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ENHANCING CREATIVITY AND OPENING UP LEARNING THROUGH VIRTUAL MOBILITIES

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Introduction

In the recent years the educational environments changed constantly as new technologies are used and the influence educational paradigms, methods and delivery. When free and open source software and the use of open educational tools are used on higher education systems the result is in a profound impact on how students learn.

Many of the online tools that students use in their daily lives are making their way into the classroom to foster the development of digital literacy skills (Schoffner, 2013). Several innovative ideas to foster the use of ICT and the development of digital literacy skills. The concept of virtual mobility can be defined as a set of ICT supported activities that realise or facilitate international, collaborative experiences in a context of teaching and/or learning it. Since 2008, the authors have offered TalkTech, an online collaboration enabling students from their universities to research technology trends, share their experiences, and create multimedia objects to present their findings (Frydenberg & Andone, 2010). As members of international teams, they must produce a viable digital media product created working with international partners located on another continent. Throughout the six-week project they must select appropriate digital tools to support with their communication and collaboration efforts, manage time zones and technologies, and track their progress. The purpose of this collaborative project is to create a controlled work environment which models the global enterprise, where the use of web-based collaboration and communication tools are commonplace. The analysis in this paper will show how this project supports Wheeler's characteristics of digital literacy (Wheeler, 2012).

TalkTech 2015 Project Description

The TalkTech 2015 project matches first year business students in IT 101, an introduction to technology concepts course at Bentley University, a business university in the United States, and Bachelor in Telecommunications engineering students in the Technologies of Multimedia (TMM) course in their final year at Politehnica University of Timisoara in Romania. 34 American and 41 Romanian students participated in the TalkTech 2015 project. All of the students who participated spoke English with fluency, but the Romanians were about 4 years older than American partners.

Both IT 101 and TMM teach students basic digital literacy skills, including creating and posting videos, making personal web pages, interacting with social networking sites, and using a search engine as a research tool. Students also learn to develop new media and use Internet technologies for communication and collaboration. The TalkTech project give students the opportunity to develop and demonstrate their skills in these areas, as they must become facile with creating, consuming, posting, and embedding multimedia, using the web as a research tool, and communicating online using appropriate methods. Many of the tasks involved creating audio or video clips in which students from both countries participated simultaneously. Students needed to rely upon their own knowledge, experience, or research to find appropriate methods to complete these tasks without recommendations from their instructors.

Students formed groups of three or four by selecting a topic. Each group worked together for a period of six weeks to research the topic, and share their findings in an interactive infographic, using ThinkLing. Students met with their international partners over this period both synchronously (using voice, video, and chat) and asynchronously (via e-mail, forums and blogs) to share their research on these popular technology trends. The instructors' input was minimal, providing general supervision to make sure the students were actively working together to meet project milestones. The instructors asked students to use the blog and file sharing capabilities of ViCaDiS (Vasiu & Andone, 2011), a customized virtual campus application with blogging and file sharing capabilities for each group to promote team collaboration. Many students also used familiar social and digital media tools for collaboration. Table 1 shows the topics chosen for TalkTech 2015, all of which are current technology trends of interest to digital students.

Table 1: TalkTech 2015 topics

1.	How is augmented reality being used in various businesses or industries?
2.	How does social media influence customer experiences?
3.	What are the most popular messaging apps, and who uses them?
4.	What are the biggest cyber security threats facing Internet users today?
5.	How does streaming audio and video impact the entertainment industry?
6.	How do mobile technologies and the Internet enable new business models through crowd sourcing?
7.	Are MOOCs threatening the future or value of a traditional university education?
8.	Are wearable devices a fad, or the future direction for staying healthy?
9.	Should you license your photos using Creative Commons on media sharing sites?
10.	Does information privacy matter in the age of big and open data?
11.	When it comes to the Internet of Things, are we there yet? If not, what is possible in the future?
12.	How smart are Virtual Personal Assistant apps such as Siri and Cortana?
13.	What factors are most important in increasing the adoption of mobile payment technologies?
14.	How do personal live streaming video apps change the way information is shared over the Internet?
15.	What features do open-source mapping apps have over Google or Bing Maps?

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The deliverable for this project is an interactive infographic created using ThingLink (ThingLink). Educators have used ThingLink and other web applications in the classroom in assignments to develop higher order thinking skills. (Schoffner, 2013) A content curation tool, educators introduce ThingLink in the classroom to have students create interactive maps, reports, images, and stories. Students posted links to their completed ThingLinks on their personal websites, as well as to their accounts on Facebook and Twitter. Text annotations were prepared in each student's native language, and then translated using Google Translate. Students created their own original background images for their ThingLink graphics. Their resulting ThingLinks showed creativity, appropriate research skills using online tools, and a command of several web based collaboration, communication, and multimedia creation tools to create highly visual and engaging presentations, such as that shown in Figure 1.

Figure 1. ThingLink on Wearables; text annotation translated using Google Translate

In this year projects, among the artifacts required, each student needed to prepare a micro-video to illustrate some aspect of the topics, and group members could discuss their ideas for the videos with each other. The assignment given was for each person to create his or her own original Vine video to present some aspect of the topic. No further qualifications or requirements were specified. The instructors did not provide any instruction on how to use Vine, other than to introduce it in class and ask students to install it if they had compatible mobile devices. 68 of the 75 participants successfully created micro-videos as part of this project. Given the time constrain given by Vine, of only 6 seconds, students needed to use their creativity for better expressing their message. Some set up different scenarios to illustrate their assigned technology trends and concepts in unexpected ways. 14 of the student-created micro-videos had one scene containing the student reading or reciting a definition while looking in the camera, as if taking a video selfie. While the majority of the micro-videos had one, two, or three scenes, several videos had more than six scenes. Two groups used mobile apps such as Flipagram, to create micro-videos from their photos and videos, and set them to

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music. Some of the videos that used six scenes implied a description of the best messaging app (each scene depicting a messaging app), or what MOOCs (Massive Open Online Courses) are (a storyline from a book to an online interactive course). Some other which were using only a single shoot, but with a specific set up and preparation as showing an example of Internet of Things Vine (using a mobile phone, laptop and a TV to send an image), Figure 2.

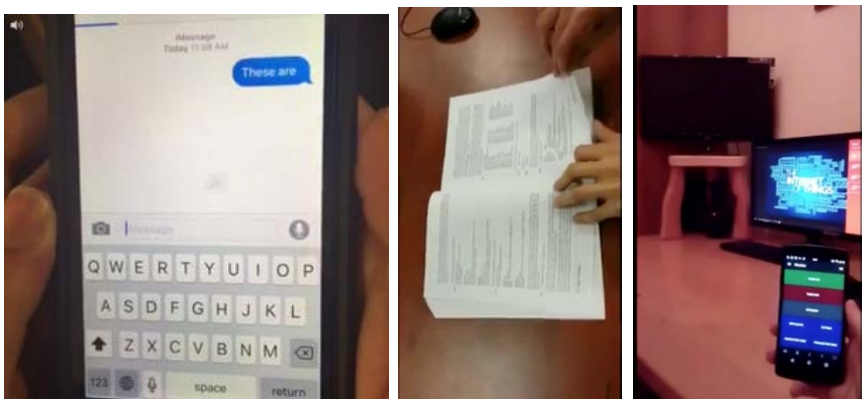

Figure 2. a) Messaging Vine , b) MOOC courses Vine, c) Internet of Things Vine

Analysis

Several evaluations were used for this project, to see how students were able to develop their digital literacy skills, the tools they chose, the challenges they faced and how this enhanced their creativity. The instructors also wanted to ascertain the variety of approaches that students would come up with to solve these problems. The authors relied on interviews and usage data to gather an impression of how students interacted with and used open personal learning environment created on ViCaDiS. In addition to the usage date, students voluntarily completed an anonymous online questionnaire based on the ZEF method (http://www.zef.fi) Both studies are qualitative and are intended to guide possible future education methods rather than to claim the value of the tools used. To evaluate the students' work for a course grade, both instructors independently graded each group's project. Grades were based on technologies used, evidence of documentation of the process on the group's Blog on VICADIS, and quality and accuracy of content presented in the interactive ThingLink infographic. The instructors shared their evaluations with each other, and then determined final grades for their own students.

The students' use of different technologies for communication during the project was dependent on the task to be performed, the project timing (they used more email at the beginning and more social media tools towards the end of the project), and the tasks they needed to accomplish. They used their smartphones for working together, recording the videos, and holding online live communications. Figure 3 shows the technologies they like to use, and those that are important to them.

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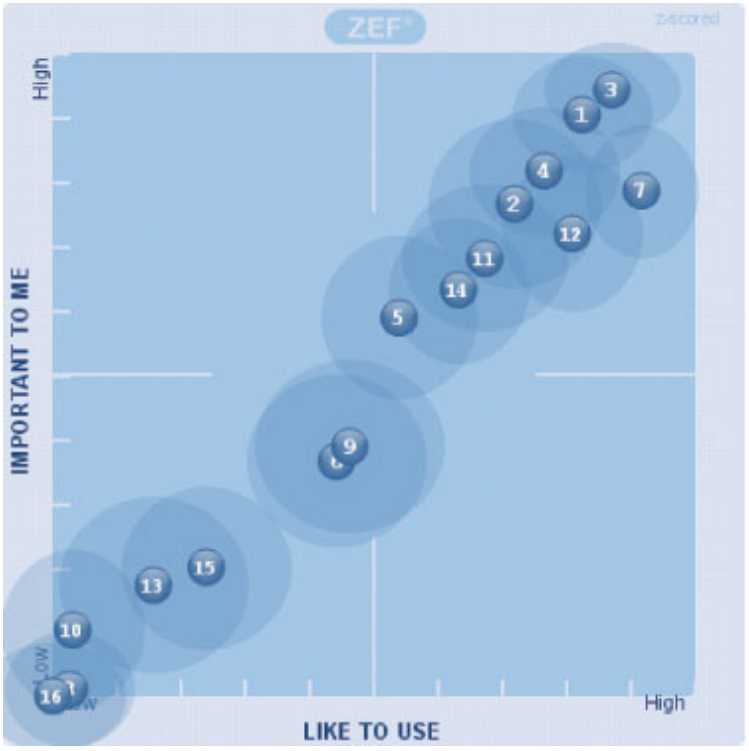

Figure 3. Student attitude toward technologies used in TalkTech 2015

Regarding their use of Skype, some students commented that it is "a valuable tool when trying to communicate…" but recognized that it is "important to have a good internet connection when talking internationally." Few students considered their use of the ViCaDiS blog as using a blog, even though all students were required to post their project milestones to it.

Even if the students considered the use of Vine as not so important, their preparations and the various approaches for their Vine videos, proved that they dedicated a big chunk of their project time for the Vine videos. In an open-ended question at the end of the project, five of the students said that "making the Vine" was the part of the project that they enjoyed the most. When asked the extent to which they agree with the statement, "Using Vine, I was able to express a complex topic in a simple way" the mean answer was 45.9% answered that they Agree. When asked which tools allowed them to be most creative, 72% listed Vine as at tool that allowed them to be creative. As for Vine's six-second delay, many students agreed with the sentiments that "You have to think hard about what you're going to say and how you can say it in six seconds."

As we considered that using new digital tools which allows student to communicate ideas by creating digital stories, enhanced their creativity, we investigated their perception upon this – Figure 4.

Students evaluated YouTube as the tool which allowed them to the most creative, followed by Facebook, Vine and ThingLink, as a proof that the media-rich tool are the most sought after, when expressing their thoughts. From tools which allows them to include large texts, links, photos and videos (as Facebook or YouTube) to tools which constrained them to 6 seconds of images, students used them within a clear purpose and following a clear idea and result.

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By not giving them any clear suggestions on the tools use, or the content to create, tutors have left the students to express freely which improved their abilities of organising, sharing, filtering and decision-making, transliteracy, clarity in communication, self-broadcasting, creating rich and engaging content and managing independently and innovatively their digital identity, all criteria of digital literacy. The sought after need to control of the young, digital students (Vasiu & Andone, 2011), with only the constraint given by the technology or tools used, enhanced students' creativity, concept understanding and learning.

Figure 4. Students perception on which tools allowed them to be most creative

We considered that TalkTech 2015 project (as well as the previous ones since 2008) are international virtual mobilities, with a strong focus on developing digital literacy skills, communication skills, multicultural abilities and entrepreneurial perspectives.

Conclusion

Today's information society demands digital literacy in order for citizens to be active contributors in the workplace and in the world. The TalkTech 2015 project introduced the task of creating micro-videos to illustrate technology concepts. While some students were familiar with Vine, for many, the task of creating micro-videos was new, and for all, the challenge of conveying the essence of a technology concept in six seconds proved to be a challenging exercise in critical thinking and planning. While some students simply read a definition of their topic, the majority chose to present their understanding in ways that were innovative and creative. The TalkTech 2015 project modelled a global workplace where students developed and applied their digital literacy skills using web-based technologies to interact with their peers across continents. In doing so, they gained new understanding of the power of their tools or technologies of choice for efficient and effective communication and collaboration.

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