

A Descriptive Analysis of the Perceived Effectiveness of Virginia Tech's Faculty Development Institute

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The Faculty Development Institute (FDI), a large scale, formal faculty training program, was implemented to help faculty acquire skills necessary to incorporate computer technology into their instruction. This study uses a mixed methodology to identify and compare the goals, expectations, and perceived outcomes stakeholders held for FDI. The stakeholders had similar expectations for the outcomes during and/or immediately following the initial FDI workshop, but differed in their expectations of the long-term outcomes.

Key Words: Training and Development, Faculty Development, Expectancy Theory

In recent years, faculty members have been asked to utilize computer technology within their professional work, primarily as instructional tools. The World Wide Web has provided the platform for faculty members to incorporate technology into their instruction (Ball, 1995). In today's technological environment, enhanced computer skills are a necessity for growth and survival throughout society. This university community had been affected by an increase in the number of students that needed to be taught by faculty who had decreasing resources available. Computer technology was used because it allowed rapid growth of knowledge acquisition and expansion. It also provided numerous resources that were never before available to both faculty and students.

Organizational and environmental change initiatives were occurring within the university before the development of Faculty Development Institute (FDI). These initiatives were a part of the long-range plan for change developed by the university (The University Plan: 1991-1996, 1991). The developers of FDI, because of their previous roles within the university, were aware of these initiatives. They saw these changes as an opportunity for action and used them to develop a platform from which they could leverage an idea that would meet professional goals and influence the achievement of the university goals. According to Kunneman, Key, and Sleezer (2000), the use of technology, the relentless speed of change, and the skills needed by working people have provided the platform for change within organizations. Interview findings show that developers saw the opportunity, were in positions to influence change and made the decision to so. FDI evolved out of their decisions.

The FDI, a large scale, formal faculty training program, was implemented to help faculty acquire the computer skills necessary to incorporate computer technology into their instruction. The university anticipated that enhancing faculty members' ability to use computer technology in their instruction would result in:

... courses with more emphasis on active and independent learning strategies, problem-solving and collaboration; strengthened student competitiveness in the job market; improved student retention; improved quality of interactions among students and faculty; and improved use of computer skills by students and faculty throughout the entire academic enterprise (Instructional computing proposal, 1992).

FDI was a brand new idea for the developers. It was not a part of a university initiative when it was developed. However, the developers designed the program to align with goals of the university as outlined within the university plan. Since its inception was a success, FDI has become a major part of the university for the past 12 years and new training programs and technology is continuously being added. There were 50 faculty members of approximately 1200 who initially participated in the first FDI training session. These faculty members represented departments such as English and Humanities because they were being asked to serve large numbers of students as a result of expanding core requirements. They were also chosen because they would have been least likely to have used computer technology within their instruction as opposed to engineers and scientists who had access and used computer technology.

Research Problem and Purpose of the Study

Traditionally, university faculty have acquired training and education through self-study, informal collaboration with peers, seminars, workshops, and professional conferences; however, those forms of skill acquisition techniques were often not specific in detail nor did they provide opportunities for faculty to develop their skills through practice.

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This training was often not directly related to the instructional roles of faculty. In an attempt to address specific faculty needs, the university decided to enhance and build upon the idea of a formal faculty-training medium through the Faculty Development Institute (FDI). FDI was the first introduction of a large scale, formal faculty training program to this university environment. The changing culture of students who came to campus expecting to use their existing computer skills and the need to make the process of learning more efficient and effective were determinants for the development of a training entity that could help faculty acquire the computer skills they needed in a relatively short period of time.

The purpose of this study was to identify and compare the goals, expectations, and perceived outcomes that the university, FDI developers, and the initial participants held for the FDI initiative as originally implemented. The focus of this study was to answer the following research questions:

1. What organizational change initiatives influenced the development of objectives for the Faculty Development Institute (FDI)?
2. What were the goals and expectations of stakeholders: the university, FDI developers, and initial participants?
3. In what ways were the university, FDI developers', and initial participants' goals and expectations different?
4. In what ways, if any, have initial participants' professional roles changed as a result of FDI participation?
5. What were the perceived outcomes for the stakeholders: the university, FDI developers, and initial participants?

Professional Development of Faculty

As the trend toward computer use and the World Wide Web (WWW) escalated, faculty members, who are subject matter experts, but not necessarily adept with computer technology, realized they needed to acquire new knowledge and/or skills to use computer technology effectively. Personal computers opened up the instructional setting to resources that were never before available. Although many faculty recognized the potential benefits offered by computer technology and the opportunities that it would provide them, they may not have been willing to invest the time needed to develop and enhance their skills. They were faced with barriers that they were reluctant to address including: (a) the upfront time required to develop their materials using a new technology; (b) the lack of hardware and/or software resources; (c) the funds to update hardware and/or software; (d) the experience, technical assistance and support needed to succeed (Eifler, Greene, & Carroll, 2001; Ndahi, 1998). When facing barriers, individuals often decide to participate in activities that are worthy of their effort or offer a valuable return as a result of their effort. They seek a payoff that will enhance skills they already possess. For faculty, overcoming the barriers they faced in incorporating computer technology into their instruction may or may not have been perceived as too difficult for the payoff that was to be obtained.

Faculty were constantly in contact with students and were the ones who needed to become adept at providing these computer enabled resources to students. Faculty were considered to be in the optimum position for imparting new and evolving knowledge. Due to this, faculty were placed in situations that may not always have been comfortable for them and required that they acquire additional knowledge and/or skills to provide necessary information to their students. In the past, course materials primarily consisted of written documentation (i.e. books, papers, course handouts, etc...) and whatever the student could obtain through lectures, labs, workshops, etc. In order to enhance student comprehension of the subject matter being presented, faculty spent considerable time preparing and revising their materials. The addition of computer technology does not reduce the amount of time faculty members must spend preparing (Deden, 1998). They could not take for granted that the computer alone would enhance student learning. Course materials using computer technology needed to be well designed and much consideration given to how the materials were implemented into the instruction (Oliver, Omari, & Herrington, 1998)

Computer Technology

American society changes and grows as technology evolves. Often the majority of society is convinced to follow the initiatives of a few. The computer revolution that has evolved throughout the past half century is no exception. The computer technology development process began in earnest during World War II with mainframe computers being developed as university projects sponsored by the federal government. These computers were very expensive and used for business, research and military purposes. The introduction of personal computers in the 1980s and the explosion of chip technology transformed the computer revolution. Computers were dramatically reduced in size and cost, and increased in power.

Among the numerous applications of the computer are its important uses in education and training. The

computer provides both a new core technology through which training can be organized and administered, and the computer and computer programs are themselves the content of an increasing number of training programs. In insurance, education, and other service industries, computer related expertise accounts for one of the largest performance needs addressed through training (Kelly, p.37. 1995).

The latest development in this revolution has been the expansion of the World Wide Web (WWW) in the last decade. The combination of computers and the WWW has transformed society, business, and research around the globe, as well as revolutionizing work and training methods (Kelly, 1995). Today, the majority of Americans of all ages have access to computers -- at home, work, school, public library, etc. In the university environment, essentially all faculty and students have access to computers in their office, lab or dorm room – most actually own one. Although faculty have moved rapidly to use computer and WWW technology in research and scholarly pursuits, they have typically been less interested in using them as teaching aids in a classroom setting. In recent years, faculty members have been asked to utilize computer technology within their professional work, primarily as instructional tools. The WWW has provided the platform for faculty members to incorporate technology into their instruction (Ball, 1995). Virginia Tech's Faculty Development Institute (FDI) was developed to assist faculty members with integrating technology into their instruction.

In today's technological environment, enhanced computer skills are a necessity for growth and survival throughout society. The university community has been affected by an increase in the number of students that need to be taught by faculty who have decreasing resources available. Computer technology has led to the rapid growth of knowledge acquisition and expansion and also provided numerous resources that were never available before to both faculty and students.

The literature suggested that computer technology was here to stay and that faculty must constantly remain up-to-date on the latest technologies available. To be effective FDI had to maintain a vision for growth and remain innovative so that it could sustain and meet the skill development needs of faculty members as technology changed. FDI serves as a resource for faculty to continuously upgrade their skills. Having been perceived as experts in their fields, these faculty members were expected to acquire, adapt, and perform new skills quickly. FDI currently provides the opportunity for upgrades on computers every four years and is seeking to reduce this to every three years. Faculty members must also remain actively involved in their own development (Hurst, 1994). They must not be intimidated by technology, but be willing to take on new challenges for their own, and their students' future development.

Method

This study used a mixed methodological approach relying on both qualitative and quantitative analysis. Qualitative methods were chosen to gain insight and understanding from the perspectives of those who participated in the program development and to discover the goals of the university and developers. Quantitative methods were used to collect descriptive data and identify the expectations and perceptions of the participants.

There were five developers of FDI. The developers were interviewed using a custom designed qualitative interview guide. The developers provided essential information since they were providing first person accounts of their perceptions of the goals and expected outcomes that the university and the developers had for FDI. The developers had the opportunity to describe their experiences and share their findings. Through the use of interviews, the developers' goals and expectations were determined from their own words. Document analysis was used because of the historical nature of the study; events could no longer be observed and informants may not have been able to recall all the events (Merriam, 1998). The historical document analysis was used to confirm the objectives of FDI, time frame for objectives, and the objectives of the university (university support) as reported by the FDI developers during interviews. Proper protocol was used in this study through the researcher submitting an IRB form and gaining informed consent from all participants.

Instrument Development

The developers' interview results were used to identify themes and develop the Likert type, survey instrument which was used to collect quantitative data from the program participants. Quantitative methodology was chosen because this is a descriptive and *ex post facto* study. The reliability and validity of the Likert type survey used in this study was evaluated by the dissertation committee and faculty members from the EDRE program within the university's Department of Leadership and Policy Studies. The survey was sent to various individuals for evaluation of readability and usability.

The process for development of the survey was as follows:

1. Interviewed developers
2. Analyzed responses to questions as they align with research questions

3. Developed a scale that is based upon the met expectations hypothesis
4. Presented survey to committee for review
5. Presented survey to selected EDRE program faculty for review
6. Field tested the survey with small group of individuals
7. Made recommended and necessary changes to survey
8. Sent letter to subjects informing them of survey
9. Administered survey to developers and initial participants of FDI and provided them the option of responding electronically, via e-mail, or using a traditional pencil and paper format.

Data Analysis

The constant comparative method was utilized to analyze the data for this study. The data was analyzed throughout the interview process. The reliability and validity of the data was affirmed through the use of triangulation, member checking, and participatory or collaborative modes of research (Merriam, 1998). Triangulation uses multiple investigators, multiple sources of data, or multiple methods to confirm emerging findings (Merriam, 1998). For example, the information provided by the developers was affirmed through analysis of documents related to the development of FDI and field notes of presentations given by the developers. Additionally, the responses of the developers were compared.

A participatory or collaborative mode of research (Merriam, 1998) was used during Phase I of the study. The FDI developers were actively involved in locating documents and former participants of FDI workshops. Also, member checking (Merriam, 1998) was used to validate the researcher's interpretation of the developers' responses during the interview.

The subjects in phase II of the study were the developers and participants in the first implementation of the FDI workshop. The participant group consisted of 42 of the 50 faculty members from departments, such as English and Philosophy, across the university who had participated in the initial training program. Parallel forms of the survey instrument were developed for, and administered to, the FDI developers and participants. The instrument identified the developers' and initial participants' expectations and used a Likert type scale to measure the extent to which those were achieved. The initial participants were also surveyed to identify changes in their jobs they believed were a result of participation in the initial FDI workshop. The following comparisons were made and evaluated during this study:

1. University Expectations vs. FDI Expectations
2. University Expectations vs. University Outcomes
3. FDI Expectations vs. Initial participants' Expectations
4. FDI Expectations vs. FDI Outcomes
5. Initial participants' Expectations vs. University Expectations
6. Initial participants' Expectations vs. Initial participants' Outcomes

The survey was used to determine if the developers had succeeded in developing a program that answered questions that faculty had regarding barriers to their using computer technology within their instruction such as access to hardware and software, specific training to use hardware and software and technical support.

Results

Outcomes and Expectations Comparison

The comparison results are:

1. University Expectations vs. FDI Expectations
The university had 11 broad strategies, goals, and expectations for meeting the challenges brought on by technological change and changes in the university environment. Of those, FDI had the potential to directly and significantly impact two: (a) "to strengthen and expand faculty development programs related to teaching effectiveness, advising, and the applications of advanced computing and communications technologies in the teaching-learning environment"; and (b) "to enhance the quality and accessibility of library and other information resources and advanced computing and communication technologies" (The University Plan: 1991-1996, 1991). The FDI initiative may have impacted most, or even all, of the university's goals to some extent; however, these two goals were those most compatible with the focus of FDI as initially conceived and implemented. FDI provided faculty with the technological hardware and software necessary to meet this university goal.
2. University Expectations vs. University Outcomes
The University's expectations for FDI were met and achieved according to the *University Plan: Progress Toward 1991-1996 Goals* (The University Plan: 1991-1996, (1996). FDI was one part of the university's

Instructional Development Initiative. The outcomes that occurred because of the FDI workshops influenced the achievement of the broader university goals. FDI provided the capacity for change necessary for the university to achieve a number of goals. For example,

The faculty development program has produced faculty ...[driven] ideas... faculty ... came up with the idea for the math emporium... faculty ... established something called the Cyber School ... an early sort of online university pilot... faculty ... realized... that students needed a certain high level of computing capability ... and proposed the requirement for everyone to have computers ...

3. **FDI Expectations vs. Initial Participants' Expectations**
During interviews, the developers identified 41 expected outcomes. The developers held 39 of the 41 outcomes identified as common expectations. When the participants were asked whether they expected these 41 outcomes to occur, agreement was reached on only 21. Developers and participants were found to agree more often on the short-term expectations, 13 of 17, than on the long-term expectations, eight of 24.
4. **FDI Expectations vs. FDI Outcomes**
Although there were differences among the developers regarding the extent to which some of the expectations were achieved, they believed that the vast majority of their expectations had been met to some degree. They believed that 16 of the 17 short-term and 21 of the 24 long-term expectations were met to some extent.
5. **Initial Participants' Expectations vs. University Expectations**
There was achievement of the broad expectations of the university that faculty would receive specific computer technology training and a state of the art desktop computer and software was confirmed by the participants.
6. **Initial Participants' Expectations vs. Initial Participants' Outcomes**
The extent to which initial participants' perceived that the outcomes they held as expectations for the workshop were achieved varied. Of the 12 short-term and nine long-term expectations held by at least 65% of the initial participants, only two were rated as having been fully achieved. Participants did not agree on the extent of achievement for the remaining ten outcomes.

University Goals

There were four university goals that FDI sought to meet as determined from the expected short and long-term outcomes evaluated in this study. They are:

- a. *to enhance the quality of undergraduate education* (The University Plan: 1991-1996, 1991).
The university did not hold FDI solely accountable for the achievement of this goal, but the findings of this study suggest that FDI developers felt that FDI could positively influence the attainment of this goal.
- b. *to establish a comprehensive program of human resource development for faculty, staff, and administrators* (The University Plan: 1991-1996, 1991).
FDI developers and the initial participants tended to hold the same short-term expectations related to this university goal and partially agreed as to the extent they were achieved. They had fewer common long-term expectations and tended to disagree about the extent to which those were achieved.
- c. *to increase the effectiveness and the efficiency of administrative and support operations* (The University Plan: 1991-1996, 1991).
FDI developers and the initial participants did not have common short or long-term expectations related to this university goal, and they disagreed regarding the extent of achievement of the short and long-term expectations related to this university goal.
- d. *to enhance the quality and accessibility of library and other information resources and advanced computing and communications technologies* (The University Plan: 1991-1996, 1991).
FDI developers and the initial participants disagreed regarding their long-term expectations related to this university goal. However, they partially agreed as to the extent to which those outcomes were achieved regardless of whether they originally expected them to occur.

Conclusion

As shown in this study, the FDI developers and initial participants did not hold identical short or long-term expectations for the workshop. However, both groups believed that all of the expectations commonly held within each group were at least somewhat achieved. Moreover, both the FDI developers and the participants confirmed that the basic expectations of the university were achieved.

Neither the FDI developers nor the participants believed that the use of computer technology in instruction would become an important factor in promotion, tenure, and salary evaluations as a result of the FDI initiative. Likewise, neither group believed that this had occurred. They did not believe that the university would become a national leader in the use and integration of computer technology in teaching and research as a result of FDI. However, they did agree that the national reputation of the university was ultimately enhanced by the results of the FDI initiative.

The FDI initiative expanded the capabilities of faculty to communicate with, and teach, their students. They were equipped to provide students with 24-hour access to course materials and students had more options for obtaining class notes and communicating with faculty. They did not believe this would guarantee that quality learning would occur; students should still be accountable for their own learning.

Overall, there was a distinct difference in the perceived outcomes and the extent to which each was achieved for the university, the developers, and the initial participants. There was total agreement among the stakeholder groups on only two of the 41 expectations. Those were that: (a) faculty would receive a state of the art desktop computer, installed in their office with necessary hardware and software to incorporate computer technology into their teaching; and (b) faculty could develop new ways to use technology to help students learn. The first of these was a very tangible and visible outcome; the second was less so, but an almost unavoidable outcome of the workshop was that faculty would know more about using technology than when they entered the program.

Although the developers communicated the goals of the FDI workshop to key participants before the workshop with the expectation that they would inform the others in their departments, the participants still entered the workshop with their own perceptions. FDI met some needs and expectations of the individual participants; however, the developers did not know exactly what those needs and expectations were prior to developing the program. A needs analysis and assessment of the individual participants' needs might have positively affected the FDI development process.

Individuals had variable skills coming into the program and may not have had the motivation or enthusiasm for the training. Silberman (1998) notes that programs should address the cognitive goals— lack of knowledge or 'don't know' situations; behavioral goals – lack of skill or 'can't do situations; or affective goals – lack of desire or fear about using new knowledge or skills or 'won't do' situations within organizations. The developers of FDI faced all three of these situations and developed FDI to meet those needs for faculty who did not understand how to use a computer for instructional purposes; who could not manipulate the new software applications or use a personal computer; and/or were afraid of or were not interested in changing their teaching methods.

Implications for HRD

The use of qualitative research methodology for this study, proved to be advantageous. Had the researcher not interviewed the developers and conducted a historical document analysis, much of the information that made an important contribution to this study might not have been discovered. A significant portion of the historical documentation was obtained from, or as a result of, the conversation with the developers. Future studies may be considered to answer the following questions:

1. Are the initial participants' expectations and outcomes the same as those of faculty members who participated in later FDI workshops?
2. To what extent has the use of technology in instruction increased since the inception of FDI?

The findings indicate that although goals and expectations were communicated by the developers to some of the initial participants before the workshop for them to communicate to others in their departments, the initial participants still came in with their own perceptions. Their personal perceptions were evaluated to determine the perceived effectiveness of FDI. FDI met some needs and expectations of the individual participants; however, the developers did not know exactly what those needs and expectations were prior to developing the program. Therefore, they would not have been able to assess the extent to which they were achieved.

A needs analysis and assessment of the individual participants' needs might have positively affected the FDI development process. The time frame, in which FDI was developed, within six months, did not provide a window of opportunity for this to occur. The theoretical models that were utilized in this study support the researcher's finding that the individual differences occurred because a pre-program assessment of individual needs was not conducted.

Many other forces drive whether technology was integrated into the classroom and how much some FDI and initial participants' expectations were achieved after the initial workshop. HRD practitioners can use some of the same techniques to design training and development programs that will add value to their employees and their organizations. The success of programs that are implemented starts with the design. The emphasis should be on

meeting stakeholders' expectations and if those expectations are truly understood at the beginning, program results should be successful.

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