

Future Teaching in Hawaii

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Abstract: Utilizing information from Hawaii state documents and personnel involved in Hawaii's education reform, an instructional website was created to inform elementary school Department of Education teachers in Hawaii about the future areas of technology change in Hawaii's public schools. This paper describes the process and development of the online module as well as the results of a survey that teachers completed both before and after information was presented. Data collected in these surveys focused on measuring teachers' knowledge of future technology trends as well as their overall feeling of readiness to teach in Hawaii in the upcoming years. Results from the surveys show that after completion of the module, teachers felt they had a better overall understanding of the major technology areas of change in Hawaii's public schools than prior to their participation in the module.

Introduction

In this current digital age of expanding technologies and online media, our public schools across the country are experiencing great reform. Throughout history, reform has been an integral part of our education system. Unlike reforms of the past, the current American school reform bill known as "Race to the Top" has provided states an additional incentive to create change: a monetary federal award for states who exhibit leading and effective methods.

On August 24, 2010, Hawaii joined a group of 12 states that were hand-selected as winners in President Barack Obama's nation-wide education program Race to the Top. With a large federal grant of 75 million dollars now coming Hawaii's way, education in Hawaii will undergo major reforms. Teachers will need to face new methods of instruction and additional training in order to keep up with the rapid modernization of our schools.

A major area of change that teachers must prepare for is advancement of technology in education. Hawaii has been waiting for a grant to fund numerous programs and media to improve technology in education. In fact, the International Association of K-12 Online Learning suggests one of the reasons Hawaii and other states were selected as winners was based on a focus of online learning in the upcoming years (iNACOL, 2010).

Teachers know that each new technology implementation can create challenges for instruction, especially at first. Our schools need to be extra prepared because the large Race to the Top grant strongly enhances the rate at which traditional instruction will change. The purpose of this instructional design project is to create a web-based module to inform Hawaii Department of Education elementary school teachers on how upcoming technology advances may affect the way they teach.

Background

In his 2011 State of the Union Address, President Obama calls Race to the Top the “most meaningful reform of our public schools in a generation.” He also asserted several times that education (especially in the area of technology) is the way to “win the future.” Passed in 2009 during President Barack Obama’s administration, the goal of Race to the Top was “to provide incentives to states to trail-blaze and develop effective reforms that can be replicated in schools and districts across the country” (Weiss, 2010). From the time President Obama began his presidential campaign, he promised reform in the area of education saying that this bill is “one of the largest investments in education reform in American history” (Weiss, 2010). The purpose of the Race to the Top grant is reform, and reform often brings new challenges for teachers in terms of *how* and *what* they teach students.

The article “Perspectives on Technology and Educational Change” describes how technology can be the catalyst for change in schools and how reform consists of “the dreams of *what could be*, the realities of *what is*, and the efforts to whittle away at the gap between the two” (Strudler, 2010). In a time of great reform, teachers easily fall into the gap that is described in the article. For change to succeed within our schools, all teachers must be aware of what type of education Hawaii is aiming to achieve.

Hawaii’s technology timeline shows change in the areas of online testing, data collection, and online learning. Online testing for the Hawaii State Assessment (HSA) has been implemented in the 2010-2011 school year. In the near future, an additional cross-state summative assessment called SMARTER will be maintained online. This will mean that teachers will be held directly accountable for students’ achievement based on collective standards, rather than Hawaii Content and Performance Standards. Data collection will expand into a data portal-community portal. This data portal will help parents and teachers predict early warning signs of problems that could affect graduation rates and will need to be continuously updated and used as an assessment resource. Online learning will expand to include video conferencing and additional digital resources that will become available with increased funding. If Hawaii follows the national trend, teachers will need to teach partially online, and the resources they use to educate our students will require sound research and best practices.

The subjects of this study are ten elementary school teachers in Hawaii in the Department of Education. These teachers are directly impacted by education reform and should benefit from the module. They are from different schools in Hawaii, come from various backgrounds and skill levels, and have had a broad range of training in the area of

technology. Each research subject has varying interest levels in technology in education, including those who dislike teaching with technology and those who enjoy teaching with technology. Parents and other community members may utilize the module as well, but will not be included in the research and testing aspect of this instructional design project.

Methods

The entire module, excluding the initial paper-based consent form, is web-based through *Google Sites*. This provides an opportunity for teachers in Hawaii to complete the module at their convenience and outside the school system. The module website offers open navigation for teachers to view information within each section independently (see Figure 1). The website is text-based but also includes multimedia tools and links to further resources. Additional research materials include a pre-module and post-module survey.

Figure 1. Snapshot of the home page of “Future Teaching in Hawaii”

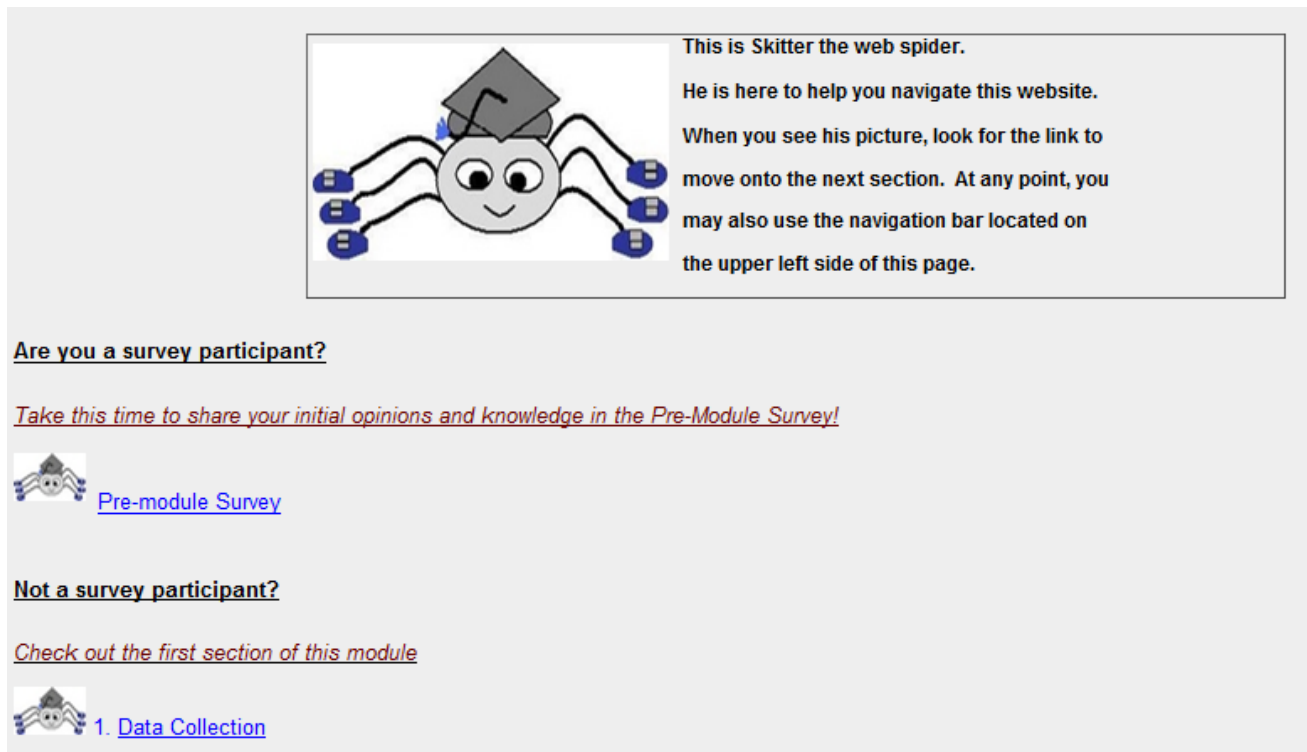


Before research could begin, this project required approval from both the University of Hawaii at Manoa Center for Human Studies and the Superintendent of the Hawaii Department of Education. Approval was obtained, conditioned by strict, non-negotiable requirements. With these numerous requirements from both agencies, many precautions had to be taken during implementation of the study. First of all, DOE principals had umbrella consent over the teachers within their schools, so written clearance was sought from multiple principals. Once a principal agreed to allow his or her school teachers to participate, contact was made with teachers. Teachers willing to participate were then asked to agree to a consent form which highlighted the intent and anonymity of the research study. Teachers were also informed at this time of the objectives, content, and time expectations of participating in this study. The consent form utilized was paper-based and required a signature from each participant. Teachers were made aware that this

project was educational research and was in no way affiliated with the DOE. Therefore, all participation in the module was expected to be conducted outside of the school campus.

During the development phase of this instructional design, feedback on the “Future Teaching in Hawaii” module was provided through one-on-one interviews and through feedback from Educational Technology Master’s Degree professors and students. Modification was made in many areas of the instructional module including ease of navigation and content. During a particular one-on-one session, the reviewer made a comment that she wished “there were some sort of signal whenever something was required” of her. Therefore, a “guide” character was added to the module: “Skitter” the web spider appeared at each major navigational point (see Figure 2).

Figure 2. Snapshot of “Skitter” who appeared at each major navigation point.



Once the module was finalized and all consent fulfilled, teachers were provided the URL link to the “Future Teaching in Hawaii” web-based module. Individually, the teachers logged onto the module and worked through the entire module. They began with a survey that required background information of each participant in both the affective and cognitive domains. Information included the participant’s knowledge and personal view of data systems, online learning, and online testing as well as overall readiness to teach in Hawaii in the upcoming years. After the survey, teachers then spent about 30 minutes working through the module’s different sections. Finally, they moved onto a 10 minute

post-module survey. This final survey measured levels of cognitive understanding and attitudinal shifts after completion of the module.

Results

Data from the pre-module survey was compared with data from the post-module survey in order to distinguish changes in each teacher's perspective and knowledge of educational technology in Hawaii. Survey responses at the completion of the module showed favorable results in both cognitive and attitudinal domains for the majority of teachers who participated. Additionally, teachers provided feedback on module navigation and clarity of content. This summative feedback from teachers was used to evaluate the module's effectiveness overall.

1. Cognitive Domain

The pre-module and post-module surveys compared teachers' cognitive understanding of three developments in educational technology: Data systems, online testing, and online learning.

a. Data Systems

According to the results of the pre-module survey, six teachers indicated they had not heard of the Longitudinal Data System (LDS) in Hawaii. The other four teachers responded that they "may have" heard of it. When responding in the post-module survey, all participants indicated that they understood or "somewhat" understood the aims and effects of Hawaii's LDS (See Table 1).

Table 1. Longitudinal Data System

	Responses		
Pre-Module Question: Have you heard <u>Hawaii's Longitudinal Data System</u> ?	Yes	No	I may have
	0	6	4
Post-Module Question: Do you understand the aims and effects of <u>Hawaii's Longitudinal Data System</u> ?	Yes	No	Somewhat
	5	0	5

b. Online Testing

According to the results of the pre-module survey, eight teachers indicated they had not heard of the SMARTER Assessment System in Hawaii. The other two teachers

responded that they “may have” heard of it. When responding in the post-module survey, nine out of 10 participants indicated that they understood or “somewhat” understood the aims and effects of the SMARTER Assessment System (See Table 2).

Table 2. SMARTER Assessment System

	Responses		
Question: Have you heard of the SMARTER Assessment System?	Yes	No	I may have
	0	8	2
Question: Do you understand the aims and effects of the SMARTER Assessment System?	Yes	No	Somewhat
	3	1	6

c. Online Learning

At the completion of the instructional module, all 10 participants responded that they understood or “somewhat” understood the increasing trend of online learning in Hawaii (See Table 3).

Table 3. Online Learning

	Responses		
Post-Module Question: Do you understand the increasing trend of online learning in Hawaii	Yes	No	Somewhat
	6	0	4

2. Attitudinal Domain

Teachers expressed, both before and after the instructional module, how aware they were of technology advancements in Hawaii and how prepared they felt to teach with technology in the next few years. Teachers also indicated their overall satisfaction with the module through responses about helpfulness of the material and whether or not they would recommend the module to colleagues.

a. Technology Awareness

In the pre-module survey, seven teachers indicated that they were only “somewhat aware” or “not aware at all” of the technology that will be implemented in Hawaii’s schools over the next few years. Upon completion of the module, three of those seven participants viewed themselves “very aware” of the technology that will be implemented in Hawaii’s schools over the next few years, leaving only four “somewhat aware.” The remaining three teachers reported that they were “very aware” of the technology that will be implemented in Hawaii’s schools in both the pre-module and post-module surveys (See Table 4).

Table 4. Technology Awareness

	Responses		
Pre-Module Question: How <u>aware</u> would you say you are about the technology that will be implemented in Hawaii schools over the next few years?	Not aware at all	Somewhat aware	Very aware
	1	6	3
Post-Module Question: How <u>aware</u> would you say you are about the technology that will be implemented in Hawaii schools over the next few years?	Not aware at all	Somewhat aware	Very aware
	0	4	6

b. Technology Preparedness

In the pre-module survey, three teachers indicated that they were “not prepared at all” to teach with technology in the next few years. Upon completion of the module, two of those three participants viewed themselves “somewhat prepared” to teach with technology in the next few years, leaving only one participant still feeling “not prepared at all.” In the pre-module survey, five participants reported that they were “somewhat prepared” to teach with technology in Hawaii in the next few years. Out of those five teachers, one participant felt “very prepared” at the end of the module, while the other four indicated the same feeling of preparedness before and after the module. The last two participants not mentioned felt “very prepared” to teach with technology in the next few years both before and after the module (See Table 5).

Table 5. Technology Preparedness

	Responses		
Pre-Module Question: How <u>prepared</u> would you say you are to teach with technology the next few years?	Not prepared at all	Somewhat prepared	Very prepared
	3	5	2
Post-Module Question: How <u>prepared</u> would you say you are to teach with technology the next few years?	Not prepared at all	Somewhat prepared	Very prepared
	1	6	3

c. Recommendation and helpfulness

In the post-module survey seven participants said they would recommend this module to others. The remaining three participants said they “may” recommend the module to others (See Table 6). Additionally, nine participants reported that the module was helpful. One teacher mentioned that there was “new, good information” even though the teacher possesses a Master’s degree in Educational Technology. Similarly, a teacher commented that there was “a lot of information I was unaware of.” Another teacher responded that the module “inspires” him/her to make use of the technology available. Lastly, one teacher remarked that the module reminded him/her to be more “open-minded” and “prepare myself” for the future (See Table 7).

Table 6. Recommendation

	Responses		
Post-Module Question: Would you recommend this module to others?	Yes	Maybe	No
	7	3	0

Table 7. Module helpfulness

Post-Module Question: Was this module helpful?	
Response	Reason
Yes	It was helpful. I have a Masters in Educational Technology and have

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	become very familiar with a lot of the concepts. There is some new, good information however.
Yes	I enjoyed reading about the different statistics and the different states where new programs have been implemented. I also have a better understanding of LDS and SBAC. I think LDS is a great idea and am excited to be able to use it in the future. I was also excited to see photographs of the different types of technology that are currently being used in Hawaii. It made me excited to realize that my school has them and we are on our way to all being able to have them in every classroom.
Yes	I got more information on what's happening with new technology in the DOE.
Yes	It opens my eyes to the high tech teaching that will be expected of me in the very near future. It seems to be successful in some schools, so I need to be more open-minded about all this and prepare myself.
Yes	It made me aware of all of the technological resources that we will have available to us soon to help us better educate our students.
Yes	I learned what is available to our students.
Yes	There was a lot of information that I was unaware of.
<i>no response</i>	
Yes	It was helpful in providing background information on a variety of topics.
Yes	This module was helpful to me. I have a lot of technology in my classroom. Reading this article inspires me to use the technology as frequently as possible.

3. Navigation and Clarity

Upon completion of the module, teachers evaluated the overall navigation of the module and the clarity of information that was provided through the module in the post-module survey. Results from the post-module survey show that all teachers felt the module was easy to navigate (see Table 8). Additionally all 10 teachers indicated on the post-module survey that the module information and content was clear and understandable (see Table 9).

Table 8. Navigation

	Responses		
	Yes	No	Somewhat
Post-Module Question: Was the module website easy to navigate?	10	0	0

Table 9. Clarity

	Responses		
	Yes	No	Somewhat
Post-Module Question: Was the module text and information clear and understandable?	10	0	0

Discussion

Many obstacles were faced during implementation of the web module. Especially in this time of school reform, the teachers and principals in Hawaii's Department of Education are swamped with requirements. Principals feel that they need to protect their teachers from additional work, and teachers are slow to give up their limited free time outside of school to participate in any research. One principal, who knew the researcher personally, did not initially give her consent for teachers in her school to be included in the research. When approached in person by the researcher, she said she had simply "thrown away" the initial paperwork request, not realizing the research was being conducted by someone she knew. She then granted permission after explaining she receives about 100 emails a day and various requests for research. Therefore, almost every request that is not mandatory will not be authorized. For a later study, teachers suggested that research conducted during the summer or winter breaks would possibly gain more willingness and participation.

A second obstacle that was faced involved the survey tool within the web-module. There were 13 teachers who completed the pre-module survey and only 10 who completed the post-module survey. One teacher contacted the researcher and explained the teacher had not remembered to press the "submit" button after completing the post-module survey. In the future a clear last question, "did you remember to press the submit button?" would be included in any survey tool to better accommodate this error.

Another major obstacle that was faced involved finding information that has not yet even been published. This module aimed to educate teachers about upcoming areas of change in technology education, and therefore there was a limited amount of accessible information available to incorporate. In addition some may regard predicting the future areas of change within any organization as speculation and, in turn, unreliable. While researching the topic, the researcher observed that people are reluctant to share information that they are not absolutely certain of, and this made the module much more difficult to create. Several individuals were approached who refused to share information on issues about which they were not completely certain. Of course not all plans for change in the Department of Education in Hawaii will commence soon or exactly as expected. However, such information is important nonetheless. The information provided in this module is based on research from state documents and subject matter experts who were involved in Hawaii's education reform. The information provided was

also based on trends that have been occurring throughout the country and even around the world. For a later study, locating willing subject matter experts prior to development of the instructional module would likely yield more available information.

Conclusion

The aim of this study was to educate Elementary School Department of Education teachers in Hawaii about the future areas of technology change in Hawaii. Ten teachers from various elementary schools in Hawaii provided input on this module through a pre-module and post-module survey. Findings show that the information provided through the web-based module was generally effective in increasing teachers' knowledge of the upcoming technologies in Hawaii's DOE schools. Findings also show that some participants became more aware of the technology that will be implemented in Hawaii schools and better prepared to teach with technology in Hawaii in the next few years. Finally, results also show that the majority of teachers deemed the instructional module to be helpful and would recommend the module to others.

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