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# INFORMATION SYSTEMS EDUCATION JOURNAL

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# A Preliminary Study: The Use of VoiceThread in Online Business Courses

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## Abstract

This study explored the use of a web-based tool, VoiceThread, as it relates to enhancing active learning and learner engagement in two online business courses. VoiceThread was integrated into various learner-centered activities supporting learner-learner, learner-content and learner-instructor interactions as part of an online course improvement process. As a result, using VoiceThread in two asynchronous courses created an online learning community, and promoted active learning and learner engagement in both courses.

**Keywords:** active learning, asynchronous teaching, Information and Communication Technology (ICT), learner engagement, VoiceThread.

## 1. INTRODUCTION

Rapidly changing technological advancements necessitate continuous adjustments of higher education online course development, design and delivery for quality learning to be achieved. Overlooking technological disruptions can easily

cripple the development and delivery of quality online learning. To replicate face to face learning, particularly, promoting active learning and learner engagement, online educators need to adapt compatible Information and Communication Technologies (ICTs) when designing asynchronous pedagogies.

The researchers of this study conducted a preliminary analysis to gain an insight into how a web-based tool could support active learning and learner engagement in two asynchronous online courses at a state university located in the Midwest. The study included learners made up of two small groups.

The learning outcomes of the two courses were based on "internally stored states of the human learner, called capabilities" (Gagné, Briggs, & Wager, 1992, p. 43), and included "intellectual skill, cognitive strategy, verbal information, motor skill, and attitude" (Gagné, Briggs, & Wager, 1992, p. 44). By supporting these capabilities, and other criteria, VoiceThread (VoiceThread LLC, 2016) was identified as a compatible option which would enable a similar face to face learning context.

The features of VoiceThread were described in three dominant words: "Communicate, collaborate, connect" (VoiceThread Features, 2017, para 1.). These features also supported active and collaborative learning, one of National Survey of Student Engagement Indicators & High-Impact Practices benchmarks (National Survey of Student Engagement [NSSE], 2016) defined as "some of the more powerful contributors to learning and student behavior" (Kuh, 2009, p. 16).

As a cloud-based application, VoiceThread (VoiceThread Features, 2017) became a powerful choice as it could be accessed from any computer and web browser, and would keep learner data secure. Furthermore, the tool was diverse in that it allowed learners to create, comment and share, offering different methods of communication with "over 50 different types of media... five powerful commenting options" (VoiceThread Features, 2017, para 1).

In addition to identifying and implementing a compatible technology, adapting a standardized quality assurance model for an online course design, delivery, and improvement was as critical. In this study, the two online courses were designed and delivered based on a benchmark model, Quality Matters Higher Education Rubric General Standards and Specific Review Standards (Quality Matters [QM], 2014). Since the quality assurance model was based on promoting three types of interactions, learner-learner, learner-content, and learner-instructor, it provided a suitable framework for active learning and learner engagement to be clearly observed (Moore, 1989; QM, 2014, 2017).

## 2. REVIEW OF LITERATURE

Literature on digital learning is growing rapidly as more institutions adapt technologies to deliver online courses. Quality online teaching and learning is made possible by means of staying atop of disruptive technologies. As many universities adopt online programs, virtual faculty discover that using and sharing multiple approaches in teaching and learning have become the norm as noted by Pacansky-Brock (2012): "As an educator utilizing emerging technologies for teaching and learning, understanding the value that sharing brings to our culture is critical" (p. 38). Faculty also discover these technologies by trial and error as the focus of developing online courses is to "explore and trial new technology-enabled pedagogical approaches" (Futhey, 2015, p. 123).

With opportunities there exists a myriad of challenges related to learner engagement. Limiting courses to discussion boards is no longer an option (Negash & Powell, 2015). The first and foremost aim of an online quality learning would be to identify compatible technologies which support program and course learning outcomes, and mirror active learning practices of face-to-face classes since "all too frequently the lack of the human element in online classes is cited as an inherent weakness of online classes" (Pacansky-Brock, 2013, p. 5).

In addition, "online classes are most potent when they use multiple methods and processes in order to convey the information and the experience of applying the information" (O'Fallan, 2010, p. 199). As new ICTs enter the scene, more and more opportunities exist to increase learner interactions transforming the asynchronous teaching environment with "a strong sense of community" (Rovai & Jordan, 2004, p. 3). These online communities are designed to encourage "the feelings of friendship, cohesion, and bonding that develop among learners as they enjoy one another and look forward to time spent together" (Rovai, 2002, p. 42) followed by "trust" which is comprised of "credibility and benevolence" (Rovai, 2002, p. 42).

One such technology, VoiceThread, serves as a virtual community enabling learners to easily communicate, get involved and engage in a variety of activities, encouraging more collaborative interactions which is an integral part of online learning (Thurmond & Wambach, 2004). Furthermore, the tool promotes the "multi-sensory interaction on learning in general"

(VoiceThread Research, 2016, para.1) as well as supports the definition of learning as a human adaptation process (Kolb, 1984).

When VoiceThread was introduced to online learners, the bulk of research in the use of VoiceThread was found in K-12 literature (Negash & Powell, 2015; Hew & Cheung, 2013). Since then, research on VoiceThread in higher education has been noteworthy (VoiceThread Research, 2016). One such study revealed that university undergraduates in an *Introduction to Technology* course used an array of digital tools, including VoiceThread: "The findings show that the undergraduates were generally able to use unfamiliar technologies easily in their learning to create useful artifacts" (Ng, 2012, p. 1065). Another study by Ching and Hsu (2013) found that "about half of the participants indicated that they preferred VoiceThread to text-based discussion forums for collaborative learning activity" (p. 298).

When adapting such technologies, online educators also need to offer learners a context for reflective thinking (Siemens & Tittenberger, 2009) which entails "a mental process with purpose and/or outcome in which manipulation of meaning is applied to relatively complicated or unstructured ideas in learning or to problems for which there is no obvious solution" (Moon, 1999, p. 161). A reflection activity is an essential part of learning as it is "characterized by engagement, pondering alternatives, drawing inferences, and taking diverse perspectives, especially in situations which are complex and novel, calling for situational awareness and understanding" (Higgins, 2013, p. 1). In this study, engagement was "a term used to represent constructs such as quality of efforts and involvement in productive learning activities" (Kuh, 2009, p. 6).

As noted by Garrison (2003) "the collaborative and reflective properties of asynchronous online learning offer the potential to create an environment with both social and cognitive presence" (p. 48). Creating such contexts needs to be designed with one focus in mind "the cognitive aspects of the educational process if quality learning outcomes are to be the result" (Garrison, 2003, p. 48).

When VoiceThread was integrated into the course to enhance quality learning, a leading quality assurance model, the Quality Matters (QM) Higher Education Rubric General Standards and Specific Review Standards (QM, 2014) provided the much-needed evaluation with a standardized

checklist to ensure that quality online learning was delivered.

Quality benchmarking for course development, evaluation, and improvement of online and blended courses serves as a focal point for streamlining quality online delivery systems (QM, 2017). A leading quality assurance model, QM, utilizes design standards which focus on learning from the learner point of view with eight rubric areas: 1) course overview and introductions, 2) learning objectives or competencies, 3) assessment and measurement, 4) instructional materials, 5) course activities and learner interaction, 6) courses technology, 7) learner support, and 8) accessibility and usability (QM, 2014).

At the university where the research was conducted, QM Higher Education Rubric General Standards and Specific Review Standards (QM, 2014) had already been in use, and faculty members including the researchers had been trained in QM. As a result, the researchers were able to adapt the QM rubrics with ease and be able to identify and implement a compatible technology, in this case, Voice Thread (VoiceThread LLC, 2016).



Figure 1. How Creation Works in VoiceThread

VoiceThread supported "the objectives and competencies to enhance learning" (QM, 2014, p. 25) for online learners located away from each other, replicating similar face-to-face settings. As a result, at first glance, the researchers observed that the creation of a context in an online community which focused on quality learning and encouraged collaboration and active learning provided a rich and powerful experience for the learners since "collaborative learning promotes

social interactions and the development of learning communities for knowledge sharing” (Ching & Hsu, 2013, p. 299). Figure 1 illustrates the collaborative nature of the tool regarding how learners are encouraged to engage one another, building on the comments of others.

### 3. METHODOLOGY

#### Purpose of the Study

As part of the course improvement and delivery plan, the researchers sought to identify and adopt a collaborative tool with the intent of creating an online community to support active learning and learner engagement.

VoiceThread (VoiceThread LLC, 2016) was used for two online business courses, *Professional Development*, and *Methods of Individual Training and Job Analysis* at a business college of a state university in the fall semester of the 2016 academic year. These two courses were categorized as graduate level courses, but both courses enrolled undergraduates as well.

During the time of the study, the university had both on campus and virtual students. The online program had over 10,000 enrolled students, and the overwhelming majority of the online students were working adults with families.

The two asynchronous courses used in this study had been improved with the introduction of new technologies over the years. The goal of the technologies was to promote active learning and learner interactions by means of text-based blogs, wikis, discussions, and stand-alone reflections.

The following central question was posed to guide this preliminary study: Does VoiceThread promote active learning and learner engagement in an asynchronous setting to replicate face-to-face learning context?

#### VoiceThread

To be able to fully integrate a compatible web-based tool into asynchronous courses, the researchers started out with three questions: 1) What are examples of engaging and collaborative tools? 2) How can instructors utilize these tools to maximize learner opportunities to further develop learner beliefs and mental models? 3) What are some approaches that maximize collaboration and feedback opportunities, both between the instructor and learners and between the learners themselves?

The second step was to employ criteria to confirm the compatibility of VoiceThread (iTunes, 2016;

VoiceThread LLC, 2016) for these two online business courses. The following five criteria supported this decision.

First, VoiceThread had been integrated into the university’s official learning management system (LMS), Blackboard (Blackboard, 2017). This meant that the much-needed technology support for the researchers was present. In addition, training related to new technologies was frequently made available by the administration as part of faculty professional development.

Second, VoiceThread also supported the quality assurance model used by the researchers, and was compatible with the “course objectives and competencies to enhance learning” (QM, 2014, p. 25).

Third, with VoiceThread course learning outcomes were addressed covering all five capabilities: “intellectual skills, cognitive strategy, verbal information, motor skill, and attitude” (Gagné, Briggs, & Wager, 1992, p. 44).

Fourth, the platform offered a virtual community in which learners would easily communicate, get involved and engage in a variety of activities resulting in collaborative interactions which was an integral part of online learning (Kuh, 2009; Thurmond & Wambach, 2004).

Fifth, the platform also served as a context for reflection (Siemens & Tittenberger, 2009) which also supported learner engagement.

Once the decision to integrate VoiceThread into the course was made, the course was designed to offer learners, prior to the VoiceThread activities, and earlier in the course to complete an orientation session, make their introductions, and become acquainted with each other. These initial phases were particularly fundamental as “emphasis on online interactions can help generate a group identity, particularly if the interaction is a component of collaborative work” (Rovai, 2002, p. 53). In addition, the learners were also made aware of issues ranging from course design to understanding the rubrics which set the parameters for effective communication.

The course also provided the learners with a set of instructions as indicated in Appendices section (Figure 2, Figure 3, Figure 4, and Figure 5) to be able to understand the mechanics of the platform to make meaningful contributions. This would enable learners to develop a “strong sense of classroom community which [sic] could have a

positive influence on student academic performance" (Rovai, 2002, p. 43).

### **Case 1: VoiceThread and Course 1**

For fall 2016, the course entitled *Professional Development* was made up of a total of 17 students, including 12 undergraduate and five graduate students.

The course learning objectives were defined as follows: 1) Comprehend the causes, issues, and approaches to career change. 2) Discuss the value of networking and how you might apply networking to your career or job. 3) Discuss the value of professional learning communities. 4) Develop and establish a Personal Learning Network (PLN). 5) Discuss the impact of the following on your career path: organizational culture, diversity, and coaching and mentoring. 6) Propose a written a personal six-part Personal Marketing Plan (PMP). 7) Describe your assessment of your own Emotional Intelligence (EI). 8) Determine the work force of your chosen career path in the year 2030.

The two textbooks required for the course were: *Emotional Intelligence 2.0* (Bradberry & Greaves, 2009), and *What Motivates Me: Put Your Passion First* (Gostick & Elton, 2014). The course as it appeared in the syllabus was defined as the study of various aspects of professional development and their importance to success in the business environment. The emphasis of the course was on developing an understanding of the role of motivation and emotional intelligence. Learners were required to mold their career, interviewing techniques and resume development, and to build their reputation with LinkedIn (2017), and manage their organizational and personal change. In addition, learners took two self-assessments including one on motivation and another on emotional intelligence (EI) answering two questions: 1) What motivates and inspires you; and 2) can you read your own emotions as well as the emotions of others?

The course included a total of six VoiceThread activities for the learners. The instructor used the following detailed instructions for each activity as described below.

Instructions for Activity 1. Select one of the topics listed below and place in VoiceThread. Relate one of these items to your work experience. Respond to one other classmate. I have posted my video to begin the use of this communication tool. Be sure you meet the Voice Thread rubric requirements. The rubrics are all found under "Start from Here" on the left-hand menu. The

topic choices are as follows: 1) Define "job sculpting." Have you sculpted or been sculpted? Tell us about your experience. 2) Does Jimmy Casas' story have any meaning to you? 3) Does Steven Reiss' story carry any meaning to you? 4) React: The motivations that drive us are the hinges upon which our lives swing, and it is only when we understand what makes each of us passionate about our work that we can begin to bring about a personal boom in our activity.

Instructions for Activity 2. Select one of the following and provide citations from your textbook, *What Motivates Me: Put Your Passion First* (Gostick & Elton, 2014) in your analysis: 1) What helps people feel engaged, enabled, and energized in their daily work? 2) What factors increase or decrease levels of job satisfaction? 3) What is it that makes people want to quit a job? 4) Respond to the following comment: What motivates a labor-and-delivery nurse is vastly different from what motivates an emergency room nurse or an oncology nurse: "But we have been treating them all the same—they have all been 'nurses' to us" (Gostick & Elton, 2014, p. 27).

Instructions for Activity 3. Read chapters 1-2 of *Emotional Intelligence 2.0* (Bradberry & Greaves, 2009), and take the Emotional Intelligence Appraisal. Select one of the items below and respond in VoiceThread. Respond to one other classmate. 1) Can you relate to Butch Connor's story? Explain. 2) "It's so easy to forget that we have emotional reactions to almost everything that happens in our lives whether we notice them or not" (Bradberry & Greaves, 2009, p.14). Comment. 3) React to the image on page 19 of your book. 4) React to the image on page 20 in your book.

Instructions for Activity 4. After you review the documents below, share your recent or past job search experience. What did you do well? What would you change? If this does not really apply to you, how do you intend to conduct your job search? Place your thoughts in VoiceThread and respond to one other classmate.

Instructions for Activity 5. Select one of the relationship management strategies. Where have you seen it applied? Comment on the event and reply to one other classmate.

Instructions for Activity 6. Tell us five ideas, concepts you feel you now have a greater understanding of. Or another way of putting it, what do you know now that you did not know

before this course? Respond to one other classmate.

### **Case 2: VoiceThread and Course 2**

The course entitled *Methods of Individual Training and Job Analysis* enrollment for fall 2016 consisted of a total of eight students including five undergraduate and three graduate students. The textbook used for the course was: *Planning Programs for Adult Learners: A Practical Guide* (Caferella & Daffron, 2013).

The course description as appeared in the course syllabus was to examine and identify planning procedures, and strategies that would lead to effective talent development programs for adults who would learn in a wide variety of settings. Learners would gain skills in course planning models, needs assessment, marketing, evaluation, and program management.

The course objectives were as follows: 1) Explain how you can add value by help building a learning organization. 2) Discuss the challenges of training a multi-generational workforce. 3) Analyze "current trends in training and development and awareness of the current state of the profession." 4) Examine the incorporation of social media tools into learning events. 5) Discuss the role of feedback and how feedback is effectively utilized to enhance learning. 6) Discuss how the positive role storytelling can play in learning by telling an effective story. 7) Build the components of effective new hire training/on-boarding programs.

The course included a total of six VoiceThread activities with explicit instructions from the instructor as described below.

Instructions for Activity 1. Reflect on each of the nine assumptions in the textbook. Select two assumptions. How have you seen these assumptions at work in your company or in past training assignments? Where have they not been taken into consideration in your experience? What were the results? Place in VoiceThread. I have started the conversation. Here is the process, acknowledge what you have heard from someone who posted before you by name. Then, add your comments to the chain. As your instructor, I will also enter my comments into VoiceThread more than once. Be sure you review the rubrics for VoiceThread in the "Start from Here" tab on the left hand menu of Blackboard.

Instructions for Activity 2. Chapter 3, pages 75-77 lists 14 chapter highlights. Select any two chapter highlights and comment related to where

you have seen them in practice. Place in VoiceThread. Be sure you review the rubrics for VoiceThread in the "Start from Here" tab on the left hand menu of Blackboard.

Instructions for Activity 3. Look over Exercise 4.3 on page 105 of your textbook "Negotiating in situations that are grounded in deeply held values that differ among stakeholders." Select one of the three questions and reply in VoiceThread.

Instructions for Activity 4. On page 127 of your textbook, you will find six chapter highlights. Select one chapter highlight and comment on where you have seen it in practice and post in VoiceThread. Respond to one other classmate.

Instructions for Activity 5. Select a chapter of your choice. Place your reactions in VoiceThread by responding to the following questions: Where have you have not seen it in practice and what were the results? To help you prepare for the mid-term on chapters 1-7, answer the following questions: What is the most imparting new concept you have become aware of? Why is it an important concept? Place your comment in VoiceThread and reply to one other classmate.

Instructions for Activity 6. Tell us five ideas, concepts you feel you now have a greater understanding of. Or another way of putting it, what do you know now that you did not know before this course? Respond to one other classmate.

### **Discussion**

In all activities, based on choice theory (Beresford & Sloper, 2008), learners were given a choice and asked to select the topic from a list of alternative issues related to the course objectives tied to the reading. In addition, while initially encouraging the use of video, learners had a choice in response medium- video, audio or written text.

Moreover, learners were asked to reflect and relate the materials to their real-life experiences. The method for learner response was to respond to a classmate of their choice and then add their unique comments.

In both courses, the last activity was to reflect on the entire course by means of using the following instructions: Tell us five ideas, concepts you feel you now have a greater understanding of. Or another way of putting it, what do you know now that you did not know before this course? Respond to one other classmate. This reflection was adapted from an After Action Review (After Action Review [AAR]. 2017) which served as tool

used at the end of the course to improve their learnings. The AAR (2017) is a powerful tool which can be used during or after a completion of a project and “can help future teams learn your successful strategies and avoid pitfalls you have worked to overcome” (para. 1).

Learners responded to a classmate of their choice, and the instructor also responded, individually and collectively. In all cases, by responding to one other classmate, learners were encouraged to engage and reflect.

Similar to online discussion forums, the learners expected instructor feedback related to the activities. The instructor provided individual as well as collective feedback using different technologies and tools. This allowed the VoiceThread community conversations to remain as a standalone community in which conversations flowed without interruptions.

Once the learners started to build conversations, the instructor used various other tools for feedback. One feedback tool was audio podcasts, via Soundcloud (Soundcloud Tumblr, 2017) which is described as “an audio platform that lets you listen to what you love and share the sounds you create” (Soundcloud Tumblr, 2017, para. 1). In this case, at times the link was stand alone and, at other times, feedback was provided on a set of notes taken as the instructor listened to the VoiceThread comments of each learner.

Other times video feedback was provided with a link to a specific YouTube (2017), or a link to a video created using Swivl (2017), a tool that allows split screen, presenter on the left and slides on the right. Finally, occasional feedback was presented to learners in the form of a pdf file related to the overall topic.

#### 4. FINDINGS AND CONCLUSIONS

Throughout the course, the instructor, who was one of the researchers, was able to observe all learner activities as the numbers of learners in each course did not make up a large group. The instructor took daily notes regarding their collaboration and their comments and shared it with other researchers. Other researchers also had access to the course.

The last reflection activity in both courses offered a platform so that the learners could provide and share their feedback (AAR, 2017; Moore, 1989; Quality Matters, 2014, 2017). These reflections provided the researchers with textually rich data (Creswell, 2015).

These data included positive adjectives, nouns, noun phrases, and verbs describing learner feelings, thoughts, and perspectives on active learning and learner engagement. One of the researchers had a linguistics background and acted as an expert in deciphering the lexicon used by the learners. These texts did not have any negative words or phrases. Findings included positive phrases which indicated that VoiceThread was a useful tool which promoted active learning and learner engagement. Since this was an initial analysis with two small groups, further research is recommended regarding ICTs and learner engagement and active learning with larger groups.

This preliminary inquiry demonstrated the ways in which VoiceThread (VoiceThread LLC, 2016) could promote a dialog, and engagement between learner and instructor, learner and content, and learner and learner by encouraging a collaborative learning environment. In addition, by offering a supportive environment, VoiceThread was able to encourage active learning and learner engagement. The tool also proved to be an effective learning tool which also met QM Higher Education Rubric General Standards and Specific Review Standards (QM, 2014), creating a supportive environment and encouraging more active learning.

Anecdotal data and qualitative analysis of learner feedback, learner-learner interactions, instructor observation and verbal communication throughout the course indicated that VoiceThread (VoiceThread LLC, 2016) was instrumental in encouraging more interactions and support, resulting in creating a much-needed virtual community. Learners in both courses indicated that they “belonged” to a community, they could “trust” their classmates related to their “experiences” and “rely on them” when needed. These findings supported the concepts of classroom community articulated by Rovai (2002). Similar findings were noted by Fallon (2011): “...majority of students, using the classroom helped build trust and rapport and went some way toward developing a sense of identification with others in the group—three important components in relationship formation.”

The words and phrases used in describing learner feelings and thoughts throughout the two courses were positive. All learners used similar phrases to describe their feelings: “felt challenged,” “felt supportive,” “felt successful,” “felt organized,” “being helped,” “being encouraged,” and “felt needed.” Majority of the learners indicated that the interactions with their classmates “helped”

them “improve” their skills and used descriptions like “better team members,” “was able to help solve problems,” “able to listen to others.” In addition, reflections by means of video, text “encouraged” learners to “share their experiences and learn from the experiences of each other.” Learning from each other was fundamental as the two courses taught professional training and prepared them for the workforce.

Furthermore, all learners revealed that being part of a “learning community” encouraged them to be “open” with other learners and their instructors. Many learners revealed feelings related to a “supportive and friendly community” by noting that they were “not intimidated,” they did not feel “peer-pressure,” they felt that they “belonged” to a community and “enjoyed studying with others.”

This rich feedback from the learners supported the capabilities and effect of VoiceThread as a powerful tool since learners were able to use their method of choice to communicate and engage with others as the tool offered “over 50 different types of media... five commenting options” (VoiceThread, 2017).

During the learning process, the instructor also observed how learners communicated with their classmates as if they were in a face to face learning setting. When verbally asked by the instructor what learners felt using VoiceThread as a course tool, all learners in both courses responded positively with phrases similar to felt part of the group including “felt belonged,” “felt included,” felt welcomed by my friends.” Having experience in face to face courses, all learners were able to make comparisons as well. When asked verbally by the instructor how learners viewed this virtual community setting when compared to a face to face learning setting, almost all learners with experience in both types of learning contexts indicated that they found support in their virtual groups just like they did in their face to face classes. In fact, 70% of the learners went further and indicated that they found more support in a virtual setting.

Related to active learning, all learners felt they were “proactive in their learning” and “felt engaged” in active learning. Having a sense of “belonging” in a supportive online community supported more “interactions” with other learners, and thus encouraged learning.

Regarding implications, although this is a preliminary analysis, online learning, when compared to face to face learning, should not be

considered a system that lacks quality. The general concept of online courses not offering the same quality as a face to face setting can be misleading. Online courses can provide learners with similar face to face contexts, and possibly much more, provided that these courses integrate compatible and innovative technologies in their courses to promote learner interactions.

In addition, using a quality benchmarking model is another fundamental step when it comes to delivering quality online programs.

## 5. FURTHER RESEARCH

This paper was limited in that it presented the use of VoiceThread (VoiceThread LLC, 2016) in two online courses as part of business education curriculum. In addition, the two groups in the study were relatively small. The researchers recommend that future studies of ICTs in higher education online courses be conducted, particularly with larger groups. While it is easier to manage smaller groups and have more interactions, the researchers recommend exploring learner engagement using larger groups.

The researchers suggest the following research topics to determine the efficacy of ICTs regarding active learning and virtual learning communities: 1) a longitudinal study with larger groups to determine the efficacy of ICTs in supporting active learning and learner engagement; 2) a study on the effects of learner-learner interactions on active learning in larger asynchronous classes; 3) a correlational study to determine the relationship between ICTs and retention in learning communities; and 4) an explanatory study on ICTs as it relates to learner engagement using National Survey of Student Engagement Indicators & High-Impact Practices (NSSE, 2016).

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## Appendices



Figure 2. Instruction for VoiceThread Self-Introduction. Learners were given the following instructions to get started: 1) Hover your mouse over the VoiceThread you want to share. The overview will pop up. 2) Click on the "Share" button. As directed by VoiceThread (VoiceThread LLC, 2016).

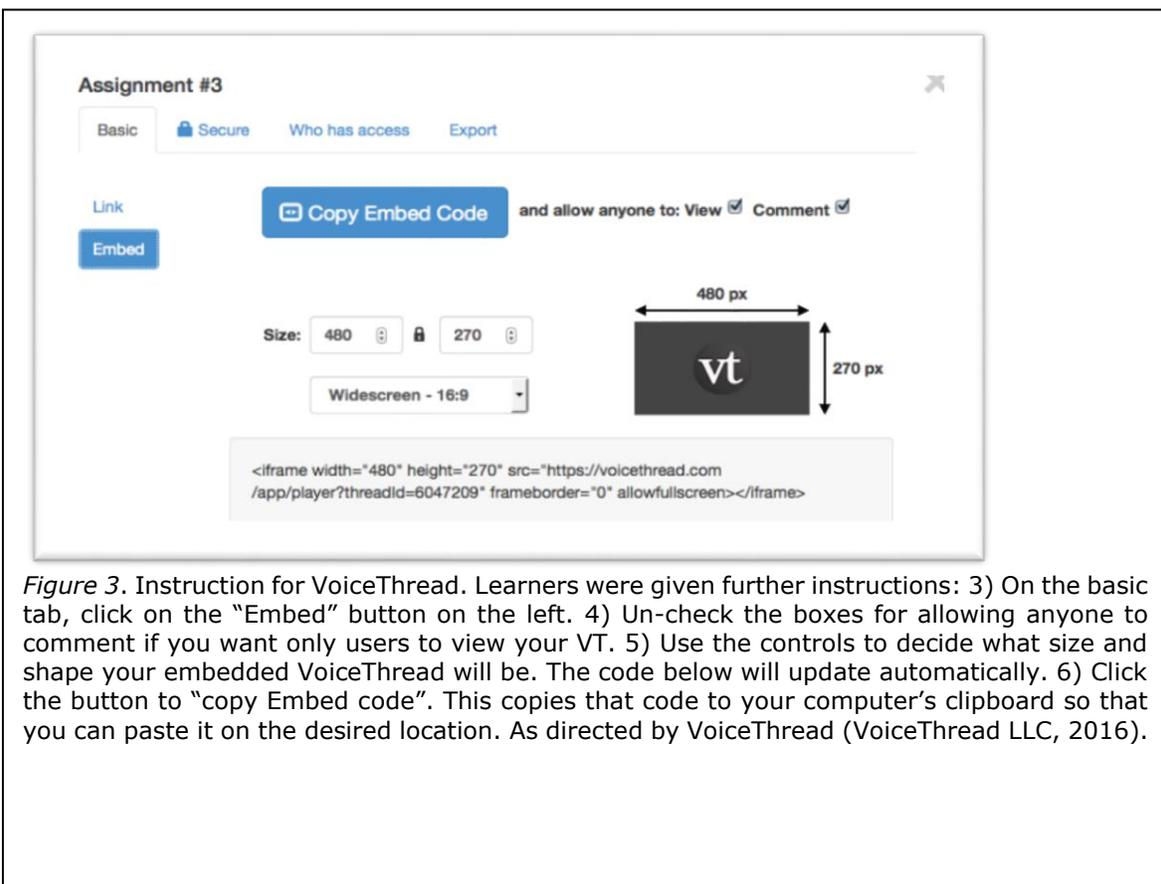


Figure 3. Instruction for VoiceThread. Learners were given further instructions: 3) On the basic tab, click on the "Embed" button on the left. 4) Un-check the boxes for allowing anyone to comment if you want only users to view your VT. 5) Use the controls to decide what size and shape your embedded VoiceThread will be. The code below will update automatically. 6) Click the button to "copy Embed code". This copies that code to your computer's clipboard so that you can paste it on the desired location. As directed by VoiceThread (VoiceThread LLC, 2016).

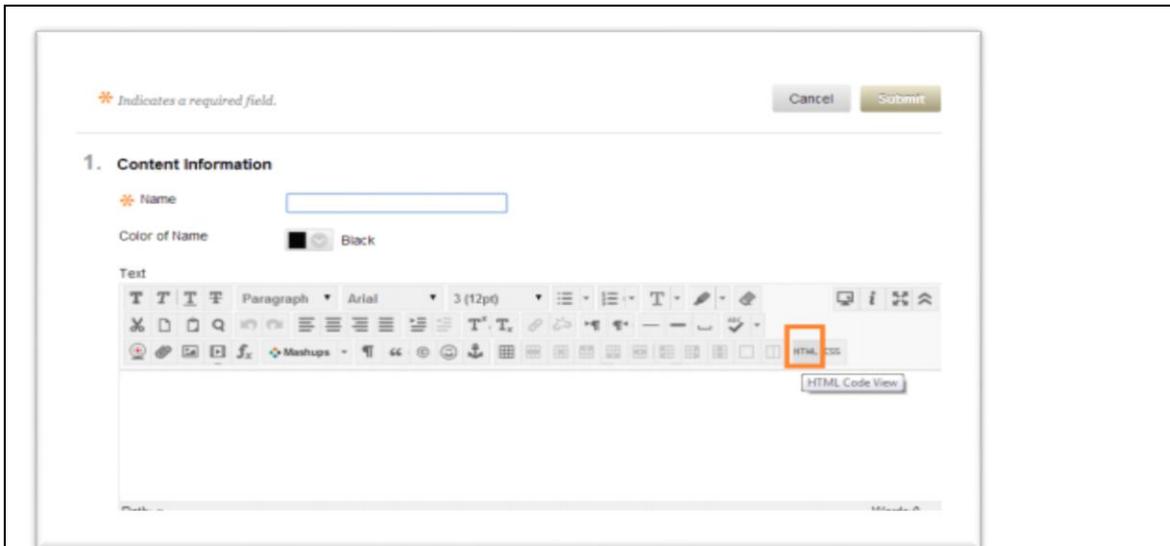


Figure 4. Instruction for VoiceThread continued. 7) Go to your Blackboard course where you would like to share the VoiceThread presentation. Build content and create an Item, then paste your embed code in HTML box. As directed by VoiceThread (VoiceThread LLC, 2016).

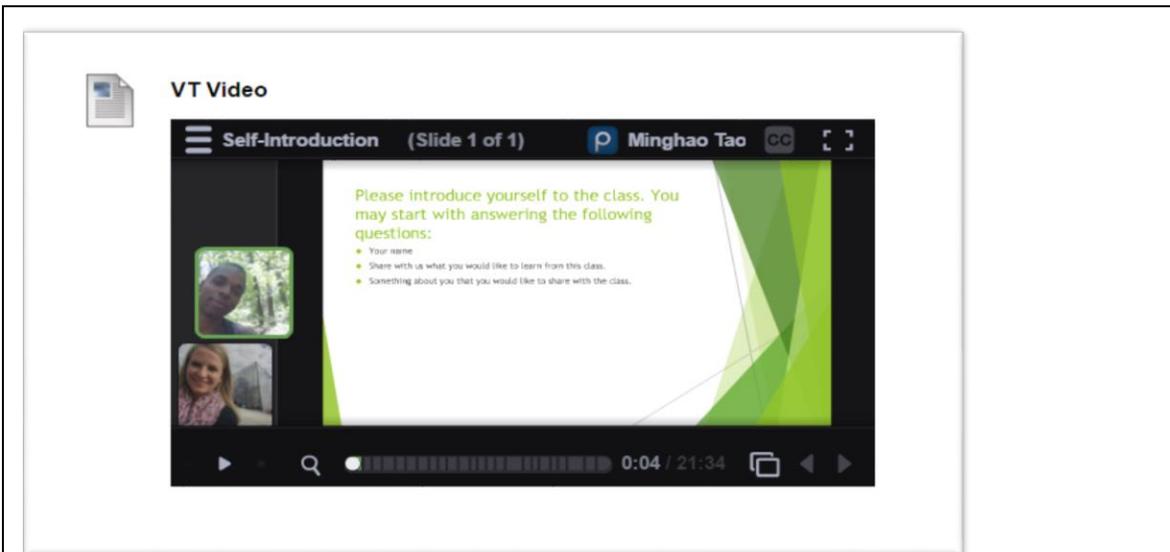


Figure 5. Instruction for VoiceThread continued. 8) After you click submit, the VoiceThread will show up to students in your course like the following image. Students can directly view/comment your video inside of your course without going to VoiceThread website. As directed by VoiceThread (VoiceThread LLC, 2016).