Challenging Teachers' Preconceptions, Misconceptions, and Concerns of Virtual Schooling

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Abstract – This student examined the changes in the perceptions of graduate students in an instructional technology course related to K-12 online learning based upon their completion of the Teacher Education Goes into Virtual Schooling (TEGIVS) curriculum. The TEGIVS program was created through a grant funded initiative at Iowa State University. Nine graduate students at a large, state-funded, mid-Western university completed this curriculum as a part of their Internet in the Classroom course. Based upon our initial analysis, the TEGIVS curriculum was effective for providing these graduate students with some experience with how K-12 online learning opportunities are delivered, along with some of the possibilities and challenges associated with these opportunities. The analysis of this data is continuing, and there are plans to continue this line of inquiry with additional students in future offerings of this course.

Virtual schooling is growing at a tremendous rate. Recent reports indicate that there was up to 500,000 students in the United States are enrolled in one or more courses from a virtual school (Clark, 2001; Roblyer, 2003; Setzer, Lewis, & Green, 2005; &; Zucker & Kozma, 2003). With the states of Michigan and Alabama now requiring an online experience in order for students to graduate from high school, and the State of Florida requiring that all school districts provide their students with online learning opportunities, this growth trend will only continue.

However, to date there has been little in the way of teacher education on virtual school or online teaching and learning pedagogy (Smith, Clark & Blomeyer, 2005). The first major initiative by teacher educators to address this gap was the "Teacher Education Goes Into Virtual Schooling" (TEGIVS) project (see http://www.public.iastate.edu/~vschool/TEGIVS/homepage.html). Other universities have begun to follow suit. The University of Florida has introduced a course entitled "Virtual School Philosophy and Pedagogy." Boise State University has created a Graduate Certificate in Online Teaching with a focus at the K-12 level. Plymouth State University has established a partnership with the Virtual High School Global Consortium to offer a Certificate in Online Teaching and Learning. During the Winter 2008 semester, the Instructional Technology program at Wayne State University adopted some of the TEGIVS curriculum that had been developed by Iowa State University as a part of its IT6230 – Internet in the Classroom graduate level course.

In this proposal, we will provide a rationale why teacher educators need to include content related to teaching and learning at the K-12 level. We will also describe the history and nature of the TEGIVS curriculum that was utilized in this study. We continue with an overview of the methods used to collect and analyze the data, and then discuss four main themes that have emerged from our initial data analysis. We conclude with advice for future use of the TEGIVS curriculum and suggestions for future research.

Literature Review

Beyond a greater knowledge of and facilitation of technology, Kearsley and Blomeyer (2004) indicated that pre-service and in-service teachers also needed to be able to complete the following tasks in a technology-mediated environment timely and meaningful feedback; create learning activities that engaged students, keep students interested and motivated, get students to interact with each other, and encourage students to be critical and reflective. At present, there are two resources at Iowa State University in the United States that may provide a model and even materials that teacher education programs can adopt to address these five online teaching tasks: Good Practice to Inform Iowa Learning Online and Teacher Education Goes Into Virtual Schooling (TEGIVS).

The Good Practice to Inform Iowa Learning Online (see http://projects.educ.iastate.edu/~vhs/) was a project by funded by Roy J. Carver Charitable Trust, where Iowa State University (ISU) partnered with Iowa Public

Television, Iowa Department of Education, the University of Virginia, and Ottumwa Community Schools, and Wartburg College. The purpose of the project was to gather "ten case studies of good practice and supported the development of three exemplary courses by pioneers in Iowa who [would] lead good practice and mentor others" (Davis, Niederhauser, Compton, Lindstrom & Schoeny, 2005, p. 342). The case studies, which have a decided focus upon courses from the science curriculum, provided users with a detailed rationale as for why the course was being offered in an online learning format, description of the course, and discussion of the online tools being used in that course. Each case study also included syllabi for each of the courses and a selection of course materials, activities and assessments as examples.

As a follow-up to these case studies, ISU secured funding from the U.S. Department of Education's Fund for the Improvement of Post Secondary Education (FIPSE) and partnered with the Universities of Florida and Virginia, Graceland University and Iowa Learning Online to create TEGIVS (see http://ctlt.iastate.edu/~tegivs/TEGIVS/homepage.html). The purpose of TEGIVS was "to build on that work [i.e., the Good Practice to Inform Iowa Learning Online project] to incorporate virtual schooling into pre-service teacher education" (Davis et al., 2005, p. 342). The TEGIVS project would to introduce and orient new and current teachers to three roles in the virtual school environment:

> Virtual School Site Facilitator: Mentoring & Advocating
> Local mentor and advocate for students(s)
> Proctors & records grades, etc.
>
> Virtual School Teacher: Pedagogy & Class Management
> Presents activities, manages pacing, rigor, etc.
> Interacts with students and their facilitators
> Undertakes assessment, grading, etc.
>
> Virtual School Designer: Course Development
> Design instructional materials
> Works in team with teachers and a virtual school to construct the online course, etc. (Davis, 2007)

While the project had three objectives, this introduction and orientation was addressed by the creation of "instructional materials that [were] designed to illustrate and provide experiences with virtual schooling concepts and issues" (Davis et al., 2007, p. 29). These materials included five web-based scenarios – one for early childhood/elementary, one for elementary/middle school, and three for secondary school – that focused on different virtual schooling issues and featured a variety of different tools (see http://ctlt.iastate.edu/~tegivs/TEGIVS/VSLab/all%20scenarios.html).

Each of these scenarios reflected four aspects of virtual schooling: pedagogy, technology, assessment and management (Davis, Demiraslan & Wortmann, 2007). The scenarios had different approaches to online learning, such as didactic inquiry, problem-based learning, and other teaching strategies. They also showcased on synchronous and asynchronous software used in the virtual school environment, and individual tools including discussion boards, chat room, e-mail, and the whiteboard to name a few. The scenarios provided examples of how assessment is conducted in virtual school environments, such as reflections, proctored exams, performance-based tests and quizzes, and other authentic assessments. Finally, the scenarios outlined a variety of management issues, including communications between teacher and students, motivation for challenges, teaching technology from a distance, and encouragement to complete activities in independent environments. The use of cases, or in this instance scenarios, has been found to be an effective way to create meaningful settings for teacher learning (Putnam & Borko, 2000).

However, simply exposing current and future educators to these aspects of virtual schooling does not necessarily prepare them for any of the three roles that they may tasked with during their teaching career. As Davis and Rose (2007) cautioned, "simply viewing any online course cannot provide a rigorous experience. Quality teacher preparation requires careful selection of field experience and student teaching in the students' content areas and grade levels" (p. 11). In this regard, the TEGIVS project was designed to incorporate the instructional materials in technology integration and/or teaching methodology course, and to provide a teaching seminar course (see http://ctlt.iastate.edu/~tegivs/CI280A/introduction.html for the course materials), a six hour field experience component

(see http://ctlt.iastate.edu/~tegivs/TEGIVS/curriculum.html for the course materials), and eventually a teaching practicum (see TEGIVS Newsletter 2 for a description of this sequence).

One challenge programs like TEGIVS must overcome is the lack of systematic research into online teaching and learning at the K-12 level. In their review of open source literature, Cavanaugh, Barbour and Clark (2007) found the literature on virtual schooling was largely limited to practitioner reports and issues surrounding the policies governing or the technology utilized. Moreover, Harms et al. (2006) described the literature on effective teaching in virtual school environments as "often supported only by anecdotal evidence" (p. 4). In the past three years there has been additional research conducted into the teaching practices in synchronous (Murphy & Coffin, 2003; Nippard & Murphy, 2007) and asynchronous environments (DiPietro, Ferdig, Black & Preston, 2008). However, more research (such as the Social Sciences and Humanities Council of Canada's College-University Research Alliance funded *Innovative and Effective Practices in Online Learning* project, being led by Elizabeth Murphy as a part of the Killick Centre at Memorial University of Newfoundland – see http://www.killickcentre.ca/) is clearly needed.

Methodology

The purpose of this study was to examine the impact of the TEGIVS curriculum on the opinions of graduate students enrolled in this IT6230. Analysis of the data also provided the instructor an avenue for creating more effective activities for future course offerings that allow the participants to actually create virtual lessons that can be applied and utilized within their current teaching environment. These activities will assist in preparing participants for easier adaptability to the three roles. The curriculum materials, readings, and discussion prompts used in portions of the IT6230 course were consistent with those utilized by Compton, Follett & Demirasian (2007) in their study of the impact of the TEGIVS curriculum at Iowa State University.

Nine graduate students enrolled in a course entitled Internet in the Classroom volunteered to participate in this research study. The course began with a focus on Web 2.0 technologies for the first seven to eight weeks of the course (e.g., blogging, RSS, wikis, microblogging, social networking, etc.). Then the students completed activities related to the TEGIVS curriculum for the final five to six weeks. These activities involved the five TEGIVS scenarios, readings related to K-12 online learning, reflective discussions using blogs and RSS feeds based upon the instructor's prompt, and the individual project and group project from the TEGIVS curriculum. This data we describe in this proposal focuses on the students' reflective discussion entries and comments posted to their blogs.

The students' individual blog entries and the comments associated with each entry of the nine participating students were collected into a single document. This data was analyzed by one of the researchers using an inductive analysis approach (LeCompte & Preissle, 1993), and constant comparative coding (Ezzy, 2002). The coded data was further analyzed using Microsoft Word® following the procedure outlined by Ruona (2005). The researcher responsible for the analysis met with the second researcher on a weekly basis to discuss codes, categories and potential themes. At present, the analysis is still on going.

Initial Results

The data collected from the participants generated four themes. The first theme focused on how virtual schooling affected K-12 teachers. The second theme centered on specific student populations and the perceived benefits virtual schools provided to those populations. The third theme focused on the participants' perceptions of why virtual schools are unsuccessful at the K-12 level. A fourth theme emerged towards the end of the course as students started to become familiar with the course content, and were able to provide ideas of necessary components that need to be in place for the success of virtual schools in the K-12 environment.

The participants enrolled in this course were all in-service teachers. One of the dominant themes in their discussions was the perceived benefits and drawbacks of virtual schools for teachers. The participants described the benefits to teachers as falling into two specific areas: freedom and the capability to customize instruction for their students. One participant felt "that online courses would serve as a way of freedom for teachers. Just like the article states, it gives teachers the ability to design and deliver a course that will fit the students' learning patterns and interests" (Nancy). Another participant agreed with the "flexibility and adaptability of virtual learning" for teachers, and also added that it "allow[ed] for faster acknowledgement of change and adaption of curriculum" (Kristy). These

comments displayed the perceived importance of differentiated instruction available within the virtual school environment. With the continued downloading of responsibilities on classroom teachers, virtual schools were also seen as an avenue to effectively provide instruction to each of their students based upon the student's individual need.

However, consistent with many of these demands currently placed on teachers' time; it is understandable that the data around this particular theme also included some drawbacks for the profession. The participants listed a total of five different reasons why they felt virtual schools posed hindrances on teachers; however, there were only three that consistently emerged from the data: increased training, and more responsibility and prep time. Six of the participants made a total of twenty-two comments referring to the need for increased teacher technical training. "Training burnt out teachers" (Barb), also meshes with their thoughts of why they believe virtual schools fail in the K-12 environment. Many students "agree[d] that the administrative work would be greater" (Ashley), and that "keeping up in the profession [could] be very difficult, and now virtual schooling comes along" (Bryan). These comments were consistent with other participants who indicated, "there would be a lot more work because of the setup and keeping track of students," (Beneliz) and "technology [was] forcing more responsibility on us all," (Barb). Interestingly, the participants in the Compton et al. (2007) study also indentified pedagogical issues as one of their concerns, those participants focused upon the misconception that online courses were easier or less demanding. This shifting of focus from ease of completing the course for the students to the demands of teaching the course for the teachers may be due to the fact the participants in this study were located in the State of Michigan where the Michigan Virtual School had been in operation for nine years and the freshmen class that year were the first group of students who would have to take an online learning experience as a part of the state's new graduation requirement.

Participants also addressed how virtual schools could affect today's K-12 students. The data overwhelmingly focused on the various populations of students that virtual schools could benefit, primarily due to the perceived ability of online learning to increase learning and engagement. A variety of populations that could benefit from virtual schooling were discussed (e.g., high school and middle school students, dropouts, and alternative education students). The participants also suggested that virtual schools "in the K-12 setting offer[ed] more alternatives for students" (Bryan). Participants also commented on how virtual schools provided various entry points for student learning, with more options and choices to learning, and that "it [was] a great way for students to get the education they so vitally need" (Nancy). The data also indicated that the participants' viewed virtual schooling for students in a very positive manner. This theme was quite consistent with the findings of Compton et al. (2007). In this earlier study, participants were of the initial opinion that virtual schooling was largely for higher ability students. However, after completing the TEGIVS materials those participants came "to realize that students who were in rural areas and who did not learn well in traditional settings could benefits from virtual schooling" (p. 2973). While the specific populations of students identified by the participants in both studies differed slightly, there was a consistent perception that virtual schooling could expand educational opportunity.

The main negative aspect concerning the various populations of students was the perceived lack of socialization and interaction between the students and instructor in the online environment. This was also a concern for the participants in the Compton et al. (2007), who identified second-language learning as a particular area of concern in this regard. This is an area that will need to be addressed for future course offerings. This may be accomplished by providing literature or case studies on the interaction that often occurs between the teacher and students and between students themselves in the online environment. This is consistent with the strategy utilized by Compton et al. (2007), who were able to address this concern later in their course by having the students explore an exemplary virtual school course.

The third theme was focused on the reasons why virtual schools were unsuccessful at the K-12 level. These included a lack of or ambivalent administrative support and lack of virtual school knowledge amongst stakeholders. The data showed that the main reason the participants felt that virtual schools were unsuccessful was because of the lack of information provided to teachers, students, parents, and administrators about the possibilities and benefits of this method of delivery. One participant stated, "I never ever hear anything at school about virtual schooling. It is not mentioned in workshops or at meetings. I doubt very many teachers are even aware of its possibilities. Or its existence" (Maggie). Other participants suggested that "teachers [were] afraid of the unknown," (Penny) and until they were able to change their perceptions (and the perceptions of their colleagues) concerning virtual schools, they had a long road ahead of them. Participants also addressed the lack of support by administration as being a main

perceived cause for virtual school's lack of success. This category is consistent with the lack of knowledge about virtual schools by administrators. If this is the case, future course offerings will need to ensure that pre-service and in-service teachers are equipped with the knowledge to understand, inform, promote, create, implement, utilize, and train stakeholders about the significance and potential benefits of virtual schooling at the K-12 level.

The TEGIVS material can be viewed as a positive measure for this course since a fourth theme emerged in their perceptions of what it takes to make virtual schooling a success at the K-12 level. Eight of the nine participants perceived the notion that "without well-trained, qualified teachers to facilitate online instruction, virtual schooling will be ineffective as an educational model" (Kristy). The participants also suggest that virtual schooling can be successful if all stakeholders are educated on the topic, proper technology is accessible, and students are trained on the technology being utilized and have access to an on-site coach. This final component is critical, as there is a growing body of research that suggests the inclusion of school-based personnel is directly tied to student success in these distance learning environments (see Roblyer, Freeman, Stabler & Schneidmiller, 2007; Watt, 2005).

Initial Conclusions and Implications

These results demonstrate the participants perceived that K-12 school administrators, and other stakeholders, were not fully equipped with the knowledge about or prepared to support virtual schooling. The data also indicated that when teachers are exposed to information about virtual schools through articles, videos, and active discussion with other peers, they were able to see the benefits of virtual schooling for both teachers and students. The participants appeared eager to begin developing the skills needed to become more active in supporting and implementing online learning at their own schools.

Based upon our findings, it was clear that more research is needed in this particular area. As a case study with a limited sample, the first step in continuing this line of inquiry would be to conducted a follow-up study with graduate students during the next offering of IT6230 – Internet in the Classroom. This will allow us to determine a number of things, such as whether this particular group of participants were an exception group or if they are consistent with other in-service teachers in Michigan. It will also allow us to determine whether an additional year with Michigan's new graduation requirement (i.e., that all high school students must have an online learning experience in order to graduate) in place serves to better inform in-service teachers about K-12 online learning. Finally, additional research in this area will allow us to make customize the TEGIVS and modify or add materials to address some of the issues found in the themes generated from these participants.

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