Effective Integration of Technology in a High School Beginning Japanese Class

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Effective Integration of Technology in a High School Beginning Japanese Class

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for the Degree of Master of Arts in Education

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Effective Integration of Technology in a High School Beginning Japanese Class

By: Yo Azama

APPROVED BY THE GRADUATE ADVISORY COMMITTEE

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Abstract

Technological advancement is rapidly changing our daily lives. Many teachers seek ways to implement technology to improve students’ learning experiences. How do we determine what types of technological tools to use to maximize learning? This research investigated the effectiveness of the integration of the Substitution Augmentation Substitution and Redefinition (SAMR) model and other web applications in learning Japanese at the high school level. Fifty-one students in first-year Japanese language classes participated in a technology-integrated lesson. Technology-enhanced activities were selected with the SAMR model and were developed for students to learn and demonstrate Japanese language skills and cultural knowledge in a learning sequence based on second language theories. A pre-survey, formative assessments, summative assessments, homework logs, a post survey, and a teacher journal were analyzed to determine the effectiveness of such integration and its influences on learners’ language performance and motivation. Results indicated that students’ language performance increased in both interpretive and presentational modes of communication, however, there was no significant improvement in the interpersonal mode of communication. In addition, students also developed learning strategies with technology as they shared them with their peers.
Acknowledgements

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No words can describe my appreciation for the bottomless support I have received from my partner, Troy Brunke. Thank you for giving me fresh perspectives each time you read my draft, and also taking care of my wellbeing during the program. I simply couldn’t have succeeded without you.

To fellow world language teachers who are seeking better ways to integrate technology in their lessons, I sincerely hope this paper will provide you with inspiration as you endeavor further courageous paths.

Last but not least, I would like to thank my former, current, and future students for providing me invaluable experiences each and every day. They nourish me as I continue my journey to discover my role in this world.
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Chapter 1: Introduction

Recent advancements in technology have a great effect on all aspects of our daily lives. Whether it is social, professional, or personal, how we operate our daily lives and interact with others have significantly changed over the past decade. This has certainly impacted our classroom instruction and how students learn as well. As good teaching must mirror the current society we live in, the instructors’ responsibility to bring the outside world to the classroom is greater than ever before. In an effort to make such connections, more teachers have taken the pledge to enhance language learning with technology. Yet, currently many language instructors struggle to integrate technology effectively as part of their teaching practices. In order for technology to effectively assist students’ language learning, pedagogical aspects, use of application, learners’ attitude towards technology must be carefully considered.

Statement of Problem

Recent shifts in the nature of web-based applications from web 1.0 to web 2.0, have changed the landscape of technology use in language classroom (Guth, S., & Helm, F., 2010). Unlike its predecessor, Web 1.0, Web 2.0 enables us to communicate, contribute, create, and share content with others in increasingly more engaging ways (O'Reilly, T. 2009). Although many language teachers have already implemented such tools in their instruction, research on the effectiveness of Web 2.0 tools is limited to certain areas such as blogs and wikis so far, due to the fact that they are still new (Wang, S., & Vasquez, 2012). Further research on the effective, broad implementation of web 2.0 applications in the context of standard-based foreign language instructions will assist
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language teachers in selecting and implementing such technologies in classrooms

Statement of Purpose

Although the term Web 2.0 was first introduced in 1999 by DeNucci and later popularized by O’Reilly in 2004, it is still relatively new in education. Because of its rapidly evolving nature in both software and hardware, the constant need for effective integration is daunting to many classroom teachers. The purpose of this study is to research effective, broad integration of web 2.0 applications in the context of standards-based foreign language instructions.

Research Questions

1. How can the integration of the Substitution Augmentation Modification Redefinition (SAMR) model in combination with relevant web 2.0 applications increase student’s language acquisition in beginning Japanese language classes?

2. How does the integration of SAMR model influence students’ motivation in learning Japanese?

Theoretical Models

Second Language Acquisition (SLA) theories play pivotal roles in determining when and how to integrate Computer Assisted Language Learning (CALL). However, CALL activities can span an ever-broadening range of learning experiences, and consequently, an evaluation of any one SLA theoretical approach limits the scope of study (Chapelle, 2009). As Garrett (1991) argued, instead of selecting one theoretical model in which to gauge the learning experience, I decided instead to draw from several models to help me understand the varying aspects that reflect my diverse high school
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Japanese classroom. Firstly, in order to establish a lesson that integrates CALL in
Japanese classroom I have selected sociocultural theory by Vygotsky as a core theoretical
model since its flexibility to employ communicative approaches in context based learning
best reflects the standard-based lessons prevalent in the world language classrooms in the
U.S in recent years (Chapelle, 2009). Vygotsky’s concept of Zone of Proximal
Development (ZPD) accompanied with the concept of scaffolding will be the foundation
in creating the students’ language learning experience with technology in this study. The
Gradual Release Responsibility (GRR) model is an instructional tool developed by
Pearson and Gallagher (1983) which was derived from this Vygotsky’s ZPD theory. This
has been implemented in our school as well as many schools across the country. It
provides practical tools for teachers to develop a lesson that the responsibility shifts from
teacher to students as the lesson progresses. Another reason why I decided on
sociocultural theory to be the theoretical model for my study is because it can easily
incorporate a wider range of areas such as teacher to student/student to student
collaboration, cultural products, practices, and perspectives, and “the development of a
grammatical repertoire that allows learners to increase the meanings that they can
interpret and construct” (Chappell, 2009).

In addition to students’ language acquisition, the role of their motivations and
perceptions of learning Japanese with technology will be studied in the framework of
Brophy. He summarized past research findings that the content and learning activities
must match learners’ cognitive levels otherwise they are no meaningful to them (Brophy,
1999). Moreover, effective teachers not only make school experience meaningful in the
cognitive sense but also in the motivational sense so that students will value their learning
effective integration of technology (Brophy, 1999). His theoretical schematic illustrates the interconnection of Vygotsky’s ZPD and what he proposed as the motivational ZPD (Brophy, 1999. See Appendix A). This framework will be essential in creating motivationally and cognitively optimal Japanese learning experiences with CALL and evaluating the study.

**Researcher Background**

As I am writing this research paper, I am entering my 20th year of teaching. I have taught Japanese language and culture to elementary school students in an urban setting, middle school students and high school students in a rural area. My teaching environment has changed dramatically over twenty years. One of the dramatic changes was brought by the advancement of technology. Like many teachers, I saw a great potential in the effective implementation of technology in language learning. Initially I chose software or applications based on excitement, hoping that my students will also find them exciting. Although this approach had some wins, it also has created chaos and occasionally frustration with students spending too much time trying to figure out how to use newly adopted technology leaving behind the focus on communication practices. How can I integrate technology so blended that students’ focus will be on communication practices in Japanese? As a teacher leader I provide workshops for other language teachers locally, regionally, and nationally on various topics related to curriculum and instruction, and technology enhanced lesson planning. In the course of research and preparation for those professional developments I was able to identify the best use of technology as identified by others, but the effective learning sequence was missing. In addition, methods to motivate students in technology-integrated lessons need to be further investigated.
Definition of Terms

- **Apps**: “Apps is an abbreviation for application. An app is a piece of software. It can run on the Internet, on your computer, or on your phone or other electronic device.” (Karch, M., What Are Apps? - Definition and Examples. Retrieved May 12, 2015, from http://google.about.com/od/a/g/apps_def.htm).

- **Computer Assisted Language Learning (CALL)**: “The search for study of applications of the computer in language teaching and learning” (Levy, 1997).

- **Gradual Release Responsibility (GRR)**: An instructional model that shifts the task responsibility from the teacher to the student gradually during the lesson (Pearson and Gallagher, 1993).

- **Motivation**: “A theoretical construct used to explain the initiation, direction, intensity, persistence, and quality of behavior, especially goal-directed behavior (Maehr and Meyer, 1997)” (Brophy, 1998)

- **Motivational Zone of Proximal Development**: A concept of incremental stages of students’ motivation towards learning developed by Brophy (1999).

- **Second Language Acquisition (SLA) Theory**: “It consists of a set of hypothesis or generalization, that are consistent with experimental data” on how people learn a second language (Krashen, 1982).

- **Sociocultural Theory**: A theory that originates Vygotsky’s idea that human mental functioning is fundamentally a mediated process that is organized by cultural artifacts, activities, and concepts (Lantolf and Thorne, 2000).
• **The Substitution Augmentation Modification Redefinition (SAMR) Model:**
  Organizational model developed to assist teachers to determine types of technology and how they can be used to maximize student learning (Puentedura, 2008).

• **Web 2.0:** Online based applications that enable us to communicate, contribute, create, and share content with others in increasingly more engaging ways (O'Reilly, T. 2009).

• **Zone of Proximal Development (ZPD):** “The distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky, 1978, p.86)

**Summary**

This chapter has provided an overview of the purpose of this study on integrating technology to maximize learners’ language performance. This chapter also provided essential theories related to the topic. The background of the researcher was shared to help the reader understand the importance of this research. The following chapter will provide the literature related to aspects of technology use in second language classrooms.
Chapter 2: Literature Review

Introduction

The framework for 21st century learning by Partnership of 21st Century Skills was developed to address essential skills a learner must demonstrate in order to be an effective citizen of the world (2009). The skills such as 4Cs: Critical Thinking, Communication, Collaboration, and Creativity along with literacy skills such as information literacy, media literacy, and technology literacy are aligned with Common Core State Standards (CCSS) and are available to teachers who wish to integrate such skills in lessons (Magner, T., Soulé, H., & Wesolowski, K. 2011). While these frameworks define and promote the skills and importance of technological literacy, many language instructors still struggle to implement technology effectively as part of their teaching practices. In order for technology to effectively assist students’ language learning, pedagogical aspects, use of application, learners’ and teachers’ attitude towards technology must be carefully considered.

This chapter will explore the key elements of implementation of technology in language instructions by investigating the areas of pedagogical framework, culture through technology, and mobile learning. First, pedagogical frameworks for implementation of technology in classroom instruction such as TPACK and SAMR models will be examined and important domains will be discussed. Next, ways to incorporate culture in language learning in a technology-enhanced lesson will be addressed. Then, the recent emerging technology, “mobile learning,” will be examined. Finally, this paper will conclude with possible areas for future research in implementation of technology in language instruction.
Frameworks

**TPACK Model.** *Technology, Pedagogy, and Content Knowledge* (TPACK) was introduced by Thompson and Mishra (2007) as a framework to assist educators to create a successful integration in their lessons by aligning content, pedagogy, and technology. TPACK (see Appendix B) builds on previous work in the field, such as *Technological Pedagogical Content Knowledge* (TPCK) by Koehler and Mishra (2005), and *Information and Communication Technology* (ICT) by Pierson (2001), and based its foundation in Shulman’s well-known work (1986, 1987), *Pedagogical Content Knowledge* (PCK). TPACK’s framework consists of three domains such as *Technological Knowledge* (TK), *Pedagogical Knowledge* (PK), and *Content Knowledge* (CK). The core of TPACK is derived from the interconnectedness and close interplay of three domains of knowledge. It is believed that a teacher who wishes to integrate technology must be competent in all three domains. These three domains of knowledge interconnect with each other such as Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK), and Pedagogical Content Knowledge (PCK). Cox and Graham argued that although Technological Knowledge (TK) highlights emerging technologies in teaching, as they become transparent in learning, it becomes part of PCK, therefore it becomes the original idea of PCK by Shulman (2009). Additionally, flexibility to incorporate other important factors such as knowledge of students, the school, and learning environment plays a crucial role (Koehler & Mishra, 2008).

Although many researchers define TK as the knowledge of all kinds of technologies, there is a mixture of understandings among researchers that TK is the idea
of the knowledge of emerging technology and is “transparent and ubiquitous in a specific content” (Voogt, Fisser, Roblin, Tondeur, and Braak, 2013. p112). Jamieson-Proctor (2010) interpreted TK as “a measure of competence with current digital technologies that affords individuals the ability to achieve both personal and professional goals with the available technologies” (p.11).

While the definitions of TK differ among teachers and researchers, another strong force that determines success of TPACK are teacher beliefs. Some teachers decide not to incorporate technology due to lack of confidence, while others still experiment because they believe students acquire knowledge and gain skills better with technology (Niess, 2005). Teachers’ pedagogical beliefs are a key-determining factor regarding whether or not they plan to use technology in their classrooms. Manfra and Hammond (2008) found that the majority of teachers in her study chose familiar teacher-centered activities despite the fact that those technologies can be easily used in a learner-centered way.

As for specific language learning with technology, Computer Assisted Language Learning (CALL) offers the components that resemble the components of TPACK; pedagogy, theory, and technology. In the article Computer-Assisted Language Learning Trends and Issues (1991), Garrett asserted the primacy of pedagogy over technology. However, after over 18 years of observation and study, she reconsidered her original position and now believes that all three domains are equally important and one should not take precedence over others. As technology has advanced, it has inspired early adopters to experiment with new technologies in teaching. These experiments resulted in providing ways to understand language learning in new ways and, therefore, technology-inspired teaching methods became necessary. For example, it was usual for a language
teacher to employ classroom activities that were driven from the traditional idea of “four skills”--listening, speaking, reading, and writing. On the other hand, multimedia-rich materials could provide opportunities to integrate those skills in a culturally rich environment. Garrett (2009) proposed that we should be flexible in thinking as each of the three domains evolves and changes their relationship to one another.

As we evaluate elements in each domain of TPACK, the Substitution Augmentation Modification Redefinition (SAMR) model (Puenteedura, 2006) provides us a valuable framework to define and organize abundant technology tools currently available.

**The Substitution Augmentation Modification Redefinition (SAMR) Model.**

The SAMR model was developed to assist teachers determine types of technology and how they can be used to maximize student learning (Puenteedura, 2008). At the substitution level, one type of technology simply replaces the other technology without improvement. For example, a student types an essay on a word processor without using any of its special features. At the augmentation level, a student uses features such as spell check or cut and paste feature when creating a word document, therefore, with some improvement. These two levels, substitution and augmentation, are categorized as the enhancement stage. Puenteedura claimed that there was a little to no improvements in students’ performance resulted by technology use at this stage (2008). Significant increase in student performance was observed in the next two levels, modification and redefinition which were categorized as transformation stage (Puenteedura, 2008). In modification level, students use email and other software that allow them to collaborate and develop a task with others. In the final level, redefinition level, students may create
interactive online videos and share them with larger communities (Kharbach, 2014). Gerstain (2014) proposed that educators should focus on activities in the transformation stage to promote the four Cs, critical thinking, creativity, collaboration and communication in the 21st century skills map.

As the above-mentioned frameworks assist educators in organizing and incorporating technology to enhance students’ linguistic ability, another important C, culture, must be considered when we prepare our students for the 21st century global world.

Culture Through Technology

Development of cultural competency is an integral part of learners’ acquisition of another language (ACTFL, 2006). Also, often times this is what intrigues and hooks students for learning (Godwin-Jones, 2013). Schenker (2012) defined intercultural communication competency (IIC) as “knowledge of self and other, attitudes of openness and curiosity, skills of interpreting and relating, skills of discovery and interaction, and critical cultural awareness” (p.450).

Although both the National Language Standards in the U.S. and the Common European Framework for Languages endorse the importance of ICC, it has not become an integral part of language instruction (Godwin-Jones, 2013). The challenges in incorporating ICC in instruction are partially due to the common treatments of culture in classrooms. Traditionally, textbooks provide only chunks of culture in forms of cultural notes or tourist-inspired generalized perspectives, and lack depth. These simplified pieces of cultural knowledge and inauthentic examples of language will lead to misunderstandings of the target culture (Godwin-Jones, 2013).
Sercu (2010) proposes the idea of cultural learning in a scaffolding matter such as through case studies and believes this would promote students’ critical thinking and problem solving skills. Samples applications of technology to bring authentic situations into the classroom were: Usage of the Web to access contemporary cultural artifacts and authentic native language use provides students opportunities to examine speech patterns in different contexts. Castaneda’s Digital Storytelling project (2012), which included photographs, text, audio narration, and video clips selected and created by students, resulted in success in meaningful experience (Castaneda, 2012).

Tele-collaboration such as email exchanges, discussion forums, text chat sessions with groups of willing native speakers have become increasingly popular in recent years as technology has advanced. Many case studies on tele-collaborations suggest that advance preparation by the instructor is the key to avoiding intercultural conflict and it encourages deeper cultural insights (Godwin-Jones, 2013).

Personal reflection and creative writing involving the target culture can also be enhanced with recent mobile apps. Whether students are local or abroad, these mobile apps engage students in action-oriented language learning and provide opportunities to be creative and personal by adding photos and videos of their choice. Ideas for mobile apps include: creating a narration tour, video interviews, oral history or digital story telling, any of which can be powerful statement about cultural ownership. (Castaneda, 2013; Kukulska-Hulme, 2009; Levy, 2009).

As to assessments, it is not easy to quantify ICC. Currently, self-assessments such as portfolio and journals are commonly used commercially as well as in non-profit school settings. The Assessment of Intercultural Competence (AIC) by Alvino Fantini
and the Intercultural Competence Assessment (INCA) are assessment tools that include language proficiency as well as ICC (Godwin-Jones, 2013).

Mobile Learning

As technology advances rapidly, handheld devices and smart phones provide more opportunities for learners to interact with other cultures. Modernized advanced nations now share a common culture drawn from emerging technology, especially mobile technology. Texting and online chatting have become accepted modes of communication in our daily lives (Levy, 2009).

The evolution of mobile devices has been rapid, and developed one innovation on another. The advancement from PDA (personal digital assistant) by Palm to earlier generation of smartphones was significant, yet many instructors were dissatisfied in implementing such tools mostly due to the size, low-resolution screen, poor audio quality, awkward text entry, limited storage/memory, and slow internet. However, a huge advancement was made by Apple’s iPhone in 2007, followed by other smartphones such as Android phones and Windows Phones. These phones are not only equipped with responsive touch screens that allow users to navigate more intuitively, but also include camera and video capabilities. The current phones’ capability arguably excels over the functionality of laptops in some ways. As well as advancements in physical components (such as touch screen and larger storage and memory), the design tool, namely WebKit—an open source project developed by Apple, allows web designers to create sites that are fully functional on smartphones. Apps both specifically for language learning and others while not intended to be used for language learning, have technological features such as GPS, vice recognition, photo tagging, and video capability. For example, the
Micromandarin project uses the app to determine a user’s location and provide vocabulary and phrases that are useful to that particular location. The CLUE project offers the feature, RFID (radio frequency identification) to allow user to tag objects and share with other users. There is further potential for developing apps by taking advantage of GPS chips and the accelerometer on mobile devices that can be used for language learning (Godwin-Jones, 2011). On the other hand, one small case study by Kim, Pueckert, Kim, and Seo (2013) showed that students prefer to engage in online learning experiences on laptops or desktop computers rather than smartphones. The reasons were thought to be due to small screen sizes, keyboard limitations, battery life, and slower internet connectivity. The rise of tablets in the language field and the possible obstacle in the software development due to the acrimony between iOS and Android were some of the common concerns in considering such devices in classroom instruction.

In terms of current mobile applications for language learning, a review of mobile assisted language learning tools by Kukukska-Hulme & Shield (2007) reveals that most activities were teacher-led and scheduled, not leveraging the mobility part of mobile devices. This finding correlates with the previously mentioned work by Manfra, et al (2008). This phenomenon may not be due to hardware/software shortcoming, but rather to the developers’ mindsets of how language should be learned.

As the mindsets of software developers and instructors influenced the course of technology use in language classroom, students’ perceptions towards mobile learning and sense of ownership were an important factor in successful implementation (Kim, et al, 2013). Ownership and the learner’s ability to personalize the learning seem to be a recurring theme in the field of mobile learning (Levy, 2009). One example of a way to
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tap in to learners’ motivations is a website such as “Free Rice” (www.freerice.com/) where students’ scores converted to donations of rice to support people in need models a way to connect learning to social issues (Kukulska-Hulme, A. 2009).

**Conclusion**

Communication is the core of the National Standards for Foreign Languages. Many language teachers who practice communication-based instruction view new technology such as Web 2.0 and mobile learning as potentially powerful tools that could provide students with more opportunities to practice communication. The goal would be to increase their proficiency in both the target language and culture in ways we couldn’t imagine just a few years earlier. While there are a number of research studies on evaluations of apps and usages particularly on Blog, Wiki’s main focus is reading and writing/typing (Wang & Vasquez, 2012), a broader spectrum of apps and how they are used need to be studied as parts of a lesson sequence. As Wang and Vasquez (2012) revealed, there were a few studies on students’ language outcome in less commonly taught languages at K-12 settings. I too suggest that future research must investigate those areas.

In addition to investigation on types of tech-enhanced activities and how they are utilized in K-12, I further propose that future research should also focus on placements of technology-enhanced activities in an entire lesson sequence. In other words, teachers’ abilities to select and sequence traditional and tech-enhanced activities to promote students’ language and cultural proficiency needs to be studied. With the respect to emerging mobile learning, future research must consider how learners’ ownership and
portability of “anywhere, anytime, however” type of learning extend language learning beyond classroom setting.

While respecting the existing pedagogy, we also must be mindful of the influence new technologies can have on them. As much of the effort has been spent on developing software that simply mimic traditional classroom activities, current pedagogy must evolve with emerging technology. On this note, I suggest researchers look into the impact of recent technology enhanced approaches such as Flipped/Blended instruction, web 2.0 apps SAMR model in mind, and mobile learning in language acquisition.

Summary

Chapter Two presented literature on pedagogical frameworks, SAMR model, culture through technology, and mobile learning that are essential in development of a successful technology-integrated language lesson. Chapter Three consists of the setting and participants of the action research study. In addition, Chapter Three discusses data sources, data collection procedures, and the technology-integrated sample lesson.
Chapter 3: Methodology

Introduction

The intent of this study is to establish a model lesson of an effective integration of web 2.0 applications in the context of standard-based foreign language instructions. The web 2.0 applications will be selected and placed in a learning sequence based on the Substitution Augmentation Modification Redefinition (SAMR) model and second language acquisition theory. In this section I will explain and describe the methods I am using to gather data to answer the following research questions:

1. How can the integration of the SAMR model in combination with relevant web 2.0 applications increase student’s language performance in beginning Japanese language classes?
2. How does the integration of SAMR model influence students’ motivation in learning Japanese?

Research Design

This is a proactive action research project to improve novice learners’ Japanese language acquisition process with current web 2.0 applications. This type of action research was selected because it will improve my current practice with technology and therefore better students’ learning experiences. Additionally, the results of this project will provide deeper insights of technology-enhanced language learning, and may therefore impact language teachers beyond my classroom.

A mixed-methods design will be utilized to gather data necessary to evaluate the effectiveness of the project. The researcher will conduct a pre-survey to find out students’ general background, motivation and current use of technology. Then, the researcher will
conduct technology-enhanced lessons over six weeks. Quizzes, homework log, and a self-regulated participation log will be collected to monitor students’ progress under technology enhanced lesson environment. At the end of the unit, students will create a project using appropriate technology to demonstrate their language skills. Lastly, students will take a self-survey to reflect on their experiences with technology-enhanced lessons. Tools to be used for the data collection are the following.

Pre-survey: This is to assess students’ familiarity and perception of technology.

- General information
- Technology accessibility, (i.e. whether student has access to technology away from school, and what type of equipment she or he has.)
- Pre-existing Technology skills
- Perception of technology enhanced learning

Formative Assessments categorized by SAMR Model: The researcher will create a unit lesson plan using technology-enhanced activities organized with the SAMR model and establish formative assessment to monitor students’ progress in both language and technology acquisitions (Appendix C).

- Formative Assessments on Interpretive Mode: Reading and Listening
- Formative Assessments on Interpersonal Mode: Speaking and Writing/Typing
- Formative Assessments on Presentational Mode: Speaking and Writing/Typing
Summative Assessments: Students will complete the final task to demonstrate their knowledge and skills in language and technology. The proficiency level is set for Novice mid to high. Rubric will be created with the following criteria.

- Performance Assessments will be assessed with American Council on the Teaching of Foreign Language (ACTFL) Performance Guideline
- Language skills
- Cultural competency
- Technology skills

Homework Log: This will be collected to monitor learners’ engagement.

Self-regulated learning log: This will be used to measure the intrinsic motivation of learners caused by technology-enhanced lessons.

- Time spent on certain types of apps/activities

Survey: This survey will consist questions to measure students’ level of satisfaction with the learning experience and motivation.

**Procedures in Detail**

**Setting**

The research site is a public high school in a rural town in the Central Valley in California. The site has close to 2,000 students and the student body consists of 77% Hispanics, 8% Caucasians, 8% Filipinos, 3% African Americans, 2% Asians and 1% Pacific Islanders. 77% of students come from socioeconomically disadvantaged households. 54% of student body is identified as English learners. The high school offers four types of languages classes; Spanish, Spanish for native speakers, French, and
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Japanese. The site currently offers six Japanese classes levels 1 to AP and over 170 students are enrolled in the Japanese program.

Participants

The project will be performed with two classes of Japanese level 1. Level 1 classes are the beginning level class with students who have no prior Japanese language instruction. By the time the research is conducted, students will have had one semester of introductory Japanese.

Students. Participants in this project will be 51 students in two Japanese level 1 classes. All students are at Novice low-mid level proficiency and the target proficiency level for level 1 at the end of first year is set for Novice mid-high. Each student’s proficiency varies between Novice-mid to Intermediate-low at the beginning of this research. Students’ interest level and motivation is high. Prior to this research, the students will have had learned basic Japanese on the topics of classroom items, classroom commands, self-introduction, and family. They can also read and write all hiragana letters and approximately 20 Chinese characters proficiently. The researcher has obtained a grant to purchase 15 iPad minis for this class. Roughly 3 to 4 students will share one iPad mini at the same time or different times depending on the activities. They have used various apps in class prior to this study. However, many of them have not had experience using iPads.

Teacher. In this study the principal investigator is also the classroom instructor. I have experience in teaching Japanese at elementary school level, middle school level, and high school level for 19 years. I have been a team leader of Monterey Bay World Language Project, have led a regional California state endorsed subject matter project,
and have been conducting workshops and presentations for world languages teachers in the area as well as the State and National level. Topics of my work include Curriculum Design, Classroom Management, Student Engagement, Performance Based Teaching, and Technology Enhanced Language Lessons.

**Data Collection Procedures**

This section addresses the procedures that will take place during the intervention of integrating web 2.0 in Japanese language lessons for beginning learners.

**Intervention**

In this study, students will gain Japanese language skills and explore cultural perspectives of a Japanese House. The following essential questions such as “How are Japanese houses and my house different or similar?” “What are the unique features of a typical Japanese house?” “What are Japanese house customs?” will be explored during this 6 week long lesson. At the end of this lesson, students will be given choices to demonstrate their skills and knowledge by creating and presenting their dream houses with Japanese features. The lesson will consist of a series of communicative activities that are regular classroom activities mixed with web 2.0 enhanced activities mainly done with iPads in classroom. Both traditional and technology enhanced activities will be carefully created and sequenced to maximize students’ language acquisition. Technology enhanced activities will be developed based on the SAMR model and students’ learning will be documented through formative assessments and personal reflections. In order to measure students’ engagement, learning logs provided by web 2.0 using their tracking system (such as which student spent how much time on a certain activity) will be collected and analyzed.
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Implementation

a) Unit Development with Web 2.0 enhanced activities and tasks (Appendix D).

I will develop a unit lesson on Japanese House with web 2.0 applications. These applications will be categorized by SAMR model and placed in the five step lesson plan model; Setting the stage, Input, Guided Practice, Independent Practice, and Assessment/Evaluation. Unit will also address the National Standards for Foreign Language Education, SAMR, and International Society for Technology in Education standards for students.

b) Pre-Survey – ten minutes

In order to learn about learners’ familiarity and proficiency level with technology as well as to document their self evaluation of technology skills, I will conduct a pre-survey before the unit.

c) Unit of Study: Japanese House – six weeks

This unit consists of two 3-week lessons. Lesson 1 is Rooms of Japanese House and lesson 2 is Japanese House Items. In both lessons, students will learn unique features of Japanese house, house customs, cultural products, practices, and perspectives while gaining language skills to describe a Japanese house and various activities in the house. At the end of the unit, students will be given choices to create their dream house highlighting Japanese features and present it using one of the following choices, PowerPoint, video, slide shows, animation, 3D models, virtual tour, and poster. Formative assessments will be conducted and students will be given feedback on their performances. Students’ participation and progress on online activities will be monitored and tracked. Additionally, the
researcher will keep observation notes everyday during the six weeks to record students’ engagements.

d) Post Survey and Reflection – fifteen minutes

Students take the survey on specific aspects of their learning experience and finally write a reflection on their overall learning.

**Data Collection and Sources**

Quantitative data

- Formative Assessment Data: Students’ achievement score on formative assessments will be collected and categorized by each stage of learning such as input, guided practice, and independent practice stages.

- Data on Time Spent on Activities. Online applications with tracking features monitor time each student spent on particular activity and score of “game” like activities. These data will be collected to determine the types of activities students found attractive and benefitted their learning in each stage of lesson.

- Final Performance Tasks (Appendix E). Students will be asked to perform the three modes of communication tasks that require them to synthesize their newly acquired knowledge and language skills. Their performance will be evaluated and scored by using the rubrics.

- Pre and Post Survey. Both surveys will employ 10-item Likert-style questions which will be developed by the researcher. The questions will cover students’ general background information and familiarity with technology. The pre survey will also cover their knowledge of the Japanese
house and house customs related to the essential questions of the unit. Post survey will show students’ experience with educational technology-enhanced activities at various stages of learning.

Qualitative data

• Self-Reflection. An open-ended self-reflection will be administered at the end of the unit. Students will be asked to write about their overall satisfaction with the unit of study and compare this type of lesson to a more traditional classroom learning setting.

• Journals. The researcher will keep a daily reflective journal to document the flow of the lesson, student engagement, foreseeing challenges, and possible solutions.

Data collector

All data collection will be done by the researcher.

Data Analysis Table (Table 1)

Each data source was established in order to address the aspects of the research questions as organized in the table below. Finally, the results of both quantitative and qualitative data will be analyzed to answer my research questions.
Limitations/Threats to Internal Validity

Although efforts were made to minimize threats to internal validity, there are still some potential threats that can limit the overall validity and usefulness of the findings.

- Technology Malfunction: I will minimize the risk of technology malfunction from occurring by rehearsing and testing the activities prior to each lesson. Also, I will have backup plans ready for such unfortunate events to continue the flow of the lesson.

- Dismissal for sports. As my level 1 classes are in the afternoon often time those students who are in sports are pulled out for games. I plan to minimize this risk by providing online tasks so that they can complete them at home or from any location.
However, those students who don’t have access to computer and smartphones might be disadvantaged in this situation.

- Familiarity with technology. Some students’ success with this lesson might be affected by their prior experience with technology. The pre survey and other research data may reveal how their technology readiness was or was not related to their language learning. For students who have a fear of, or lack of experience with, technology, I plan to provide extra tutoring sessions to minimize the effect of students’ lack of experience with technology.

- Levels of Interest: The content focuses on Japanese House and cultural practices surrounding it. Although its cultural information is expected to intrigue many students, some may find the topic not particularly interesting. I will implement wider aspects of unique Japanese house features to maximize students’ interests.

Summary

This chapter provided the detailed information about the research setting, participants, and instruments used during the research. The purpose of each instrument was also described and organized to address the research questions. Furthermore, possible limitations and threats to internal validity were addressed.
Chapter 4: Findings

Introduction

This chapter analyzes the results conducted on my two research questions:

• How can the integration of the SAMR model in combination with relevant web 2.0 applications increase student’s language performance in beginning Japanese language classes?

• How does the integration of SAMR model influence students’ motivation in learning Japanese?

Qualitative and quantitative data collection methods were used to triangulate the validity of the data. Five themes emerged after analyzing my first question:

• The integration of SAMR model increased students’ language performance in the interpretive and presentational modes.

• Students’ interpersonal mode of communication skills didn’t show significant improvement in both writing and speaking.

• Students overall acquired significantly more vocabulary beyond the required vocabulary in a short time.

• Students developed individual learning strategies and shared them with other peers.

• Students overwhelmingly found the apps in the Redefinition stage to be something they would like to use for their own purpose in the future.

Three themes derived from my second research question:

• Students’ motivation levels sustained throughout the lesson.

• Students liked certain technology-enhanced activities better than others.
• Technology-enhanced activities attracted some students to practice Japanese more outside of the classroom.

**Impact on Beginning Language Classes**

The integration of the SAMR model with relevant web 2.0 applications in the beginning language lessons resulted in the increase of language performance level in the interpretive and presentational modes of communication. It also provided learners opportunities to develop learner autonomy and collaboration with other classmates.

**Varied results in three modes of communication activities.** Although students’ summative and formative assessment results indicated that significant number of students achieved at or above the expected performance level in the interpretive and presentational modes of tasks, their achievement was much lower in the interpersonal modes of tasks *(Figure 1).*

![Results of Summative and Formative Assessments by Three Modes of Communication](image)

*Figure 1.* Results of summative and formative assessments indicated students’ high performance in both interpretive and presentational modes and low performance in the interpersonal mode of tasks.
Technology-enhanced activities were more effective at building word recognition than traditional classroom activities such as flashcards and worksheets. On average 41% of students added more than the expected 22 vocabulary words and phrases provided by the teacher, and a few students even doubled the number (Figure 2). Not only did many students choose to add more vocabulary than assigned, they were also able to retain the new information was evident in the assessments as seen in Figure 1.

*Figure 2. 41% of students added more vocabulary in addition to the vocabulary given by the teacher. Many students shared their vocabulary with other classmates.*

The self-reporting log of how much time students spent on interpretive activities such as Quizlet (Modification Level) confirmed that some students spent more time outside of the classroom practicing the language with both their mobile devices and their computers. Specifically, students were more engaged in technology-enhanced activities that allowed them to compete against or interact with other classmates such as with *Space Race* and *Scatter* games on Quizlet. Significant amount of time was spent on vocabulary development in the beginning level of language learning. Augmentation and Modification levels of activities engaged students in the learning process by providing students instant
feedback, the flexibility in choices, and more practice time as indicated in students’ post survey responses on the interpretive mode activities that “it was great - I could get to hear the sounds many times because it takes time for me to remember words,” “typing super fast during the [space] game really helped me learn,” and “I downloaded the app on my phone and practiced between football practice.” The increase in learners’ self-driven behavior was also evident in the researcher’s log as it described a quiet classroom full of focused students as well as low performing students choosing to repeat the input activities over and over.

Presentational mode tasks also showed an improvement in students’ learning experience. While students described the benefits of interpretive tasks with technology as self-paced learning, instant feedback, and peer collaboration, many students described the benefits of technology for completing presentation tasks including creativity, fun, and learning new skills. Students found the Tellegami app (that allowed them to become a character in a virtual reality) especially amusing, and as a result 100% of students demonstrated their speaking skills at by creating a one-minute video clip describing their rooms. In a traditional classroom this type of activity required more time for students’ to draw pictures and to be original. This app shortened students’ time for preparation, therefore, it provided them more time to be creative and focus on the language. The researcher log noted that students were highly engaged in the activity and repeated the recording process even after the class bell rang. This was also evident in the result of survey question #3, “Rate the Activities based on your engagement” (Figure 3).
On the other hand, students performed less well on interpersonal tasks in speaking. Although the majority of students performed average to above average when they performed the task to exchange information about their own rooms and fictional rooms, when the topic became the discussion of Japanese cultural practices around the house their performance was significantly lower. This may be due to a technology glitch which occurred during online conversation practice with CLEAR. As a result, students were given situation cards and had to practice exchanging information about the Japanese house manners without technology.

Interpersonal communication requires spontaneity and negotiation of meaning between speakers. For this reason, currently there are very limited online tools and apps
available to establish such an environment. Pre-recorded conversation practice tools do not create authentic conversation. However, they can be helpful to learners as preparation to real conversation. I believe there is a huge demand for developing such tools to increase conversation skills in speaking. However, for the above reasons, almost all conversational speaking practices were done in traditional teacher-student, student-student, and small group formats during this unit of study. For example, one successful technology-enhanced activity for interpersonal speaking was *Charade Game* with iPads. One group member guessed the word displayed on a screen in which he was holding up on his forehead by formulating questions about the word and listening to other group members’ responses.

The results of interpersonal writing indicated that students have gained skill while enjoying the activities. Google Chat enabled three to four students in each group to converse in written messages, discussing each other’s rooms and activities that take place in the room. Although it was a new experience for many students, they were able to maintain online chat conversations for more than 30 minutes. Students also figured out a way to use emoji and to send pictures to convey their meaning if the other members didn’t understand the sentence. The engagement among group members was high as apparent in *Figure 4*; researcher observation also noted that their desire to understand what other group members wrote and communicate with them established the necessary patience as they attentively read the incoming text over and over.

**Three modes of communication activities categorized by SAMR model.**

The study included 16 technology-enhanced activities and 19 traditional activities (Table 2). All 35 activities are categorized by the three modes of communication
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(interpretive, interpersonal, and presentational modes) and SAMR model (Substitution, Augmentation, Modification, and Redefinition) in the lesson plan. In this research, there were no substitution types of technology implemented, since those were done by the traditional in-class-paper-and-pencil types of activities. Only technology-enhanced activities that met the definition of Augmentation, Modification, and Redefinition along with 19 traditional activities in all four SAMR categories were included. These activities were placed in the five-step lesson sequence to effectively promote learners’ language acquisition from comprehensible input to production with purpose (Appendix D). Out of 16 technology-enhanced activities and tasks, 10 were interpretive, 4 were interpersonal, and 3 were presentational modes of activities (Appendix D).
The tasks under Redefinition required creativity and critical thinking. Those tasks were placed towards the end of the lesson where students were asked to synthesize their newly acquired language skills and cultural knowledge in Augmentation and Modification levels. For this reason, all summative assessment tasks were categorized under Redefinition. Due to the technical failure, the conversation activity with CLEAR was not administered as planned in the lesson. Although students’ responses did not show any particular SAMR stage being more engaging than other stages, when students were

### Table 2
*List of Technology-Enhanced Activities Categorized by SAMR*

<table>
<thead>
<tr>
<th>Substitution (0 activity)</th>
<th>Augmentation (4 activities)</th>
<th>Modification (5 activities)</th>
<th>Redefinition (7 activities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No technology enhanced activities incorporated by researcher’s choice.</td>
<td>• Prior Knowledge with Padlet</td>
<td>• Vocabulary Input with Bitzboard</td>
<td>• Video clip with Zaption</td>
</tr>
<tr>
<td></td>
<td>• Recorded Mini Lesson with Explain Everything</td>
<td>• Vocabulary Input with Quizlet</td>
<td>• Chat about Rooms with Google Chat</td>
</tr>
<tr>
<td></td>
<td>• Vocabulary Quiz with Quizlet</td>
<td>• Japanese House Manner with Aurasma</td>
<td>• Conversation practice with CLEAR</td>
</tr>
<tr>
<td></td>
<td>• Charade with Charade app</td>
<td>• Room Game with Kahoot</td>
<td>• Room introduction with Tellegami</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cultural Perspective Reading with Penzu</td>
<td>• Japanese vs. American House features with Piktochart</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Discussion with Google Doc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Creation of Dream House with Roomsketcher and WeVideo</td>
</tr>
</tbody>
</table>

The tasks under Redefinition required creativity and critical thinking. Those tasks were placed towards the end of the lesson where students were asked to synthesize their newly acquired language skills and cultural knowledge in Augmentation and Modification levels. For this reason, all summative assessment tasks were categorized under Redefinition. Due to the technical failure, the conversation activity with CLEAR was not administered as planned in the lesson. Although students’ responses did not show any particular SAMR stage being more engaging than other stages, when students were
asked to rate technology tools they imagined they would use in the future, significantly more students chose redefinition tasks over the other stages of activities. Although students found some activities in the Augmented stage enjoyable, they perceived those activities (such as vocabulary practice with Quizlet and mini lesson with Explain Everything) as “tools for learning”. However, the activities in the Modification and Redefinition stage were perceived as useful by students for everyday purposes. Further research on effectiveness and engagement with learning tools (tools made for specific learning purposes) and everyday tools (tools people use in daily setting) in classroom would be an interesting area to explore in the future.

Learner motivation and peer collaboration. 51 students (33 boys and 18 girls) took the Pre-Survey. When students were asked “Rate your motivation level for learning Japanese?” and rated the importance on a scale of 5 (5 being very important and 1 being not important at all), 22 students (43.1%) answered very important, 21 students (41.2%) answered important, 7 students (13.7%) answered somewhat important, 1 student (2%) answered not important, and 0 students answered not important at all. The following keywords emerged from students’ responses to the question “What is your motivation for learning Japanese?” (Table 3). The pre-survey results and researcher journal addressed that this is a highly motivated group of learners who were also comfortable with technology.
The question “How would you rate your comfort with technology in general?” revealed that 35 students (68.6%) were very comfortable, 11 students (21.6%) were comfortable, 5 students (9.8%) were somewhat comfortable and no students answered uncomfortable. With this background, I rarely had to assist students with the functionalities of the applications. Rather, students helped each other when the question was raised and most of the time their conversations were to share “cool features” they found in the process. My observation log noted that students gained more skills from listening to others; they were sharing “cool features” rather than teaching basic functionalities. Excitement about new discoveries from fellow classmates caused
classroom noise levels go up from time to time. However, it always transferred to a focused individual learning time.

The response to a pre-survey question “Generally, do you prefer to work alone or work with others?” indicated that 21 students (41.2%) preferred to work alone and 30 students (58.8%) preferred to work with others. However, the group chat activity using Google chat showed active student engagement among students in all groups based on students’ production (chat threads), reflection, and teacher’s journal. The online chat experience provided a unique environment where students could choose to be a participant or observer at their will while still involved in the group conversation. Google chat combines features of working alone with working in groups, meeting the needs of both social and independent workers. My observation log noted high focus level when students tried to understand what their peers wrote. Since there were 3 to 4 students in a group they were able to maintain a steady discussion flow. Another observation was students’ increased awareness of sentence structures. It was evident in their chat threads that students indeed learn from other group members. The patterns that emerged from the chat threads are

1. Students mimicked patterns other group members used (usually used by more capable students),

2. Students clarified meaning by asking simple questions in Japanese or some cases by sharing pictures and emoticon (emotional icon such as smiley face).

Students’ responses to their final project to create their dream house and a short promotion video indicated that although the task was challenging, they found it highly engaging, meaningful, and practical for their future life (Table 4).
As applications have become more intuitive to users, learners are able to focus on language tasks and self-expression. Therefore, students spend less time to figure out how to use the application, and have more time for the things that matter: practicing language skills creatively and enjoyably.

**Summary**

This chapter revealed my findings derived from the analysis of the data collected both quantitatively and qualitatively. The themes that emerged from this research were the effectiveness of the integration of the SAMR model as a tool for selecting technology-enhanced activities, the importance of peer collaboration, the development of learner autonomy, and the acquisition of life skills. The following chapter will discuss the overall study and results. The limitations and finally action plan for further study will be shared.
Chapter 5: Discussion

Introduction

This chapter will discuss the overall study on the following research questions:

1. How can the integration of the SAMR model in combination with relevant web 2.0 applications increase student’s language performance in beginning Japanese language classes?

2. How does the integration of the SAMR model influence students’ motivation in learning Japanese?

This six-week research was conducted in two beginning Japanese language classrooms with 51 students during the second semester of school year. First, I will summarize the objectives of my study and discuss the findings relating to the main ideas emerged from literature review. Then, I will share my personal thoughts on the study and its findings. Finally, I will discuss the limitations of the study and outline the action plan I intend to share with fellow language teachers who seek to improve learning experiences with technology.

Summary

Living in our current world, we cannot avoid the effects of the numerous technological advancements in our lives. This certainly has an effect on our daily lessons. In the classroom, teachers often find it a struggle to search for the best ways to take full advantage of such tools to meet students’ needs. In order for a teacher to fully maximize the learning potential of technology, she or he must possess solid knowledge in three areas; technology, pedagogy, and content (Koehler & Mishra, 2008). The objectives of this study were to find out how a lesson for beginning Japanese language learners could
benefit from the integration of technology tools categorized by the SAMR model and to evaluate students’ motivation levels throughout the lesson. Previous research found a significant increase in student performance in the modification and redefinition levels, which were categorized as transformation stage (Puentendra, 2008). Furthermore, the characteristics in the transformation stage (critical thinking, creativity, collaboration, and communication) play important roles in increasing students’ performance and motivation (Gerstain, 2014). While the SAMR model provides useful criteria to guide teachers when they select certain types of technology-enhanced tasks for their whole-class lessons, advanced technology such as mobile apps can create a basis for a personalized learning environment in which learners cultivate their autonomy (Levy, 2006). In addition to creating such a personalized learning environment, technology can also provide unique opportunities for collaboration among learners and teacher. As Vygotsky claimed, imitation is a uniquely human capacity, technology enhanced collaboration establishes new ways of learner interaction.

**Significant Findings**

My study results concurred earlier researchers; students showed a significant increase in performance in the transformational stage (modification and redefinition levels) (Puenteudra, 2006). An overwhelming number of students rated high on the activities in the modification and redefinition levels and they also indicated that they would most likely use these technologies in different settings in the future. Learners’ language performances in interpretive mode (listening, reading, and viewing) and presentational mode (speaking and writing) scored significantly higher with the applications than without. Student engagement was high throughout the lesson and it was
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evident in the online time log of activities, student survey results, and observation that the
students enjoy using these applications. Personalization of language learning was evident
as 41% of students voluntarily added more than the required vocabulary and shared with
other classmates. Although assessment on the interpersonal mode scored low compared
to other two modes, students indicated strong interests in communicating with other
classmates via online chat, online document sharing, and online project sharing in
Japanese.

Implications

My above-mentioned research questions were derived from my curiosity and
wishes to best integrate, rather than implement, technology to enhance learners’ language
learning experiences and to increase their motivations. The SAMR model certainly
helped me understand the nature of technology-enhanced activities and tasks; rather than
“What it can do” I began to consider “what I can do with it”. I feel that technology is one
of a number of valuable teaching tools, and needs to be carefully selected and blended in
a lesson seamlessly. Ideally, it should be so seamless that the transitions between
activities are flawless both logistically and cognitively. Giving students various options to
learn and demonstrate their learning, technology exceeded the effectiveness of the
traditional ways. However, these new ways are soon to be traditional in the near future.

Possible reasons for low achievement in the interpersonal mode tasks include the
small number of interpersonal activities in the lesson, misplacement of the activities
within the lesson, a lack of immediate feedback to the user in the apps, and simply the
time it takes to develop the interpersonal mode. In terms of the time required for
interpersonal communication skills and language development, the result may not be
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visible right away. Lantolf and Thorne (2000) addressed that an important aspect of the imitative process is that it doesn’t need to happen right after one was exposed to a certain language pattern. He further described that it can happen in a delay, becoming important building blocks for spontaneous speech later (Lantolf, J., & Thorne, S. 2000.) Perhaps, the benefits of technology-enhanced activities for the interpersonal mode may become evident some time after students have used them.

At the beginning level of language learning, students need to be exposed to formulaic language in various situations and spend significant amounts of time in memorizing and pattern recognition. I found that online activities were more effective for word recognition activities than traditional classroom activities with flashcards, as they promoted more personalized learning and learning pace. Technology also provided students with more opportunities to exercise their creativity and connect to authentic resources in the world. As was evident in their final products and survey results, students found designing their dream houses with the actual room 3D simulator app very practical and useful for the future. It was fascinating to observe how students shared their skills with other classmates. Oftentimes they were adept at sharing skills or knowledge between more capable and less capable peers. In fact, learners were visibly excited as they shared “cool ways” to improve their learning experience. In other words, these skill-sharing moments were almost always learner-driven and occurred spontaneously during the lesson. Whether it was “Here’s how you can add more vocabulary words to your online flashcards from others” or “I found out how to type short sounds in Japanese!” learners mediated, imitated, and self-regulated highlighting the notion that the use of technology appeared to increase intrinsic motivation.
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An unexpected interesting finding was learners’ use of private and social dialogues during online chat activities. When 3 to 4 students in a group exchanged dialogues on the given topics (their room, typical Japanese house, and finally their dream house), their chat threads revealed that they have used private dialogue, circumlocutions, pictures and emoji to articulate their feelings. Interaction among students in small groups kept up a steady flow of chat conversation since there was always a member typing while others were trying to comprehend. Some students learned new words during the chat sessions and included them in their own online flashcard stack.

Limitations

The first limitation to this effort was the unexpected loss of the access to Wi-Fi during the study. My initial lesson plan included many more apps on iPads to execute seamless integration in the lesson to maximize the benefits of both traditional classroom activities and technology-enhanced activities with minimum distraction. Because of this, I had to replace my technology activities with lab activities. Time spent moving from the classroom to the computer lab, a few occasions of lack of lab availability, bad acoustics in the lab, and an undesirable seating arrangement for group work prevented me from realizing my initial desire for a more seamlessly technology-blended environment.

A second limitation was unreliable computers in the lab. The majority of desktop computers in the lab were more than 8 years old and were slow creating problems, especially when students were working on video editing. This caused some frustration and some of the students lost their work and had to start over a few times.

A third limitation was the students’ poor access to computers and other technological devices outside of the classroom, which limited their learning opportunities.
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Although 43 students answered they had access to computers at home while only 8 students replied they didn’t have access, many of them didn’t have Japanese fonts installed on their home computers. Because of this, some students wished to continue working on their tasks on school computers, but the lab closed as school finished, the library computers didn’t have Japanese fonts installed, and there were no available headsets on the premise.

Another limitation is the lack of the technology-enhanced interpersonal speaking activities. This resulted in having to conduct almost all interpersonal activities in person. This was a known challenge from the beginning of the study and the researcher had created the lesson with this in mind. However, if there had not been a malfunction on the CLEAR site, I believe my students would have benefited from the conversation exercises.

Finally, this group of students in this research was highly motivated and exhibited high comfort with technology use before the study. The results may suggest potential similar outcomes in other situations; but they may differ in the situations where learners with different technology backgrounds are involved.

Action Plan

Plan significance. The benefits of integration of technology can be maximized with the use of the SAMR model when the teacher selects and creates technology-enhanced activities supported with sound language pedagogy. Successful integration of technology in a language class does not only lead to students’ higher language performance, but it increases students’ motivation for learning and foster life-long learning as they found ability to use technology to create valuable life skills.
Plan dissemination. This research study and its findings will be shared with world languages teachers at my school and five Japanese teachers across the district during collaboration time. I also plan to share during a three-day technology workshop series for world language teachers which I am scheduled to conduct for the Monterey Bay World Language Project in June 2015. This workshop series usually draws 15 to 20 world language teachers from our region and surrounding regions.

Implementation of action plan. I will develop the following materials to inspire other language teachers to organize and develop lessons with technology tools that maximize students’ learning opportunities:

- List of currently available technology tools categorized by SAMR model
- Sample lesson plans with technology integration
- Website to share teacher-developed lesson plans, discussions, and useful resources.

I will include above materials in the already established Japanese teachers’ district website in the summer of 2015. I will invite all Japanese teachers in my district to Monterey Bay World Language Project Technology Series and share the study and its implication while I will provide hands-on technical training as the participants critically think the ‘whys and hows’ of choosing such technology tools categorized by the SAMR model.

Conclusion

Language learning and technology have been a great interest of mine for many years. This study convinced me that an effective learning experience relies on teacher’s pedagogical skills and technical knowledge in the selection of appropriate technology, placement of activities, room for peer collaboration, and learner autonomy supported
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with motivation. This study provided me the opportunity to learn the essential elements to evaluate and establish successful integration of technology in the 21st century language classroom that is part of a rapidly changing world.
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Appendices

Appendix A: Theoretical Schematic Chart

(Theoretical schematic chart from toward a model of the value aspects of motivation in education: Developing appreciation for *Educational Psychologist* by Brophy, 1999)

<table>
<thead>
<tr>
<th>Theoretical Schematic: Intersections of the Cognitive and Motivational Readiness Dimensions, Including the Zones of Proximal Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above the Motivational ZPD(^a)</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Above the cognitive ZPD (not yet able to learn)</td>
</tr>
<tr>
<td>Within the cognitive ZPD (able to learn with mediation)</td>
</tr>
<tr>
<td>Below the cognitive ZPD (has learned already)</td>
</tr>
</tbody>
</table>

*Note. ZPD = zone of proximal development.
\(^a\)Not yet able to appreciate. \(^b\)Can learn to appreciate with mediation. \(^c\)Appreciates already.

Appendix B: TPACK

[http://www.tpack.org](http://www.tpack.org)

(Reproduced by permission of the publisher, © 2012 by tpack.org)
Appendix C: SAMR Model


Redefinition
Tech allows for the creation of new tasks, previously inconceivable

Modification
Tech allows for significant task redesign

Augmentation
Tech acts as a direct tool substitute, with functional improvement

Substitution
Tech acts as a direct tool substitute, with no functional change

### Appendix D: Technology-Integrated Lesson Plan

<table>
<thead>
<tr>
<th>Stage</th>
<th>Activities with Focused Modes of Communication</th>
<th>SAMR</th>
<th>ISTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting the Stage</td>
<td><strong>1. Tapping into students’ prior knowledge with Padlet</strong> Teacher shares several pictures of Japanese houses and pose a question; “What do you know about the Japanese house? Are they similar to or different from your house? What do Japanese people do in and around the house?” Teacher engages students in conversation and brainstorming on various features of Japanese houses, cultural products and practices in and around the house.</td>
<td>Augmentation</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td></td>
<td><strong>2. Set the stage with a culturally enriched video clip with Zaption</strong> Students view a short video clip introducing the Japanese house using Zaption. Students interact with the clip by being engaged by questions and small tasks appeared during the clip. (Interpretive Listening)</td>
<td>Modification</td>
<td>Critical Thinking, Digital Citizenship</td>
</tr>
<tr>
<td>Input Stage</td>
<td><strong>3. Vocabulary Input with Bitzboard on iPad</strong> Students in pairs interact with new vocabulary and information using Bitzboard on iPad minis. Students gain recognition of vocabulary through online flash cards, matching games, typing while listening to the sounds. (Interpretive Reading)</td>
<td>Modification</td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td><strong>4. Vocabulary Input with Quizlet</strong> Students further practice with vocabulary with Quizlet, an online flashcards with audio and games. (Interpretive Reading and Listening)</td>
<td>Augmentation</td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td><strong>5. Mini Lesson on Describing Rooms with Explain Everything on iPad</strong> Students watch the video clip of teacher explaining the target sentence structure using pictures of various Japanese rooms and descriptions. (Interpretive Listening and Reading)</td>
<td>Augmentation</td>
<td>Information Fluency, Communication</td>
</tr>
<tr>
<td></td>
<td><strong>6. Vocabulary and Sentence Quiz with Quizlet</strong> Students take a quiz on vocabulary and new sentence structures on Quizlet. (Interpretive Reading) – Formative Assessment 1</td>
<td>Modification</td>
<td>Communication</td>
</tr>
</tbody>
</table>
### Guided Practice Stage

<table>
<thead>
<tr>
<th></th>
<th>Activity Description</th>
<th>Modification/Redefinition</th>
</tr>
</thead>
</table>
| 7 | **Japanese House Manner with Aurasma**  
Students in small groups move to different areas of the classroom then watch short video clips and read articles about Japanese house customs and answer the questions.  
*(Interpretive Listening)* | Modification  
Research and Information Fluency |
| 8 | **Rooms Game with Kahoot**  
Students in pairs choose the sentence describing the correct cultural practice shown on the screen.  
*(Interpretive Listening)* | Augmentation  
Communication and Collaboration |
| 9 | **Charade Activity with Charade App**  
Each group of students selects one student to guess the room in a Japanese house while the rest of group members provide clues such as common activities and items in the room. Activity is timed and takes place in front of the class.  
*(Interpersonal Speaking and Interpretive Reading)* | Modification  
Communication and Collaboration |
| 10 | **Chat about Rooms with Google Chat**  
Students choose one picture they like from the list and each other about the rooms via google chat.  
*(Interpersonal Reading and Writing)* | Modification  
Communication and Collaboration |
| 11 | **Conversation Practice with CLEAR**  
Students practice conversation about house and rooms with a pre-recorded video conversation partner.  
*(Interpersonal Speaking)* | Modification  
Communication |
| 12 | **Culture Perspectives Reading with Penzu**  
Students read short descriptions of Japanese rooms and highlight the key ideas. Then, they share the differences and similarities of Japanese houses and American houses and share the perspectives of various cultural practices in and around a Japanese house.  
*(Interpretive Reading and Presentational Writing) – Formative Assessment 2 and 3* | Redefinition  
Critical Thinking, Communication and Collaboration |
| 13 | **Room Introduction with Tellegami**  
Students describe various rooms using Tellegami, virtual reality app.  
*(Presentational Speaking) – Formative Assessment 4* | Redefinition  
Creativity and Innovation, Digital Citizenship |

### Independent Practice Stage

<table>
<thead>
<tr>
<th></th>
<th>Activity Description</th>
<th>Modification/Redefinition</th>
</tr>
</thead>
</table>
| 14 | **Japanese vs. American House Features with Piktochart**  
Students read letters from Japanese students and view pictures of their rooms. Create charts highlighting differences and similarities of houses and cultural practices in and around the houses using Piktochart.  
*(Interpretive Reading) – Summative Assessment 1* | Redefinition  
Research and Information Fluency, Critical Thinking |
| 15 | **Discussion Board on Japanese House and Cultural Practices in the house with Google Doc**  
Students exchange their findings and opinions about a Japanese house, Japanese students’ rooms and cultural practices via Google Doc and Google Hangout.  
*(Interpretive Reading, Interpersonal Writing) – Summative Assessment 2* | Redefinition  
Communication and Collaboration, Critical Thinking |
| 16 | **Dream House Presentation with options (Roomsketcher, Minecraft, Adobe Voice, Videolicious, Powtoon, the Sims, TED Ed, and WeVideo)**  
Students design and share their Japanese inspired dream house for Japanese students.  
*(Presentational Speaking and Writing) – Summative Assessment 3* | Redefinition  
Creativity and innovation, Communication and Collaboration, Problem Solving and Decision Making and Digital Citizenship |
Appendix E: Task Sheet and Rubric for Summative Presentational Task

Dream House Design Project!

Here’s your chance to be creative and help your Japanese friend! Design a dream house for your sister school students and create a short video tour. Your design must reflect the wants and interests of your Japanese friend and Japanese culture to be successful. You may choose a way to present your design from the choices below.

**Available Tech Tools**
- Roomscketcher
- Minecraft
- WeVideo
- Adobe Voice
- Videolicious
or paper poster presentation!

**Requirements:** Your design and tour must include…
- an attractive house design
- reflection of Japanese friend’s needs and interests
- evidence of understanding of Japanese culture
- tour less than 90 seconds
- oral presentation entirely in Japanese

Your design tour must be uploaded and shared on our class website on Edmodo by ____________

<table>
<thead>
<tr>
<th></th>
<th>Strong Performance</th>
<th>Meets Expectations</th>
<th>Approaching Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Am I understood? (Language Control)</td>
<td>Very easy to understand throughout the tour. Any errors in pronunciation do not interfere with understanding. Presentation is very smooth and natural with few hesitations.</td>
<td>Easy to understand most of the time. Tour sounds like a script being read at times.</td>
<td>Errors occasionally interfere with comprehension. Delivery lacks natural flow.</td>
</tr>
<tr>
<td>How does my design reflect my friend’s interests and Japanese culture? (Culture)</td>
<td>Reflects the friend’s interests and deep understanding of Japanese culture in and around the house.</td>
<td>Reflects some aspects of friend’s interests and Japanese culture.</td>
<td>Includes minimal information about friend’s interests and Japanese culture.</td>
</tr>
<tr>
<td>Is my tour interesting and engaging? (Communication using technology)</td>
<td>Visuals, slide transitions, background music are used effectively to engage audience and delivered detailed information.</td>
<td>Visuals or background music are used help convey the main message.</td>
<td>Either too many or too little slides are used. Music is too loud or not effective.</td>
</tr>
</tbody>
</table>

Comments:
Appendix F: List of Web 2.0 Apps and Software Used in the Lesson

4. CLEAR: http://clear.msu.edu/clear/
10. Minecraft: https://minecraft.net/
11. Padlet: https://padlet.com
15. Quizlet: https://quizlet.com/latest
17. TED-Ed: http://ed.ted.com/
18. Tellagami: https://tellagami.com/
20. WeVideo: https://www.wevideo.com/