

## **Final Paper 04/25/21**

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### **Subtitle: Introduction**

I really enjoyed reading, "Rethinking Education in the Age of Technology: The Digital Revolution and the Schools." (2018) It helped me synthesize my readings from both this course and my other course and supported my thoughts about the future of education. I, too, believe that the reliance on schools in the future is going to take on a different role. We've been moving in that direction for some time now, and it seems as if COVID has catapulted us further along this path.

Although technologies throughout history predicted to revolutionize education in the schools have failed time and time again, I believe that online learning is here to stay. The advent of the internet has slowly made access to knowledge attainable. We are no longer dependent on the academics and educators in our schools and universities to impart their knowledge. When we want to know something, we look it up. Information is literally at our fingertips.

### **Subtitle: My Vision of the Future Classroom/Training**

As we see in some online schools now such as FLVS, teachers are more like instructional coaches, and I think this is the future role of teachers in education. Students access the curriculum online and work at their own pace. They often have access to lectures, digital sources and books, as well as interactive games to help them learn the material. Compared to language learning in the 1980s, students are now able to access primary sources such as TV, radio, podcasts, news channels, and websites in the target language instead of just listening to the professor and the language lab tapes. This gives learners more autonomy in their learning. The challenge in language learning has always been having access to primary sources and native speakers and now the digital age has changed everything!

Since my background is in French and Spanish, I'm going to focus on language education in the age of technology. It has been a while since I have gotten back to my roots, and I now have the opportunity to teach French again next year. I work with visually-impaired kids so we don't always get the best books, and many of them have inaccessible online component. However, through my quest to find an appropriate, accessible book, I came across a book that was in Bookshare (a free resource for visually-impaired learners available in braille) published by HMH. The students are already familiar with this publisher in their other classes so it's a great find! What I didn't know was how great the new language textbooks have become.

I discovered that this HMH textbook provides primary sources as part of the curriculum as well as interactive games, authentic audio, and has developed some tours in Google Expeditions which work with virtual reality. This enables a simulation of being "abroad" without ever leaving the classroom. Instead of having to work around the hours of the language lab, they can go online and immerse themselves in French content by native speakers. This type of learning allows learners to choose the activities which benefit them the most, thereby granting learners the autonomy to customize their own learning. This was suggested as a future trend in education in "Rethinking Education in the Age of Technology: The Digital Revolution and the Schools." This is how I envision the future of language learning, and I'd like to see more augmented and virtual reality. I think it will also help student motivation.

A few theories play important roles in language learning. One is Cognitive Info Processing Theory which indicates that learners have three types of memory: sensory, short-term, and long-term memory. Learners store memory and retrieve it when necessary. This is very similar to what language learners do when they apply what they learned to living abroad. That's when they make the connection between grammar and communication.

Another theory is Schema Theory and Cognitive Load where information is represented in "schemas" in long-term memory. This information is organized into categories, and learners can draw upon these schemas to interpret events and develop more complex schemas through experience and learning. Learners without these schemas face a higher cognitive load. In terms of language, think of those who have been in some contact with native

speakers just like I had throughout my studies in language. My best friend in 7<sup>th</sup> grade was Puerto Rican, I had many Latino friends throughout college and I worked at the Puerto Rican center at the University of Connecticut. The “schemas” I learned in Spanish class and internalized were able to develop into more complex schemas since I had the opportunity to apply what I learned in my personal relationships. Compare that to someone who studied Spanish for as long as I had but hadn’t had contact with native speakers. The cognitive load for them might be so great that trying to communicate in Spanish would be overwhelming.

Situated Learning Theory would explain when a language learner uses his/her skills abroad. Since you learn by doing, spending your Junior Year Abroad really gives you an opportunity to learn. My first month in France was spent exploring – trying to figure out how to buy cheese in a small cheese shop, buy a Metro ticket, get from one place to another, ask for directions, figure out how pharmacies work, navigate the grocery stores and markets, and understand the cultural norms and expectations. The strength of Situated Learning Theory is integrating knowledge with doing. Spending time abroad was expected at the college level for someone studying languages. Research has shown that Situated Learning Theory has influenced anchored instruction as well.

“The Cognition and Technology Group at Vanderbilt (1990) proposed anchored instruction as a means of providing a situated context for problem solving. Specifically, they developed video adventure programs containing a series of embedded problems that engaged the viewers in attempting to solve the problems. The video adventure story provides a realistic, situated ‘anchor’ for activities such as identifying problems, making hypotheses, proposing multiple solutions, among others.” (Driscoll, Trends and Issues in Instructional Design and Technology, chapter 6, p. 56)

I think more of this anchored instruction for language learning will become available where learners are expected to solve problems in another language and culture. I hope to see more immersive educational video games with embedded assessments as a regular part of language learning in the future. Because of this, I’d like to include an instructional design approach that

works well with these games, and one I hope to master: Evidence-Centered Design (ECD).

“A game that includes evidence-based assessment must be able to elicit behavior from the students that bears evidence about the targeted knowledge and skills (i.e. the competencies), and it must additionally provide principled interpretations of that evidence in relation to the purpose of the assessment. Figuring out these variables and their interrelationships is a way to answer a series of questions posed by Messick (1994) and that get at the very heart of assessment design generally, and ECD specifically.”(Van Eck, Shute, Rieber, Trends and Issues in Instructional Design and Technology, chapter 33, p. 282)

A well-designed game would incorporate situated, authentic problem solving which would support Situated Learning Theory. It should also trigger the play phenomenon, be designed for adaptive challenge and support, be active and goal-oriented, and have embedded assessments.

### **Subtitle: Emerging Technology: Virtual Reality**

The emerging technology I would like to focus on is Virtual Reality. I think it's going to play an important role in language learning in the future. Immersive learning in a simulated environment is as close to the real thing as possible. One of the apps I reviewed for our segment on Augmented Reality is the Mondly App and they have a Virtual Reality option. At the moment it is only available for Android phones but they are currently in the process of developing it for the iPhone. Now this app in particular presents the learner with simulated situations that a foreigner might find themselves in while traveling abroad. It includes AI chatbot technology which anticipates and learns from the learners' responses. While this is impressive, I think we need to take it up a notch.

I want to see an ECD approach to designing immersive Virtual Reality experiences as a regular part of language learning in the future. Virtual Reality can challenge students with typical problems they may encounter in another country, provide the right amount of adaptive support and challenge, include embedded assessments, and be fun to play. Situated Learning Theory

supports the creation of these problem-based VR games whereas you learn by doing.

Although the cost of VR headsets is currently prohibitive for most school districts, I think they will become more prevalent in the future. Schools need to keep up with the pace of technology or our students will be left behind. But even more important than this, is our need to match subject matter experts with game designers. They know how to create a good, goal-oriented adventure story, and trigger the play phenomenon and provide adaptive challenge, but they don't know how to educate. In your quest to solve a problem, your actions determine your subsequent path. These authentic simulated experiences support Situated Learning Theory.



## **Subtitle: Virtual Reality: Language Lesson Plan**

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**Age group:** HS language learners-first year

**Objective:** Students would learn to put what they learned in French in Unit I into practice. Unit 1 includes present tense verb conjugation, following directions, masculine/feminine, and false cognates.

### **Activity:**

Students will participate in a goal-oriented adventure VR game (without the use of GPS). They will start the adventure by themselves or with a partner (if multiplayer can be enabled). Then will set off to explore in a small French town but they have to be back at the bus in time to leave with the group.

This game will require them to ask directions of the local shopkeepers, use and understand the meanings of the false cognates, and navigate the winding streets where no one speaks English. The game will be conducted in the present tense only and include vocabulary related to everyday travel and directions as well as common cognates. There will be consequences for choices made as well as rewards for excellent comprehension and navigation.

### **After Completing the Activity**

Students will return to their seats and the teacher will engage in a group discussion of the students' VR Experiences

## **Subtitle: Virtual Reality: Benefits & Concerns**

### **Benefits**

The benefits of integrating Virtual Reality into the classroom are many, one of which is motivation. School is boring to many young learners who grew up with technology so this helps them get excited. It utilizes the same gaming reward system to motivate good performance.

It has the ability to deliver rich experiential learning. You are more likely to remember the things you are involved in rather than things you listen to in class. This helps you retain your learning and without distractions, you can better focus on the content.

“The benefits of virtual reality in education go beyond academics as well to include cultural competence, the ability to understand another person’s culture and values—an important skill in today’s interconnected, global society. For example, a virtual reality field trip to other parts of the world, whether it be Peru or China, exposes students to cultures other than their own.” (Virtual Reality in Education: Benefits, Tools, and Resources, 2019)

“Growing evidence suggests that AR and VR in education, as well as the combination of both technologies known as mixed reality, can improve student outcomes, too. For example, in a March 2019 report, EdTech cites a study showing that students in a mixed reality biology classroom received higher scores than other students. And AR and VR can help with memory retention and recall, as well—EdTech reports on a recent study that shows an increase in retention of almost 9 percent for students who learned in an immersive environment such as VR” (Virtual Reality in Education: Benefits, Tools, and Resources, 2019)

VR is an international platform so there is multi-language support in the software itself. The United States is not the only country who produces video games so it’s possible to find games in other languages. “If these games incorporate multiplayer, a communal language hub for language learners could easily be created...There are many different approaches to video game language learning. By switching the dialogue over to a target language and turning on English subtitles, you can follow along with the audio, picking up visual cues from the scene and character body language. This in-context learning makes language learning a challenging yet rewarding endeavor.”

(Shofner, The Immersive Experience of Video Game Language Learning, 2021)

## **Concerns**

One of the concerns teachers have with Virtual Reality is that of relinquishing control of the classroom. Another concern is the cost although this will reduce over time. Unless you're in multi-player mode, human interaction will be reduced and if students have questions they will have to fend for themselves. Personally, I think this is good in language learning, since you are forced to communicate and figure things out as you go.

The concern we all have is that you can get addicted to playing video games. This is probably not that different from addictions we already have, such as smartphones, texting, Facebook, Instagram, etc. It'll be hard to pull students away from the game.

Technical issues always seem to be a problem in schools and immersive language learning games with their detailed audio could be frustrating. If there are any audio issues with speech recognition this could ruin the experience for the users. (Shofner, The Immersive Experience of Video Game Language Learning, 2021)

Teachers tend to be resistant to new technologies which they are not comfortable with. I think this will change with a younger generation of teachers.

There could also be a long-term effect to vision, or bacteria and viruses transmitted through shared headsets, and it could affect the emotional development, and peer interactions of young children.

## **Subtitle: Virtual Reality Recommendations**

I recommend considering Virtual Reality for the language learning classroom. I realize that the changes I would like to see incorporating VR into the classroom are a long way away from where they need to be in order to experience a truly immersive experience. In the meantime, however, I would encourage incorporating simple AR or VR experiences such as the ones found in Google Expeditions as well as 360 photo and videos when exploring another country.



Although educational technologists aren't necessarily game designers, they can certainly familiarize themselves with 3D, v 360 experiences , AR, and VR in the subject area in which they are designing. I would go as far to suggest that they incorporate these experiences into their presentations. The technologies will soon improve and if we don't get on board we will not stay current in our job. Virtual reality does require headsets, so they may consider including headsets as part of their training.

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