Evaluating Educational Technologies: Technology Connoisseurs in the Campus*

Betül C. Özkan
Department of Media and Instructional Technology
University of West Georgia
United States
bozkan@westga.edu

Barbara K. McKenzie
Department of Media and Instructional Technology
University of West Georgia
United States
bmckenzi@westga.edu

Abstract: This paper explores a new approach to the evaluation of educational technologies by using Eisner's connoisseurship model. This model has two essential features in program evaluation: holistic approach to the analysis and interpretation of data and multiple perspectives in the evaluative tasks (Eisner, 1998). Using Eisner's model, the key technology connoisseurs at a state university in the Southeast were interviewed to shed light on the evaluation practices of educational technologies. The results of this study are summarized for those who are interested in alternative evaluation models. The findings should also serve as a guide for technology leaders in making educational improvements.

Summary

Purpose

Local and state agencies as well as the federal government have invested heavily in various technology tools for schools and classrooms for the last two decades. Meanwhile, efforts that demonstrate the value of educational technologies in the learning environment gained momentum by increasing the discussions on technology's effectiveness in schools (Haertel and Means, 2003). In this regard, the call for 'evidence' for effectiveness became a buzzword and researchers started conducting studies to better guide the technology investments.

Ling (n.d., ¶2) believes that there are four positions in the evaluation of educational technologies: One is oriented to the stated objectives of the particular educational innovation; one to comparison with alternative educational approaches; one to the benefits and costs anticipated from a knowledge of the state of the art of learning technologies; and one to criteria developed from a particular educational and/or social theory. This paper will use the fourth position while evaluating effectiveness of technologies in one university's campus.

Theoretical Framework: Connoisseurship Model

Eisner's connoisseurship model provides a strong framework and alternative to the experimental design evaluations. According to Eisner (1998), connoisseurship is "the art of appreciation" (p.63), and educational connoisseurs are those who have a distinctive awareness of qualities in different settings. He thinks connoisseurs evaluate the issues by looking at their

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

qualities and illuminate a situation so that it can be seen or appreciated by others as well. In the evaluation of educational technologies, the connoisseurship model has two major implications: holistic approach to the analysis and interpretation of data and multiple perspectives in the evaluative tasks. Holistic approach guides researchers from the formation of data collection instruments to the final write-up.

Eisner points out five dimensions of schooling that educational connoisseurs consider: intentional, structural, curricular, pedagogical and evaluative. The "intentional level deals with goals or aims that are formulated for the school or a classroom" (Eisner, 1998, p.73). The structural level addresses the organizational forms of the schools and classrooms such as facilities, time, utilities and their cost. The curricular dimension focuses upon "the quality of the curriculum's content, goals and activities employed to engage students in it" (Eisner, 1998, p.75). The pedagogical level deals with teaching and learning occurred in the classrooms. The last dimension, the evaluative level emphasizes the evaluation practices that influence the learning environment.

Data Collection Process

The data in this study were collected through open-ended interviews with 7 technology connoisseurs in a public university in the Southeast. In the selection of participants, an email that explains the purpose of the study was sent to all technology faculty and staff in the university. Only those who were volunteered and has available time for an interview joined to this study. Participants range from technology support specialists for different colleges in the campus to information technology service directors, from university faculty to technology trainers who are well known at this institution and whose responsibility is to use and integrate educational technologies.

The interview questions were developed by the researchers using five dimensions of the connoisseurship model. Each interview took 25-30 minutes and was audio-taped with the consent of the participants. Interviews took place in fall, 2004. The recorded interviews are transcribed for further data analysis. After this task was completed, researchers used the holistic approach to qualitative data analysis, and summarized the results.

Results

The first section of the interview contained warm-up questions of which probed participants' demographic information. Table 1 is to summarize these results.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Table 1: Demographics

Position	• Tenured faculty member = 3 • Technology Administrator = 4
Years at the Institution	• 1 – 5 years = 2 participants • 6 – 10 years = 0 participants • 11 – 15 years = 3 participants • 16 – 20 years = 1 participant • 21-25 years = 1 participant
Gender	• Female = 3 • Male = 4

The second section of the interview schedule included two questions. The first one was about the criteria used in the selection of educational technologies, and second one was about whether technology investments or available technology in classrooms match the technology goals of the university. Almost all participants concluded that use of technology in the classrooms to support instruction is number one criteria to make decisions in technology investments. One interviewee mentioned that if a technology is deemed important by the faculty members, even if is not vitally used, they usually have very good support from the administration. This shows that faculty members at the higher education institutions are very critical to set up the criteria for technology. Another participant mentioned that use of standard software and hardware across the campus is very important criteria while purchasing new software. He also added that at the moment because of this criteria faculty members, staff and students can walk from one unit to another and use the same program.

In terms of second question in this section, one participant mentioned university's butter and bread goals and the part about technology:

> To achieve national recognition, the University should (a) develop high-tech minors and programs for students in the humanities, natural and social sciences, business, and education; (b) ensure that every graduate is competent in the use of information technology in his or her discipline, and (c) become a leader in the innovative use of asynchronous learning environments to support both distance education and classroom instruction.

Almost all participants agreed that use of technology in the broad sense of the word matches with the university's mission. Table 2 summarizes the rest of the results for this section.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Table 2: Intentional Level: Goals, aims and intentions

Criteria used to choose software and hardware
• Technology's use in the schools; • Future use of technology in the schools; • Cost of technology; • Compatibility of technology hardware and software with the technology that is currently in place; • The technology plan and what is proposed to be used and purchased in the future due to changes taking place; • Easy support; • Our criteria is for whole campus software and hardware; peer institutions may serve as models; • The extent technology will support instruction; • Broad use of technology; • Faculty members' requests based on curricular needs; • Criteria are not clear all the time; • Outside agencies that rank the universities set some of the criteria. • Higher Education IT groups such as Educause • University's bread and butter goals. • Budget. • The University Technology Committee. • Extent of technology use. • The consistency of technology use; • The portability of the technology; • The use of standard software programs across the campus; • The software sets the criteria for hardware; • The criteria set up by lower level technology groups across the campus • Software and hardware should meet pedagogical needs; cost; • The skills of the people who are going to use technology

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Match between technology and university goals
Interviewee #1: There is a close match: Department focuses on students' effective use of technology and becoming a leader in the school; effective and innovative use of asynchronous learning environments that support classroom instruction and distance education.
Interviewee #2: We follow university's bread and butter goals for technology; individual units match their goals with the university' goals.
Interviewee #3: Everything we do is to advance university' mission; university' goals are consideration for us before we implement anything.
Interviewee #4: We try to match up enterprise applications for entire university.
Interviewee #5: This is a technology rich institution. Availability helps reaching the university's goals.
Interviewee #6: University goals are very broad and open when it comes to technology. University Technology Planning Committee has a little more specific IT Strategic Plan. It is easy to fit in there.
Interviewee #7: My observation is that people have bought the technology and then tried to find a need for it.

When interviewees asked for the available technology that facilitates successful technology integration, they all agreed that university has enough resources. One interviewee stated that their university has a number of computer labs available on campus for use by students and faculty for computing classes and individual use to work on technology projects as well as a wealth of technology rich classrooms and resource rooms such as the Teaching Materials Center, Learning Resource Center, Video Editing rooms, Darkrooms, Educational Technology Training Center, and multimedia rooms. In terms of offering technology training, same participant stated that a wealth of technology and distance training classes were offered to faculty across the colleges to enhance faculty skills and knowledge. Many of these are collaborative training sessions across colleges and departments. Another participant stated that the university has adapted a more decentralized model of technology support in the past few years but different IT units collaborate, share information and work together for a common cause. Table 3 summarizes results of this section.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Table 3: Structural Level: University's Organizational Structure

In what ways does the organizational structure of the university (classrooms, labs, utilities, time allocation for courses, subject areas technology used, degree levels) facilitate successful technology integration?
• A number of computer labs are available for students; • Technology rich classrooms are available for teachers and students to use; • There are a wealth of technology training opportunities offered to both students and faculty; • The organization provides many online resources for students and faculty; • The Distance Education Office provides incentives to distance faculty; • There are special courses for technology integration; • A student computing club exists for interested students; • Electronic portfolios that show students' technology skills; • Each college has their own resources, budget, and planning committees; • One on one training provided for the faculty; • Assistance with technology is provided; • Decentralized model of technology support is helpful; • This university has done a pretty good job providing the resources.

The fourth section of the interview is about curriculum content, goals, and activities. When participants asked for evidence whether technology matches with the curricular goals or not, one participant stated that this process is very informal. She said:

> If things are going along smoothly and you don't hear many complain then you know that things are matching pretty well. If you hear rumblings and grumbling about the technology, then you know that there are problems.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Table 4 summarizes how well participants felt technology matched curricular content and evidence that supported this and successful technology integration.

Table 4: Curricular Level: Curriculum Content, Goals and Activities

Match with technology and curricular content
• # of participants who reported there was a match = 4 • # of participants who did not = 2 • # of participants do reported there was not match = 1
Evidence demonstrating technology matches curricular content
• Formal and informal feedback from students; • Formative and summative course evaluations; • Informal dialogue between department members; • Professors inform technology leaders; • Student's work and electronic portfolios; • Students complain when technology does not match the curriculum content;
Evidence technology is successfully integrated into the curriculum
• Class observations by the administrator; • Listening to student questions and concerns; • Projects created by students; • Faculty web sites; • Informal dialogues with faculty members; • Informal dialogues with students; • Annual reports from each department and college; • Observations of students teaching;

The fifth section of the study targeted learning and teaching experiences. Most of the participants stated that individual faculty members and departments set up the criteria for evaluation and there is no standardization across the campus in this regard. Other results of this section are summarized in Table 5.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Table 5: Pedagogical Level: Learning and Teaching

Criteria used to determine effective technology in enhancing learning
• Research that shows positive impact of technology on student learning; • There are a number of people impacted by certain technology; • The cost of technology; • Best practices using technology; • Replacement of old technologies; • Multimedia features of computers enhance learning; • Observing students and their use of technology in the field after graduation;
Criteria used to determine effective technology in enhancing teaching
• Technology's capability to enhance student's ability to learn concepts; • Technology's capability in meeting diverse and varying needs of the students; • Number of people impacted by certain technology; • Cost; • Replacement of old technologies; • Best practices using technologies; • University Technology Committee discussions provide leadership; • Published research studies on criteria to use to determine effective technology in teaching; • Student feedback; • Real life needs in the teaching situation;
Role of instructors in effectively integrating technology
• Model effective technology use; • Using new and emerging technology; • Faculty collaborating with instructional designers in their teaching; • Faculty serving as a facilitator of student learning; • Faculty should have good technology skills and understand what effective technology integration is;

The last section of the interview dealt with the evaluation practices for effectiveness of educational technologies. Results of this section can be viewed in Table 6.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Table 6: Evaluative Level: Evaluation Practices

Questions	Evaluation practices of the educational technologies	Evaluation practices that take place in the university
Interviewee 1	• University course evaluations; • University distance education course evaluation; class observations; • Formative and summative course evaluations; • Department programs outcomes survey; • Program completers survey; • Mid program survey; • Feedback gotten at the oral exams.	• Focus group interviews with the students; • Focus group interviews with the cohorts; • Needs assessment survey administered by some faculty; • COE Technology Committee reports; • University Technology Committee reports; • Learning Resource Center surveys; • Distance Education Office surveys.
Interviewee 2	• University Technology Planning Committee's annual reports; • Instructional Technology Services (ITS) Annual report (not directly related to educational technologies but it is evaluation of overall technology in the campus)	• University Technology Planning Committee, • Strategic Plan
Interviewee 3	• Formalized survey of the students (sometimes students don't take this seriously, so informal feedback should be considered as well); • Formalized survey of the teachers; • Informal email sent to the faculty members.	• Formation of different groups that meet on regular basis to discuss technology on campus (in this university not everyone agree on how we do things but we do all communicate about it)
Interviewee 4	• We track use of certain technologies across the campus	• University Strategic Plan for technology.
Interviewee 5	• We have to do more evaluation research. Unfortunately most faculties use technology and believe that that is effective and fine and they don't need to do anything else.	• I see a genuine concern to make technology available everywhere. Accreditation reports show this. But there is no systematic formal evaluation of the technologies campus-wide.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.

Interviewee 6	• Formal surveys; • Personal observations.	• Feedback through small studies; • Quick polls; • Decentralized units.
Interviewee 7	• Student surveys and interviews; • Interviews of alumni; • External interviews.	• Very mixed. Some departments do a better job than the others.

Importance of the Study

We believe this study could serve educational leaders in higher education a multitude of ways. The information revealed from the seven participants may cause technology administrators and/or teachers to take a closer look at their technology systems, especially their teaching, learning, and evaluation practices in order to make program improvements. The preliminary findings may provide some additional ways of examining our current practices.

References

Eisner, E. (1998). The enlightened eye: Qualitative inquiry and the enhancement of educational practice. Upper Saddle River, New Jersey: Prentice Hall.

Haertel, G. D., & Means, B. (2003). *Evaluating educational technology: Effective research designs for improving learning*. New York: Teachers College Press.

Ling, P. (n.d.). Frames of reference for evaluating new learning technologies. Retrieved October 17, 2004 from http://www.aare.edu.au/99pap/lin99105.htm.

*This paper was presented at the 2006 Annual Meeting of Eastern Educational Research Association, which was held in February 22-25, Hilton Head, South Carolina.