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Conceptual Framework
SI 549 Transformative Technology

Introduction

This paper is my conceptual framework for critiquing educational technology. Many of my ideas have been expanded on and refined since the beginning of the semester. Technology can be effective in the classroom but we should also be looking for it to be transformative. I still maintain that technology is, and should only be used as, an aid to one's message, never the focus or reason for the lesson. But, we can go further with that. I now believe there are different categories that a technology and its uses can fall into: ineffective, effective, leveling, and transformative. This paper details what each category means and why a technology would be considered one of these categories. Each is evaluated through the criteria explained in the next section. Ultimately, my view of what makes a learning technology useful has both widened and become more focused. Many technologies will fall into ineffective or effective. Fewer can be considered leveling, and even fewer are transformative.

Criteria

The first criterion is simply whether or not the technology is easy to use. This is a basic trait that all technology must pass if it hopes to become widely used. The second criterion is whether or not the technology motivates students to learn. This is along the same line of ease of use, if a technology does not motivate a student to learn, it will not be any more effective than any other technique or tool. Third, the technology should afford something to the student that they did not previously have access to. Finally, the use of the technology should go beyond traditional techniques. The technology should afford new, improved ways of learning. These criterions are similar to how I saw it at the beginning of the semester. The first two are exactly the same. The second two, however, are modified and expanded to reflect the fact that a transformative technology is more than just something that improves the ways

of learning that we already have. When a technology is introduced into the classroom, we should be asking more of it, not just that it might make traditional techniques easier to do.

Ineffective Technology

An ineffective use of technology is one that doesn't meet the criteria at all. It fails at the two base criteria. If a technology isn't easy to use or motivating then there's little chance it will pass the other two. There are many examples of ineffective technology uses such as using laptops as just a fact finder. This would be no different from looking something up in an encyclopedia.

Effective Technology

Effective technologies should be easy to use or learn and be motivating. Where an effective technology fails to become leveling or transformative is in the inability to afford access to different ways of learning and better learning. An example of an effective technology is PowerPoint. PowerPoint can be used to show videos, images, and text together to give more ways to visualize the point the speaker is trying to make. PowerPoint is easy to use and can motivate learning by allowing interesting pictures, audio, and video to become part of a presentation. However, it does not afford access to things they didn't have; it just makes it easier to put them together. It also doesn't afford a new way of learning, it just makes presentations or lectures more effective.

Leveling Technology

A leveling technology is one that provides access to new experiences. It needs to meet the first two criteria of being easy to use and motivations but most importantly towards, it must afford access to something a student may not have had before. However, most examples of online classrooms do not

teach in a different way so it does not meet the final criterion which prevents it from being called transformative. This can be anything from online classrooms to basic internet access in the classroom. An example of a leveling technology is online classrooms. The 2000 National Educational Technology Plan talks about a group of schools working together to offer "NetCourses," which allows smaller schools access to the same high quality teaching that other schools already have through the use of recorded lessons seen through VCR (US Dept. of Education, 2000). This technology isn't expanding on any actual method of teaching but it affords the children access to high quality instruction that they wouldn't have received without the technology.

Transformative Technology

A transformative technology meets all criteria. It's easy to use, motivating, it affords access to new experiences, and those experiences promote a better learning. An example of this is the GIS software My World. The first promising aspect of GIS software is that it is also used professionally. While the software still needs to be tailored for educational use, this fact can help students to learn because they are taking on a real-world identity. This is a powerful concept, as James Gee (2007) discusses in *What Video Games Have to Teach Us About Learning and Literacy.* "Learning involves taking on and playing with identities in such a way that the learner has real choices and ample opportunity to mediate on the relationship between new identities and old ones. (p. 64)" This is exactly what the GIS software encourages as students are presented with situations very similar to what a GIS professional might face. In addition, the software looks to enhance a student's ability to do critical thinking and analysis. The research being conducted even showed that "students using My World spend more time discussing the content of their investigations and less time consumed with learning the software (Edelson, 2007, p.

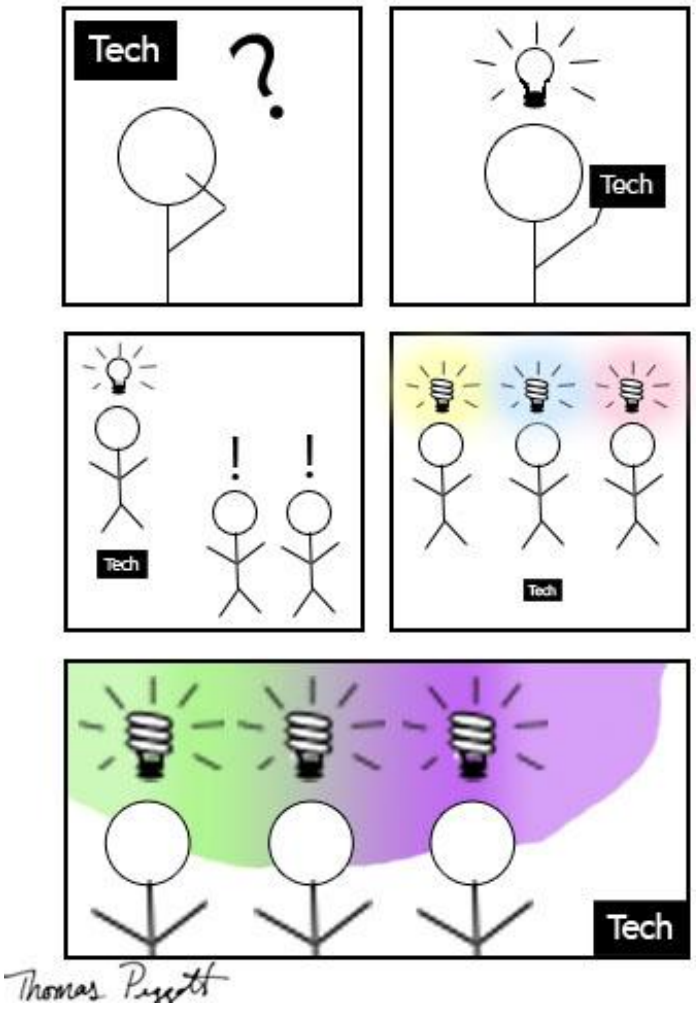
95).” This speaks to the whole point of a transformative technology, developing crucial thinking skills beyond specific content in new, valuable ways.

It should also be noted that leveling and transformative technology uses can be combined. The idea of Universal Design for Learning (UDL) accomodates just such an idea. The idea behind UDL is to support learning through multiple means. This means that options for engagement, methods of expression and apprenticeship and methods of presentation should all be flexible and use multiple modes of delivery (Rose, 2002). An example of this is to provide both a print and digital version of a textbook. Where the physical copy may be easily transported, marked, and annotated, the digital version allows for customization. Sizes and colors may be changed for those that have trouble with sight, and technology exists that can read text aloud for those that have trouble learning (Rose, 2002). This sort of technology use must be considered leveling because it provides useful access to something students didn’t have access to previously and the support they find from it helps them to learn in ways that weren’t previously possible.

Visualization

This visualization expresses all of my criteria. The potential learner is unsure how to figure out a problem, unsure what to do with technology. The potential learner then realizes they can *use* it to learn. Other people see that the potential learner has become a learner and are motivated by it. Thanks in part to the technology and everyone having access to it, everyone becomes a learner. To illustrate that technology can be transformative, the light bulb above each student’s head is a new type of bulb and each has a different color. This represents the idea that better learning takes many forms, potentially different for each student, and a useful technology will recognize and accommodate for this. Finally, the ideas of the learners combine and reform into new ideas. It is important to note that the technology

gets smaller in each frame. This is meant to represent the fact that it is less and less the focus; it has served its purpose and is much less important than the actual learning taking place. The final frame has the technology off to the side where it's not as necessary because the ideas have already been planted in the minds of the learners and has served its purpose.



Conclusion

For technology to be useful in education, it needs to be supportive of the ways students learn. The technology should at least be easy to use and motivational to be effective. What schools should really be looking for though, are the technologies that afford access to new experiences and better ways of learning. And it is in this vein that a technology may become leveling and transformative. Technology is simply a tool that must have focus, not *the* focus. It is up to the teacher, administration, curriculum writers, and all educators to select the right technology for the right opportunity, even if that means not selecting the latest and greatest. If they don't, not all of the criteria for what makes a technology useful in education will be met.

Works Cited

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