

Complexities in the Evaluation of Distance Education and Virtual Schooling

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Abstracts

The purpose of this paper is to discuss the complexities and issues involved in the evaluation of distance education and virtual schooling. In order to provide an anchor to the issues involved in evaluating online projects we first present the evaluation design of a virtual high school project. Then, the emphasis of the paper is on the goals of the evaluation, stakeholder analysis, evaluator role, data collection, and data analysis. Finally, we discuss the need for evaluation of distance education and the ethical responsibility of the evaluators involved.

De la complexité de l'évaluation de l'éducation à distance et de la scolarité virtuelle.

Le but de cet article est de discuter des complexités et des problèmes posés par l'évaluation de l'éducation à distance et de la scolarité virtuelle de façon à fournir un ancrage aux problèmes impliqués dans l'évaluation de projets en lignes, nous présentons d'abord un schéma d'évaluation d'un projet d'école secondaire virtuelle. Ainsi l'article met l'accent sur les objectifs de l'évaluation, l'analyse du dépositaire d'enjeux, le rôle de l'évaluation, la collecte des données et leur analyse. Finalement, nous discutons du besoin de l'évaluation de l'éducation à distance et de la responsabilité éthique des évaluations impliquées.

Komplexitäten in der Auswertung von Distance Education und virtueller Schulung

Der Zweck dieses Beitrags ist, die mit der Auswertung von Distance Education und virtueller Schulung verbundenen Komplexitäten und Fragen zu erörtern. Als Ausgangspunkt zu den Fragen, die mit der Bewertung von Online-Projekten verbunden sind, zeigen wir zuerst den Auswertungsentwurf für ein virtuelles High-School-Projekt. Dann liegt der Schwerpunkt des Papiers auf den Zielen der Auswertung, Interessengruppenanalyse, Auswerterrolle, Datenerfassung und Datenanalyse. Zuletzt erörtern wir den Bedarf nach Auswertung von Distance Education und die ethische Verantwortung der eingebundenen Auswerter.

Introduction

Distance education as a field has grown from simple correspondence education to a highly sophisticated, distributed interactive learning experience (Vrasidas, 2000; Vrasidas & Glass, 2002). One of the trends in the field of distance education is the development of virtual high schools. Virtual high schools are offering alternative solutions to educating K-12 students who are not well served otherwise. The Virtual High School is a consortium of high schools, which offers online courses taught by consortium teachers for students in participating schools. During the academic year 2000–2001, it offered more than 200 high school courses to nearly 4,000 students in 350 schools in 30 states in the US (Kozma et al., 2000). Virtual high schools are developed and are in operation in several states including Kentucky, Florida, New Mexico, Illinois, and Michigan.

The Center for the Application of Information Technologies (CAIT) at Western Illinois University (WIU) commissioned a study to examine the status of virtual high schools in the United States (Clark, 2000). The study looked at other leading projects and provided information on key forces driving state interest in virtual schooling. Such forces include state and federal initiatives, as well as curriculum equity concerns such as advanced placement. Furthermore, the study identified key characteristics of some leading virtual high school projects. These characteristics include technologies used, funding resources, curriculum issues, student

services, professional development for teachers, access and equity issues, assessment, policy and administration, marketing, and public relations.

In another recent study on virtual high school projects Clark (2001) reports the following:

- Between 40,000 and 50,000 K-12 students enrolled in an online course during 2001–2002
- The trend to continue developing virtual high school projects continues
- Advanced placement courses and Calculus AB were the courses offered by most schools
- The most often reported tuition was \$300 per semester, but there was also a great variation among reported prices
- A variety of virtual high school projects were identified among which we can find state sanctioned projects, university-based virtual schools, virtual school consortia, virtual schools operated by schools and districts, virtual charter schools, and private virtual schools.

There is a strong need for more research and evaluation studies that will help improve virtual high school projects and distance education theory and practice at all levels. Evaluation studies are of critical importance for establishing a model for the development, delivery, support, and evaluation of distance education and online programs (Vrasidas & McIsaac, 2000). A coordinated, systematic study and evaluation of online projects will allow designers, developers, researchers, and policymakers to make informed decisions for project development, and implementation, as well as for funds allocation. This paper will present and discuss issues in the evaluation design behind the LUDA Virtual High School project (LUDA-VHS). Because of space limitations, the emphasis will be on the process of evaluation and not on the findings of the evaluation (the findings will be briefly presented in the discussion section). The decision to focus on the process of evaluation in this paper is purposive, because we want to analyze the ethical responsibilities involved in evaluating distance education – an issue that deserves attention.

LUDA-VHS: overview and background information

Technology is blurring the boundaries between traditional face-to-face and distance education and educators need to revisit their fundamental assumptions about teaching and learning (Vrasidas & Glass, 2002). Students no longer need to sit in a room with desks in rows for learning to occur. LUDA-VHS, like other virtual high schools and online projects, is based on the assumption that learning occurs when the student is given opportunities for interaction with the content, the teacher, and other students.

LUDA-VHS is an effort by LUDA (Large Unit District Association) Education Foundation in partnership with CAIT at WIU to provide opportunities for virtual learning to high school students in the state of Illinois. The LUDA Education Foundation is a non-profit corporation formed to operate ‘exclusively for charitable, educational, religious, or scientific purposes.’ Members of the foundation are school districts in the state of Illinois and members of LUDA. One of the goals of the organization, as stated in its bylaws, was to develop educational programs, which will permit students to learn in a virtual classroom setting. One or more educational programs will be established so that individuals may access the educational programs to obtain high school credit toward a graduation degree.

LUDA-VHS has as major goal to use technology for developing alternative ways for serving the needs of school districts and providing quality education to high school students in the state of Illinois. The project entered its planning phase in Fall 2000 with meetings attended by LUDA representatives and CAIT personnel. From the first planning meetings, one of the group’s goals was to create a sense of teamwork and interdependence among all stakeholders for achieving the goals of the project. All stakeholders were encouraged to be actively involved in supporting and promoting the program goals. Although the scope and specific goals of the project were not clearly defined, one of the goals of this evaluation was to help the Foundation identify clear objectives and goals for LUDA-VHS.

The LUDA Education Foundation appointed the LUDA-VHS planning committee, which consisted of members of the LUDA Education Foundation, CAIT personnel, and representatives from LUDA school districts. The planning committee’s major role was to work closely with the teachers and CAIT personnel for the design, development, and implementation of a pilot online class. As part of LUDA-VHS, a pilot online class on Consumer Education was developed and implemented during the summer of 2001. The goals for the pilot class, which are directly related to the goals of this evaluation, were to:

- Resolve the technical, administrative, development, and implementation issues relating to online class development.

- Identify a process for online class development.
- Identify the lessons learned from this pilot, so they can be used for the development of more courses.

For the development of the pilot class on Consumer Education, three LUDA teachers worked closely with the project manager and two instructional designers from CAIT. During the first meeting, instructional designers gave an overview of the process for developing online classes and discussed several ideas for providing interaction in online environments. In order to facilitate content preparation by the teachers, a template was given to teachers, which was used by CAIT designers for developing other distance education courses. This template provides a basic structure of how to organize the content for an online class, structure its goals, objectives, activities, communication strategies, and interaction. During the meeting, teachers were assigned units of content they felt more comfortable developing. Following the first day meeting, teachers worked on their own to develop a sample lesson from the content they were assigned. They sent that lesson via email to CAIT designers who provided feedback. Following that, there were periodical meetings among teachers and CAIT designers during which the status of the project was discussed and feedback was provided on content development and on the class website. After class content was developed, teachers were trained on teaching online, on using the class tools, and navigating the class website. In order to try out the class, three sections of Consumer Education online were offered during summer school at the three schools the teachers worked. Students met face-to-face with their classmates and teacher during the first day orientation to the course. Class continued online and met again face-to-face at the end of the summer session for the final exam. The evaluation plan described in the following sections, was the plan implemented for evaluating the summer deployment of the course in the three participating schools.

Evaluation design

The framework within which the evaluation for LUDA-VHS was conducted was designed, developed, and implemented by CAIT. While several approaches, models, and theorists were taken into account (Cronbach, 1982; Smith & Glass, 1982; Stake, 1995; Weiss, 1998), the focus of this evaluation was to collect data to help the LUDA Education Foundation and CAIT improve the project. The evaluators worked with the LUDA Education Foundation, school principals, superintendents, teachers, and the development team at CAIT to design the evaluation, so it meets the objectives of the project and furnish findings that would be used to improve the LUDA-VHS. After conducting an extensive literature review of research and evaluation studies conducted in the field of distance education, and after negotiating the goals and purposes of the evaluation with all stakeholders, the evaluation plan was implemented as described below.

A variety of methods for data collection and analysis were used. Data were collected to triangulate findings and provide a complete picture of the program (Miles & Huberman, 1994). The selection of a method depends on several factors such as the nature of the program to be evaluated, the questions of the evaluation, stakeholder needs, and the evaluation timeframe. Stakeholder input and interests were accounted for in planning the evaluation in an attempt to establish a shared vision, ownership, and leadership on the project and allow for multiple voices to be heard. The plan for this evaluation was negotiated with major stakeholders during the months of May and June 2001. During a meeting with the planning committee, the evaluators discussed the evaluation plan with members of the planning committee. After the meeting, an email questionnaire was sent out to the members of the committee, as well as to the teachers who were assigned to teach the summer class. The questionnaire asked them to identify the major problems and concerns of the project and to identify their expectations from this evaluation. The questions included in that email questionnaire were the following:

1. What issues or key questions would you like to be addressed by this evaluation?
2. What do you see as the major goal/objectives of this project?
3. What do you see as the primary problems of this project?

Goals of the LUDA-VHS evaluation

As Cronbach (1982) would argue, the purpose of evaluation is to paint a clear picture of the program, its operations, and the nature of the outcomes as they are manifested on its clients. This evaluation was formative in nature. The major goal was to provide information to LUDA Education Foundation and CAIT on how to improve LUDA-VHS. The specific goals set for the evaluation of LUDA-VHS and the summer pilot class are listed below:

- Document the design, development, and implementation of the pilot class and assess its initial impact.
- Resolve the technical, administrative, development, and implementation issues relating to VHS projects.
- Identify the lessons learned from this project and use them for the development of more courses.
- Identify a process for online class development that will involve the collaboration of CAIT designers and Illinois certified teachers.
- Propose a set of goals for LUDA-VHS.

Stakeholders

The stakeholders in this program were multiple.

- LUDA Education Foundation. The LUDA Education Foundation is a non-profit corporation formed to operate 'exclusively for charitable, educational, religious, or scientific purposes.' Members of the foundation are school districts in the state of Illinois and members of LUDA.
- LUDA planning committee. This committee consisted of members of the LUDA Education Foundation, CAIT designers, and representatives from LUDA school districts.
- Center for the Application of Information Technologies (<http://www.cait.org>) at the College of Education and Human Services at Western Illinois University. One of CAIT's major goals is to promote the integration of a broad array of advanced information and communication technologies into education and training settings.
- The three teachers who developed the content for the class and taught it during the summer. All three teachers had extensive experience teaching Consumer Education.
- Principals, superintendents, assistant superintendents, technology coordinators, teachers, and other school personnel at the participating schools. Some of these people were also members of the LUDA Education Foundation and/or the LUDA-VHS planning committee.
- Students who participated in the summer pilot class as well as all students who might take online classes as part of LUDA-VHS.

Evaluator role

The evaluator always acts in political, institutional, social, and historical contexts (Erickson, 1986; Patton, 1987). Our role as evaluators was closely defined by a social network of relationships with the LUDA Education Foundation, the LUDA planning committee, CAIT as our employer, and the teachers. We had a responsibility toward the LUDA Education Foundation, CAIT, teachers, and students to maintain confidentiality and make sure that we did not cause any problems or harm to any of the parties involved. We created a relationship based on trust and collaboration with the participants, which allowed us easy access to the setting and collection of quality data. The assumption was that, the closer we got to the setting, the more likely it was that we would be able to access information from multiple sources to warrant our assertions.

As members of the design team, we had a serious interest in improving the project. Therefore, it is possible that our strong desire to be successful in this project might have influenced our judgment. This is a challenge that is always an issue for internal evaluators. Furthermore, during the interviews with stakeholders, it was clear that they were strongly committed to the project and they were concerned about the outcomes. Several of the stakeholders' suggestions and recommendations were implemented in the plan. Other recommendations, for example, the request to design a controlled experiment, were not incorporated because of several reasons. First, it did not match the objectives of the evaluation. Second, there were too many variables to control, and since this was a pilot project, it was very difficult to design a controlled experiment. Our role as internal evaluators was clearly very sensitive and challenging; however, there is no way out of the politics and ethics involved in evaluating programs.

The evaluators' experience with the subject of study influences the validity of inferences. Articulation of the background of the evaluators is important. Our role as evaluators was influenced by our roles as part of the design team and by our experience with the topic of study, which also influenced data collection and analysis. There is no bias-free point of view in any approach to evaluation. We all filter our view of phenomena through our theoretical lenses. It was not an easy task to block out our preconceptions about the setting and the topic under inquiry. No matter how hard we try, we can never enter a setting as the 'fly on the wall.' We enter a setting and depending on the lens we view this setting through and the role we assume, we construct our perspective. We can never renounce our prior knowledge. However, we can discuss our preconceptions and

be aware of their existence and how they influence our view of the world and our interpretation of social phenomena. By discussing some of the factors that might influence our interpretation in this evaluation, it allows readers to be co-analysts of the study and reach their own conclusions about the validity of inferences. Following, the various data collection procedures are briefly described.

Data collection

In order to identify how to improve LUDA-VHS, a variety of data collection procedures were employed. Only by coordinating data collection and analysis from various sources and by performing a systematic comparison across cases, could we reach insights and discern themes and patterns that would help us define the scope of the project and identify what needs to be done to improve it.

- *Observations and Interviews.* The evaluators were also active participants in the planning, development, and implementation of the project. Therefore, they had the opportunity to observe all meetings that took place. Semi-structured interviews about the scope, effect, and impact of the project were conducted both face-to-face and on the phone after the completion of the summer school sessions with all stakeholders. All interviews were tape recorded and transcribed.
- *Surveys and Questionnaires.* Two online survey questionnaires were administered to students who took Consumer Education. A student online survey was administered the first day of class to get the students' level of technology skills, demographic information, and the students' attitudes and perceptions of online courses. A second online survey was administered at the end of the class to get the students' views on the impact of the class and how to improve it for subsequent semesters. A total of 45 students have successfully completed the class. From the 45 students, 38 of them have completed the class evaluation survey that corresponds to an 84.4 % response rate.
- *Document Review.* School report cards of the three schools involved, LUDA strategic plans, documents relating to the LUDA Education Foundation, and reports of minutes from the meetings of the planning committee were reviewed for this evaluation.
- *Content Review.* Teachers working under the K-12 division at CAIT reviewed the content during the development process and checked for alignment of each of the lessons and units objectives with the Illinois Learning Standards (ILS).
- *Usability Testing.* Usability testing has been conducted throughout the development process.
- *Email Messages, Discussion, Contributions, and Log Files.* Email messages exchanged and class discussion postings were collected and tabulated.
- *Memos.* Detailed memos were kept by the evaluators throughout the 7 months of production and implementation of the project. A memo is a theoretical write-up about ideas, concepts, categories and their relationships as they strike the evaluator while in the field and or during data analysis. It is the evaluator's note to himself about the data, ideas, method, and the like. This procedure is used to keep track of emerging ideas and categories, stimulate further analysis and data collection, and serve as a means for the development of assertions and recommendations for the improvement of the project. As an analytical process, writing memos helps the evaluator in filling out the analytic properties of the descriptive data collected. In the later stages of analysis, the memo helps to connect the data, assertions, and the theoretical and practical discussions.

Data analysis

The data collection and data analysis phases overlap (Behrens & Smith, 1996). As data were being collected, we were making analytical decisions about the evaluation plan, and data analysis. For data analysis, we followed two stages: the inductive and deductive (Erickson, 1986). Interview transcripts, class documents, meeting minutes, memos, log files, and survey results were all analyzed. Upon entering the inductive stage, we organized all the transcripts, field notes, and documents. We used data displays, concept maps, and tables to illustrate findings of the evaluation. We calculated descriptive statistics based on the survey data completed by students at the end of the class.

The inductive stage of data analysis is very open-ended, and it is the stage in which the evaluator generates assertions (Vrasidas, 2001). After we collected and organized all the data, we read through the data three times and tried to gain an overall understanding of what was happening in the particular class. As we read through the data, questions came to mind. We wrote notes and memos about those issues and events that stroke us and began to generate assertions. Assertions are propositional statements that indicate relationships and generalizations in the data and which the evaluator believes are true. Once we generated assertions from

the data as a whole, we entered the deductive stage. In this stage we engaged in detailed examination of the data corpus and looked for data to confirm or disconfirm our assertions.

Discussion

The findings of this evaluation indicated that LUDA-VHS was successful because a synergy of people, resources, and processes, worked together in a team spirit, sharing the same vision. A strong indication of the success of the project was the very low dropout rate of students. Only 4.2% of the students dropped out during the pilot deployment. Alignment with schools districts technology plans, commitment and ownership to the project, high quality material, frequent teacher-student interaction, and good teamwork were the major reasons of the success of the project. However, as the project expands to include more schools, teachers, and students, several issues need to be addressed for continued success. Such issues include teacher training and compensation, student selection and support, instructional strategies for online learning, educating the public on the benefits of online learning, providing equal access to all students and teachers, and building quality assurance mechanisms (Vrasidas, in press).

One of the main barriers we had to deal with was the fact that the evaluation for LUDA-VHS was an *internal* evaluation. That is, evaluators were part of the development team and also of the major stakeholders involved in this project. Selecting an internal or an external evaluator depends on several factors such as available resources, budget, goals of the evaluation, and scope of the project. In our case, the major goal of the evaluation was to improve the project. Furthermore, there were no extra funds available to commission an external evaluation. External or internal, the evaluation has certainly different advantages and disadvantages. For example, it is believed that the presence of an external evaluator suggests that the findings of the evaluation are more likely to be 'objective' (Calder & Panda, 2000). However, an internal evaluator is more likely to know better the program and collect more quality data that can help improve the program and its operation.

In both cases – i.e., an external or an internal evaluation – the politics involved raise the issue of the ethical responsibility of the evaluator. Evaluators of projects must be prepared to face political and ethical dilemmas at all stages of their work. What makes evaluation wrought with political and ethical complications is the fact that it is people who design and perform the data collection and analysis about projects that are meant to, in some way, affect yet other people. How can the evaluation be value plural instead of claiming to be value free? Will the evaluator's standards and values conflict with the client system's and/or sponsor's values; will the evaluator face any conflict of interest problems; what will be done about possible conflicts? Will conducting an internal evaluation compromise the credibility of one's findings in the opinion of the funding agency or other key persons? How will evaluators stay abreast of social and political forces associated with the evaluation and use this knowledge when planning and carrying out evaluation procedures? How will the evaluator make sure to address and honor the needs and rights of all stakeholders equitably, taking appropriate account of their gender, ethnicity, and language backgrounds? All these questions raise the possible political, social and ethical pressures on the evaluator. The dilemma is to weigh the social, ethical and political concerns of the commissioning agency against the evaluator's commitments to participants. The positive aspect is that evaluation can necessitate alliances between historically separate community groups (e.g. academia, practitioners, advocacy groups, service providers etc.). On the other hand, mutual misperceptions regarding the goals and process of evaluation can result in adverse attitudes.

Conclusion

Research and evaluation of distance education and technology-based learning are essential for the growth of the field and improvement of education. Often educators focus on comparison studies trying to find out whether distance education is as effective as the traditional face-to-face instruction. However, decades of research and evaluation have demonstrated that there is no significant difference and that distance education is at least as good and effective as traditional face-to-face classroom instruction (Clark, 1983, 1994).

What is needed most is evaluation of technology-based research projects and distance education programs. Traditionally, evaluations were more quantitative-based. However, during the last 10–15 years, evaluators of distance education programs have been employing more holistic qualitative methods (Simonson, 1997). It is only with the systematic evaluation of such innovations that educators, administrators, and policy makers can make informed decisions about the design and implementation of school programs. Evaluations that are formative in nature and that use multiple methods for data collection and analysis, like the one described in

this paper, have the potential to shed light on programs in ways that will help stakeholders improve the quality of education they offer to their students and communities (Calder & Panda, 2000; Heinecke, Blasi, Milman, Washington, 1999). Therefore, evaluation, above all, is *ethical* evaluation, which means more than just a proper use of evaluation methods. The premise is, that integrity, credibility, respect and fairness come true in evaluation process and that the process provides socially relevant information.

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Biographical Notes

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