare e bere caffè* - Create 3 posts here with places you would like to go for a meal or a drink, in and around the city. Include links (perhaps to the menu) or images, and explain what you'd like to eat there.

8. *Cose sorprendenti, fantastiche o scioccanti* – Make at least one post with anything you saw during your Google StreetView explorations that really surprised you, shocked you, or fascinated you. Analyze and explain why this [thing, place, scene] made you feel that way.

9. *Dove resterò la notte* – Find one actual lodging place (hotel, youth hostel, Airbnb, campsite, etc.) and post it here. Explain why you selected it, include its website (in Italian) if available, and anything else you consider important.

10. *Cose utili* – Includes an online dictionary and Italian typing tools.

What tools will I need for this activity?

For this activity, you need a computer, Internet access, the Padlet field trip platform I sent you, Snipping Tool (or screenshots), Google Maps, and Google StreetView. Additional guidance will be provided.

- Now, please start planning and developing your virtual field trip at home.
- Part of your Wednesday live-online Italian class meeting will be a group workshop for everyone to work on their field trips during class time.
- Next week, you will talk through a solo “guided tour” of your field trip, speaking Italian.
- Finally, a week after that, you’ll guide a class partner through your planned trip in Venice. Your partner will ask you questions about it in Italian. This partner activity should last between 30-40 minutes. Each student will get a chance to present their trip to a partner.

Optional extra information - What is a virtual field trip?

It's a way to use technology to explore a digital facsimile of a real place. A “digital facsimile” means a lifelike copy created with digital technology that is accessible via the Internet. We will use Google StreetView to access this. Google Inc. sent 360-degree videorecording equipment to

capture 360-degree video images of life on streets around the globe -- sometimes even inside buildings. Private individuals also upload their own 3-D digital photos to StreetView. Those images appear as blue dots on the map. StreetView gives you very open-ended access to the streets of a town or city. Some things cannot be seen (the inside of many buildings, certain streets, areas, and regions) but overall, the options for exploration are vast.

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