Transforming Language Learning through Technology

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Abstract
As is the case in many educational systems worldwide, secondary education in Thailand is largely teacher-centered. Students transitioning from this educational system to liberal arts universities in Thailand and beyond face serious disadvantages. The liberal arts model, which emphasizes enquiry, problem solving, and critical analysis, stands in stark contrast to teacher-centered models of education, which value passivity, obedience, and memorization. This paper presents various educational technologies that are utilized to prepare students to enter an English-medium liberal arts program at a Thai university. These tools include online resources such as Google Drive, Hangouts on Air, and VoiceThread. These technologies have the potential to change many aspects of language teaching. Students collaborate to conduct research and to create content that is relevant to their own experience, practicing their language skills and engaging meaningfully with their peers. In the process of researching, discussing, and presenting their findings, students construct their own understanding of contentious topics and controversial current events. Through this process of exploration and interaction, students are empowered to take greater responsibility for their own learning, beginning a personal transformation that will continue throughout their time in the liberal arts program. This paper will present several applications of educational technology in the EFL classroom and, using the *RAT — Replacement, Amplification, and Transformation* framework, assess the degree to which these applications transform learning.

Keywords: Educational technology, curriculum, EFL

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Introduction

A student-centered learning environment is a goal that is often sought, yet rarely attained. Thailand is a case in point. There have been a number of attempts over the last two decades to shed the straight-jacket of rote learning and shift the paradigm to one where student needs drive pedagogy (Hallinger & Lee, 2011). Despite these attempts, Thai students graduating from high school continue to lack the experience of enquiry, problem solving, and critical analysis in formal education that a more student-centered approach offers. This shortcoming is more apparent and problematic when those students enter a liberal arts university program where the skills listed above become indispensable.

Thai students competing to enter Mahidol University International College face the challenges of adapting to the liberal arts model of education and an English language medium of instruction. Students unprepared for instruction in English have the option of attending the Preparation Center for Languages and Mathematics (PC) where they can hone their skills to a point that is sufficient to enter the university. The PC mission statement indicates that rather than simply readying students' language ability, PC is tasked with "foster[ing] their ability to be self-reflective and responsible learners." Critical to achieving this goal is creating a learning space that emphasizes autonomy, thereby enabling student development of intellectual and practical skills that underlie a successful liberal arts education. Such a learning space can be created through certain applications of educational technology.

Assessing Technology Integration

Given the abundant choices for integrating technology into the classroom and the difficulty in establishing its usefulness, Hughes, Thomas, and Scharber (2006) designed an assessment framework that "look[s] deeper to what end technology serves rather than simply focusing on the variety and number of software programs teachers use" (p. 1). Teachers are likely to be bombarded with examples of technology uses, particularly computer based options, but may have little idea of their pedagogical value in achieving curriculum goals. With this challenge in mind, Hughes et al. (2006) present a working framework that can guide the process of employing technology in the classroom called *RAT — Replacement, Amplification, and Transformation*. "Technology as Replacement" includes uses of technology that "in no way change established instructional practices, student learning processes, or content goals" (Hughes et al., 2006, p. 2). The use of technology, in these cases, simply exchanges one technology (paper, pencil) for another (tablet). In "Technology as Amplification," the effect is one of allowing the learner to improve productivity, what Hughes et al. (2006) describe as "increasing the efficiency or productivity of instruction, student learning or the curriculum" (p. 3). When "Technology as Transformation" takes place, a fundamental change in at least one of the dimensions of instructional practices, student learning processes, or content goals has occurred. Pea (1985) explains that the use of technology "has opened up new possibilities of thought and action without which one comes to feel at a disadvantage" (p. 175), an explanation that has also been quoted by Hughes et al. (2006) in the article "Assessing Technology Integration." Technology has transformed learning, and is akin to Cuban's (1988, p. 84) "second-order changes" that produce "new goals, structures, and roles that transform familiar ways of doing things into novel solutions to

persistent problems" (p. 94). A major example of the transformative potential of technology is dramatically expanded opportunities for collaboration, not only the ease of which technology has enhanced, but the breadth, scale, and varying degrees of coordination that are now available. What Shirky calls the "collaborative penumbra" (McKinsey & Company, 2014) is one iteration of a transformative use of communication technology, whereby collaborators may have no coordination yet share the work involved in achieving a mutual goal.

As technology itself transforms, teachers themselves must become learners to be able to achieve transformative uses of technology. Hughes (2005) describes how for some teachers, integrating technology into the classroom is a "daunting" (p. 278) task, one that "requires practicing teachers to assume a learning stance." Thus, technology in education can take on the mantel of transformative innovation, but in many cases it essentially maintains the status quo when it remains as a replacement or an augmentation. For transformation to take place, student and teacher technological literacy itself must reach the level of what Davies (2011) calls "phronesis" (p. 45), where there is no fear of and a proficient ability to learn new technology. Effective use of technology in learning, then, depends on the learner's technological literacy, which include that they "understand the learning task and recognize ways the technology will facilitate attainment of the learning goals" (Davies, 2011). In this way, technology is a means to an end, or curricular goal, and is integrated into the classroom to the extent that it facilitates goal achievement, not merely because it is available.

Applications of Educational Technology

Three primary educational technologies are used at the Preparation Center for Languages and Mathematics: Google Drive, Hangouts on Air, and VoiceThread. Other tools are assessed on an ongoing basis, but these three are used consistently by a significant proportion of the teaching faculty. Significantly, these are all free products (although VoiceThread does charge for the use of premium features).

Google Drive allows the creation, storage in the cloud, and sharing of several types of files. Once files have been shared, simultaneous editing and collaboration by multiple users is possible. The three primary file types are documents, spreadsheets, and presentation slides; less common file types include forms, drawings, and fusion tables.

Google Docs have several uses, the most common being peer and instructor feedback. When a document is shared, the owner of the document can grant one of several levels of permission: view, comment, or edit. Students assigned to give each other feedback are asked to give permission to comment only, and students give their teacher permission to edit the document. A revision history is also available to anyone with permission to edit the document. This is particularly useful to teachers, who are able to check the evolution of the document over time in order to gauge whether students have made a genuine effort to edit their work.

Google Sheets are extremely useful for administrative purposes. At the Preparation Center for Languages and Mathematics, an attendance spreadsheet that contains the students' names, nicknames, and ID numbers is shared with all of the relevant teachers, who can then input attendance records. In order to protect the students'

privacy, a version of the spreadsheet containing only the ID numbers and attendance record is posted on the students' website. The students' version of the spreadsheet automatically retrieves data from the teachers' version, so the students' version does not need to be updated manually. Using a Google Sheet to record attendance provides a permanent record students' attendance. Also, the spreadsheet is able to calculate and display the total number of absences for each student.

Another useful tool is Google Slides, which allows users to collaboratively and simultaneously edit and comment on presentation slides. One straightforward application of this is have students create individual or group presentations, which can be shared with each other and with the teacher. There are other uses of Google Slides in addition to the creation of individual or group presentations. For example, each student or group of students can be assigned one slide in which they are to provide their text or multimedia response to a given prompt. Organizing an assignment in this way provides more structure than a similar assignment in Google Docs. Having a limited amount of space also encourages students to be succinct in their responses and to follow basic design principles. This tool can also be used in conjunction with VoiceThread in order to provide narrated slides.

Hangouts on Air is a feature of Google+, which is primarily a social networking service. Hangouts allows users to chat and share photos. Additionally, they can start a group video call that includes up to 10 participants. During the video call, users can easily view files from Google Drive together. The user who initiates the call has the option of recording the video call and uploading it to YouTube. As a default, the video is uploaded as private, which means that it is not searchable.

This product is extremely useful in language classes, as it allows teachers to assign homework that involves listening and speaking. In the upper-level classes at the Preparation Center for Languages and Mathematics, students complete discussions about controversial issues for homework. Topics include nuclear power, genetically modified foods, and business ethics. Teachers provide several texts and lectures about a topic, and the students conduct independent research to further develop their understanding. After being assigned to a group, the students choose a mutually convenient time to begin the Hangout on Air. Afterwards, one member of the group submits a link to the uploaded YouTube video of the discussion.

The shared videos can be used in a variety of ways. Segments of the videos can be played in class in order to analyze aspects of the students' performance, such as communicative ability, the strength and specificity of the arguments that they use to support their assertions, and body language. The videos can also be used for further assignments,

VoiceThread is a cloud-based application that allows users to upload, share, and comment on many types of media, including photos, videos, and presentation slides. Once content has been uploaded, the owner can share a link that will allow others to make audio or text comments. Users can make individual comments on each slide of a presentation. They can also draw on the slides using various colors. Their markups will appear whenever the associated comment is viewed. Many users can comment on a given thread, allowing conversations to develop.

At the Preparation Center for Languages and Mathematics, VoiceThread is primarily used to provide students with presentation practice. After creating presentation slides in PowerPoint, Google Slides, or other presentation software, students download the presentation as a .pdf and upload it to VoiceThread. The student or group of students delivering the presentation record the audio content for each slide. They have the option of re-recording the audio associated with each slide until they are satisfied with the quality. The teacher and other students can then give audio and text feedback. Based on this feedback, students update their presentations and deliver them live to the class.

Discussion

The integration of Google Drive, Hangouts on Air, and VoiceThread into the curriculum of the Preparation Center for Languages and Mathematics can be assessed using the *RAT – Replacement, Amplification, and Transformation* framework. It is important to note that this framework does not assess technologies themselves; rather, it assesses the application of technologies in educational contexts.

The application of Google Drive allows fundamental transformation of instructional methods and of the students' learning. The three main products within Google Drive — Google Docs, Google Sheets, and Google Slides — all share the capacity for real-time collaboration and feedback. This distinguishes Google Drive from other word processing software, and makes it invaluable in process writing. The revision history is another feature that allows transformation of the basic dynamics of the writing classroom. Using this feature, a teacher can check the evolution of a piece of writing over time. He or she can verify the extent to which a student has made changes based on comments. Also, he or she can ascertain whether a piece of writing was completed in a timely manner or left until the last minute.

Hangouts on Air also has the potential to transform language learning. Using this product, students can engage in discussions regardless of their geographical locations. Furthermore, Hangouts on Air will make discussions, which are typically ephemeral, permanent. This allows students to keep a record of their discussions to monitor their progress and to reflect on their performance. Keeping a record also allows teachers to ascertain that the discussions have taken place and to review students' discussions in order to provide feedback.

Finally, certain application of VoiceThread can transform the teaching of presentations. This tool allows students to easily practice, record, and share their presentations. The audio that corresponds to each slide is recorded separately, allowing them to re-record the audio until they are satisfied. This encourages students to practice their listening and speaking skills, and to reflect on their performance. The ability to define the audience of the recorded presentation by sharing the link is novel; it would not be possible without the use of VoiceThread or a similar tool. Notably, all of these products facilitate collaboration and sharing, activities that promote student-centered learning and individual inquiry.

Conclusion

This paper has presented several applications of educational technology and assessed them using the *RAT — Replacement, Amplification, and Transformation* framework. The technologies discussed in this paper — Google Drive, Hangouts on Air, and VoiceThread — have the potential to transform the way that languages are taught. These are but three of the many resources available to learners, and the array of options is growing exponentially. As language learning shifts from teacher-centered to student-centered methodologies and approaches, tools such as these will take on an ever greater role in empowering students.

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