

Review of Literature

Introduction

When an innovation is introduced, people react predictably. Some welcome the new technology believing that it will improve their quality of life, while others tend to resist change. In this civil war of technology adoption, opponents are demonized, belittled, and harassed. However, innovation can be dangerous, especially as our society becomes more specialized; people lose jobs and status. Entire countries seem to adapt while our country replays regional debates every two to four years, and GM continues losing money.

Innovation creates problems also, but remaining stagnant has negative consequences too. Often, people want other countries to slow down; yet, other nations can compete in a new flat economy while the United States struggles with basic education policy and school technology implementations. We complain that Bangalore customer service agents work "our" phone lines. We dislike their accents; they change their accents. We do not change.

How could children of the 1960's allow this to happen? How did a group of children raised on television create an underperforming education system? What will happen when New Media and New Economy have aged?

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Marshall McLuhan, a leading social commentator in the 1960's, may be helpful. McLuhan, who was known for coining the terms "global village" and "the media is the message," was less concerned with content than the effect of the particular media (Federman, 2004). He worried that innovations altered societal structures without our knowledge. The content distracted us from how we were living our lives, which some would argue is the purpose of watching television.

Wanting to be able to help people "predict the effects of any new device or technique before they actually appear in time and experience," (M. a. E. McLuhan, 2007) he began creating testable laws. In 1988, eight years after Marshall's death, his son Eric published a co-authored book *Laws of Media*. Four laws were established; they are presented throughout the paper.

Problems with Predictions

Predictions are answers. Questions influence our answers, and predictions are often incorrect, because we ask the wrong questions (Gladwell, 2007). In the book *Blink*, Gladwell (2007) argues that when faced with major decisions, humans are more likely to be satisfied when we use our instincts. Conversely, on minor decisions, humans are more satisfied if we weigh the decision carefully. Therefore, the more difficult the decision, the more we must trust our own judgment. This becomes problematic, because we ask our leaders to justify their

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decisions. Reasoning and predicting is complex. The more complex, the more possibilities.

Similarly, McLuhan claimed that when we adopt a new innovation, we may be familiar with its advantages and disadvantages, but we have trouble predicting long term consequences, because there are too many unnoticeable factors. When faced with making decisions and predictions, there is always more that we can know. Sometimes people become overwhelmed with too much information.

Before the Japanese bombed Pearl Harbor, our military knew too much about Japan. Our journalists however, who predicted an attack on Pearl Harbor, knew much less. They knew that the world was at war. Japan was engaged in the Pacific. We had naval ships in Hawaii. According to Gladwell (2007), the journalists predicted the invasion, but the military did not, because the military knew too much, whereas the journalists knew less. Journalists also have a tradition of asking predictive questions. They ask "who", "what," "when," "where," "where," and "why?" Later, we will explore the value of having a framework of questions.

Prediction, Policy and Instruction

The ability to question and predict is fundamental to sound education policy, technology implementation and instruction. Scholars argue that using prediction skills is useful for planning technology

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implementation (Guri-Rosenblit, 2005). Unfortunately, many school administrators do not have necessary leadership skills for innovation and technology.(McLeod, 2007a) To lead, one must ask tough questions. (McLeod, 2007b) What questions are out leaders asking?

McLuhan would not merely argue that policy leaders or school administrators were asking the wrong questions; he would challenge educators to consider long term implications of their decisions. (Federman, 2004). While some researchers argue that technology implementations do not disrupt change quickly enough(Blin & Munro, 2008), McLuhan asserts that most innovations create change slowly. Furthermore, most change is usually "unanticipated." (Federman, 2004)

According to McLuhan, these "unanticipated consequences," often referred to as "unintended consequences," are caused by events that we do not consider when planning, because these events are too normal and too numerous for most people to consider (Federman, 2004). It is for this reason that society needs artists and other social critics to remind us what we take for granted. (M. McLuhan, 1964).

McLuhan had his critics. Some argued that his opinions were dismissed (Berger, 2003) or that he was not concerned with historical facts (Finkelstein, 1968). On this latter point, McLuhan would concede. McLuhan was a cultural critic, and similar to an artist, he did

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not believe that historical accuracy was required to predict the future or to comment on the present. He often argued that being outside of social conventional thought was a better indicator for the ability to predict.

When educators use prediction skills they are able to learn about their students. Research shows that students with physical disabilities benefited by word prediction software. In part, it is suggested that students' motivation improved, as well as their ability to be assessed. (Tumlin & Heller, 2004). Perhaps the nature of prediction, which is forward looking, propels these students. In another study, in this case with high functioning college students, research suggests that student motivations predicted the ability to introduce higher order cognitive skills. According to the researchers, this has important educational and business implications, because educators can design their curriculum around student interests. (Mehta, Clayton, & Sankar, 2008).

This last idea is problematic to implement. Our education policy does not seem concerned with children's motivations. We have created standardized reading and math programs; the programs are taught similarly and at the same pace. What questions were asked about the children as people? How would they respond? How would parents respond?

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Prediction skills are useful educational devices. Early literature arts educators teach predictions skills by using an external monologue; e.g. "I wonder what will happen next?" Science teachers instruct their students about the hypothesis. Artists ask questions.

McLuhan's Laws

Educators and artists learn to make predictions, and can thus hold society accountable. As Eisner argued, good teaching and art are intertwined, because teaching is an art form (Eisner, 1994). Artists reflect. Artists ask questions. Good teaching is also a process. Eisner preferred the metaphor of the artist studio to that of the laboratory (Eisner, 2006).

Not only did McLuhan value artists, his foundational philosophies are artistic. McLuhan (1964) claimed that "when we touch something, we contact it, and create an interaction with it." It did not matter if the object interacted with us. We interacted with it. This philosophy informs his four laws, which are framed as questions.

Four Laws of Media

1. What does the artifact enhance or intensify or make possible?
2. What is pushed aside or obsolesced by the new 'organ?'
3. What recurrence or retrieval of earlier forms and services is brought into play by the new form?

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4. What is the reversal potential of the new form? (M. a. E. McLuhan, 2007)

These four laws can be used to test any innovation or strategy. For example, one could test online individualized computer courses for high school students as mentioned earlier.

Law 1: Enhance - By distributing motivating personal instruction, some students increase learning. Also with increased participation, the program would improve.

Law 2. Obsolesce - Students will not attend traditional high school. The more successful this program becomes, the more it will affect extra and co-curricular programs at traditional high schools.

Law 3. Retrieval – Community theatre and other community organizations might return; youth recreation and youth work credit would return. Teens would become part of the community during the day instead of being forced to stay at school to earn credits to graduate. Currently, teens are kept at school or truant.

Law 4. – Reversal – This might become too popular. Parents might want their teenager to have a “normal teen life.” Students might want less individualized instruction, and might want more structure, or something to rebel against, or the program might not be prepared for

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rapid growth and experience operational problems, which could reverse popularity.

When schools choose new programs, this framework would assist with any decision making. Often, school districts decide on programs after cost-benefit analysis; however, the benefits have not been carefully considered. By using the Laws of Media, an educator or a student can better predict outcomes.

Technology Prediction, Past and Future

In July 1945, Dr. Vannevar Bush, the Director of the Office of Scientific Research and Development during WWII, wrote an article that predicted many of the technical advancements that exist today. Dr. Bush oversaw 6,000 scientists during the war; he foresaw personal computers, the internet, digital photography and other technological advances. More impressive than his predictions was his question, "What are the scientists to do next?" (Bush, 1945)

WWII was different than our current War in Iraq. As Bush wrote, "this has not been a scientist's war; it has been a war in which all have had a part." (Bush, 1945). The Iraq War has been costly and lasted longer than WWII, but we have "not all had a part." Soon, troops will be returning slowly. Yet, neither party's candidate is asking grand questions about our scientists.

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Bush argued that specialization was necessary for this progress (Bush, 1945) Specialization, however, also creates tension. (M. McLuhan, 1964). When people have specialized skills, they are more likely to be replaced when new innovations occur. When people do not have the new skills, business will go elsewhere, or machines simply replace people. (M. McLuhan, 2001)

In education, teachers experience this similar conflict with technology. (Blin & Munro, 2008) Many educators were trained before the internet. Before New Media, veteran teachers maintained subject mastery. New teachers learned from master teachers. Students learned from teachers. Today, students might have more information about technology than most teachers. If not for "tenure," many veteran teachers would be replaced by young teachers who know how to use the new tools of education. Many veteran teachers have become irrelevant.

Recently, an innovative Ivy League business leader has written a book about the future of education. The author claims that students should be motivated and encouraged to use technology. (Christensen, 2008) Most of the ideas are consistent with best practices. Often, people have claimed that schools should be run like businesses. Perhaps educators needed business people to restate their own beliefs.

The Business of Business

“Today the business of business is becoming the constant invention of new business.” Marshall McLuhan

Our schools can be innovation leaders, just as businesses. When Minnesota created the first state Media Arts Standards in 1997, many people did not use the internet. (Bequette, 2008). Though other states have not created statewide Media Art standards, visual arts standards are common, and educators have begun to value digital literacy (Bequette, 2008). Because young people change, educators must change. Digital literacy is our newest challenge.

About the time that Minnesota adopted media arts state standards, Yahoo popularized search. At first, people were fascinated that by the access. Then search became big business. The yellow pages nearly became obsolete.

Once people began searching for businesses, one could predict that commercialism would interfere with the validity of search results, but as McLuhan argued, most people only know the basics of a technology. Search engines, especially Yahoo and Google, began listing companies higher for a fee. (Battelle, 2006) Even company trademarks were not safe (Battelle, 2006). This business practice is especially problematic for young people. When students search “college,” they are directed to a site listed as “college-scholarship.com.

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There is no evidence to suggest that young people are smarter consumers than adults.

The internet has also changed the basic elements of this page. Increasingly, all text has become sans serifed, so that it can be read on low resolution monitors and hand held devices (Luxley, 2006). Print mimics the popular medium to remain constant, so we may Times New Roman may soon become obsolete, at least until it is retrieved by a new media.

Conclusion

Fonts have been changing since Gutenberg was credited with inventing the printing press; sometimes fonts changed suddenly, whether for political or technological reasons. (Luxley, 2006). This generation believes that we are changing faster than any previous generation, because we can search or because people in India are making the world flat. But have we changed suddenly? Have we changed much at all?

Until recently, there was a myth that marketing executives and political campaigners could control their message. Now, there is a myth that they have stopped trying. As I write, the internet company Yelp (www.yelp.com) is facing scrutiny for its business practices. Yelp began as a small social networking company in San Francisco and it now operates in eighteen metropolitan areas. According to Yelp's

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website, it is "...the ultimate city guide that taps into the community's voice and reveals honest and current insights on local businesses and services on everything from [martinis to mechanics](#)." However, Yelp has faced two major problems that will illustrate how a company (or media) may experience reversal. People that were excited by social networking might become repelled.

First, Yelp has pulled reviews that it feels were not genuine. Yelp argues that businesses traded positive reviews with each other. In response to having their positive reviews pulled, some businesses have begun a class action lawsuit against Yelp. These business people contend that their frequent customers might also be their friends, but there has not been any quid pro quo and all reviews were truthful. Yelp's response will be interesting. Since their journalism standard seems to be "the community's voice," anyone with a voice should be allowed to share their opinion. Do avatars reviews make a critique accurate?

This dilemma was predictable, or as McLuhan would argue, anticipated. As Yelp became influential, businesses wanted positive reviews. Yelp wanted to protect their brand; if business were using Yelp as free advertising, this might even violate Yelp's low journalistic standards. As several news organizations reported recently, Yelp

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seems more frustrated that businesses were using Yelp for free advertising.

According to many news sources, Yelp advertising executives will change reviews if customers pay a monthly fee; bad reviews will be dropped to the bottom of the page. Some businesses have claimed that Yelp advertising executives arrive days after mysterious bad customer reviews.

Have we begun distrusting New Media already? Maybe this generation is moving faster. We trusted the real news for generations. How much longer before Yelp becomes obsolete, and the real journalists return? Yelp claimed to be "honest and current." When everyone is honest and current, who will lead? Who will teach?

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