Exploring the Integration of Technology into Jewish Education:
Multi-user Virtual Environments and Supplementary School Settings

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Abstract

This descriptive case study explores the implementation of a multi-user virtual environment (MUVE) in a Jewish supplemental school setting. The research was conducted to present the recollections and reflections of three constituent populations of a new technology exploring constructivist education in the context of supplemental and online schooling. Given the desire of the field of Jewish education to innovate and create within the area of supplemental schooling, this case study is presented to consider the possibility of MUVE as an innovative alternative and a framework for future technology integration. Through student focus groups, parent and teacher interviews, and review of program artifacts, this study seeks to present a description of how the implementation of MUVE technology supports a constructivist approach to education in a Jewish supplemental school. The description includes participant understandings of the learning experience as well as their understanding of the added value of using technology in this constructivist approach.

Several important findings emerged from the case study. The stakeholders did experience or observe social constructivism in both the virtual and physical classroom spaces. However, students found the constructivist teaching style to be incredibly frustrating. All parties agreed that MUVE in a supplemental school is exciting and innovative and that the allure of technology and gaming is of great value despite the many technical difficulties. Finally, the students connected to the land of Israel through the MUVE. The findings of the study are significant both for the field of Jewish education as well as for the general community of educators incorporating technology into a constructivist classroom setting. The implications of the descriptions of student experience in particular provide a framework for the best practices for future implementations.
Keywords: MUVE; constructivism; Jewish supplemental school; blended learning; innovation; Jewish education
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Chapter One: Introduction

Topic

Jewish education, which includes the education of Jewish students through private day schools, after-school programs, and camping and youth group movements, is being critically examined by educators and consumers. The primary mode of Jewish education is comprised of after-school and Sunday morning classes, known in the field as complementary or supplemental Jewish education. Recently, a number of national initiatives focused on updating and improving the supplemental school model have emerged, prompting stakeholders to call for innovation. Some supplemental schools have begun the process of change. However, it is critical to note that worthwhile innovations need not only be new, they also need to be better (Woocher, 2011).

Unlike in the 1960s and 70s, Jewish innovative ventures in the past ten years have not been about protesting against the establishment. Rather, they have centered on determining what is necessary to support meaningful Jewish lives in the 21st century (Woocher, 2011). Innovations in the field have to be “new,” have to be “better” and must be relevant in order to sustain the system of Jewish supplemental school education.

The dramatic demographic, sociological, cultural, technological, and organizational changes that have taken place in Jewish and general society over the past quarter century call for equally dramatic changes in how Jewish education is organized, practiced, and delivered in 21st century North America to attract and to retain the participation of an increasingly diverse population (Woocher, O’Brien & Isaacs, 2010). Supplemental schools will not achieve the breadth or depth of change desired without addressing each of the criteria of new, better, and relevant innovation.
Making meaning and personal connections to Judaic content stands at the forefront of Jewish Education in all of its approaches. Supplemental schools are responding to the demands for innovation and improvement to the programs in a number of ways, including exchanging traditional methodology with a constructivist approach, as many students do not respond positively to lectures and need space to employ constructivist methods which will allow them to create personal connections and meaning. One such example of constructivism in a supplemental school is found in the gamification of teaching the history of Israel’s second wave of emigration through multi-user virtual environments.

Multi-user virtual environments (MUVE) have been used in a number of educational settings over the past ten years, with limited use in Jewish education. MUVEs are web-accessible graphic environments that allow for synchronous interaction between user avatars, the environment and educational content (Alrayes & Sutcliffe, 2011). MUVEs provide a space for learners to extract their own personal meaning from Judaism’s vast tradition and history. This study explores the integration of constructivist education through use of an MUVE called Virtual Israel in a supplemental school’s fifth grade Israel curriculum.

**Research Problem**

The supplemental school presents familiar and unique challenges. Chief among the challenges is the notion of “limitations”. In supplemental schools classroom time is limited, connections to Judaism outside the supplemental program are often limited, and the attention span of students attending school after they have already spent the day learning is often limited. As this method of education is often seen as optional by students and parents, supplemental programs must work to retain their population (Cohen, 2008). Notable scholars in the field of
Jewish education are predicting the demise of the traditional Hebrew School in the next decade, giving way to innovative, fresh approaches (Weissman, 2010).

Additionally, students in these programs are digital natives who expect technology to be a part of their lives. Students are so engrossed in technology in their everyday lives that a traditional textbook-and-lecture supplemental school may lack relevance and meaning. The general field of education has acknowledged the struggle of engagement of digital natives (Prensky, 2009). Many researchers spend time assessing and implementing new technologies in the general education world. Jewish education must follow suit in order to ensure the engagement of students within the system itself and more importantly, an appreciation of and interest in the content.

**Evidence Justifying the Research Problem**

The use of virtual space in a classroom environment is not a new idea. In fact, there are several studies of the implementation. Hew and Cheung (2010) examined over 400 papers written on the topic of integration MUVEs into K-12 classrooms and in some cases higher education. They identified three uses for virtual space in a classroom setting: communication spaces, simulation space and experiential space (p. 37). Additionally, Salmon (2009) took a close look at emerging trends within the field of educationally related implementations of MUVEs and noted a few of the methods. Community building activities and collaboration have become commonplace in MUVEs such as Second Life. Some universities have built classrooms and replications of museums in order to allow for asynchronous extension activities by their students. Salmon also notes the use of MUVEs in order to explore places or people that are otherwise difficult to encounter in real life (p. 530). The immersive quality of the MUVE
experience is full of opportunities for the learner to explore, encounter and create personal meaning.

Deficiencies in Evidence

While significant attention has been paid to the implementation of MUVEs in secular education settings, the field of Jewish education remains essentially untouched. Minimal research attention has been paid to the successful integration of MUVE technology or constructivism in Jewish educational settings in general and certainly less in the field of supplemental education. Likewise, I was unable to find any articles that describe a constructivist blended learning approach in a Jewish supplemental setting.

The Audience

Exploration of a constructivist approach to education in a supplemental school setting using MUVEs may provide administrators in supplemental school settings with a better understanding of how to create relevant and engaging learning experiences. Additionally, teachers in other Jewish educational settings who might be interested in the implementation of similar technology would benefit from this study. Synagogue-based rabbis and educators may benefit from the information as well and could plan to utilize a similar approach in their programs. The audience for this work may extend beyond the Jewish educational community, as a critical exploration of the convergence of blended learning and constructivism transcends content and topics.
Context

Supplemental schools across the country are experiencing coercive pressure to reinvent themselves -- pressure from central agencies, from the competing synagogues and from the movement as a whole. Over the past twenty years, several programs have been established with the goal of facilitating deep and sustainable congregational change. Programs such as STAR, L’atid, ReImagine, Synaplex, and Jewish Futures encourage congregations to take a serious look at what the model of Jewish education looks like, and to envision alternatives. This study seeks to explore the notion of constructivism through MUVE technology as an example of an innovative alternative to the traditional supplemental schooling.

The advancements of technology have forever changed the landscape of educational practice. Educators must adopt prudent uses of available technology in order to enhance digital wisdom and maintain relevance to digital natives (Prensky, 2009). Students and teachers have instant access to thousands of years of history, massive libraries, and realistic simulated experiences equivalent to years of actual experience (Prensky, 2009). The school selected for this study has acknowledged a need to integrate progressive thought and technologies into the program and has been experimenting with an alternative supplemental school model for the past three years.

This study took place in a supplemental school on the West Coast. The school is housed by a Conservative synagogue with a membership of approximately seven hundred and fifty families. The majority of the member families would be classified as middle-class. The school itself supports approximately one hundred families. Students in the school attend a combination of public schools and non-Jewish private schools for their general education and attend this supplemental program for Judaic and Hebrew studies only. The school meets one weekday
afternoon for two hours, occasional Sunday mornings, and offers immersive weekend retreat experiences throughout the year.

**Positionality Statement**

As a student and educator on the cusp of the category “digital native,” my personal, positive experiences place me in a position of bias toward the use of new technologies. As a Jewish educational leader, I am concerned about the delay in integrating technological trends into our field, as the prudent use of available technology appears to be the only way to keep up with the changing student population. I know that this belief about a difficulty in my field is both a positive and negative aspect of my interest (Machi & McEvoy, 2009). I feel personally attached to the ideas of constructivism in education and technology integration and therefore passionate about the idea of MUVEs in educational settings. I also know that it was important to control my feelings and opinions in order to collect data and information without bias (Machi & McEvoy, 2009).

I believe that technology changes not just the way information is processed, but also the way in which those born of the digital age interact in the world—indeed, that the human brain itself is undergoing change (Prensky, 2010). Therefore traditional human wisdom combined with digital enhancements is the only way people will be able to keep up with the demands of the 21st century (Prensky, 2009). I knowingly brought these beliefs with me as I collected data and looked for a balance of studies of successful and unsuccessful integration of other technologies.

Allowing the student to create his or her own meaning in the supplemental school classroom is crucial to the success of the educational experience. I believe that when students come to their own conclusions and make personal connections to the material presented, the
connections are lasting and formative. MUVE is an exceptional example of an opportunity to teach students in a relevant way while utilizing a constructivist approach.

I believe that education should be dynamic, hands-on and experiential. Learners of all ages are able to design their own learning experiences based upon their interests or questions generated by the environment. As outlined in Brooks and Brooks’ (1993) guide for implementation of constructivist theory, “Autonomy and initiative prompt students’ pursuit of connections among ideas and concepts (p. 103).” I agree that personal connection to the content is of utmost importance and can be achieved by allowing the learner space to explore and inquire.

MUVEs create space for personal connection that can extend into other areas of the learner’s life. While the learners engage in a multi-user environment which allows for collective experiences, it is up to the individual to decide the areas of exploration allowing for personal growth and development. I feel that education is not about how much information can be regurgitated by the students of a classroom. Education is about making meaning, finding personal connections and engaging a variety of intellectual processes (Eisner, 1994).

Previous knowledge of the students’ interaction with technology helped to equalize my bias. As we have experimented with other technology integration in the past, I made incorrect assumptions about the students’ comfort and knowledge. I found it surprising that the students had difficulty using web technology to produce a collaborative document, assuming (wrongly) that they had worked with certain technologies at their secular schools. This realization countered my previous bias upon collecting data and descriptions from the students.
**Research Questions**

The guiding research question of this case study focuses on the exploration of MUVE technology within the bounded system of a supplemental school setting: How does the implementation of MUVE technology support a constructivist approach to education in a Jewish supplemental school?

The following three sub-questions act as a guide to approaching the project:

1. How does MUVE technology and constructivism represent an innovative alternative model of supplemental schooling?
2. What is the added value of using technology in this constructivist approach?
3. What are the participant’s understandings of this learning experience?

**Theoretical Framework**

The use of a theoretical framework provides a lens through which to view the literature, data collected, and overall research findings. Given that the purpose of this research is to explore how MUVEs represent an innovative and constructivist approach to supplemental school programs it seemed appropriate to utilize the philosophy of constructivism as a foundation, as virtual worlds provide an excellent platform for this. (Miller & Peck, 2010). Students engaged with Virtual Israel began each class session with an in-person prompt or conversation facilitated by their instructor that intended to inspire inquiry. Then they were moved to a computer lab with their classmates where they entered the virtual space. In this setting the students were able to interact with each other in person as well as in the virtual setting. As a result of the many opportunities for interaction, cognitive constructivism (working alone) and social constructivism (working in groups) will be explored.
Additionally, a look at the Community of Inquiry (CoI) model will provide a supporting lens and enhance the understanding of social and cognitive constructivism. After I reviewed the literature and began to formulate the design of this study, it became clear that application of the CoI model would serve to enhance the understanding of constructivism applied in this learning environment. Before the explanation of how the theoretical frameworks of CoI and constructivism act to support one and other, it is important to take an in depth look at each one of them individually.

**Cognitive Constructivism**

Cognitive constructivism, based on the original contributions of Piaget, contends that learning takes place in the mind of the individual when they themselves have constructed knowledge from their actions with the environment (Piaget, 1952). The interactions can be either physical (touching the object) or mental (connecting the new information to something they already know and then enlarging or refining this knowledge). To Piaget, learning should be based in discovery and providing information or experiences that children can transform into personal meaning (Piaget, 1952). Bruner also postulated that the notion of discovery learning is a crucial aspect of the educational process (Bruner, 1960). In a constructivist approach to education, it is up to the facilitator or teacher to develop in their students a thirst for inquiry and positive attitude toward learning (Bruner, 1960). Constructivist philosophy suggests that the presentation of lessons should have within them the underlying goal of encouraging students to deduce or fill in the gaps.

Dewey presented the concept of “deliberation” (1922). Deliberation to Dewey is a dramatic rehearsal of the various potential outcomes that may occur after a student makes a decision. The process of deliberating itself then becomes an important aspect of the educative
experience. MUVEs allows not only for deliberation but for the implementation of the learning cycle model which is crucial to the constructivist approach and as well as the individual’s opportunities to make personal connections (Brooks & Brooks, 1993). The opportunity to explore and test student hypothesis in a safe space and then to apply the new piece of knowledge to the repetition of the process is crucial to constructivist education (Brooks & Brooks, 1993). This opportunity is one that is ever present in the MUVE setting.

As students explore the MUVE, there are several options for engagement with the material. As previously noted, each of the eight lessons began with a facilitator presenting an opportunity for inquiry and connection to the history lesson at hand. The delivery vehicle for this inspiration will vary but the students will always find themselves together in a classroom setting for this piece. While in the classroom setting, in the computer lab and in the virtual space, the students often worked alone. They were individuals working alongside their classmates but not along with them. For this piece, as well as some aspects of the exploration of the MUVE, cognitive constructivism is a fitting framework.

Social Constructivism

Social constructivism may appear contrary to cognitive constructivism given that Vygotsky, unlike Piaget, theorized that learning was a communal experience (Duele, 2013). However, the two approaches complement each other well, given the virtual and social settings in which the students will be engaged. In social constructivism, the context and setting are of utmost importance as they become vital cognitive tools in the formation of knowledge (Vygotsky, 1978). For learning to occur in this philosophical framework, the child must first encounter the social environment on an interpersonal level and then internalize the experience.
The child’s earlier experience combined with the new information becomes the foundation for the new knowledge construction.

Vygotsky’s learning theory has three major tenets: the zone of actual development (where the student actually is), the zone of potential development (where the student could or should be), and the zone of proximal development (the amount of assistance required for a student to move from the zone of actual development to the zone of potential development) (Vygotsky, 1978). In social constructivism, challenging but reachable goals lead to effective learning experiences as more capable peers can act as the shepherds from one zone to the other (Vygotsky, 1978). This philosophy fits neatly with elements of game design philosophy, which are not explicitly touched on though subtly present in the similarity of MUVE technology to video game experiences. Vital to the design of Virtual Israel was the inclusion of “leveling up” and experience points with Vygotsky’s zones as the impetus.

Both cognitive and social constructivism emphasize the importance of making meaning and personal connection above rote memorization or transfer of content. The teacher must be an expert in content in order to guide the students and help them uncover the potential information. Critics of the constructivist philosophy contend that the title has become devoid of meaning and that in a classroom or school governed by constructivist philosophy the teacher completely disappears or the student entirely determines what happens in the classroom (Harlow, Cummings, & Aberasturi, 2006). It is clear that use of constructivist philosophy in this setting and in others must be carefully and thoughtfully designed.

Community of Inquiry

The Community of Inquiry (CoI) model is a framework used frequently in the existing MUVE literature. Burgess et. Al (2009) looked at how CoI applied specifically to their learning
environment in Second Life (where Virtual Israel was built). Both observational and perceptual data were gathered in this study from the two instruments derived from the CoI model — the Multi-User Virtual Environment Education Evaluation Tool (MUVEEET) and the CoI Survey (Burgess, Slate, Rojas-LeBouef & LaPrarie, 2011). However, the original application of the framework was used to assess online learning in higher education settings.

The model was developed based on significant research and assessment of online learning settings. The researchers found that online learning required tremendous forethought and consideration of the behaviors and processes that lead to successful learning experiences (Garrison, Anderson, & Archer, 2000). Garrison and Anderson (2003) sought to define “good e-learning” through the exploration of three major components; cognitive presence, social presence, and teaching presence.

Garrison defines cognitive presence as “the exploration, construction, resolution and confirmation of understanding through collaboration and reflection in a community of inquiry” (2007). Cognitive presence is grounded in the work of Dewey on practical inquiry and Vygotsky on concept development (Garrison, Anderson, & Archer, 2000). In a face-to-face classroom, critical discourse and conversation is the norm. This model seeks to understand, among other things, how critical discourse and conversation in an online setting inspires exploration, construction and resolution. What is interesting about this model is that identifies the three presences as intertwined (see Figure 1 below) and as an overlapping set of lenses (Garrison, 2007). One element does not exist alone, they all complement each other.
Social presence is the extent to which online learners are able to project themselves as “real people” in the setting (Garrison, Anderson, & Archer, 2000). In a community of learners, it is possible to support personal cognitive presence when the students project their personality and character into the community and work together (Garrison, Anderson, & Archer, 2000). 

Teaching presence is comprised of two functions, first the design of the educational experience and second the facilitation of the learning activities. This element reflects the creation, integration, and facilitation of both cognitive and social presence (Garrison, Anderson, & Archer, 2000). **CoI and Constructivism as Theory**

In the exploration of a blended learning environment, the combination of constructivism and CoI is a logical theoretical framework. The CoI model is grounded in similar theory to constructivism and in its very nature supports constructivist ideals. The CoI model as applied to an online learning environment supports and enhances the understanding of constructivism in a blended learning setting. Figure # is a representation of the merging of the theories and how they
can support the analysis of the data collected on the implementation of MUVE in supplemental school settings.

![Figure 2 CoI Model as influenced by Constructivism](image)

The environment in which the students experienced Virtual Israel was unique. They began each lesson in person, with their teacher offering a triggering event, an opportunity for inquiry. This in-person lesson demonstrates cognitive presence which is a precursor for critical thinking and an important element of cognitive constructivism, represented in the model above. The students then went into the computer lab together and interacted both in person and in the simulation, not always in the same way. This is represented above in the quadrants labeled virtual and physical presence as well as the social constructivism field. The teacher played a very important role in the delivery of the material and the support in the simulation; this is denoted in the fields above labeled blended learning, content and physical presence of teacher. Finally, at the center of the diagram, in the original CoI model the words “educational experience” appears. However, here “making meaning” is substituted to highlight the core of the
constructivist philosophy. This tool will be used in a number of ways in the analysis of the data and the exploration of the case study.
Chapter Two: Literature Review

Introduction

Advancements in technology have completely changed the landscape of educational practice. Technology changes the way information is processed and the way in which those born of the digital age interact in the world. As technology changes, so do the brains that interact with it, as their early literacy skill have been developed with and steeped in technology (Toledo, 2007). Educators must adopt prudent uses of available technology in order to enhance digital wisdom and maintain relevance to digital natives (Prensky, 2009). One such prudent use is the introduction of MUVEs into educational settings. MUVEs allow students to immerse themselves in learning. As teachers plan to educate students in the age of technology, tools such as MUVEs should be part of their regular regimen, Jewish supplemental school settings included.

MUVEs are three-dimensional virtual spaces used to explore and immerse oneself in the digital surroundings. MUVEs are currently being utilized as tools in both traditional classrooms and distance education (Hew & Cheung, 2010). The environments can range from historical to imaginative settings and usually share three important features. The first, the illusion of space, second, the use of avatars (digital representations of themselves which they use to maneuver in the space), and third an interactive chat tool for users to communicate with one another (Hew & Cheung, 2010). When used in education, the settings are often key elements in exploration and achievement of curricular objectives.

Jewish Education is currently lagging behind in the integration and implementation of current technological trends (Woocher, O’Brien & Isaacs, 2010). The factors contributing to this delay are currently unidentified and deserve exploration. This study will examine the integration
of MUVE technology into a fifth-grade classroom, and will include the perspectives of students, teachers and parents. The MUVE presents Israel in the early 1900s. Students were assigned avatars (or virtual characters) who have just immigrated to Israel from eastern Europe. They students faced a series of challenges necessary to complete in order to become citizens of Virtual Israel. The students encountered important historical figures such as Henrietta Szold, Eliezer Ben-Yehudah and A.D. Gordon. This simulation was part of the fifth-grade students’ study of the history of the establishment of the state of Israel, and was used in a Jewish supplemental school program with a constructivist approach to education.

**Why MUVE?**

The primary mode of Jewish education is comprised of after-school and Sunday morning classes, known in the field as *complementary* or *supplemental* Jewish education. Jewish supplemental schooling has been not only the means by which a significant number of students receive their Jewish education, but also a source of boredom, unhappiness and family disagreements because students simply do not want to go (Woocher, 2010). Supplemental schools across the country are being pressured to reinvent themselves by central agencies, competing synagogues, and by the movement as a whole. Innovation and relevance are necessary to sustain the system of Jewish supplemental school education.

“The dramatic demographic, sociological, cultural, technological, and organizational changes that have taken place in Jewish and general society over the past quarter century call for equally dramatic changes in how Jewish education is organized, practiced, and delivered in 21st century North America to attract and to retain the participation of an increasingly diverse population” (Woocher, O’Brien & Isaacs, 2010).
There is a notion in the world of Jewish education that supplemental school programs are at the same time the method by which most Jewish students will be educated in the future and in need of serious innovation in order to continue to attract students. Historically, supplemental schools operate at a significant deficit. The synagogue which houses the program funds the deficit as a philosophical statement: Jewish education is the inherent right of all Jewish children. On a global level, without the implementation of innovation within these programs Jewish supplemental education could be at risk, since the synagogue needs to attract new membership in order to sustain itself.

In addition to the need for recruitment and retention in supplemental schools, it is important to provide opportunities for students to be engaged in serious learning endeavors. Supplemental schooling presents opportunities beyond providing the students with a space to prepare for their *bar* or *bat mitzvah* (traditional rite of passage ceremonies). Twenty-first century learning objectives such as collaboration, critical thinking, creativity, and communication (Prensky, 2010) can be supported in a Jewish program which acknowledges a new approach to literacy and education. As the greater field of education changes, Jewish supplemental educational programs can integrate learning objectives in a skillful way providing serious and meaningful learning opportunities. The endeavor of incorporating MUVEs is not simply about keeping up with the times, but also about adding significance to the supplemental school.

**Why MUVE?** The MUVE platform allows the educator to act as a guide and facilitator of learning experiences generated by the learner. The selection of a platform which sustains multiple players at the same time is no coincidence and allows for great potential in the study of the social constructivism. Virtual space allows for constructivist education and a relevant method of instruction utilizing technology familiar to the student. The role of the educator in a
constructivist program is not to enact an express curriculum upon the learner but to assist in personal development and connection (Brooks & Brooks, 1993). The instructor must discover the current vocabulary of learners and to react to them as a population. Friere (1974), while focused on the notion of social change and action, introduced the important notion of speaking the language of the intended audience, the learner. Current societal trends indicate a highly technological vocabulary among students of all ages. Friere considers the educational experience to be a partnership between learner and educator. “With this knowledge as a starting point, the educational curriculum can be organized to include a group of themes on which educator and educatee as Subjects in the knowing process can use their ability to know” (Friere, 1974). Friere’s opinion is echoed in that of educational technologist Marc Prensky, who suggests a partnership between teacher and student with the frequent acknowledgement of teacher as learner as well (Prensky, 2010).

In a setting with limited time and certain expectations of skill and knowledge acquisition, there must be an explicit curriculum. This is not to suggest that educators should not allow student responses and interests to shift the focus of a lesson or even to alter content. Within the virtual world, facilitators can be available to ask and answer important questions about content that is purposefully selected and intentionally placed within the environment.

Given the inherent challenges of Jewish education, different members of the community may have conflicting ideas regarding the adoption of MUVE technology in a supplemental school setting. Community interaction and reception of a new technology will serve as the foundation of the case study. MUVE technology may affect the way the fifth-grade students interact with the curriculum and the way their teachers feel about teaching the material. The
adoption of a new approach to teaching traditional material may be of interest to the clergy and community members.

Significant literature supports the use of technology in educational settings. Beginning with an explanation of the findings of one research team which identify three categories for uses of virtual space in a classroom setting, this section will provide a broad look at the MUVE literature over the past ten years will be provided. Each of the explanations of categories will include examples of successful implementations of MUVEs of that type in secular educational programs. Then support for the concept will be reviewed both in reference to MUVE literature as well as a dramatic call for innovation in the field of Jewish education. Finally, a critique of the state of the current literature and summation of the potential impact of MUVE technology in educational settings will conclude the review.

The Landscape of MUVE in Education

An overhaul of the educational system of supplemental schools will require the vocabulary of the 21st-century learner. Gaming, a set of experiences a player participates in from a particular perspective, namely the player controls (in the case of MUVEs, the avatar), has become a significant part of the everyday vocabulary of students (Gee, 2008). Gaming allows for intrinsic student motivation and group collaboration in a way that traditional instructional methods do not (Gee, 2008). Video games offer players experiences and learning in the form of pleasure while seeking mastery of skills (Gee, 2008). Games use stories, characters and experiences that allow students to interact with subject matter (Clark & Ernst, 2009).

Though there is a distinction between immersive worlds and “gaming,” Game Based Learning served as the theory behind a number of the studies reviewed. Game Based Learning (GBL) is a theory as simple as the name suggests, students will engage more readily in material
that is presented in a game. James Paul Gee, professor of Literary Studies at Arizona State University, has dedicated substantial effort toward gaming theory research and literature (Gee, 2008). Many of the studies in the literature reviewed cite Game Based Learning as their theoretical foundation. Though there is a distinction between immersive worlds (like MUVEs) and gaming, the theory behind GBL is in fact applicable to the study. It is important to note, that in the case of Virtual Israel, the MUVE is not a “game” but an immersive experience. In many pieces of literature, MUVE was a subheading among other gaming platforms.

When used in education, the settings are often key elements in exploration and achievement of curricular objectives. In the field of higher education it is reported over 100 universities have built classrooms and replications of museums in order to allow for asynchronous extension activities by their students (Miller & Peck, 2010). Elementary schools use simulations like Quest Atlantis and River City to foster inquiry-based and constructivist learning (Ketelhut, Dede, Clark & Nelson, 2010). Medical schools take advantage of the popular free platform Second Life to allow students to participate in emergency training scenarios (Heinrichs, Youngblood, Harter & Dev, 2008). Hew and Cheung (2010) examined over 400 papers written on the topic of integration of MUVEs into K-12 classrooms -- and in some cases higher education -- and identified three uses for virtual space in a classroom setting: communication spaces, simulation spaces and experimental spaces. Exploration of each of the uses and examples thereof will help to clarify the role MUVEs have played in secular education.

**Communication space.** There are options for communication within MUVEs. One can use the chat function and type, a user equipped with a microphone can speak and allow his voice to enter the space, or one can relay a message through body language via an avatar. A unique aspect of MUVE is the use of avatars to navigate the three-dimensional space. Avatars allow
users to feel as if they are actually immersed in the setting, a feeling known as *telepresence* which enhances the social, communicative, collaborative and educative aspects of the in-world experience (Peterson, 2006). An interesting and successful implementation of MUVE with English-as-a-foreign-language students involved an assignment to complete tasks in the virtual space with a partner (Peterson, 2006). Using the chat feature, students worked together to make decisions in English that would allow them to successfully complete their task. They also made use of the avatar movements to express themselves during the assignment (Peterson, 2006).

Communication in virtual space allows for synchronous collaboration from disparate locations. Distance learning is increasing in popularity and student collaboration designed to co-construct learning experiences in virtual settings remains a priority to educators (Miller & Peck, 2010). Burton and Martin (2010) sought to determine if learning occurred within MUVE by observing whether or not elements of collaboration were present. Participants of a computer programming course were asked to help craft the three-dimensional environment, then given a list of four items that needed fixing within the MUVE (Burton & Martin, 2010). The students worked together using the chat feature to solve the problems, and researchers then conducted interviews to gather data regarding their feelings toward the use of MUVE and collaboration.

**Simulation Space.** MUVEs provide simulation of space, a virtual environment created in order to replicate real space which allows opportunities to explore a place without physically entering. Creating parallel cyber learning spaces has become commonplace at the University level, so much so that a set of guidelines has been created for doing so successfully (Praslova-Forland, Sourin & Sourina, 2006). Nanyang Technological University in Singapore created a virtual replica of their campus based on these guidelines (Praslova-Forland, Sourin & Sourina, 2006). The virtual space was used as an opportunity not only to relay information but also to
allow the students to become comfortable navigating the actual campus. Students report they felt more familiar when they arrived at the actual campus after time spent exploring the virtual space (Prasolova-Forland, Sourin & Sourina, 2006).

**Experiential space.** The third category of MUVE use is experiential space (Hew & Cheung, 2010). This implementation allows the user to learn while doing and observe the outcome of their actions without physically impacting other human beings. A substantial benefit of MUVE is the opportunity to experience a real-life scenario without consequences. Virtual worlds provide an excellent platform to utilize constructivist philosophy (Miller & Peck, 2010). This space also allows for the implementation of the learning cycle model, to explore and test hypotheses in a safe space and then to apply the new piece of knowledge to the repetition of the process (Brooks & Brooks, 1993).

The creation of a virtual world provides an opportunity to bridge the gap between theoretical knowledge and confidence in application (Prensky, 2006). In Australia, graduates of the nursing school program reported comfort with the theoretical side of their new jobs but discomfort with the practical (Miller & Peck, 2010). Nurses reported an increase in confidence as they engaged in simulations of potential events and received immediate feedback on their actions (Miller & Peck, 2010). This virtual platform has proven successful in increasing competence and confidence in medical training. In fact 62% of medical students using an MUVE identified the game-based approach as effective if not more effective than traditional methods (Heinrichs, Youngblood, Harter & Dev, 2008).

Another example of an effective MUVE is River City. River City is an MUVE that immerses students in problem-based inquiry science curricula with the intention of providing both content coverage and deep inquiry skills (Ketelhut, Dede, Clark & Nelson, 2010). Students
work together in teams to gather data and develop hypotheses regarding simulated illness and then test their hypotheses within the MUVE. After testing their hypotheses, students analyze their data, write an authentic lab report on their findings, and finally compare their research with other teams in their class (Ketelhut, Dede, Clark & Nelson, 2010). A study of the efficacy of the inquiry-based model was conducted and revealed that utilization of MUVE as a tool to improve knowledge was in fact successful (Ketelhut, Dede, Clark & Nelson, 2010).

Why MUVEs in Jewish Education?

Technology integration presents a possibility of the type of innovation required in order to perpetuate the Jewish supplemental school. As Jewish students interact with Virtual Israel, they may realize that they are participating in designing their own learning experiences (Berry, 2010). Taking ownership of one’s Jewish identity is an aspect of the future of Jewish education and certainly part of the design of simulations in educational environments (Woocher, 2010, Berry, 2010). Assessing the efficacy of inquiry-based and constructivist learning is addressed in the available literature.

Jewish education in all forms encourages inquiry in order to establish personal connection to a vast history of communal experiences. Inquiry-based and constructivist education models can be supported with the use of MUVE. Use of MUVE in an inquiry-based classroom can help build 21st-century learning skills in virtual communication and expression in addition to facilitating good inquiry learning, engaging teachers and students and even improving student attendance (Ketelhut, Dede, Clark & Nelson, 2010). Each of these outcomes would prove beneficial to the supplemental Jewish classroom. The immersive quality of learning with MUVE is one that is strongly supported theoretically and throughout the literature by Dewey’s
educational philosophies. As in most discussions of experiences in education, Dewey, Bloom and Vygotsky strongly inform rationale for the theoretical frameworks used in the reviewed literature. Dewey believed that the process of education was just that, a process that continued to renew itself once a certain aim was achieved (Dewey, 1922). Similarly, constructivist learning theory is heavily resonate among the reviewed literature as it allows, as Dewey suggests, for the student to experiment and participate in the learning cycle model (Brooks & Brooks, 1993).

Methods of assessment. For the most part, researchers have studied and presented MUVEs with a variety of approaches including opinion papers, conceptual papers and case studies. In fact, Hew and Cheung (2010) completed a comprehensive review of the current MUVE literature and found that of the four hundred and seventy papers they reviewed only fifteen of them were empirical research studies. It is also worth noting that none of the studies were longitudinal, rather most only lasted about a year given the various design methods.

Salmon (2009) developed a five-stage model to measure the efficacy of online learning in general and discusses its applicability to MUVEs. A number of the studies relied upon very small samples sizes including a study of MUVE and socialization which included Salmon’s five-stage model in their assessment of the effectiveness of the research (Edirisingha, Nie, Pluciennik & Yong, 2009). These five stages of learning in MUVE provide an interesting tool in which to examine the learning that may or may not be happening while students are engaged in simulations. Three case studies were examined, each falling into one of the categories established by Hew and Cheung (2010).

The five stages include:

1. Access and motivation – students gain access to the online world and create their personal avatars in this stage. Here they experiment with the movements of the
simulation and understand how to maneuver in the MUVE. Salmon (2009) discovered that in-world training for all of the students and teachers who will be interacting with the simulation is a useful step to moving on to future phases of the model.

2. Online socialization – once the users have established their avatars, interactions with others helps individuals to establish their avatar’s persona. They meet and chat with others and some report having both an instant connection to the self-created, virtual representation of themselves as well as to the other avatars in the world (Salmon, 2009).

3. Information exchange - individuals give and receive relevant and useful information about the course and then participate in course related tasks. In a MUVE information exchange takes different forms, two players may chat and help each other complete a task, or a student avatar will encounter a non-played character (NPC), a pre-programming avatar that is not manipulated in real time by a person, who has information to share with them (Salmon, 2009). Virtual Israel makes use of NPCs in order to relay information to students about historical figures alive during the early 1900s.

4. Knowledge construction – in this stage of the model, students worked together in an official capacity. They collaborated for a number of different reasons to build something, to figure out the answer to a question or to share information needed in order to progress to the next stage.

5. Development - The final stage includes reflection and transfer of knowledge to other applicable settings.
The research methods utilized in MUVE research are vast and occasionally complicated. One team created a measurement device called the Multi-User Virtual Environment Education Evaluation Tool (MUVEEET). Combined with the Community of Inquiry Survey, the team sought to measure observational and perceptual data in Second Life among Instructional Technology graduate students (Burgess, Slate, Rojas-LeBouef & LaPrairie, 2011). The three Community of Inquiry (CoI) constructs are cognitive presence, social presence, and teaching presence. Both observational and perceptual data were gathered in this study from the two instruments derived from the CoI model: the Multi-User Virtual Environment Education Evaluation Tool (MUVEEET) and the CoI Survey (Burgess, Slate, Rojas-LeBouef & LaPrairie, 2011). This methodology produced interesting results that indicated positive relationships between student performance, community and the potential of MUVE as an instructional tool, although the sample size was rather small and specific to students studying Instructional Technology (Burgess, Slate, Rojas-LeBouef & LaPrairie, 2011).

A large part of the information in the general review was dedicated to the instruments that will be used to measure the efficacy of information retention. On a number of occasions researchers utilized knowledge pre-tests and post-tests to compare experimental (MUVE) and control (traditional instruction) groups (Annetta, Minogue, Holmes & Cheng, 2008, Spires, Rowe, Mott & Lester, 2011, Hearrington, 2010, (Tuzun, Yılmaz-Soylu, Karakus, Inal, & 2009). These studies indicate a slight to substantial increase in knowledge acquisition of the experimental groups, though it might be considered a flaw in the data to note that none of the studies were longitudinal in collection.

At a private elementary school in Turkey, fourth and fifth grade students utilized an MUVE to supplement their Geography studies. The researchers employed pre- and post-testing
for achievement, interviews to gather further data on engagement, observation, artifact collection
and a Likert style motivation scale. Students were selected very purposefully, based on grade
point average, and the results therefore seemed to skew toward the positive given the already
highly motivated and highly prepared group (Tuzun, Yılmaz-Soylu, Karakus, Inal, & Kızılkaya,
2009).

Student engagement is certainly part of the data collected in the reviewed literature and a
number of the studies indicate interesting methods for gathering this important piece of
information. Utilizing a post-test only control group design along with participant's average
grade on their last three report cards in biology, a group of high school students were part of an
MUVE experiment measuring learning differences and engagement in Biology (Annetta,
Minoguge, Holmes & Cheng, 2009). Post-test grades were compared for knowledge acquisition
and student engagement was assessed using the Protocol for Classroom Observations. Though
statistical results indicated no differences in student learning as measured by the instrument,
there were significant differences found in the participants’ level of engagement while using the
video game (Annetta, Minoguge, Holmes & Cheng, 2009).

Theoretical Frameworks

The social sciences are strongly represented as contributors to the theoretical frameworks
in the reviewed literature. The selection of a platform which sustains multiple players at the
same time is no coincidence and allows for great potential in the study of the social learning
theory. Social learning theory is based on the idea that students learn based on interactions in a
social context as proposed by Albert Bandura (1977). It consists of three components
specifically useful in the implementation of MUVE technology, observational learning, imitation
and behavior modeling (Smith & Berge, 2009). The theory is a framework that captures the intricacies and potential of MUVE implementation in an elementary school classroom and will be utilized as the framework of the Virtual Israel study.

The stimulation of the sights and sounds of gaming is a potential obstacle to knowledge acquisition utilizing MUVE platforms (Annetta, Minogue, Holmes & Cheng, 2008). The possibility of overload is best examined through the framework of Cognitive Load Theory, the idea that the brain has a limited-capacity of working memory which may be disturbed by the multi-media presentation of information (Annetta, Minogue, Holmes & Cheng, 2008). In the sample of twenty articles reviewed, five utilized this framework.

**Connection to a place.** MUVEs provide simulation of space, a virtual environment created in order to replicate real space which allows opportunities to explore a place without physically entering. Creating parallel cyber learning spaces has become commonplace at the University level, so much so that a set of guidelines has been created for doing so successfully (Praslova-Forland, Sourin & Sourina, 2006). Nanyang Technological University in Singapore created a virtual replica of their campus based on these guidelines (Prasolova-Forland, Sourin & Sourina, 2006). The virtual space was used as an opportunity not only to relay information but also to allow the students to become comfortable navigating the actual campus. Through reflective essays, students report they felt more familiar when they arrived at the actual campus after time spent exploring the virtual space (Prasolova-Forland, Sourin & Sourina, 2006).

Prasolova-Forland, Sourin and Sourina’s (2006) study produced an important insight into the potential of MUVE as a means of facilitating familiarity and connection to a place. A desired outcome of the Virtual Israel project is to create an environment for fifth-grade students to explore Israel and begin to create personal connections to the land. In many cases, the students
have not yet traveled to Israel and this MUVE could be their first exposure to the land as more than an abstract concept.

**Summation**

Based on current research, Jonathan Woocher (2010) presents qualities of successful supplemental school programs. High among the priorities of schools that are both innovative and successful is the unification of lay leaders (community members) and staff around a common goal. In the case of MUVE technology implementation, while the method may appear foreign to the lay leadership, the common goal remains the desire to have the best supplemental school available. A well-articulated vision of what an excellent congregational school looks like will guide the practice of leaders and stakeholders as they confront the myriad issues involved in running an educational program on a daily basis (Woocher, 2010). The opportunity to observe and research as MUVE technology enters the Jewish supplemental school world is very exciting and one that has the potential to add a new dimension to the existing literature.

Upon completion of this literature review, I found myself left with a few questions for the broader field of MUVE in education. Foremost is the need for a clear understanding of the value of this technology on the part of teachers, administrators, clergy and parents. Teacher perception of learning affordances in MUVE is an area of the field with little data. A study was conducted of twenty two teachers: one cohort of eleven teachers experienced in MUVEs and one cohort of eleven teachers for whom the technology was foreign (Vimani, Tretiakov & Crump, 2011). The teachers were interviewed and their feelings were mixed even within the cohort regarding the use of MUVE technology in educational settings (Vimani, Tretiakov & Crump, 2011). These were full time teachers in a professional setting who were able to devote their full attention to this
implementation. The perspective of the supplemental school teacher as well as the other adult stakeholders in this process will be very important to the study. Secondly, a number of the studies indicated a difference in student engagement when using MUVE but few indicated a difference in knowledge acquisition.
Chapter Three: Research Design

Methodology

My problem of practice is an observed lack of examples of constructivist, relevant, innovative, supplemental school models which forces the greater field of Jewish education to be stuck in a cycle of conversation without action. To address this problem, I propose the exploration of MUVE technology as an innovative model of constructivist education in the Jewish supplemental school world. My primary research question: How does the implementation of MUVE technology support a constructivist approach to education in a Jewish supplemental school?

Three sub-questions act as a guide to approaching the project:

1. How does the combination of MUVE technology and constructivism represent an innovative alternative model of supplemental schooling?
2. What is the added value of using technology in this constructivist approach?
3. What are the participant’s understandings of this learning experience?

Research Design

My primary and subsequent research questions are well suited for a qualitative research design as this method “is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem,” (Creswell, 2009). The data collected is a combination of a series of focus groups, individual interviews and personal reflection. As students and teachers reflected upon the implementation of Virtual Israel in the supplemental school, qualitative exploration of the meaning both the students and teachers attributed to the program is of great interest. The school in which the Virtual Israel program was implemented does not assess learning through paper and pencil testing. The school does not conduct
assessment in a traditional format; student learning is assessed through projects and teacher observations. For these reasons, quantitative data collection was excluded. Collection of quantitative data from the students would be a foreign concept in this setting.

I am most interested in the narrative and description of the program and events surrounding the implementation of this technology. Of particular interest is the application of the CoI and constructivism model to the narrative in order to share best practice of MUVE implementation in a supplemental school. A qualitative design was selected to allow for data collection in the form of participant narrative, participant reflection, and the general formalization of what is usually anecdotal information (Creswell, 2009). This particular case study approach allows for elaborate description of the program, participants and reflections through action research while limiting the potential bias.

Research Tradition

The approach to this research was a descriptive case study (Creswell, 2007). The study is described as descriptive for several reasons. First, I sought to describe Virtual Israel in a way that helps extend insight into the influences that shape the design and implementation of the process (Fallon & Barnett, 2009). “The more that your questions seek to explain some present circumstance (e.g. “how” or “why” some social phenomenon works), the more that case study research will be relevant”, (Yin, 2014,). Both Merriam (2002) and Creswell (2011) discuss the storytelling element of case studies, an aspect of the endeavor that is very appealing to me as I sought to describe how and why Virtual Israel can be a model for other supplemental programs of merging blended learning with constructivism.
Case studies are often chosen because they are novel phenomena or models and examples (Merriam, 2002). Implementation of this MUVE program is a unique case that may serve as a profile or model for future programs. Creswell (2012) suggests using the qualitative case study approach when studying an issue within a bounded system, which in this case was the Jewish supplemental school which integrated MUVE technology. The issue within the bounded system was explored in the examination of a single case, the eight-week implementation of the MUVE technology within three fifth-grade classrooms. The desire to provide in-depth understanding of the program itself as well as any emerging themes of response reinforces the descriptive case study approach as the appropriate methodology (Creswell, 2007).

**Participants and Sampling Strategy**

Participants were chosen based on criterion sampling, meaning all chosen meet specific criteria (Creswell, 2007). The fifth-grade students who were immersed in the Virtual Israel simulation were the primary population involved in the study. Students who had participated in either the first or second run of the Virtual Israel program were solicited to join the focus groups. The total sample size of the student participant pool was eight people.

Additionally, it was important to collect the narratives of the fifth-grade classroom teachers and the computer lab teacher to describe the program from their perspectives. Parent support, participation, and feedback are expected in all aspects of the school community and the Virtual Israel program is no exception. Interviews were also conducted with three parents of students who engaged in Virtual Israel.
Recruitment, Access and Protection of Human Subjects

The students participated in the Virtual Israel program as part of their regular participation in the school program. Because student feedback is the foundation of data collection for this study, parents received a letter to review with their children requesting their participation in a focus group. After the students and parents decided whether or not to participate, each was given an informed consent form to review. The form was written in language appropriate for students and included a place for both their symbolic signature and their parent’s legal release. The parents who decided not to allow their child’s participation were excluded from the participant pool. All parents and students were told they could choose not to participate at any point during the focus group, should they become uncomfortable, and none elected to leave the group.

Participation in the focus groups and interviews did not present risks to the participants. The focus groups and interviews simply documented the reflections and recollections of the participants of the experiences with Virtual Israel. The students are no longer in the fifth grade in my program and therefore there is absolutely no risk of consequence of their involvement on their performance evaluations or promotion to the next grade. Personal reflection on my part only serves to strengthen the program and provide the opportunity for growth. Participation does not put the wellbeing or rights of students, parents, or teachers at risk. Institutional Review Board approval was granted ensuring the safety and well-being of all of the participants.

In order to recruit the parents and teachers to interview, an additional request for participation was sent out via email. Given the atmosphere of community and support of the school, this recruitment process is reasonable. Of course whenever working with children it is important to ensure the protection of their identities in the studies as well as their well-being in
the study. Pseudonyms were used for all participants and any documents collected do not show the participants’ names. As mentioned previously, I serve as the director of the program where the Virtual Israel project is implemented allowing access to the site under the supervision of the head rabbi of the synagogue.

Data Collection

In case study, research data should be collected in multiple formats. For the purposes of this study, participant narrative made up only a portion of the data; reflections, artifacts in the form of formal written evaluations and in-person interviews were also collected. The focus groups were conducted in small groups of students. Three focus groups of students were interviewed with three, two and four students; the groups were blends of participants who were in either the first or second implementation of Virtual Israel. Three open-ended teacher interviews were conducted, and two parent interviews were conducted, each of varying length. Each interview was recorded and an interview protocol was developed and approved by the Institutional Review Board.

Data Storage

All data were stored in multiple places. First, the interviews were recorded using my iPhone and a backup recording on my tablet was also obtained. If the recording on the iPhone proved audible, the recording was sent to Rev.com for transcription. Rev.com is an independent transcription service whose services were approved by the Institutional Review Board. The audio files and transcripts are stored on the hard drive of my computer, in password protected Dropbox cloud storage, and on an external USB storage device. I am the only one who has access to the data and will destroy the files within seven years of final project approval.
Data Analysis Overview and Trustworthiness

I analyzed the data holistically as I wanted to look at the whole of the case and the personalities that show different perspectives on the event (Yin, 2014). I collected as much information as possible and even reached into program artifacts for further data. Upon completion of the focus groups and interviews, the conversations were transcribed and sent to the adults for validation. Due to extreme scheduling conflicts, it was impossible to gather the students for a second group. Instead of gathering the students back together, I sent a summary of the focus group conversations to them via email (through their parents) and requested their approval of the summary.

Lincoln and Guba (1985) present an approach to interpreting qualitative data that applies to this case study in a significant way. Lincoln and Guba (1985) suggest, identifying the problem of the case, clearly describing the context and the issues that emerge, and finally elucidating the lessons learned from the case study. From the data collected I approached the final analysis utilizing this method combined with the CoI and constructivism model.

Interview and Focus Group Process

Students. The recruitment email was sent to parents twice. The first recruitment email yielded three student participants for the first focus group. The first focus group was quickly and easily arranged, and the students and parents met at the synagogue on a Sunday morning. I reviewed the signed consent form with both the parents and students. The students and parents asked any questions remaining and each signed the consent form; the parents signing officially and the students symbolically adding their signature to the form. The parents then left for forty-five minutes while I followed the established focus group protocol. The students seemed at ease and were very willing to share their thoughts and feelings about the MUVE openly.
The parent recruitment email was sent once more to the same participant group with the extraction of the names of the initial participants and this round of emailing yielded six participants with varying schedules. It was possible for four out of the six to meet at the same time. These four met for another in-person focus group following the same format explained above. The other two participants were interviewed via WebEx independently due to technological difficulties on the part of one student. Table 1 below shows the link between the primary and secondary research questions and the student focus group protocol.

<table>
<thead>
<tr>
<th><strong>Research Question</strong></th>
<th><strong>Student Focus Group Questions</strong></th>
</tr>
</thead>
</table>
| How does the implementation of MUVE technology support a constructivist approach to education in a Jewish supplemental school? | 1. When you reflect upon your fifth grade year at JLC, what is a memory you would like to share?  
2. What sticks out in your mind about the programs offered here?  
3. Can you give an example of another program or something you did in JLC that felt similar to your experience in Virtual Israel? |
| How does MUVE technology and constructivism represent an innovative alternative model of supplemental schooling? | 1. How did you feel about the directions given for the experiences in-world? What do you think about how the challenges were presented? |
| What is the added value of using technology in this constructivist approach? | 1. Think back to our first class entering the simulation space on the computer. How did you feel? What were you thinking about as you started to play the game?  
2. What was it like to be in the virtual space with your classmates? |
| What are the participant’s understandings of this learning experience? | 1. How did you feel about using Virtual Israel?  
2. What was it like to be in the computer lab with your classmates?  
3. What was it like to be in the virtual space with your classmates?  
4. Now, think back to our last class using Virtual Israel. What is your biggest take away from the experience?  
5. If you were telling your best friend about Virtual Israel, what would you tell them? |
Adults. Two parent volunteers were interviewed in-person on the campus of the synagogue. The first recruitment email was successful in engaging their participation. The second and third emails did not, however, provide opportunity to add to the parent participant pool. After review of the unsigned verbal consent form, the adult interview protocol was followed for the parent conversations and both were relatively short even with additional probing questions. Finally, the teacher recruitment email was distributed and yielded complete participation on the part of those solicited. The conversations were detailed and elaborate as they were merely prompted by the adult interview protocol and the recollections came readily.

The focus group and interview protocols were developed with the overarching research question as well as the sub questions at the core. Table 2 below is a sampling of questions that were used in the adult interviews and their link to the research questions.

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Interview Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>How does the implementation of MUVE technology support a constructivist approach to education in a Jewish supplemental school?</td>
<td>How do you think gaming aligns with the overall philosophy of the program?</td>
</tr>
<tr>
<td>How does MUVE technology and constructivism represent an innovative alternative model of supplemental schooling?</td>
<td>What were your initial perceptions when you heard we would be using a video game in our supplemental school?</td>
</tr>
</tbody>
</table>
| What is the added value of using technology in this constructivist approach? | 1. What were your initial perceptions when you heard we would be using a video game in our supplemental school?  
2. How do you think you would react if I said we planned to bring another game to the school? |
| What are the participant’s understandings of this learning experience? | What do you think you will remember most about Virtual Israel? If applicable, what do you think your child will remember most? |

Coding

The focus group and interview data were processed through several coding cycles. Each transcript was carefully reviewed and validated by the participant before beginning provisional
In Vivo coding. I approached the data as a “splitter,” viewing each line of text or dialogue as its own codable moment (Saldana, 2009). Utilizing the adapted model of constructivism and CoI, provisional codes were drafted in a memo to frame the first cycle of coding. The first cycle of coding was completed with the memo above in mind, but specific codes were not assigned until the second cycle. Instead, each transcript was read and coded based on emerging themes from the conversations. The coded data were then combined into one table for the adults and a separate table for student comments for the second cycle elaborative coding as “elaborative Coding is appropriate for studies that build on or corroborate previous research and investigations” (Saldana, 2009).

Table 3 Coding Template

<table>
<thead>
<tr>
<th>Transcript Data</th>
<th>Theme</th>
<th>Initial Code</th>
<th>Final Code (from memo)</th>
</tr>
</thead>
</table>

Conclusion

This chapter has demonstrated how a qualitative case study of a group of students and teachers who implemented Virtual Israel in a Jewish supplemental school classroom responds to the problem of practice, fills a gap in the literature associated with Jewish education and can present a model for future replication. The problem of delayed integration of technological trends and a decline in student engagement in Jewish supplemental schooling will not be solved by this case study. However, given the present lack of descriptions of models of constructivist education in supplemental school settings, this study seeks to expand the field and encourage further contributions. Additionally, this project complements the current research cited on MUVEs in general education.
Social and cognitive constructivism, along with the Community of Inquiry (CoI) model, provide a framework for describing the experiences of students and teacher’s interactions with Virtual Israel. This framework will help elucidate the personal connections and recollections of the students and at the same time support the educational notion of constructivism in the classroom. The qualitative case study methodology proposed for the study correlates with other research on the implementation of MUVEs. The analysis of focus groups, interviews and personal reflection helps to provide a rich description of the recollections and reflections of the participant interactions with the implementation of Virtual Israel.
Chapter Four: Research Findings

Introduction

The purpose of this study is to explore and describe the participant experiences of students, teachers and parents as MUVE technology enters a Jewish supplemental school with constructivism and CoI as a framework. The data analysis seeks to contribute, elaborate and slightly modify the existing research on the use of MUVE technology in an educational setting. This chapter presents and summarizes the findings of the data collected in the form of interviews, focus groups and program artifacts.

Data Description and Participant Information

Participants were selected based on criterion sampling. Students who are currently in sixth grade in the supplemental school or who have graduated from the program and are currently in seventh grade were recruited to participate in the focus groups based on their past participation in the Virtual Israel program. Likewise, parents of the students who experienced the MUVE were solicited for personal interviews to gather their recollections and reflections. Finally, teachers who facilitated either or both of the implementations of the simulation were interviewed to gain their insight.

Data were collected and analyzed in several formats. Three small student focus groups were completed, two face-to-face and one conducted in WebEx due to scheduling conflicts on the part of the students who were interested in participating. Of the nine students who participated, seven were in the seventh grade and two were in the sixth grade. Two of the nine student participants were female. When student comments are referenced in the analysis, note that they have been given pseudonyms to provide anonymity.

Two parents agreed to be interviewed in person, both parents of current seventh grade students. Three teachers were interviewed, two interviewed face-to-face while one teacher who
longer worked for the school, was interviewed via Skype. One of the three teachers is a computer specialist and worked in the synagogue Day School computer lab during the day. The other two teachers work in educational settings during the day that are outside synagogue based schools. One continues to teach fifth grade in the supplemental school while the other pursued other work in the field of education. All adult names have been changed as well in order to provide the level of anonymity promised in the unsigned consent documents.

Data were also collected from program artifacts. It is the philosophy of the supplemental school that all program activities be documented in several formats in order to give the parents and students information regarding what they are doing in the classroom setting. To that end, after the first run of Virtual Israel, students were interviewed on video and teachers wrote reflections to document the new venture. Videos, reflections pieces from teachers and unsolicited parent responses in the form of email were included in the data set.

Research Questions

How does the implementation of MUVE technology support a constructivist approach to education in a Jewish supplemental school?

The following three sub-questions act as a guide to approaching the project:

1. How does MUVE technology and constructivism represent an innovative alternative model of supplemental schooling?

2. What is the added value of using technology in this constructivist approach?

3. What are the participant’s understandings of this learning experience?

Data Analysis
The focus group and interview data were processed through several coding cycles. Each transcript was carefully reviewed and validated by the participant before beginning provisional *in vivo* coding. I approached the data as a “splitter,” viewing each line of text or dialogue as its own codable moment (Saldana, 2009). Utilizing the adapted model of constructivism and CoI, provisional codes were drafted in a memo as a deductive frame for the first cycle of coding. The first cycle of coding was completed with the memo above in mind, but the data were not assigned a specific code until the second cycle. Each transcript was read and coded based on emerging themes from the conversations. Table 3 illustrates a sample of the initial coding cycle.

<table>
<thead>
<tr>
<th>Original Transcript</th>
<th><em>In Vivo</em> Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that the teacher that's going to teach it should experience what we're experiencing before she asks us the lesson because then she'll realize, &quot;Whoa, I didn't realize my students won't know the answer to this. I'll have to re-teach it to them.&quot;</td>
<td>- Student understanding of Teacher’s role in virtual setting</td>
</tr>
<tr>
<td></td>
<td>- Cognitive presence</td>
</tr>
<tr>
<td></td>
<td>- Unclear content</td>
</tr>
</tbody>
</table>

**Table 3.** Sample of initial coding

The coded data were then combined into one table for the adults and a separate table for student comments for the second cycle elaborative coding. Given the theoretical constructs of this case study as a means to explore participant experience in a blended learning setting and provide a rich description, it is appropriate to base the data analyses on the existing construct of CoI. The codes in the section that follows were utilized in order to process the second cycle of elaborative coding. Finally, the data from each participant group was combined and compared for the purposes of establishing internal validity through triangulation.

**Virtual Presence.** The notion of virtual presence on the part of both the student and teacher came from CoI literature. Teaching presence is one of the three structural elements of the CoI framework and refers to the leadership approach, style and efficacy of the instructor in
an online classroom setting (Anderson & Garrison, 2003). For the purposes of this study, the idea of virtual presence extended to both the teacher and the student as they maneuvered through the MUVE. The application of the virtual presence code was used in remarks where the student or teacher would share how they perceived their role in the virtual setting either on their own as a learner or as a contributor to the collaborative learning process.

The code was also applied to remarks that illustrated how a student might feel or interact differently in the simulation in contrast to being face-to-face in the classroom. This statement by a teacher coded with virtual presence is indicative of the interesting dichotomy: “It’s a pretty great thing to see and students that wouldn’t necessarily interact with each other were typing to each other and saying “hey will you work with me on this?” Sub-codes of virtual presence (teacher) and virtual presence (student) were applied in the final round of coding.

In some cases students and teachers shared how they understood their personal character to be represented in the setting. In CoI literature, the ability of students to project their personal characteristics into the online community is part of the social presence element (Garrison, Anderson & Archer, 2000). For the purposes of the intersection of constructivism and CoI, this element will be grouped with “virtual presence”.

**Physical Presence.**

The code physical presence was utilized for language that the student or teacher used to describe their understanding of the classroom, face-to-face experience of the implementation. Teachers shared that it was second nature to roam through the computer lab, help the students with technology difficulties and attempt to capitalize on “teachable moments” as they noticed them in the lab. This code was also applied when teachers mentioned their role in the lessons that were delivered before the students went into the MUVE. When the students referenced in-
class lessons or face-to-face interaction with their peers, the same code was used but with the parenthetical “student” attached.

**Social Constructivism.** In CoI literature, an element of the model is social presence, which incorporates the concept of social constructivism. Garrison and Archer (2000) view social presence as inspired by Dewian theory that collaboration is crucial to cognitive development. They note that the educational process cannot exist with a focus only on cognitive or social development; cognition cannot be separated from the social context (Garrison, Anderson & Archer, 2000). This part of the model was adapted to acknowledge the portion of the learning that happened in the classroom as well as the opportunities for connection in the virtual setting.

When students, teachers or parents referenced the collaborative nature of either the in-person or virtual piece of the game, social constructivism was applied as the code. For example, students referenced the environment in the computer lab as one where they would stand up and ask for help from another student or simply “look at the person’s screen next to me”. This element is important not only to demonstrate the opportunity for collaborative problem solving but also to identify the ways in which students worked together to construct meaningful and worthwhile knowledge (Garrison, Anderson & Archer, 2000).

**Cognitive Constructivism.** Cognitive constructivism is a code that was used to categorize the comments of students, parents and teachers that reference personal learning. While social constructivism is an obvious aspect of the program that is more readily reflected upon, it took probing on my part to get the students to share what they personally internalized as a result of the experience. Cognitive constructivism and cognitive presence are, like the code social constructivism above, very similar and interconnected. Cognitive presence provides
phases of inquiry from the provocative moment to the student’s personal internalization of the information, particularly in an online learning setting (Garrison & Archer, 2000).

Cognitive constructivism, based on the original contributions of Piaget, contends that learning takes place in the mind of the individual when they themselves have constructed knowledge from their actions with the environment (Piaget, 1952). The interactions can be either physical (touching the object) or mental (connecting the new information to something they already know and then enlarging or refining this knowledge). In the case of this unique blended learning setting, the students in the MUVE, are “touching” and “exploring” through their avatar while they are also constructing meaning in their in-person sessions beforehand. This code was applied when remarks indicated a personal discovery and connection to the content on the part of the student.

**Personal Connection and Content.** At the core of the adapted model is “making meaning,” in which the student uncovers personal connection to the material through the careful construction and interplay of each of the other pieces. The CoI model places “educational experience” at the center (Garrison & Archer, 2000). The notions are quite similar but in this adapted model, the connection is potentially deeper than a solid educational experience.

In reviewing the literature, I came across a variety of different educational uses for MUVEs. Virtual replicas have been created of college campuses, historical landmarks, operating rooms to recall just a few. As mentioned earlier, when the University of Singapore created a virtual campus for students to explore, students reported they felt more familiar when they arrived at the actual campus after time spent exploring the virtual space (Prasolova-Forland, Sourin & Sourina, 2006). References to this connect to space were coded as “personal connection”.
The Participants

The following section reveals the perspectives of each of the stakeholder groups: teachers, parents and students. I offer descriptions of their recollections of the experience with the implementation of MUVE technology as they relate to the emergent themes based on the adapted CoI model.

The Teachers

Rachel, Ramona and Veronica were the three teachers interviewed for this study. Each had vastly different understandings of their role in the implementation of the MUVE and varying degrees of value placed on the use of the technology in a supplemental school setting. Their interviews were all conducted with the same protocol allowing follow-up questions, and the data suggest their perspectives and understandings are quite different.

Rachel. Rachel works in another afternoon-based secular program that focuses on the arts as a form of therapy. Rachel no longer teaches in this supplemental program but has remained in contact with the administration and clergy of the synagogue. Rachel is a recent college graduate and is both a digital native and novice teacher. When speaking about her role as a teacher in the implementation of Virtual Israel, Rachel uses the language of constructivism calling herself a “guide” and “facilitator”. Rachel had an understanding of her physical teaching presence in the classroom as one that encouraged, engaged and provoked rather than one who imparted or transferred. She recalled one of the in-person introductory lessons she facilitated,

There was one talking about what you find in a Jewish home and what symbols are important and special in a Jewish home and what the students prioritize and felt that they should have in a Jewish home. This was a lesson before they were … I think it was level
two or something when they went into this home where they were supposed to find and identify different Jewish symbols and artifacts, like the mezzuzah or hanukkiah or I believe there was a hamsa as well. They got to speak about what was important to them in terms of their home and what made it feel like a Jewish home to them. I was able to facilitate that conversation.

Rachel’s understanding of her physical teaching presence was clearly articulated in her interview. Not only did Rachel have an understanding of what her role was in the computer lab as it pertained to the MUVE implementation, it was also clear that she employed constructivist philosophy in her teaching methodology. She noted,

> We always took about I want to say at least fifteen to twenty-five minutes to have a discussion based lesson before each Virtual Israel session. They were always grounded and prompted about what they were going to expect. We also used questioning to guide them and get them in the head space.

Because Rachel was in the computer lab with another teacher, Veronica, she saw her role while the students were in the MUVE as a troubleshooter and guide. Rachel did not use her assigned avatar often while in the computer lab with the students. Instead she moved from student to student helping and prompting them along the way. She did, however, indicate that when she did enter the virtual world it was personally meaningful, “I think the sense that we were able, because I also got to play a little bit, we were able to feel … I don’t know if this is counterproductive in what I’m saying but we were able to establish virtual empathy for the settlers of the land.”
That the experience took place in a blended environment was significant for Rachel. She articulated the purpose of utilizing the virtual space and creating for the students a context through which to physically explore the content. She shared,

They felt very gratified when they completed that level. Then of course it stuck with them and they were so proud to talk about it. I think it definitely established and enabled them to feel accomplishments in their Jewish learning when they were in this world. They were able to be physically view these things that they were learning about while maneuvering themselves in a game to make the lesson complete. It was very cool. Rachel highlights a number of important ideas in this statement: the concept of the student physically connecting to the content through the MUVE, that the implementation benefits from being in a blended learning context, and the potential for personal connection and meaning on the part of the students.

The notion of community and social constructivism is one that resonated in Rachel’s remarks. When asked how she remembered the student interactions both in the classroom and in the virtual world, she shared, “They established a virtual chevrutah. It’s a pretty great thing to see and students that wouldn’t necessarily interact with each other were typing to each other and saying, ‘hey will you work with me on this?’ ”

**Ramona.** Ramona viewed the Virtual Israel implementation in a different light. Ramona is also an educator outside of her time at the supplemental school. She focuses on experiential education and works in camping environments. Ramona is on the cusp what is considered a “digital native” and is a seasoned teacher in the supplemental school context, having taught for the past eight years in the same school.
During the first year of the Virtual Israel implementation Ramona and Rachel worked together. They each head their own fifth grade classrooms but often came together for lesson planning and larger events. After the first few weeks of implementation, Ramona and Rachel decided it was best if Rachel lead the in-person prompts for the two fifth grade classes while Ramona focuses on other curricular information with the students. In the second year of implementation, Ramona was responsible for each element of the experience. In contrast to Rachel, Ramona did not feel that the overall experience for the students was positive when she was at the helm. She recalled, “Something I did didn't work. Really, I've done a lot of reflection, and you and I talked about it. I don't know what I did. I really don't know what happened.”

Constructivist educational theory is also very much a part of Ramona’s vocabulary. As I have observed her classroom, it is clear that she works hard in her teaching to ensure that the lessons she creates are exploratory and meaningful. Something about the way the lessons before the simulation experiences were written did not make sense to her, “How are they supposed to hook or how are they supposed to make meaning of something if they don't know where they're starting?” Her critique of the program was both inward as well as the design of the curriculum that accompanied the lessons.

Ramona’s understanding of her physical role as a teacher was clearly articulated as she noted,

…I assumed that I was the person who would help them troubleshoot issues and also use those wonderful, because there were so many wonderful, educative moments to point things out that were happening. I would walk around especially because the second year my class was smaller so I was able to do that better.
Conversely, Ramona viewed Veronica’s role as the teacher who was meant to be in world working on technological problems so she was not at all involved with the students in the simulation. Ramona’s understanding was that she did not have a virtual role in the implementation of the MUVE.

The content and setting of the MUVE was something that Ramona mentioned a few times in her interview. She understood the content of the game to be an important contributing factor to the overall design and student experience. Ramona shared that the historical aspect of the game, particularly meeting historical figures, encouraged students to create personal meaning,

I think that is the best part about Virtual Israel is that they can --especially in history-- they can meet these figures in a way that's acceptable. Again because to try and teach about people is really challenging when you don't have the connection.

Ramona, though she internalized that the implementation of the game itself was not successful, valued the intention behind the design of the experience.

**Veronica.** The overall theme of Veronica’s narrative is that the technological bugs and glitches overshadowed a potentially worthwhile experience. Veronica approached the implementation as a computer lab teacher and expert. Her knowledge of the content in the game was very limited, although she familiarized herself with the inner workings of the game design. In preparation for each class, she would take time to maneuver through each of the levels to be ready for the students to participate but found the endeavor to be very frustrating, “On my end I couldn't figure out stuff. I was trying to learn it with them.” Her virtual teaching presence took the form of a scouting mission each week before the students arrived and her physical teaching presence was limited to troubleshooting the technology issues.
From our conversation, it seemed as though Veronica’s experience was significantly influenced by this frustration and she did not recall it in a positive light. When asked what she viewed as the major difficulties with the MUVE she explained,

I think what made it hard is that it didn't, the activity itself didn't flow really easily on the computer. That was very -- then the kids kind of got thrown off and played a little bit. I think also what would be helpful -- some of the kids really didn’t seem to know what the seven species were, certain things, so it made it hard. If there was a check off list or something they had to accomplish, like, "Can you define this? Can you find that?" I'm not sure if that was supposed to have been completely taught before, or how that was supposed to be done.

Veronica’s understanding of a successful implementation of a game like this in the computer lab involves methods of direct instruction. She offered to prepare lists of things that the students were supposed to find in world based on her exploration of the level they were experiencing. Her main focus was on the technical difficulties of the design, but she did suggest that there might have been better approaches to the content that included transmission rather than discovery.

Parent Reflections

During the recruitment phase of the data collection process I received email from parents indicating they would be very happy to help with the project. However they did not have specific memories about the MUVE beyond their children enjoying it. Initially I had hoped to interview three parents but did not have that opportunity. Two parents did make themselves available and shared their support and excitement for the project they perceived as innovative and relevant.
One parent, Karina, recalled the end of the year student led conferences which took place in the supplemental school.

Eric walked me through what he had been learning. I got to see first-hand what it looked like and what he had been doing, and how far he had gotten and what he had gotten out of the program. I thought it was incredible. I thought it mixed fun with education which is important in my opinion.

Karina went on to share that she had attended a similar supplemental program when she was a child and that she was thrilled to see that exciting things were happening in this program (indicating that exciting things did not happen when she was in supplemental school). She went on to acknowledge her perceived value in the balance of the virtual and physical implementation of the MUVE, “Even though it’s a game, a video game, it’s quite interactive with the other students in the class. It’s not alienating in any way or isolating in any way.” Karina also appreciated the opportunity for her son to connect to Israel in what she understood to be a fun and relevant way.

The second interview was with Deborah, mother of seventh-grade Jason. Deborah’s son Jason is very fond of games and she shared her excitement that he participated in the Virtual Israel program, “…that was very cool for a game in a learning environment to do more of the same kinds of things that he does in games that are not associated with a learning environment.” She appreciated her son’s connection to the MUVE as it seemed relevant to his everyday life, which is not how supplemental schooling is usually regarded by the participating families. Deborah understood that the overall philosophy of the program was to create meaningful engaging experiences for the students and families that participate in the supplemental school.
“It fits in very neatly and nicely because it’s a dovetail so nicely with the philosophy of creating an engaging experience so it just works.”

The parent interviews were both relatively brief and filled with statements of support and appreciation for the addition of the MUVE to the school program. Program artifacts help broaden the voice of the parent body as many sent emails to the administration after their children shared their experiences with them. For example, one parents shared via email,

I say “You’re going to get picked up a little early from [supplemental school] so you can go to the event at school” and he says something along the lines of “Ugh! That stinks! Pick me up as late as you can because I don’t want to miss any of it!”

Additional parent voices are included further in the descriptions.

Student Recollections

The students were beyond insightful. They spoke freely and critically and were not afraid to tell me what was wrong with Virtual Israel. They all shared that it was fun and they all shared that they were gravely frustrated with the “glitches” and flow of the game. It was very important to the sixth and seventh grade students to tell me what would make the MUVE better for the fifth grade students who would soon be entering Virtual Israel for the first time. These sentiments were generally shared by all nine of the students who participated in the focus groups. Some, however, had unique opinions that shed light on their interactions with the MUVE.

The Gamers

Ian is a self-proclaimed gamer. Ian is an expert in Minecraft as well as first person shooter games. He spends his free time playing Call of Duty with friends and he was beyond excited to hear that we would be gaming in our supplemental school. “Gaming during school!”
was his enthusiastic response when I asked him what his first thought was as his teachers explained the Virtual Israel project. His friend, also a gamer and participant in the focus group, shared, “... the first thing I realized was that the graphics weren’t good.” It became clear very shortly that the game was not like the ones that they were used to playing.

Virtual Israel was in fact unlike the games that the students were used to playing at home. However, like some of the games the students are more familiar with, collaboration was an unstated goal of the experience. Working together in the virtual space is referenced throughout the focus group data. Jason reflected,

At the beginning, like first day and second day maybe, we were all just getting to know it, so nobody knew what that was yet. We were all just being like, "Oh, look at this thing. Oh you should go look at that thing. OK I'll go look at this thing".

When the students were able to figure out how to do something in the game, they immediately shared with their classmates. Jeremy was the first in the computer lab to discover that it was necessary to fish in order to earn money in the first level of the game. “I got it in and I was the first one ever in the history of the game to catch a fish,” he recalled with great excitement. Once he learned this skill, he shared with his classmates either by demonstrating in the virtual space or by sharing verbally in the lab. Michael recalled, “It also helped that if somehow somebody was able to figure out then you could follow them and you could interact with them.”

**Personalization and Connection**

Upon review of the footage of the students in the computer lab during the first day of the implementation, I came across a video of a student who shared that her avatar “felt sad” based on her facial expressions. When the student was told that she had control of what her character
looked like and how she interacted, she became extremely animated and excited that she might be more herself in a foreign setting. In student focus groups, it was shared on more than one occasion that they wished they had more choices and control over what the avatars were wearing. The avatar clothing options were limited to six choices based on the historical time period; however, the students quickly learned how to alter the avatars’ outfits to feel more like something they would wear themselves. As one student shared, “… I think they should give more clothes like clothing choices. Instead of just like a tank top, shorts and a dress because obviously back then they did have more than that.” See Figure 3 for an in-world photo of the students dressed in the initial offerings.

After reviewing the student reflections and parent emails that were sent as part of the first implementation of Virtual Israel, I found an email from a parent sharing an amazing experience on the part of her son. Her son, Jeremy, had participated in the simulation and they traveled to Israel that summer. During the focus group, Jeremy shared that he did not feel like he learned
very much in the MUVE. Jeremy said it was very fun to be playing a game, but that he did not “get much out of it” in terms of content. Though Jeremy indicated he did not learn in the traditional sense, his mother indicated in the email that he felt a familiarity and connection to the country as he visited for the first time that summer. He pointed out buildings that looked similar to those he saw in the MUVE and reminded his mom that he had enjoyed the experience in the supplemental school. Michael also shared that he did not recall any facts or specific information from the year previously that he visited Virtual Israel but he did remember “walking around the town” and “what it looked like there”.

Figure 4. Side by side comparisons of the virtual representation of the Neve Tzedek neighborhood with an actual photo (photos from www.tripadvisor.com)
“Regular Learning” vs. Unclear Directions

A number of the students reflected that they did not feel like they learned anything from the game. Michael went so far as to say, “I remember the game, how you played the game. I don't remember what we did in the game. I remember what we did really, but I don't remember what we learned.” This was a sentiment shared by many. Specific frustration was mentioned surrounding the directions that were given for challenges or in-world experiences. Natalie shared, “I'm sure the game was meant to be informative and everything, but it just had a lot of problems, so it wasn't really clear what we should do.”

So many students mentioned that the directions from the MUVE were unclear or missing that a clear theme of our conversations became, “unclear direction” which captured statements like, “It was very unclear for me to know what I was supposed to do.” Or, “Yes, it made you start over if you did bad on riddles, which were unclear. It had a lot of bugs, a lot minor issues.” And suggestions from Michael like,

Well I would say, if I was creating the game, first I'd have a page before, and you'd have to type out the directions and how to play so you actually focus on what you have to do in the game. You understand what I mean?

The students perceived the encouragement to explore the game after the in-person prompts as a lack of direction and did not seem to understand that they were meant to go out into the MUVE, explore, discover and connect. Eric shared, “I enjoyed it, but I didn't really understand why it benefits our education. There wasn't really something that clearly stuck out of what I learned. More like it was just fun playing the video game.” Later in the conversation, however, Eric also shared what he took away from the experience of “playing the video game”,
Yes, that you had to, when you went to Israel, you would go there and immediately start over. You had to get clothes, then you had to fish. They didn't really bring anything with them. They couldn't go from wherever they were, go online and purchase the house, start renting it, get the job so they have the interview the first day and everything set up for them when they come. But they had to go there and then they had to start once they got there making a life.

Though Eric’s initial recollection of his learning experience in the MUVE was that he did not learn anything specific, from the comment above it is clear that he was able to make a personal connection to the material and retain it for nearly two years. Eric brought up the topic of “regular learning” in his focus group. His preference, which was confirmed by the other three students, was that they learn what they needed to know to navigate the world first and then go out and do it. He referred to regular learning as the teacher lecturing and the students taking notes in order to internalize facts. The MUVE, according to Eric, was fun but not educative and certainly not regular learning.

The students had clear expectations of what they wanted their teachers to be doing while they were in the lab together. Natalie agreed with Eric’s sentiment regarding regular learning—she wanted the teacher to impart specific details. She wanted the teacher standing in front of her, telling her what she needed to know and how she might be able to apply it in the game or in her life. At some point during each student focus group, one of the participants mentioned that the teachers were not teaching in a traditional, frontal way. Interestingly, the students prefer direct instruction and did not understand why the teachers perpetually prompted them to investigate and explore rather than impart the information.

**Experiencing Technological Difficulties**
Characters in SL have the ability to fly which is fun and practical for those who need to get from one place to the other quickly without teleporting (another method of expedited travel). As a team, the creators and I decided that flying would be very distracting to the students and we probably should eliminate the possibility from the proprietary viewer they were creating. We wanted the students to focus on the challenges and discovery of the content and so we eliminated flying.

Little did we know that the students would be so skilled at finding all of the technical flaws in the design. I expected that the students would discover elements of the MUVE that we had not thought of, but the extent of discovery was rather impressive. They fondly refer to these discoveries as “glitches.” Michael shared, “There was a glitch and you could jump over buildings and stuff.” Eric admitted once the directions became unclear, he would set out on a mission to find more, “Yes, and once you get stuck on something and you're able to leave, you just start looking for glitches.” Joseph suggested that all his class did was play with the glitches for the entire class period, “The glitches were fun. Basically all we did was play with the glitches the entire hour.”

The word “glitch” was used forty times in the three student focus groups conducted. Ian shared, “Well yeah. Virtual Israel was fun because of the glitches. Plus the jumping on roofs, you have to love that.” The glitches in the game seemed to entertain the students. They differentiated between their frustration with delays in the game play such as slow or lagging responses from non-player characters and their notion of unclear directions. Those were frustrating, glitches were fun. Glitches in the game design made it so they could jump on top of buildings, alter their clothing, chuckle when someone was stuck underground and ultimately, fly.
The student discovery of glitches is representative of their ease and comfort with technology. The had great expectations for speed and ease of maneuvering through the content of the MUVE and when those expectations were not met, they set out looking for something there were able to understand. This theme initially seemed related to the frustration expressed by the students regarding their lack of direction, but has become clear now that this is something entirely different. This exploration was about student inquiry, discovery and collaboration in relation to the gaming platform itself.

**The Administrator**

As I shared in my statement of bias, I was the director of the supplemental school at the time of the implementations of Virtual Israel. I partnered with the Central Jewish Agency (CJA) nearby and worked together envisioning what innovation might look like in a supplemental school. Since I shared an excitement for gaming, virtual worlds and technology with an administrator of the CJA, Pete, this seemed like the perfect project. Pete had made contact with a team of developers that was hoping to bring MUVE experiences to supplemental schools like ours. The three entities came together to create Virtual Israel. The design and curriculum produced for the game were based on the desired learning outcomes of the fifth grade Israel curriculum that was enacted in the supplemental school I direct.

The initial design and creation of the virtual space took approximately six months. We expected it would as there were many things to consider when using the SL platform with students. It was very important to Pete and me that the students be protected from outside influence of SL in a “walled garden,” that players in the general SL world could not come into VI and the VI players could not exit the space. This was important to parents as well, since they
did not feel comfortable with the idea that their children might befriend or be influenced by people around the world that we did not know.

Once the MUVE was created, I invited the parents to an informational meeting. There was a tremendous amount of excitement on my part and on the part of the CJA as we prepared to launch. Parents came to the meeting, asked questions, shared their excitement and gave their general blessing for the implementation. All we needed to do was engage the teachers.

The teachers had been informed this would be happening. I shared the news enthusiastically that they would be pioneers in implementing this virtual world. In retrospect, I wish I had invited them into the process of creation earlier on. They were informed and not invited; I feel that this potentially negatively influenced their view of the experience. One of the creators of the game came to our school to train the teachers. We explored SL a bit, let the teachers move their avatars around and showed them level one of the experience. The two teachers, Rachel and Ramona, were willing to give the MUVE a try. They were each handed a binder full of the accompanying in-person lessons and told that we would be starting that week. They were generally supportive and prepared themselves appropriately for the first session.

As I spent time interviewing each of the fifth grade teachers, Rachel and Ramona, I could not help but notice that one was far more positive about the experience than the other. Rachel simply understood the purpose of the MUVE as a tool for deeper student engagement through personal discovery. Rachel willingly and enthusiastically facilitated the lessons and encouraged the students along the way. Ramona was willing and indicated that she too understood the philosophical underpinnings of the implementation, but maybe she was not as invested. As she herself stated in her interviews, “I learned ... I don't remember when I learned this, but some time in my teaching career that if nobody's getting it, it's not them. It's you.”
The first day of implementation was entirely an in-person lesson. The students were prompted and engaged by watching a quick video about immigration. They had been studying their personal ancestry and where their families immigrated to or from so it was a logical next step to learn about emigration to Israel. The atmosphere of the classroom was extremely upbeat, cheerful and anticipatory. The students were surrounded by curious adults, Pete came to sit in on the first several rounds of implementation, the designer of the curriculum was there, I was in the room and both teachers were anxiously presenting the introductory lesson. The kids were really excited to hear that the next lesson they would be entering the computer lab and “playing a video game” to learn more about the establishment of the state of Israel. They could not wait to get into the lab the next week and get started working in the MUVE.

After reviewing the video clips of interviews after the first implementation, I came across student reactions that indicated their understanding of the experience and their level of excitement. “I think it was really awesome because now we don’t only have to learn from when our teachers explain stuff, you have another visual of learning,” shared Amanda. Another student was pleasantly surprised by the graphics, “I thought it was great. Like the avatars and stuff. I didn’t expect all of that.” Two others expressed their summarized their experiences as engaging but difficult, “It was fun, but it was hard because I didn’t know what to do all of the time because I’m not like a video game person,” and, “It was cool how you could move around and talk to people but it was hard to get money.”

The next seven weeks were full of highs and lows. The students were clearly engaged in the experience initially. They sought out the challenges, worked together to discover the next tasks they needed to complete and bragged about the amount of experience points they each had. Along the way there were certainly technical difficulties but nothing insurmountable and the
support from the CJA and game designers was substantial. The students reviewed the experience as generally positive and the synagogue board was delighted that this implementation happened first on their campus. The school even won an award for innovative use of technology, which was very gratifying.

The second year of implementation was a very different experience. For starters, Rachel had left her teaching position, leaving Ramona to take over the in-person lessons for the classes. The class of fifth grade students was much smaller and the personalities of the students were very different. As the administrator, I missed the buildup and excitement. I had spent time working with the creators to “fix” all of the technological difficulties and expected the product to be sound and free of the glitches the students loved so much. The CJA and I had thought that after we elevated the product to be more user-friendly that we would be able to invite other programs to experiment in VI as well.

The first few classes were generally fine. Nothing happened that was remarkable on the part of the students or the teachers. The technical difficulties we had encountered during the first year were for the most part resolved, but we were introduced to a whole host of new and unexpected issues during the second round. Veronica was incredibly diligent about noting the issues and sharing them with the developers and they did what they could to support us. I was out on leave for the rest of the year and missed the remainder of the implementation.

The students who participated in the second run shared a unique set of remarks that I did not note from those in the first run. For example, when I asked the students what the environment was like in the computer lab I was surprised to hear, “We weren't allowed to. We weren't allowed to work with each other. No, it was supposed to be a challenge on your own.” Clearly there were major differences in the participant experiences from the first implementation
to the next. These differences are part of the impetus for this research. To ensure the success of future technology integration is important to establish a set of guidelines. The findings below introduce the idea of a set of best practices that might be replicable for future implementations.

**Findings**

The goal of this study was to document participant experiences of Virtual Israel in a supplemental school setting in order to explore how the implementation of MUVE technology supports a constructivist approach to education. The data is also intended to help answer the sub questions presented with the overarching research question:

1. How does MUVE technology and constructivism represent an innovative alternative model of supplemental schooling?
2. What is the added value of using technology in this constructivist approach?
3. What are the participant’s understandings of this learning experience?

Students, parents and teachers contributed recollections and reflections which were analyzed in depth in order to help understand their perceptions of the program. From this analysis, several findings emerged which are indicated in **bold**.

Throughout the student narratives, they indicated a feeling of community, cooperation and collaboration in order to make their way through the Virtual Israel experience. Thus, **social constructivism is present in both the virtual and physical classroom spaces**. The blended learning environment created by combining the computer lab experience with the MUVE was successful in creating community and encouraged collective meaning making.

The students noted several different ways in which they engaged in the process of collaboration in both physical and virtual spaces. In some cases it was simply one student who did not know what they needed to be doing looking at the screen of the person next to them. In
other situations the students found each other in-world and chatted in order to join together and move to the next level. Some of the students in the first run of VI shared that they experienced the computer lab as merely the setting where they were placed in order to work together in-world and that they did not work together in the physical setting. Either way, the remarks of the focus groups indicate that the students successfully collaborated in order to deepen the collective understanding of content.

However, **students found the constructivist teaching style to be incredibly frustrating** potentially hindering their own cognitive presence and making that aspect of the experience null. The students unanimously agreed that they were often unclear regarding what they needed to do and were uncomfortable exploring and figuring things out on their own. They all wanted more extensive teacher involvement in the game experience and most did not understand the connection between the in-person lessons as the exploratory prompt and what did in the MUVE.

The comments of the teachers support this finding as well. It was clear to them as facilitators in the physical setting and support in the virtual setting that the students did not appreciate their indirect responses to the student questions. The teachers were also frustrated by the directions given within the context of the game. In some cases it was incumbent upon the teacher to ensure there was a proper bridge between the in-person lesson and the student immersion in the MUVE and based on their remarks, this was not something that they accomplished.

**Gaming in a supplemental school is exciting and innovative.** Across the board the stakeholders shared that the concept of Virtual Israel was something they had not imagined would be part of their supplemental school experience. The students found the technology to be very appealing and appreciated the opportunity to sit in the computer lab and “play.” Parents
and teachers reflected that this opportunity felt unique and unlike the supplemental school programming they recalled from their youth.

The blended learning and gaming approach resonated very positively with each of the participant pools. The general notion of innovation and relevance of the user experience was one that emerged with the gaming and blended learning format at the core of the “fun.” The students, parents and teachers saw this method of engagement as relevant and appropriate. The parents and teachers interviewed seemed to be convinced that gaming in general is a way to engage their children and teach valuable lessons in the process. They indicated that educational gaming felt like a natural fit given the supplemental school environment and the desire to create a similar atmosphere. Students were excited about bringing in gaming as the unit was being introduced to them. When asked what he thought when he heard there would be a virtual world introduced in the class room Ian, a seventh grade male shared, “I guess I was just excited because, yay, we get to play a game!”

The allure of technology and gaming is of great value to the stakeholders. Technical difficulties aside, the excitement the participants shared regarding the implementation of MUVE was of tremendous value. The participants were asked to share a program in the supplemental school that felt similar to Virtual Israel. When they reflected on the supplemental program as a whole, they all shared that this experience felt unique. A few of the students shared that their participation in a mock wedding or weekend retreats felt like similar experiences, but not as enticing from the get-go. The mock wedding and retreats are examples of the way the supplemental school intends to provide immersive learning experiences for the students and their families. The correlation between those experiences was indicative of an underlying understanding on the part of the students of the general philosophy of the program.
There were too many technical difficulties. Both the student and teacher participant groups shared their frustration with the technical difficulties of the MUVE. Students were stuck underground for extended periods of time or non-player characters were overloaded by users and did not respond when engaged. The student expectations for what the MUVE could support technically were not met. Students shared that the graphics were not as impressive as the games they were used to and that waiting for things to be available for them made the experience frustrating. Students expect technology to be fast, responsive and fluid. When these expectations were not met, they immersed themselves in finding the “glitches” of the game. Technical exploration of the platform is in itself educative for the students and something that would be beneficial for them in another setting. In a supplemental program with limited hours, the focus needs to remain on the content.

Virtual Israel in its current version does not represent a viable alternative to traditional supplemental school. MUVEs in general, however, seem to have the potential to represent an innovative alternative model of supplemental schooling. Students, who were able to overcome the technical issues, or figure out ways to work around them, seemed to appreciate the experience. They were able to articulate their enduring understandings in ways that indicated they retained curricular elements.

The students connected to the place through the MUVE. Beyond positive feelings on the part of the participant, utilizing this technology in a constructivist setting adds significant value. The examples of students connecting to the physical land of Israel through their virtual visits illuminate the purpose and value of the simulation. Teachers noted this connection for themselves as well as the students. Parents were equally positive in their remarks regarding their understanding of their children’s connection to Israel through the MUVE.
As noted by one of the parents interviewed, this is a connection that textbooks and pictures do not provide. Ramona pointed out that the students were able to interact with historical figures in Virtual Israel that they would have just read about in the past. The MUVE afforded the students the opportunity to approach the historical characters with their avatars and engage in conversations with them. Ramona described how she introduced the students to David Ben-Gurion. “He's kind of like an American George Washington in a way, that's something they couldn't understand, but for them to go and meet Ben-Gurion, and to interact with Ben-Gurion, now they have that connection because it's personal and that's something that they can relate to.”

The following chapter will discuss recommendations for future use of MUVE technology in supplemental school settings. Utilizing the adapted CoI model as a framework to describe the ideal program, chapter five will present suggestions for best practices integrating a blended learning environment into a supplemental school.

**Chapter Summary**

The purpose of this study was to explore and describe participant experiences of various stakeholders involved in Jewish supplemental schools. Data were collected from students, parents and teachers in the form of interviews, focus groups and artifact review. The data were checked for validity by sending each of the adult participants their transcripts for approval. The students were sent a summary of the focus group they participated in to approve. Then, the data were coded first using the framework of provisional codes based on the adapted CoI model and constructivist educational philosophy. A second cycle of the coding was completed applying the codes based on the theoretical framework that clearly described the many factors of the MUVE implementation. The data were then triangulated across stakeholder groups for internal validity.
The findings reported in this chapter indicate areas of strength and areas of weakness when viewed through the lens of the adapted CoI model. The following question guided this case study: How does the implementation of MUVE technology support a constructivist approach to education in a Jewish supplemental school?

The following three sub-questions act as a guide to approaching the project.

1. How does MUVE technology and constructivism represent an innovative alternative model of supplemental schooling?

2. What is the added value of using technology in this constructivist approach?

3. What are the participant’s understandings of this learning experience?

The analysis of data through each of the cycles revealed seven specific findings along with detailed descriptions of participant experience. Incidentally, these findings were relatively inconsistent with my impressions at the outset of this investigation. The following and final chapter of this thesis will discuss recommendations for improvements, as well as implications for future research.
Chapter Five: Discussion of Findings and Implication for Practice

Introduction

The final chapter of this qualitative, bound, case study highlights the essential findings connecting them to both the theoretical framework and review of literature. Additionally, it provides recommendations for both current educational practices and for future research. This qualitative, single case study (Yin, 2009) examined the recollections and reflections of three participant populations as they considered their experiences with a new technology in their supplemental school. The case study model presents a clear and complete representation of the participants’ understandings of their experiences (Yin, 2009). The study contributes to the existing body of literature in the following areas: MUVE implementation in educational settings, models of Jewish supplemental schools, blending learning examples in Jewish school settings, and constructivism in educational philosophy.

All of the student participants were in either sixth or seventh grade in the 2013-2014 school year. The first implementation of Virtual Israel was in the 2011-2012 school year and the second run was in the 2012-2013 school year. The teachers present in the classrooms for both of the implementations were interviewed one-on-one. The researcher conducted three focus groups of student participants, with a blend of students from each of the first and second implementations. The children of the two parent participants were seventh grade students at the time of the interviews. This research is intended to provide a description of a replicable, innovative model of Jewish supplemental education.

Research Questions

The basis for this qualitative case study exploration of MUVE technology within the bounded system of a supplemental school setting is this question: How does the implementation
of MUVE technology support a constructivist approach to education in a Jewish supplemental school?

The following three sub-questions act as a guide to approaching the project.

1. How does MUVE technology and constructivism represent an innovative alternative model of supplemental schooling?

2. What is the added value of using technology in this constructivist approach?

3. What are the participant’s understandings of this learning experience?

**Constructivism**

Two important findings emerged from the examination of the data in relation to the theme of constructivism:

1. Students found the constructivist teaching style to be incredibly frustrating.

2. Social constructivism is present in both the virtual and physical classroom spaces.

**Theoretical framework.** These findings are consistent with the theoretical frameworks of constructivism and the CoI model. The first finding reflects negatively on the implementation but the data collected indicates that the experience would have been positive had the structure of the frameworks been prevalent. These difficulties will be addressed through the implications for the practitioner. The second finding is consistent with the theoretical frameworks examined and supports the current literature.

The CoI model and constructivism both contribute guidelines for the teaching presence. The element of teaching presence in the CoI model refers to the responsibility of the teacher to design the educational experience. Included in the design of the experience, but not limited to, is the selection, organization and presentation of the content (Garrison, Anderson, & Archer, 2000).
An additional element shared with constructivist philosophy: it is incumbent upon the teacher to facilitate the conversations and learning opportunities in the classroom setting (Dewey, 1922).

The teachers found the MUVE implementation difficult to align with constructivist philosophy. The use of the technology was foreign and the blending of in-person lessons with the exploration of the simulation was new. Though they did not approach the teaching with constructivism in mind, elements of the philosophy are present in their comments. Creating motivated learners by connecting new information to prior knowledge through schema was clearly the approach referenced by two of the teachers in their remarks (Brooks & Brooks, 1993). In the situations where the teachers thought it was possible to avoid direct instruction and instead encourage the students to explore, question and discover, they did employ those methods (Brooks & Brooks, 1993). However, the frustrations of the students often made the teachers feel pressure to “tell” rather than help them to uncover.

The students understood the teachers’ lack of information transmission to be “unclear directions” rather than an opportunity to prompt and facilitate (Brooks & Brooks, 1993). The student conversation surrounding “regular” learning was a fascinating aspect of this study. In one of the three focus groups, a conversation regarding the type of learning they preferred was prompted by a comment from one of the students. Eric shared that what the teachers were doing in the lab did not feel like “regular” learning, an astute observation on his part.

While in the simulation the students once again noticed a lack of specific instructions. Michael articulated a specific frustration with the game’s lack of direction.

If the teacher taught you everything that you have to know like they did the game, they finished it, then they teach you what you need to learn to do the game on each day. Let's say they taught you what the seven species were and then you would go in and find that.
In contrast to the evidence of social constructivism, recollections of frustration and feelings of confusion emerged when they were prompted to discover and make connections on their own. The students appeared to need one another in this setting in order to navigate the constructivist approach as opposed to their definitions of “regular learning”.

Despite the students’ unfavorable recollections of the implementation, social constructivism was present in both the virtual and physical settings. In social constructivism, challenging but reachable goals lead to effective learning experiences as more capable peers can act as the shepherds from one zone to the other (Vygotsky, 1978). Students worked together in-world, sharing what they had learned and showing each other how to approach the various challenges presented. In the computer lab, students referenced many opportunities where they were able to assist fellow classmates or were assisted themselves as they solved problems and discovered new information.

**Literature.** The findings are consistent with the current literature on MUVE use in secular programs, particularly regarding the need for thorough and complete teacher training as well as their perceptions of the learning affordances offered by MUVE technology. A study was conducted of twenty-two teachers, one cohort of eleven teachers experienced in MUVEs and one cohort of eleven teachers for whom the technology was foreign (Vimani, Tretiakov & Crump, 2011). The teachers were interviewed and their feelings were mixed even within the cohort regarding the use of MUVE technology in educational settings (Vimani, Tretiakov & Crump, 2011). The teachers interviewed for this study also shared mixed feelings regarding the learning affordances, approach and philosophy of the Virtual Israel program. Consistent with the literature, it is clear that it is necessary to encourage deeper investment on the part of the teacher in designing and implementing the MUVE learning experience. The literature stresses the fact
that in order for teachers to identify with large-scale reforms they need to be regarded as partners and consulted regarding its most important elements (Hargreaves, 1994).

**Implications for practice.** Fostering a constructivist learning environment in a supplemental school setting is a challenge in its own right. The opportunity to bring technology like Virtual Israel to the program was very exciting. A lot of work went into designing the virtual space to ensure the elements of the school’s formal curriculum were addressed and the underlying philosophy of the program was supported in the implementation. This, however, happened on the part of the administration of the program alongside the creators of the experience and did not include the teachers.

It is recommended that teachers be brought into the conversation surrounding similar technology integration much earlier than they were in this implementation. Engagement of the teachers in the process of change is critical to ensure they support the endeavor and attempted outcomes. It is also incredibly important that the teacher placed in the lab or the classroom with students engaged in this sort of technology be comfortable with and enthusiastic about the endeavor. If a program has a teacher or team of teachers who find the implementation to be burdensome, that will translate to the student experience.

Training is very important to this process. The teachers were afforded the opportunity to experience a single training session with one of creators of Virtual Israel. The training was brief, focused on how to maneuver in Second Life and did not go into great detail regarding the philosophy and reasoning for bringing the MUVE to the supplemental school setting. Should a program like this supplemental school want to bring in similar technology, it would certainly behoove the administration to invest in proper and extended training for their staff, both on the technical side as well as the philosophical. Without this training, the teachers will not fully
understand the frustration on the part of the student when they experience difficulties on the technical side. Additionally, they will not be able to encourage cognitive construction of the ideas if they are unfamiliar with the content.

It would be very beneficial for synagogue school administrators to consider the implementation of new technology an opportunity for collaboration with other schools. Forming networks of schools that use the same or similar technology would provide structured opportunities to share best practice, lessons, and troubleshooting guides. This network would help alleviate some of the difficulty in successful integration. Additionally, this collaboration might provide the individual schools occasion to offer more significant professional development opportunities that might otherwise be too costly.

Not only should the teachers be trained in the new technology and the philosophy of constructivism, it would be incredibly helpful to offer them ideas for supporting students as they become frustrated in the environment. Rather than jumping in and “telling” the students what it is they need to know, helping the teacher to make an educative moment out of the emerging frustration would enhance the new experience. Role playing or brainstorming possible situations where student frustration might occur, and arming the teachers with an arsenal of constructivist responses, may provide support to the teachers and calm to the students.

**Implications for future research.** Based on the desire to provide other supplemental school programs with a replicable model for future implementation, and the perceived gaps in the current literature, the two questions below would provide educators with the means to define and carry out a more seamless integration of a blended learning environment.

1. How do Jewish supplemental school teachers need to be trained in order to include innovative technology into their programs?
2. What tools and support does the administration of supplemental schools need to offer their teachers in order to provide a positive experience implementing MUVE technology?

Studies addressing both of these research questions would benefit all educational stakeholders who consider MUVE technology or blended learning environments to be of value.

**Innovation**

Three findings emerged from the data collected surrounding the concept of innovation and technology. They are as follows:

3. Gaming in a supplemental school is exciting and innovative
4. There were too many technical difficulties.
5. The allure of technology and gaming is of great value to the stakeholders.

**Theoretical framework.** This set of findings speaks specifically to the second research sub-question regarding the added value of using technology in a constructivist supplemental school setting. All of the participants were excited to bring something that felt relevant into the classrooms. The overall philosophy of the hosting supplemental program is that the students should have the opportunity to be immersed in positive Jewish learning and living experiences. The stakeholder groups often understand this to mean that we are hoping that they all have a “fun” experience. Enjoyment is certainly a factor when considering what types of experiences to offer the students, but before that we are looking for opportunities to immerse them in the learning.

Parents and teachers have specific recollections about what Religious School used to be. For the most part, previous generations recall that their Religious School or Hebrew School
experiences were boring and difficult to attend. I internalize these experiences with the “old model” of supplemental education to be full of traditional, direct instruction. Students had to memorize Judaism, recite Judaism and generally experience the transmission of facts and traditions of Judaism without making personal connections.

Virtual Israel is meant to be another opportunity for students in the supplemental program to construct personal meaning and create significant connection to the content through immersion. Parents, teachers and students shared excitement about a video game coming to the school because the idea itself was the initial scaffold through which the rest of the schema was tacked. Constructivist philosophy encourages the connection of new knowledge to that which already exists in the student’s vocabulary. The excitement shared by the stakeholder represents the current vocabulary of learners and their readiness to construct personal connections and meaning.

**Literature.** Though the language used in the study references the experience as participation in a multi-user virtual environment, the students thought of it as a video game. The literature regarding video gaming speaks to the value of collaborative learning experiences in language the students would appreciate. Gaming allows for intrinsic student motivation and group collaboration in a way that traditional instructional methods do not (Gee, 2008). Video games offer players experiences and learning in the form of pleasure while seeking mastery of skills (Gee, 2008). Games use stories, characters and experiences that allow students to interact with subject matter (Clark & Ernst, 2009). The students worked together in the classroom and in the MUVE to co-construct a meaningful learning experience in what they thought of as a video game. They should think of it as a video game, as it connects them to the experience in a way that is outside what usually happens in the supplemental school setting.
Innovation is the buzzword these days when it comes to what stakeholders would like to see happening in supplemental school settings. Traditional models of one to two afternoons each week along with a Sunday morning are being reexamined in the name of revolution. Parents have options that are outside of the synagogue-based schools and they are exercising them. Synagogue-based supplemental school programs feel the coercive pressure to create, reinvent and inspire. The first implementation of Virtual Israel happened in 2011. At a parent meeting in 2014, I was asked what other programs were doing in the area that might inspire the supplemental school program I run to be more creative. The expectations for innovation are huge.

**Implications for practice.** Technical difficulties were expected in the first round of implementation. The students were prepared to enter the eight week unit on Virtual Israel knowing that we were “testing” the MUVE on them. Teachers spoke to them about the project that was coming, that they would be observed by the game creators, people from the central agencies, donors and the school’s administration. I went to the classroom and told them how excited I was to share with them the virtual world that was created in order to immerse them in Israel in the early 1900s. I reiterated what the teachers had shared about the fact that they were the first people ever to try the game. The students jumped in to the game armed with the information that nobody had ever tried this game before. They felt very special at first. Then, they felt frustrated.

The students’ feeling of connection to the testing process made some of the technical difficulties forgivable. The first day of implementation, all of the students stood at the wardrobe that was placed at the door to exit the ship. In order to leave the keel of the ship, the students needed to select their new outfits to be dressed appropriately for their new homes. It was a great
idea and fantastic transitional lesson that did not go well. The first student clicked on the wardrobe and was offered his choices for “changing” his clothing. Then the second student clicked on the wardrobe, then the third and then the fourth. The wardrobe froze. The students wandered in the small underbelly of the virtual ship. They were special for a few minutes and then they were impatient.

The list of technical difficulties the students experienced is significant. We worked with the creator and programmer of the game as we uncovered the difficulties with the design of the experience. The students told us what was wrong and quickly learned that the game they were playing in the supplemental school was not anything like Call of Duty. One and two years after the implementation of this game, these are the takeaways that the students were able to readily access. They did not immediately recall what they learned or that they had a great time working with their friends in the computer lab, they remembered the frustration.

User testing of this and similar technology is vital to the success of the experience. Though the first users were informed that they were in essence beta testers, their valuable learning time was corrupted by frustration and technical difficulties. One or two glitches in a session are forgivable, but the frustration the students experienced in both the first and second implementations was difficult to assuage because they were “special”. If I were to bring a similar technology to the program again, I would be sure to send it through multiple passes of user testing. Perhaps a group of students who already finished the grade level and would like to try something new on their own time would be a good fit for this type of testing.

**Implications for future research.** The language of innovation in Jewish education is considered frequently by practitioners and academics in the field. More specific data on what parents and students think about as “innovation” and creative would benefit the field. Therefore,
probing further into this facet of innovation would be extremely informative for administrators who are invested in providing innovative, relevant experiences to their constituents. The following research questions would be beneficial avenues of investigation for future research studies.

1. What experiences in supplemental school settings do students find exciting?
2. What are the characteristics of supplemental school settings that parents look for as they consider where to send their children?
3. Based on student input, what are the characteristics of a supplemental school program students would be excited to attend?

Making Meaning

One very important finding related to the student’s understanding of this learning experience emerged from the data.

6. The students connected to the place through the MUVE.

Theoretical framework. The CoI model was an incredibly helpful framework for examination of the student connection to the content. The Community of Inquiry model was developed to assess the efficacy of online learning environments and has since been used as the grounding for a significant number of other studies. Recently, the framework has been used to understand learning affordances in blended learning environments such as the one created by the use of Virtual Israel.

In the adapted model, content and delivery are critical aspects. In the past, the students learned about the history of Israel through a textbook with pictures of the settlers and maps. The content was substantial, as it remains in this implementation, but the delivery was not significant.
As the students explored the Port of Jaffa, where their ship landed after they emigrated from Eastern Europe, they were able to feel what it was like to have left their homes and to try and navigate a new place. Their connection to the space, while often frustrating, was real. The interconnectedness of the elements of the adapted model encouraged, in at least two cases, a personal connection to the land of Israel – the centerpiece of the model.

**Literature.** Use of MUVE in an inquiry-based classroom can help build 21st-century learning skills in virtual communication and expression in addition to facilitating good inquiry learning, engaging teachers and students and even improving student attendance (Ketelhut, Dede, Clark & Nelson, 2010). In the field of higher education it is reported over 100 universities have built classrooms and replications of museums in order to allow for asynchronous extension activities by their students (Miller & Peck, 2010). Elementary schools use simulations like Quest Atlantis and River City to foster inquiry-based and constructivist learning (Ketelhut, Dede, Clark & Nelson, 2010). Though statistical results indicated no differences in student learning as measured by the instrument, the literature does indicate significant differences found in the participants’ level of engagement while using the simulation (Annetta, Minogue, Holmes & Cheng, 2009). The available literature supports the concept of connecting to a place through MUVE technology. It was pretty amazing to hear that it actually happened to at least one of my students.

**Implications for practice.** MUVEs are basically a virtual flannel board. You can create any setting you want in the space and use it in a myriad of educational settings. For the purpose of this study, we acknowledged that an area of the curriculum that our students were having a hard time connecting to in the program was that of the history of early Israel. One of the teachers of the grade level even admitted that she found it to be dry and difficult to get through
so she often quickly dropped it in to other lessons she was teaching on the same topic. This was the topic around which we decided to construct the MUVE. However, any curricular topic would be easily represented in the virtual space.

This technology has the potential to transport students to anywhere in the world at any time in history. Offering students an opportunity to “visit” Israel when they may not have already visited was a fantastic use of MUVEs. The student in the focus groups who shared an incredibly negative reflection of the program was still able to describe what it looked like as he wandered around trying to figure out what to do. If a school were to replicate this model, creating a virtual space that is similar to the real site and has obviously recognizable landmarks may present an opportunity for future students to explore and connect in a similar way.

In our implementation of the program, we learned that Second Life was a platform that was accessible and easy to build in (for the developer who created it). The developer built a proprietary viewer for our students so they would not be overwhelmed by all of the options and code that one sees on the screen that is part of the Second Life experience. We had thought that this would be enough to make the interface user friendly and appealing to the students. While in the computer lab, the students often did not know what to do because they were not reading the few lines of text on the screen that did prompt them or give instructions for how to proceed once they had completed a task. This was an important lesson we learned, the platform in which subsequent schools might build an experience like Virtual Israel should be easy to use and visually appealing.

**Implications for future research.** It was a fluke that I was able to hear about one of the students who had been in the Virtual Israel implementation traveling to Israel and sharing that he recognized his environment. That I received an email from his mother sharing that he seemed to
have a connection and familiarity on his trip was an amazing anecdote to add to this study. It would be incredibly useful and meaningful to develop a longitudinal study of both a similar implementation of MUVE and then to follow up with students later in their lives as they have the opportunity to visit Israel on an organized youth trip (later than high school might be a challenge for them to recall the connection). It would be very helpful to learn the answers to the research questions:

1. How did your physical trip to Israel remind you of the virtual experience you had in your supplemental school program?
2. As a result of participation in Virtual Israel, did you recognize any of the landmarks you visited in real life? If so, what were they and what do you recall about how they looked in both the physical and virtual settings?

Implementations for Practice beyond the Jewish Supplemental School

Any technology brought into the classroom is a tool. In the same way that teachers bring learning centers or Legos to the classroom with a specific objective and design for implementation, so is the case for iPads or MUVEs. As an administrator, I was anxious to bring exciting technology to my program. I think that is a feeling that is shared across many institutions. Bringing technology to a program without first determining how it might fit in with the overarching philosophy of the school is a mistake. This study has given me the opportunity to think about ways to bring technology to educational programs while honoring constructivist educational philosophy.

The CoI model represents the most logical starting point for examining technology integration with constructivist theory in mind. Though it was originally developed to understand student learning in higher education courses that were entirely online, the elements in the model
are applicable to a blended learning environment. Current literature suggests that many researchers are utilizing the model in this way and are making great strides toward improving the implementation of various technologies in blended learning settings.

For the evaluation of the in-person lessons, it is very helpful to reach back to general constructivist philosophy. A deep understanding of the curricular content, a basic understanding of the new technology, along with excellent tools for helping students discover and connect will help the teacher feel confident and successful. These two pieces might not be enough, however, to successfully present technology integration in a constructivist way. I would like to suggest that the biggest hindrance may be in what I am calling the “gap”; the space between the in-person lesson or teacher facilitation and the student interaction with technology. Ensuring the student bridges the gap between what they are being provoked to consider in their physical, cognitive selves and what they are able to discover in their virtual social selves was clearly not achieved in this implementation of VI. I can only assume that this is not a unique situation.

Areas of Study Vulnerability and Limitations

This study was meant to be a description of participant understandings of their learning experience within a MUVE called Virtual Israel. The first area of vulnerability is the amount of time between the implementation of the MUVE and the collection of participant recollections. Due to forces beyond my control, Virtual Israel was not functioning this year and I was not able to observe a cycle of implementation in real time. The students who participated in the focus group shared what they were able to recall, but it is possible that their reflections were colored by time.

Additionally, the total participant pool consisted of nearly forty students and yielded only nine student participants in the focus groups. That is not to say this is not an adequate sample
size, but as I intended to provide a rich description of the implementation it would have been ideal to include more voices. Of the nine participants, only two of them were female students. During the two implementations, it was interesting to see the difference in how the male students engaged with the MUVE in contrast to the female students. Their outlooks were different in some cases, though not all as there were a few female gamers in the room. The study would be fuller and perhaps more interesting if more female voices were included.

As the site director, my interviews with the students were interesting. It was necessary to share with them at the outset that my feelings would not be hurt if they had negative things to say about the project. I could see that for some of them they were concerned at first about opening up and sharing honestly the details of their experiences. For others, the entire conversation focused on what could be done with the MUVE in order to make it a more positive experience for students yet to play. Those who had a personal interest in gaming seemed to be very invested in the concept of improving and fixing the technological difficulties so their successors would not experience the same level of frustration they did. Inasmuch as I tried to collect unbiased data from all of the participant pools, this limitation of the study remains.

Conclusion

The key findings of this study are:

1. Social constructivism is present in both the virtual and physical classroom spaces.
2. Students found the constructivist teaching style to be incredibly frustrating.
3. Gaming in a supplemental school is exciting and innovative.
4. There were too many technical difficulties in the implementation.
5. The allure of technology and gaming is of great value to the stakeholders.
6. The students connected to the place through the MUVE.
These ideas all resonate with the ideas shared in the theoretical framework and literature review. The adapted CoI model serves to outline what an ideal implementation of MUVE technology would look like in a supplemental school setting, both in the virtual and physical classrooms. MUVEs can be used for so many educational purposes, Virtual Israel is but one of the ways students might benefit from an environment they get to explore, discover and collaborate with their classmates. The role of the teacher in this implementation is crucial to its success. Teachers must be invested in the implementation and brought into the planning phases so they are engaged and prepared to offer students this incredible experience.

My recommendations for future use of MUVE or other forms of blended learning are heavily influenced by the stories and reflections of the participant narratives I collected for this study. I heard their frustrations but I also feel as though I was able to uncover their success and the success of the program to build a community of inquiry around a MUVE that exposed students to an important piece of their collective history. Future research should involve the opinions of students to better understand what it is they would like to see in supplemental school settings and how the programs that exist can appeal to them.

Ultimately, the results of this study are encouraging. As supported by the problem of practice, research questions, theoretical framework and research methodology, this case study provides a description of a unique, innovative, constructivist implementation of MUVE technology in a Jewish supplemental school. While contributing to the existing body of literature, I hope to inspire further research to discover how MUVE or similar technology supports and helps construct meaningful personal connections for students in Jewish supplemental schools.
References


Peck, B., & Miller, C. (2010). I think i can, i think i can, i think i can…i know i can multi-user virtual environments (muves) as a means of developing competence and confidence in undergraduate nursing students an australian perspective. Innovation and Creativity in Education, 4571-4575.


Appendix A

Parent and Student Recruitment Email

Dear Parents,

I hope this email finds you well! As you may or may not know, I have been working toward a doctorate in education over the past few years. I am very excited to report that I have finished my coursework and have moved on to data collection in order to write my dissertation.

The focus of my study is the implementation of Virtual Israel (you might know it as the video game the kids played in JLC fifth grade) in an afternoon school setting like ours. I am asking for your help in two ways. The first, I am interested in collecting the recollections and reflections of the student experience with Virtual Israel. For this, I will need to conduct a focus group with the students who played Virtual Israel. I am in need of student volunteers for two groups.

The first group will be on: January 12, 2014
The second group will be on: January 28, 2014

I expect the focus group to last no more than one hour. I do, however, need you to come in with your student for the first ten minutes so I can further explain the study and get your consent to include your child in the study. Please respond to this email with your preference if you are able to participate in either group.

The second way I am asking for your help is more direct. I would like to interview a few parents to get feedback about your recollection of the experience. I am hoping to set these interviews up to take place in person but understand that life is very hectic! I am very happy to set a phone date, if that is easier for you. This interview will last approximately forty-five minutes. Please respond to this email if you are able to participate.

Please know that your participation is completely voluntary. Your support is greatly appreciated.

Do not hesitate to be in touch if you have any questions about either the focus groups or interviews.

Thank you in advance!

Johannah Sohn
Appendix B

Signed Informed Consent Document (Student)

Northeastern University, College of Professional Studies

Name of Investigator(s): Johannah Sohn, Student Investigator: Karen Reiss Medwed, Principal Investigator

Title of Project: Exploring the Integration of Technology into Jewish Education: Multi-user Virtual Environments and Supplementary School Settings

Informed Consent to Participate in a Research Study

Your child is invited to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why is my child being asked to take part in this research study?

Your child is being asked to participate because you were a participant in the Virtual Israel project.

Why is this research study being done?

The purpose of this research is to explore how Virtual Israel might represent an innovative and constructivist approach to supplemental school programs. We are interested in learning about your child’s reflections and recollections of the experience. We are conducting this research to provide an example for other Jewish institutions.

What will my child be asked to do?
If you decide to take part in this study, your child will be asked to participate in a focus group with a few other students and talk about their experience with Virtual Israel. You will be given the opportunity to review the focus group transcript for accuracy.

**Where will this take place and how much time will it take?**

The focus group will take approximately forty-five minutes and will take place on the campus of Adat Ari El.

**Will there be any risk or discomfort to my child?**

There is extremely minimal risk in participating in this research study. This research will not use names or identifying information, and does not aim to share the profile of the JLC and/or students in a way that will reflect negatively.

**Will my child benefit by being in this research?**

There is no direct benefit to you or your child for taking part in the study. However, the information learned from this study may help educators, rabbis and lay leaders in other communities to integrate technology into their classrooms in a way that makes the experience meaningful for other students.

**Who will see the information about me?**

Your child’s part in this study will be confidential. Only the researcher will see the information. No reports or publications will use information that can identify your child in any way. In all documentation (including interview transcripts) your child will be given a pseudonym, as will the school. Recordings will be kept in a password-protected file, labeled using only focus group dates and times. Transcripts will be kept confidential at all times. All documents will be kept in a password-protected file on the researchers personal computer, which is also password protected. Notes and any documents that are not needed will be shredded to maintain confidentiality. All
documents and data will be destroyed within six months of final dissertation approval. Once data analysis is completed, a peer reviewer will be provided access to the data transcripts and subsequent coding and analysis. The peer reviewer will not share or disclose the information, and they will not have access to your identity – only your pseudonym. In rare instances, authorized people may request to see research information about you and other people in this study. This is done only to be sure that the research is done properly. We would only permit people who are authorized by organizations such as the Northeastern University Institutional Review Board to see this information.

**What will happen if my child suffers any harm from this research?**

We do not anticipate any physical or emotional harm as a result of this research. No special arrangements will be made for compensation or for payment for treatment due to participation in this research.

**Can my child stop my participation in this study?**

Your child’s participation in this research is completely voluntary. He/she does not have to participate if they do not want to. Even if he/she begins the study, they may quit at any time. If your child does not participate or decides to quit, you will not suffer any negative consequences.

**Who can I contact if I have questions or problems?**

The researcher, Johannah Sohn, sohn.jo@husky.neu.edu or 310-309-9455 or Dr. Karen Reiss-Medwed, Principal Investigator, at k.reissmedwed@neu.edu, or 617-390-4072

**Who can I contact about my rights as a participant?**

Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: irb@neu.edu. You may call anonymously if you wish.
Will I be paid for my participation?

You will not be paid for your participation.

Will it cost me anything to participate?

No.

I agree to have my child take part in this research.

____________________________________________   ____ ____________________
Signature of parent agreeing to take part    Date

____________________________________________
Printed name of person above

I agree to participate in this research.

____________________________________________   ____ ____________________
Signature of student agreeing to take part    Date

____________________________________________
Printed name of person above

____________________________________________   ____ ____________________
Signature of person who explained the study to the  Date
participant above and obtained consent
Appendix C

Unsigned Informed Consent Document (Adult)

Northeastern University, College of Professional Studies

Name of Investigator(s): Johannah Sohn, Student Investigator: Karen Reiss Medwed, Principal Investigator

Title of Project: Exploring the Integration of Technology into Jewish Education: Multi-user Virtual Environments and Supplementary School Settings

Informed Consent to Participate in a Research Study

You are invited to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to verbally consent.

Why am I being asked to take part in this research study?

You are being asked to participate because you were involved in the implementation of Virtual Israel either as a parent, teacher or administrator.

Why is this research study being done?

The purpose of this research is to explore how Virtual Israel might represent an innovative and constructivist approach to supplemental school programs. We are interested in learning about your reflections and recollections of the experience. We are conducting this research to provide an example for Jewish institutions.

What will I be asked to do?
If you decide to take part in this study, you will be asked to participate in an interview with the researcher and talk about your experience with Virtual Israel. You will be given the opportunity to review the interview transcript for accuracy.

**Where will this take place and how much of my time will it take?**

The interview will take place on campus at Adat Ari El when possible or over the telephone.

**Will there be any risk or discomfort to me?**

There is extremely minimal risk in participating in this research study. This research will not use names or identifying information, and does not aim to share the profile of the JLC and/or students in a way that will reflect negatively.

**Will I benefit by being in this research?**

There is no direct benefit to you for taking part in the study. However, the information learned from this study may help educators, rabbis and lay leaders in other communities to integrate technology into their classrooms in a way that makes the experience meaningful for their students.

**Who will see the information about me?**

Your part in this study will be confidential. Only the researcher will see the information about you. No reports or publications will use information that can identify you in any way. In all documentation (including interview transcripts) you will be given a pseudonym, as will the school. Recordings will be kept in a password-protected file, labeled using only aliases and the date obtained. Transcripts will be kept confidential at all times. All documents will be kept in a password-protected file on the researchers personal computer, which is also password protected. Notes and any documents that are not needed will be shredded to maintain confidentiality. All documents and data will be destroyed within six months of final dissertation approval. Once data
analysis is completed, a peer reviewer will be provided access to the data transcripts and subsequent coding and analysis. The peer reviewer will not share or disclose the information, and they will not have access to your identity – only your pseudonym. In rare instances, authorized people may request to see research information about you and other people in this study. This is done only to be sure that the research is done properly. We would only permit people who are authorized by organizations such as the Northeastern University Institutional Review Board to see this information.

**What will happen if I suffer any harm from this research?**

No special arrangements will be made for compensation or for payment for treatment due to participation in this research.

**Can I stop my participation in this study?**

Your participation in this research is completely voluntary. You do not have to participate if you do not want to. Even if you begin the study, you may quit at any time. If you do not participate or if you decide to quit, you will not suffer any negative consequences.

**Who can I contact if I have questions or problems?**

The researcher, Johannah Sohn, sohn.jo@husky.neu.edu or 310-309-9455 or Dr. Karen Reiss-Medwed, Principal Investigator, k.reissmedwed@neu.edu or 617-390-4072

**Who can I contact about my rights as a participant?**

Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: irb@neu.edu. You may call anonymously if you wish.

**Will I be paid for my participation?**

You will not be paid for your participation.
Will it cost me anything to participate?

No.

Please keep a copy of this consent for your records.

Do you consent to begin the interview?
Appendix D

Adult Interview Protocol

This information will be gathered via recorded in person interviews, telephone or recorded online interviews. These questions are simply a guide and the interview will follow the participant’s flow. The goal is to obtain all of this information throughout the course of the discussion.

**Begin with unsigned verbal consent form – review. If verbal consent granted, begin interview.**

Thank you for agreeing to participate in this study. Do you have any questions? Do I have your permission to record this interview?

**The recording has begun.** For this interview, we will be discussing your involvement with the Virtual Israel program. The interview will take between half an hour and forty five minutes. Do you have any questions before we begin?

1. Okay, tell me how you were connected to Virtual Israel.
2. Can you share a specific memory you have about Virtual Israel?
3. What were your initial perceptions when you heard we would be using a video game in our supplemental school?
4. Have your perceptions changed since the implementation?
5. How do you think you would react if I said we planned to bring another game to the school?
6. How do you think gaming aligns with the overall philosophy of the program?
7. What do you think you will remember most about Virtual Israel? *If applicable*, what do you think your child will remember most?
Thank you so much for this information. I’m going to stop the recording now. RECORDING ENDS.
Welcome: Hi everyone! Great to see you, it has been a while since we’ve had the chance to sit together and chat, I am very glad you are here. Tonight we are going to discuss your experience in the Jewish Learning Community with a focus on Virtual Israel. You were selected to participate in this study because you were students who were in the first two implementations of Virtual Israel. The information I collect here tonight will be used to help understand your feelings about the project and will be used in my thesis I am writing for school. Before we start, I would like to go over the consent form with your parents so we can make sure that all of your questions are answered.

Review consent form

For the remainder of our time together, we are going to have a conversation. You do not need to raise your hand to speak, please just make sure that your comments and the comments of your friends can be recorded clearly. Everything you have to say is important to this study.

The rest of the group will be an informal conversation with the following questions guiding the conversation (with room for further explanation).

Questions:

6. When you reflect upon your fifth grade year at JLC, what is a memory you would like to share?
7. What sticks out in your mind about the programs offered here?
8. How did you feel about using Virtual Israel?
9. Think back to our first class entering the simulation space on the computer. How did you feel? What were you thinking about as you started to play the game?
10. How did you feel about the directions given for the experiences in-world? What do you think about how the challenges were presented?
11. What was it like to be in the computer lab with your classmates?
12. What was it like to be in the virtual space with your classmates?
13. Can you give an example of another program or something you did in JLC that felt similar to your experience in Virtual Israel?
14. Now, think back to our last class using Virtual Israel. What is your biggest takeaway from the experience?
15. If you were telling your best friend about Virtual Israel, what would you tell them?

Summarize conversation briefly

Have I missed anything? Any last minute thoughts you would like to add?

Thank you so much for your participation! I look forward to seeing all of you soon.