

Lessons from a First Year Lab: Constructing a Successful Virtual Environment in an Institute of Higher Education

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Introduction

According to the U.S. Department of Education (2015) public school teachers today are more disillusioned about their jobs than they have been in many years. One 2013 poll found that teacher satisfaction had declined 23 percentage points since 2008, from 62 percent to 39 percent very satisfied, the lowest level in 25 years. Unfortunately, a critical teacher shortage exists in Alabama. Specifically, a critical teacher shortage exists in the fields of science, technology, engineering, arts, mathematics (STEAM), and special education. Videotaping is one of many tools used in teacher preparation programs for the purpose of improving teaching skills through reflection and discussion.

Quality teacher preparation programs that provide rich modeling and a plethora of hands on classroom opportunities for teachers in training are invaluable at the college level. The Council for the Accreditation of Educator Preparation (CAEP) encourages the use of technology, like videotaping, to facilitate ongoing learning for teacher candidates.

In teacher preparation, more effective practices are needed for preparing teacher candidates (U.S. Department of Education 2009b). The challenge also lies in finding an effective mechanism that provides essential learning experience and opportunities to refine teaching techniques to fidelity in a safely controlled and coordinated environment (Garland, Vasquez, & Pearl, 2012). One way to support teacher candidates is through the use of a virtual environment (VEs). The goal is to provide teacher candidates the opportunity to learn new skills and craft their practice through the VEs. Currently, Auburn University at Montgomery is the only university in the state of Alabama that offers the Virtual Avatar Laboratory (VAL) for teacher candidates. Research has shown an improvement in teaching methods with only four sessions in a VE (Abernathy, 2014). What if teacher candidates could be provided with at least four years of practice through the VAL? Imagine the VAL utilizing “rounds,” borrowing from the medical model, which would allow teacher candidates to learn in the field from a number of mentor teachers in a variety of settings.

There is a need to provide authentic, controlled, and specific teaching experiences to teacher candidates. Faculty members have little control over what teacher candidates

experience in the area schools that partner with colleges and universities. It is difficult to guarantee that they are seeing evidenced based practices across content areas, behavior management, lesson planning, and assessment with a novice teacher. The goal, when placing teacher candidates, is to diminish the gap of their theories and implementation of said theories in preservice (Allsopp, DeMarie, Alvarez-McHatton, & Doone 2006). It is imperative for future educators to have strong preparation experiences both in the field and in the college classroom. Pairing a teacher candidate with a single mentor for a semester of observation and student teaching, which is common in traditional preparation programs, may not be the optimal way to allow candidates to see expert teachers in action. Moore (2003) found in her study that mentors expected their teacher candidates to know and be able to implement specific strategies. So, if there are certain expectations from mentors, it would be important that teacher candidates practice and perfect a variety of strategies throughout their education program. It could take years of practice for someone to perfect rules, theories, or strategies (Ericson & And 1993). However, with the implementation of the VAL, the teacher candidates are being provided with an innovative tool that will enable them to explore, implement, and reflect on strategies for teaching and classroom management in an authentic environment.

The VAL provides teacher candidates the opportunity to learn new skills and craft their practice without placing “real” student/parent relationships at risk during the learning process. That is, if a teacher candidate performs poorly or wants to experiment with a new approach with the VAL, there is no adverse effect on any real student, but the experience feels real. A teacher candidate can also reflect on the lesson, determine what needs to be improved, and then try a new approach in the same environment without affecting “real” students (Dieker, 2017). One of the most important aspects of the system is that a faculty member can script an experience and then deliver it with fidelity and validity while being customized to the responses of teachers or students. The VAL evokes personalized learning and an authentic experience (i.e., suspension of belief) by providing a simulated, mixed-reality setting.

In the VAL, teacher candidates or administrators walk into a room where everything looks like a standard classroom including props, whiteboards, and students. Unlike the brick and mortar setting, the lab is a virtual setting and the students in the classroom are avatars. Depending upon the objectives of the session, the virtual students may behave in a way that offers student teachers an opportunity to practice their classroom management, pedagogical skills or both. Teacher candidates can interact with student avatars and review previous work, present new content to students, provide scaffolding or guided practice in a variety of content areas, and monitor students while they work independently or in small groups. In a VE, teacher candidates can learn instruction and

management skills needed to become effective teachers and in-service teachers can sharpen and refine their existing skills. Furthermore, computer simulation provides unique benefits in that performance data can be recorded, compared with past performance, and tagged for analysis using a video tagging tool in conjunction with developed rubrics.

In conclusion, it is important that teacher candidates feel and are prepared when they start their first job. The best way to do that is through authentic practice and that is what the VAL can offer teacher candidates. This program will allow teacher candidates the opportunity to practice and perfect their own strategies without directly effecting students. Ultimately, getting more of these programs in colleges and universities will help with teacher preparedness. In order to create this laboratory, there are many steps and processes that one must go through. The goal is to address these steps and process and answer some of those questions in order to help create a successful first year laboratory. The questions that will be addressed are: (a) how do I fund the program? (b) who do I need support from? (c) what companies do I need to establish a relationship with? (d) what needs to be included in the budget? (e) how do I design the laboratory? (f) what ways can I market the new laboratory? (g) what steps do I need to take once the laboratory has been funded? (h) how do I have a successful first year laboratory?

Tips from the Director

Writing your grant

What are the weak areas of your program, college, or university? Writing a grant can be daunting. However, stay focused on the who, what, how, and where. The focus for this particular grant was to enhance teaching experiences for special education teacher candidates. The VAL grant funding was solely for College of Education (COE) use. All COE faculty can use the VAL for free, but others (in and out of the university) must pay an hourly rate. I found that focusing on COE needs with an emphasis on outside pay will hopefully help with future funding.

Developing your niche

What makes you unique? For the COE, our niche is that we are the only VAL in the state of Alabama. That makes us exclusive. Some labs focus on English Language Learners (ELL) as their niche. Working with STEAM and local school faculty or students on the Autism Spectrum Disorder (ASD) are other areas of need. Find something that would make your lab stand out. Even think of larger community needs if you can link it back to your university goals.

Working with the Institutional Review Board (IRB)

What research do you want to produce? Our focus was on “enhancing” teacher field placements, not replacing them. Enhancing the learning experience through parent-teacher conferences, principal-parent conferences, student behavioral issues, mock interviews, or counseling sessions just to name a few. Your IRB should all relate to your grant and desired niche. Don’t reinvent the wheel!

Establishing friendships with Mursion, Inc.

Why should I use *Mursion, Inc.*? *Mursion, Inc.* is the virtual training company in which educators practice and master their skills through the original TLE TeachLivE Lab. They provide the training platform that is authentic, targeted, personalized, and interactive. The TLE TeachLivE Lab provides teacher candidates the opportunity to learn without placing “real” students or peers at risk during the learning process. That is, if a TLE TeachLivE Lab user performs poorly or wants to experiment with a new approach while using the TLE TeachLivE Lab, there is no adverse effect on any real student, but the experience feels real. One of the most important aspects of the system is that a faculty member can script an experience and then deliver it with fidelity and validity while being customized to the responses of teachers or students. A TLE TeachLivE Lab evokes personalized learning and an authentic experience (i.e., suspension of disbelief) by providing a physical environment in which everything looks like a classroom, yet users are in a computer simulated, mixed-reality setting. Furthermore, simulations provide unique benefits in that performance data can be recorded, compared with past performance, and tagged for analysis using a video tagging tool in conjunction with developed rubrics. Currently, *Mursion* is the only company in the United States that offers artificial intelligence enhanced by live human interactors. *Mursion* is a great, young company that can help you develop the needs of your lab. They can also build specific avatars to fit your lab needs. Their technology support staff is exceptional... something that is needed with this particular type of lab.

Seeking support from those within your institution

Who should I seek support from? Anyone! Most importantly, have the support of your dean first. For every “presentation” I made about starting a lab, I showed a TLE TeachLivE video. The technology, what it can do, how it works, and its implications are difficult to explain. Especially, to non-technology people. Every impromptu presentation I started with the “why” of the lab, how it can enhance learning, followed by a video. The video example usually drives it home. Follow up the video with all the different scenarios one can design. I have found that letting the person brainstorm out loud its use for their particular field works best. No need to add bells or whistles...the technology and the experience sells itself.

Generating the link to CAEP accreditation

Why should I care about accreditation? Any accrediting body is always looking for how universities improve or augment the learning experience. If your COE has difficulty finding ELL or secondary placements, you can build those needs in a lab. One could use it to focus on improving a weakness in a program area (STEAM, problem solving, to name a few!). Do some research and use the lab to your advantage.

Emphasizing university needs/goals

Why should I emphasize university needs and goals? To increase your likelihood of funding! If you are going for an in-house grant, tie in as many university needs/goals as you can. If the university can see the benefit beyond the institution, the better off you are at getting funded. For our particular grant, we align with all eight of the university wide goals.

Working with your administrator and budget

Why include an administrator? Your lab will become a small business and any help from an administrator is important in keeping equipment and payment in line. They are also helpful in keeping up with simulation specialist pay and opening up the lab if need be. They are an invaluable part of running a successful lab. To note, it is always good to have a second pair of eyes on a budget!

Designing the physical space of your laboratory

For the VAL, the dean gifted one office for the simulation specialist and one classroom for the grant. The VAL (gifted classroom) has a smartboard and computer in the front of the classroom for lectures. On the back wall is a mounted television with a computer behind it. This is the VAL. In front of the mounted television, is a checkered floor to keep students inside the lab while running simulations. The four windows in the VAL have frosted tint over the glass to minimize the sun and keep out the distraction of students walking by. The VAL was placed in the back of the room on purpose, this was to keep distractions to a minimum if someone were to come in during a simulation. This set up allows for a faculty member to lecture, provide examples, and then turn and start simulations if necessary. It is a great dual-purpose room, especially for those who want to rent out the space for an all-day event or professional development. See pictures below.

Meeting with upper administration for support and circulation

Why meet with upper administration? Your administrators are always out in the community. Have them “sell” your lab while out. No matter where they go, a lab is a source of pride, and can easily be worked into any conversation with local businesses. Let them do some advertising for you! Always invite them over when you have distinguished guests visiting.

Marketing your laboratory (name, logo, flyers, giveaways)

Why should I market my lab? Giving your lab a kitschy or memorable name gets it notoriety in and around your area. Think about your lab, your COE needs, community needs, and how you can enhance learning through your lab name. Enlist the help of your university marketing department, give them a presentation on the lab, and see what they design. Technology gurus love being in the VAL. Show the different ideas and mock ups to a group and get a feel for what looks good. I have full page flyers, half page flyers and quarter page flyers for all occasions. We also have cups, keychains, and pens to hand out to visitors. Keep them handy. Our elongated logo design is below.



Conceptualizing your webpage

What information do you want the general public to know? Our VAL webpage is dedicated to information about *Mursion*, the VAL, and current press releases. There is also a “More information” link. This is a survey that can be filled out for those who want to come visit or have questions about the VAL. This link is to Qualtrics, a survey design website. Every time someone completes a form, the director receives an email alert and can contact them promptly.

Hiring your simulation specialists

Hiring a simulation specialist is an import key to a successful lab. They “bring to life” the scenarios that you want to design for your participants. *Mursion* does an excellent job of advertising, recruiting, and training your simulation specialist. It is worth the extra money to have them during the hiring process. They will send over resumes, video interviews, and their grades earned during improvisation exercises for faculty to review. My area of expertise is in special education, not theatre, puppetry and improvisation. I am happy to leave that process to *Mursion* and decide upon those they send forward to the hiring committee.

Holding an open house

Why should we have an Open House? An Open House is a great opportunity to highlight and really showcase your lab. Invite upper administration, faculty and staff, deans, school superintendents, and special education directors. Don't forget to include your state department of education, local school systems (professional development directors) and local business. Anyone you think that would be interested. The director personally hand delivered invitations to upper administration and deans. Your agenda should include a short welcome and then two simulations (each lasting around 5-6 minutes each). Call for volunteers from the floor. The best simulations are done impromptu, that way participants do not get nervous or try and think ahead about what they would say and do. Keep it authentic. Question and answer sessions will take up much of your time, and that is ok...you want it to. Having participants brainstorm on how to use your lab increases the likelihood they will pay to use it.

Customizing the logistics of your laboratory (the who, what, when, and where)

Why should I customize the logistics of my lab? Keeping organized and prompt is key in a successful lab. There are certain steps to signing up for and using the lab. Faculty must pass the "Facilitator Handbook Quiz" before being allowed to use the lab. First, facilitators must read the "Facilitator Handbook," and watch the "Facilitator Handbook Video". Then, they must pass a "Facilitator Quiz." After they pass the quiz, they are given a link to a university wide calendar to sign up for simulation design times or simulations (Qualtrics survey). The calendar will then send automated emails to the director and the simulation specialist to ensure it is on our personal calendars. Other facilitators can also see what times are still available to sign up for when perusing the university calendar. The automated email also helps aid in keeping up with hourly pay. Next, the facilitator completes the "Simulation Design Form." This form allows for the facilitator to write out the needs of the scenario, including; title, simulation goal(s), scenario design description, specific quotes, number of pushbacks, and resolution. Facilitators can bring additional information to the meeting with the simulation specialist. Additional information includes content area information, for example, a synopsis of Dracula, or a refresher on the water cycle. Information to help support the simulation specialist in acting out your desired scene. As the director, I also made a short video on "how to" open up and start the VAL. I meet every first-time facilitator in the VAL to ensure they understand how everything gets started during their simulation. After that, facilitators are on their own and seem to do well. Instructions on how to get going in the VAL are sent via email, in a handout, and on our private COE webpage. The university Instructional Technology (IT) numbers and *Mursion* helpline are also laminated in the VAL.

Creating forms and questionnaires

Why should I have forms and questionnaires for my lab? Forms and questionnaires are a great way to keep your lab organized and allows you to continue with other teaching and university duties. Qualtrics sends email alerts whenever one is completed that way I can follow up on any issues and talk specifically with facilitators with what they are planning. It keeps me, as the director, in the loop and involved with all things VAL.

Time logs and pay are due at the end of the month. All invoices will be sent then and are double checked against the university calendar and simulation specialist time sheet. Every effort has been made to minimize the logistical needs of the grant to focus on relevant research produced in the VAL, along with my regular teaching and university wide responsibilities.

IPads are also available in the VAL with preloaded research surveys (IRB approved) for participants to complete when they are finished with a simulation. This survey is also on the COE webpage and sent out in an email to forward to students if they did not get a chance to complete it during a simulation. Again, making it easier to collect research data.

Final Thoughts

As with any lab, being organized and strategic in your planning is important. Develop your niche and tie it to university wide goals. Work on getting others involved and invite them to see classes working through live simulations. Make your job easier by making forms and information accessible and easy to understand. Remember, not all faculty will be on board, and that is ok! Sometimes technology is scary for digital immigrants and they need extra assurance. And always remain flexible...you never know when WIFI will be down or an important visitor will pop in. Being flexible will keep you calm and resilient...remember, there is no need for bells and whistles, the technology and experience sells itself. Remain true to your goal of improving and enhancing teacher practices and you cannot go wrong.

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