1993

# Incentives and their impact on teachers' participation in microcomputer staff development programs in suburban Cook and Dupage counties

Robert H. Johnson
*Loyola University Chicago*

LOYOLA UNIVERSITY OF CHICAGO

# INCENTIVES AND THEIR IMPACT ON TEACHERS' PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS IN SUBURBAN COOK AND DUPAGE COUNTIES

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE SCHOOL OF EDUCATION
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF EDUCATION

DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

BY

ROBERT H. JOHNSON

CHICAGO, ILLINOIS

MAY 1993

# VITA

Robert H. Johnson was born in Chicago, Illinois to Carl F. and Christine A. Johnson. In 1960, the Johnson family moved from Chicago to Lemont, Illinois where Mr. Johnson attended St. Alphonsus School and Lemont Public School. In 1974, after graduating from Lemont Township High School, he enrolled at Illinois State University. The author received his Bachelor of Science degree in Business Education from Illinois State University in 1978.

After graduation, Mr. Johnson became a business education teacher at East Leyden High School in Franklin Park, Illinois, where he also coached football, wrestling, and baseball. While still teaching and coaching at East Leyden, the author enrolled in the masters program at the University of Illinois where in 1983, he received his Master of Education degree in Educational Administration.

In 1984, Mr. Johnson was promoted to Director of Careers for Leyden High School District 212. He remained in this position until 1988, when he was given additional responsibilities and the title of Assistant Principal for Student and Community Services for the Leyden district.

In 1990, Mr. Johnson accepted the position of Assistant Principal for Operations at Glenbard West High School in Glen Ellyn, Illinois. He remains in this position today as he completes the requirements for the Doctor of Education degree from Loyola University of Chicago.

Mr. Johnson is married to Elise A. Johnson and has two children - Carole and Tracy. He currently resides in Schaumburg, Illinois.

Robert H. Johnson

Loyola University of Chicago

# INCENTIVES AND THEIR IMPACT ON TEACHERS' PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS IN SUBURBAN COOK AND DUPAGE COUNTY

Since the advent of the microcomputer in the early 80's, school districts have been spending large amounts of money purchasing a wide variety of computer hardware and related software. However, many school districts seem to neglect the staff training needs that technology demands in order to best meet the needs of students. While school districts may offer various staff development opportunities to its faculty, this in no way guarantees participation on the part of the teacher.

This study investigated microcomputer staff development programs in suburban Cook and DuPage county high schools in an effort to determine if schools are offering microcomputer staff development programs. The study also looked at what incentives were most important to teachers in these high schools as well as determining if the incentives were more intrinsic or extrinsic in nature.

In order to study this problem, 78 high schools were contacted and asked to have six teachers complete a questionnaire. The questionnaire is a variation of one used by William I. Jordan to study incentives as they relate to national and Washington state teachers' decisions to participate in general staff development programs. Every high school in suburban Cook and DuPage county offered to participate by issuing the survey instrument to three computer using teachers and three non-computer using teachers in their school. This allowed the author to compare and contrast the responses of these two

groups. A total of 468 questionnaires were sent out with 382 returned for a return rate of 81.6%. There were 258 respondents, or 67.5%, who indicated that they were computer users, while 124 or 32.5% indicated that they were non-computer users.

The study found that most high schools in suburban Cook and DuPage county offer some sort of microcomputer staff development program. Teachers from both groups were impacted more by intrinsic incentives than extrinsic incentives when deciding whether or not to participate in microcomputer staff development programs. The most important incentive was found to be inservice training in innovative microcomputer teaching strategies followed closely by the opportunity to grow both personally and professionally from various microcomputer staff development activities. Teachers want to improve their computer skills, but only if the staff development offered will have a positive impact in the classroom with their students or on them personally. While extrinsic incentives were found to be important, teachers from both groups were more affected by intrinsic incentives when forced to make a choice between the two.

# ACKNOWLEDGMENTS

There have been so many people who have helped make this study possible. First of all, I greatly appreciate the help and guidance of my dissertation committee - Dr. Philip Carlin, Dr. Max Bailey, and Dr. Todd Hoover. Their kind words and constructive criticism helped ease the task.

Secondly, I could not have completed this project without the support of my good friends and colleagues at Glenbard West. They were always there for me, and did whatever was necessary to make sure I had the time and energy to complete this study. A special thank you to the BAT team - Dr. Susan Bridge, Mr. Bruce Viernow, Mrs. Mary Bennett, Mr. Frank Lodico, and Mrs. Kathy Robbins. Their support, good humor and good deeds meant a great deal to me and kept me going through it all. Also, a deep appreciation to Dr. Robert Stevens for his special interest in seeing me through this study. I would also like to recognize Dr. Marge Nier and Dr. Jack Schoenholtz, my mentors at Leyden High School, for believing in me and encouraging me to "Aim High."

Finally, and most important, a special loving acknowledgment to my family. To my father, Carl Johnson, for always standing quietly in my corner. To my daughters, Carole and Tracy, for their hugs, kisses, and willingness to share computer time. Most of all to my best friend and wife, Elise, for her love and belief in what I could accomplish.

TABLE OF CONTENTS

# LIST OF TABLES

Table

# LIST OF GRAPHS

Graphs

Graphs

# CHAPTER 1

# INTRODUCTION

## Background

On January 3, 1983, *Time* made its annual "Man of the Year" selection. This honor is usually reserved for heads of state, business leaders, or people who have made great contributions to society and the world. On this date, the editors of *Time* decided to honor none of the customary candidates for this title. Rather, the decision was to make the computer, *Time's* "Machine of the Year."

In honoring the computer, *Time* stated that the "information revolution" that had been predicted by many futurists had arrived. With the advent of this revolution came the promise that these machines would dramatically change the way we live, work, learn, and perhaps even the way we think. Friedrich summed it up best when he said, "America will never be the same."[1]

Since this event in 1983, America has not been the same. The computer has crept into every aspect of our lives. In the office we use word processors, data bases, spreadsheets, and desktop publishing to enhance our communications and to provide people with the information they need to operate more effectively and efficiently. At home we are using these machines to keep track of our budgets, and to help us play with our children. In schools, we have used machines to make learning easier and more fun. Today's students can solve the most complicated Calculus problem in a matter of seconds. They can also easily research any topic in an automated library that maintains information on CD-ROM. As time progresses, the technology we see keeps getting better and more sophisticated.

---

[1]Otto Friedrich, "The Computer Moves In," Time 121 (January 3, 1983): 14.

As educators, we know that one of our key responsibilities is to make sure that we are meeting the future needs of our students. Computer technology will play an increasingly significant role in the teaching and learning process. Recently, the state of Illinois has made technology and staff development major goals for schools throughout the state. The Illinois State Board of Education, in its pamphlet titled, "Illinois Goals: World-Class Education for the 21st Century," cited eight major goals for public schools in Illinois. Two of these eight goals are directly related to staff development and technology. The fourth goal of the state speaks to the quality of our teaching ranks and is as follows:

> All Illinois public school students will have access to schools and classrooms with highly qualified and effective professionals who ensure that students achieve high levels of learning.[2]

The fifth goal of the state deals directly with technology and is stated as follows:

> All Illinois public school students will attend schools that effectively use technology as a resource to support student learning and improve operational efficiency.[3]

While these will not be easy objectives to attain, it is important that a direction and vision has been established. This direction supports the importance of staff development and the technologically literate teacher.

Since the early 80's, school districts throughout the nation have spent millions of dollars on computers, related hardware, and software. In 1981, only 16 percent of the public schools in the United States used computers. Today, most schools use computers somewhere in their curriculum.[4] According to a study done by Link Resources Corporation, a respected marketing research firm, there were approximately 2.5 million machines being used in nearly 95 percent of our elementary and secondary schools by the

---

[2]Illinois Goals: World-Class Education for the 21st Century, (Springfield: Illinois State Board of Education, 1992), 6.

[3]Ibid, 7.

[4]Thomas Toch, "Wired for Learning: Does Computer Technology Have the Power to Revolutionize Schooling?" U.S. News and World Report 111 (October 28, 1991): 77.

end of 1991. This equates to a student to computer ratio of 19:1.[5] This ratio reflects a significant decrease since 1983 when the ratio was 125:1.[6] This is but one indicator of the growing importance technology is playing in school systems throughout the nation to provide quality education to all students.

The future of computers in education holds great promise and excitement. However, true change is needed if we plan to meet the needs of tomorrow's student. Demographics tell us that nearly 5 million children of immigrants are expected to enter U.S. public schools during the 1990's. Of those 5 million, 3.5 million children will come from homes where English is the second language spoken at home. Approximately 150 languages are represented by these immigrants. Overall, nearly one out of three Americans will be members of minority groups.[7]

It is also important to note that more of our future students will be products of "nontraditional" families. Single parents will head more than one of four families. Many of these families will be economically disadvantaged. When considering all this information, 25 percent of our students who begin their education in 1991 will be from impoverished families, 15 percent will speak languages other than English, and 14 percent will be from single parent families.[8]

Changing demographics and technology puts an additional burden on our country's teachers. However, technology can also be the key to the future and working constructively with minority and disadvantaged students. In Watkins Mill High School, a high tech school in Maryland, many exciting things are happening. In a contemporary issues class, the students are investigating and discussing why Iraq wanted Israel involved

---

[5]Christopher O'Malley, "The Revolution is Yet to Come," Phi Kappa Phi Journal 71 (Summer 91): 12.

[6]Toch, 77.

[7]Ben F. Eller, "The New World Order for Education and Technology," Phi Kappa Phi Journal 71 (Summer 91): 44.

[8]Ibid.

with the Persian Gulf war. Using a computer, a laser disc player, and a television, the teacher instantaneously is able to show the students a copy of a 1917 British edict favoring a Jewish homeland. The teacher then clicks his computer's mouse, and he is able to show the students a map of Palestine prior to 1948. He clicks again and he can show an interview given by Israel's first ambassador to the United Nations.[9] This teacher is able to make his class come alive, and is doing so in a very nontraditional way. Tomorrow's teachers must develop nontraditional strategies in teaching if they are to meet the needs of a wide variety of students. Teachers must begin to realize that today's students, who have grown up with MTV, are more accustomed to 20 second sound bites and "talking heads" as a way to gather information. The computer has the capability to tap into this type of learning style.

Despite the fact that the technology exists, many teachers still do not use it. According to a 1989 survey by Johns Hopkins University, more than half of all high school teachers in the U.S. do not use computers in their teaching.[10] Part of the problem is that there is not enough training of teachers in the use of technology. Typically what has happened is that schools are more concerned with obtaining the necessary equipment and not as concerned with educating staff as to the best uses of the technology. "The technology is far ahead of our ability to use it," according to a technology expert at the University of California - Santa Barbara.[11] This creates a difficult problem for today's schools in that they must begin planning and implementing staff development programs to assist the teacher in how to best use computer technology in their classrooms. Is merely offering staff development programs in computer technology enough to get teachers involved with these important programs?

---

[9]Toch, 76.
[10]Toch, 78.
[11]Ibid.

## Statement of Problem

It is this question that led to the main problem of this study. Do incentives, provided by suburban Chicago high school districts, have an impact on teacher decisions to participate in microcomputer staff development programs?

## Purpose

This study had three main purposes. First, the study was designed to determine if suburban Chicago high schools are offering microcomputer staff development programs to their teaching staffs. Second, this study was designed to identify whether intrinsic or extrinsic incentives are more important to teachers in order to secure their participation in staff development programs. Third, this study was designed to determine if computer and non-computer using teachers respond to the same incentives.

## General Methodology

To address this research problem, 468 teachers from Illinois high schools in Cook and DuPage counties were surveyed. One half of the surveys were given to computer users, while the other half were given to non-computer users. These teachers represent 57 suburban Cook County high schools and 21 DuPage County high schools. The survey instrument was developed by William I. Jordan in 1990 to look at staff development incentives that influence teacher participation in all staff development programs. The present study dealt specifically with microcomputer staff development programs, and the impact those incentives have on teacher participation.

## Research Questions

The following six research questions were asked by this study:

1. Are suburban Chicago high schools offering microcomputer staff development programs?

2. What incentives are considered most important by teachers in suburban Cook and DuPage county public high schools in order to encourage their participation in microcomputer staff development programs?

3. Is there any relationship between intrinsic incentives and participation in microcomputer staff development programs?

4. Is there any relationship between extrinsic incentives and participation in microcomputer staff development programs?

5. From a teacher's perspective, what are the most important incentives in soliciting teacher participation in microcomputer staff development programs?

6. Do computer and non-computer using teachers place the same importance on specific incentives?

# CHAPTER 2

# REVIEW OF LITERATURE

## Introduction

According to Orlich, incentives that "encourage and reward staff development" are largely ignored by school boards and administrators.[12] A review of the literature reveals little work done in the area of incentives and their effect on teacher participation specifically in microcomputer staff development programs. In order to best review related research, this section has been broken down based on the following headings:

1) Motivation Theory
2) Staff Development and Incentives
3) Incentives and Rewards
3) Computer Staff Development

## Motivation Theory

Abraham H. Maslow's theories on motivation provide a sound basis for investigating incentives as they explain the hierarchy of needs. Maslow first described sixteen propositions that he felt must be included in any sound theory on motivation. In order to satisfy these propositions, Maslow proposed a theory of growth motivation that he felt met these sixteen propositions. He believed that the most important principle underlying all human development is need gratification. Maslow stated that "the single, holistic principle that binds together the multiplicity of human motives is the tendency for a new and higher need to emerge as the lower need fulfills itself by being sufficiently gratified."[13]

---

[12]Donald C. Orlich, Staff Development: Enhancing Human Potential, (Boston: Allyn and Bacon, 1989), 72.

[13]Abraham H. Maslow, Toward a Psychology of Being, 2nd ed., (Princeton: Van Nostrand, 1968), 55.

Maslow elaborated on this basic principle by proposing a hierarchy of needs. This hierarchy of needs contains five basic levels of needs. The hierarchy begins with Physiological Needs and progresses through Safety Needs, Belonging and Love Needs, Esteem Needs, and Self-Actualization Needs. Maslow stated that:

> Human needs arrange themselves in hierarchies of prepotency. That is to say, the appearance of one need usually rests on the prior satisfaction of another more prepotent need. Man is a perpetually wanting animal. Also no need or drive can be treated as if it were isolated or discrete; every drive is related to the state of satisfaction or dissatisfaction of other drives.[14]

Each human need is examined in relation to others, so that before need "B" can be satisfied, need "A" must be satisfied first if "A" has greater prepotency.

Douglas McGregor took Maslow's hierarchy and described the five levels of the theory in a concise and clear manner. At the lowest level, but pre-eminent in importance when they are thwarted, are his physiological needs. As an example, a person will live for food alone, when there is no food. The need for love, status, and recognition are unimportant when one is hungry. But if a person eats adequately, hunger ceases to be an important motivation. The same is true of the other physiological needs of humans. An important axiom of this theory states that a satisfied need is not a motivator of behavior.[15]

The next level of needs are called safety needs. When physiological needs are met, safety needs become motivators. These needs include protection against danger or threat. McGregor does not believe that this need refers to security. Rather, he believes that it is the need for the "fairest possible break." When a person feels that they are safe, they will be more willing to take risks. A person who doesn't feel safe will look to guarantees and other protections for security.[16]

---

[14]Abraham H. Maslow, "A Preface to Motivation Theory," Psychosomatic Medicine, vol. 5, (1953) 85; quoted in Thomas J. Sergiovanni and Robert J. Starratt, Supervision: Human Perspectives, 4th ed., (New York: McGraw-Hill, 1988), 136.

[15]Douglas McGregor, The Human Side of the Enterprise, (New York: McGraw-Hill, 1960), 36-39.

[16]Ibid.

When a person's physiological needs are satisfied and they feel safe, then social needs become the prime motivator of their behavior. This includes the need for belonging, for association, for acceptance by peers, and for giving and receiving love.

Studies have indicated that employees working as a cohesive group may be more effective in achieving organizational goals than an equal number of separate individuals. McGregor also states that when a man's social needs are obstructed, he becomes resistant, antagonistic, and uncooperative, which all help to defeat an organization's goals.[17]

The fourth level in Maslow's hierarchy is ego needs. McGregor states that there are two kinds of ego needs -- those that relate to a person's self esteem and those that relate to a person's reputation. Self esteem refers to such needs as self-confidence, independence, achievement, competence and knowledge. Reputation refers to such needs as status, recognition, and appreciation. McGregor states that these needs are seldom satisfied.[18]

The final level is that of self-fulfillment. These needs deal with realizing one's own potentialities, and for continued self development. McGregor states:

> It is clear that the conditions of modern life give only limited opportunity for these relatively weak needs to obtain expression. The deprivation most people experience with respect to other lower-level needs diverts their energies into the struggle to satisfy those needs, and the needs for self-fulfillment remain dormant.[19]

Sergiovanni and Starratt state that a basic principle of motivation theory is that people must invest themselves in their work in order to achieve their desired reward.[20] They suggest that there are two types of investment in work that teachers make--participation and performance investment. Participation investment includes all that is necessary for teachers to obtain and maintain satisfactory membership in the school

---

[17]Ibid.

[18]Ibid.

[19]Ibid.

[20]Thomas J. Sergiovanni and Robert J. Starratt, Supervision: Human Perspectives, 4th ed., (New York: McGraw-Hill, 1988), 139.

community, and includes such activities as preparing lesson plans, meeting classes, following school rules, and attending required school meetings. Participation investment is the minimum investment that a teacher must make to a school. Those teachers that don't make this minimum investment are seen as being unacceptable. However, Sergiovanni and Starratt note that no institution can become great by just maintaining a staff that is only willing to make a participation investment. Teachers in outstanding schools must make a higher investment in order to achieve greatness.[21]

On the other hand, performance investment is the type of investment where teachers give more than a person could reasonably expect. This allows teachers to reap tremendous satisfaction from their work and themselves. This type of investment speaks to Maslow's higher order needs of esteem, autonomy, and self-fulfillment. Administrators must develop a reward structure that assures the attainment of lower order needs, but contains the potential to meet these higher level needs.[22]

Herzberg in his motivation-hygiene theory found that there are certain conditions in work that employees expect to enjoy and are associated with the conditions of employment. These conditions are called hygienic factors. The presence of these hygienic factors are necessary or dissatisfaction and poor performance occur. However, Herzberg found that increasing hygienic factors does not motivate performance. These hygienic factors are associated with participation investment and are extrinsic in nature. These include such items as salary, working conditions, job security, status, and company policy.[23]

The factors that enhance performance by encouraging employees to exceed their traditional work relationship are called motivators. These factors are associated with performance investment and are intrinsic in nature. The absence of motivators does not

---

[21]Ibid., 140.

[22]Ibid., 141.

[23]Frederick Herzberg, Bernard Mausner, and Barbara B. Snydermen, The Motivation to Work (New York: John Wiley & Sons, Inc., 1959) 113.

result in dissatisfaction, nor does it encourage employees to go beyond the traditional work relationship. Motivators include such things as achievement, recognition, responsibility, advancement and the work itself.[24]

Sergiovanni applied Herzberg's Motivation-Hygiene theory to teachers and found achievement and recognition were identified as the most potent motivators. Significant dissatisfiers included poor interpersonal relationships with students, inadequate supervision, and rigid school policies.[25]

Sergiovanni also advises caution to school administrators in applying Herzberg's theory in that some teachers may be more interested in hygienic factors than motivational factors. These teachers can be broken down into three categories: (1) those who have the potential to respond to motivational factors but are frustrated by what they perceive as insensitive administrative policies and procedures; (2) those who have the potential to respond to motivational factors but rather decide to channel this potential to other parts of their lives; (3) those who do not have the potential to respond to motivational factors on or off the job.[26]

Bredeson, Fruth, and Kasten asked teachers and administrators to respond to personal issues in education that they felt were satisfiers and dissatisfiers. They found that growth, security, money and time were the major satisfiers and dissatisfiers. The chance to grow professionally was cited most frequently as an advantage of teaching, while the lack of time and opportunity for professional growth was seen as a frustrating aspect of teaching. Personal and professional growth were found to be powerful incentives that can enhance classroom performance. However, if professional growth is

---

[24]Ibid., 114.

[25]Thomas J. Sergiovanni, "Factors Which Affect Satisfaction and Dissatisfaction of Teachers," The Journal of Educational Administration 5 (January 1967): 66-82.

[26]Sergiovanni and Starratt, Supervision: Human Perspectives, 149.

stifled, or not available, it can become a negative factor that contributes to job dissatisfaction.[27]

Victor Vroom outlined his cognitive model of work motivation using the concepts of valence, expectancy, and force. According to Vroom, a person has preferences among "outcomes and states of nature." Valence refers to a person's orientation toward various outcomes. In his model, the outcome is positively valent when a person would prefer attaining it, and is negatively valent when a person prefers not to attain it. If a person is indifferent to the outcome's attainment, the outcome is said to have a zero valence.[28]

Expectancy, according to Vroom, is a momentary belief that a particular act will be followed by a particular outcome. Each expectancy can be described based on their strength. Maximal strength is denoted by the certainty that a particular act will be followed by a specific outcome. Conversely, minimal strength is denoted by the certainty that a particular act will not be followed by a specific outcome.[29]

The concept of force suggests that behavior on the part of a person is assumed to be the result of a group of forces that have a specific direction and magnitude. An outcome with a high positive or negative valance will have no effect on the creation of a force unless there is a great likelihood that the outcome will be attained by performing some specific task. The strength (force) of an expectancy increases when the valence of the outcome increases. If the valence is zero, the strength of the expectancy to attain a specific outcome will not have any effect on the forces.[30]

Based on their study of administration, Hoy and Miskel argue that expectancy is a person's subjective belief that a specific course of action is followed by a highly positive outcome. Valence is described as the degree of attractiveness a person attaches to a

---

[27]Ben Brodinsky, "Teacher morale: What Builds It, what Kills It?," Instructor 93 (April 84): 36-38.

[28]Victor H. Vroom, Work and Motivation, (New York: John Wiley & Sons, 1964) 15-16.

[29]Ibid, 16-17.

[30]Ibid, 18-19.

reward. Instrumentality, on the other hand, is the belief that certain performance is essential in reaching a particular reward or satisfying a preference or valence. Hoy and Miskel also suggest that Vroom's theory of motivation focuses on extrinsic rather than intrinsic motivational factors. They also suggest that a number of factors in Vroom's cognitive model account for the use of the term force in some instances and instrumentality in others.

## Staff Development and Incentives

Sparks defines staff development as "any training activity that helps teachers improve teaching skills."[31] Jordan states that staff development "denotes educational programs which are based on identified needs, planned and designed for a specific group of individuals in a school or school district, having a very specific set of learning objectives and are designed to extend, add or improve immediate job-oriented skills, competencies or knowledge."[32] Finally, Fullan defines staff development as any activity or process intended to improve skills, attitudes, understandings, or performance in present or future roles.[33]

## Incentives and Rewards

Boe in his research using the 1988 Schools and Staffing Survey of the National Center for Education Statistics makes a distinction between rewards and incentives in order to help to better define incentives. He states that any definition of reward must include three elements. These elements are:

1. A generally desirable object or condition (e.g., food, money, public recognition, positive student feedback, and the like);

---

[31]Dennis Sparks, "Staff Development and School Improvement: An Interview with Ernest Boyer," The Journal of Staff Development, 5 (December 1984): 32-39.

[32]William Jordan, "Staff Development Incentives and their Influence on Teacher Decisions to participate in Staff Development Programs" (Ed.D. diss., Washington State University, 1990), 8.

[33]Michael G. Fullan, "Staff Development, Innovation, and Institutional Development," in Changing School Culture Through Staff Development: 1990 ASCD Yearbook, (Alexandria, VA: Association for Supervision and Curriculum Development, 1990), 3.

2. A specified response or performance; and
3. A principle or rule under which the acquisition of a desirable object or condition follows and is contingent upon a specified response (i.e., a response/outcome contingency).

Based on these elements, Boe defines reward as "the response-contingent acquisition of a desirable object or condition." However, Boe includes two additional elements when defining incentives. These elements are as follows:

4. Knowledge by the performer of the response/outcome contingency; and
5. A subsequent increase in the strength or quality of the response upon which the outcome is contingent (i.e., an incentive effect).

In considering all five elements, Boe defines incentive as the "prospect of reward which energizes goal-directed behavior."[34]

Mitchell, Ortiz, and Mitchell concluded that rewards may become incentives only when linked in teachers' minds with their participation in particular school activities. Incentives offer the promise of some reward and tend to influence the modification of teacher behavior. The anticipation of a reward induces people to change their behavior in ways that will lead them to acquire the reward. However, Mitchell, Ortiz and Mitchell contend that if an individual cannot see any way of linking their actions to the attainment of the reward, the reward cannot serve as an incentive.[35]

Jordan defines incentives as "any anticipated and valued goals, relationships, or personal rewards that provide effective stimuli or reasons for engaging in a particular activity." While on the other hand, he states that "rewards may be linked to money or some consideration given for good work, to student achievement, pleasure, satisfaction or self-fulfillment, have the potential to become incentives."[36]

---

[34]Erling E. Boe, "Teacher Incentive Research with SASS," Paper presented the Annual Meeting of the American Educational Research Association (Boston, April 17-20, 1990): 1.

[35]Douglas E. Mitchell, Flora I. Ortiz, and Ted K. Mitchell, Work Orientation and Job Performance: The Cultural Basis of Teaching Rewards and Incentives. (Albany: State University of New York Press, 1987), 188-189.

[36]Jordan, 8.

Sykes states that a reward is an activity or experience from which one gains pleasure, fulfillment, or satisfaction. An incentive on the other hand is a reward that is offered for a specific behavior. The incentives available to any worker will depend on the motivation that is brought to the workplace, and the organizational mechanism to control reward distribution.[37]

Dorman and Bartell, as a result of investigating incentive programs in the seven states comprising the North Central Association, directed their definition of incentives specifically at teachers. In their definition they feel that incentives can best be defined as "any deliberate effort intended to provoke the movement of teachers toward a pre-selected behavior." In addition, "they are a value based commodity and exist on a relative, rather than an absolute basis."[38] Bartell simplifies this definition when she states that an incentive is that which "induces, motivates, and encourages participation or performance."[39]

Bartell also makes an important point when she states that incentives are highly subjective and related to individual values. What motivates one person or group does not always act as an incentive for other groups or individuals. Incentives, according to Bartell, can be placed on a continuum where they can be strongly or weakly valued or fall somewhere in between.[40] Barro confirms this position when he states that a "system that creates an incentive for one group, or one desired type of behavior, may create no incentive, or even a disincentive, for another."[41]

---

[37]Gary Sykes, "Teaching Incentives: Constraint & Variety", ed. Ann Lieberman, Schools as Collaborative Cultures: Creating the Future Now, (Bristol, PA: The Falmer Press, 1990): 58.

[38]Arthur Dorman and Carol A. Bartell, Incentives for Teaching: LEA Programs and Practices in Seven States. One in a Series of Reports on Attracting Excellence: The Call for Teacher Incentives (Elmhurst: North Central Regional Educational Lab, 1988), 3.

[39]Carol A. Bartell, Incentives that Enhance the Teaching Profession: Background Paper. One in a Series of Reports on Attracting Excellence: The Call for Teacher Incentives, (Elmhurst: North Central Regional Educational Lab, 1987), 1.

[40]Dorman & Bartell, 3.

[41]Stephen Barro, The Logic of Teacher Incentives, (Alexandria: National Association of State Boards of Education, 1985): 5, ERIC, ED 270888.

Cresap, McCormick and Paget state that there are five categories of incentives that may be used by school districts to attract, motivate, and retain outstanding teachers. These categories include the following:[42]

1) Compensation plans
   These plans include various modifications to salary schedules and other monetary benefits to reward, attract and retain particular types of teachers.

2) Career options
   These options create a different organizational structure that can be used as a way to promote teachers without taking them out of the classroom.

3) Enhanced professional responsibilities
   These options include ways to extend and vary teachers' responsibilities.

4) Nonmonetary recognition
   This can include awards and symbols as a way of recognizing teachers' accomplishments.

5) Improved working conditions
   These include ways to improve the physical and social conditions that teachers work under.

Within these five categories of incentives, there are specific incentives that correspond to each, and general purposes that can be achieved for each incentive. Table 1 highlights the type of incentive and most appropriate purpose listed by Cresap, McCormick and Paget.

Bartell contends that current teacher incentive plans focus on four major intents. These areas are: 1) the attraction of competent and talented people into the profession; 2) the retention of excellent teachers; 3) the improvement of teacher performance; and 4) the enhancement of teaching as a profession. She writes that different incentives will appeal at different stages, and that enhancement of the teaching profession is the ultimate goal of all teacher incentive plans. In the end if more talented people are attracted to the

---

[42]Cresap, McCormick, and Paget, Teacher Incentives: A Tool for Effective Management, (Reston, VA: National Association of Secondary School Principals, 1984), 16.

profession, remain committed and continue to take advantage of opportunities to grow and expand within their roles, the profession will be enhanced.[43]

TABLE 1

PURPOSES OF TEACHER INCENTIVES

| Type of Incentive | Purpose: Attract High Quality Teachers | Retain Superior Teachers | Motivate Effort and Improvement | Accomplish Other Community Goals |
|---|---|---|---|---|
| Compensation Plans: | | | | |
| Performance Based Salaries | Yes | Yes | Yes | |
| Bonuses | Yes | Yes | Yes | Yes |
| Market-Sensitive Salaries | Yes | Yes | | Yes |
| Salary Differentiation | Yes | Yes | | |
| Loan Forgiveness | Yes | | | |
| Grants and Sabbaticals | | Yes | Yes | |
| Modification in Base Salary | Yes | Yes | | |
| Career Options: | | | | |
| Career Ladders | Yes | Yes | Yes | |
| Short-Term Career | Yes | | | |
| Part-Time and Joint Appointments | Yes | Yes | Yes | |
| Early Retirement | Yes | | | |
| Enhanced Professional Responsibilities: | | | | |
| Master Teacher Assignments | | Yes | Yes | |
| Teacher Projects | | Yes | Yes | |
| Longer Day or Year | Yes | Yes | Yes | |
| Nonmonetary Recognition: | | Yes | Yes | |
| Improved Working Conditions: | | Yes | Yes | |

Source: Cresap, McCormick and Paget, Teacher Incentives: A Tool for Effective Management, (Reston, VA: National Association of Secondary School Principals, 1984, Figure 5.1.

[43]Bartell, 4.

As a way to investigate incentive plans, Bartell adds that these plans are based upon different conceptions of what it is that motivates teachers and their performance. She suggests these different conceptions can be classified into the following areas: 1) monetary compensation; 2) career status; 3) professional responsibilities; 4) awards and recognition; and 5) conditions of the workplace.[44] Bartell writes that incentives should be designed to match the motivator with the intent of the plan. Table 2 provides a matrix, designed by Bartell, that aids in the examination of the interaction of teacher motivators and the intent of various incentives. The most comprehensive plans, writes Bartell, will address as many cells as possible and include factors that are felt to motivate teachers and serve a wide range of purposes.

TABLE 2

A CONCEPTUAL FRAMEWORK FOR THE EXAMINATION OF TEACHER INCENTIVE PLANS

| | INTENT | | | |
|---|---|---|---|---|
| MOTIVATOR | Attraction | Retention | Improvement | Enhancement |
| monetary compensation | | | | |
| career status | | | | |
| awards and recognition | | | | |
| professional responsibilities | | | | |
| conditions of the workplace | | | | |

Source: Carol A. Bartell, A Reform Agenda: The Call for Teacher Incentives, (Elmhurst: North Central Regional Educational Lab, 1987), Figure 1.

Lortie investigated rewards that teachers reported receiving and arranged them into three categories: extrinsic rewards, ancillary rewards, and intrinsic or psychic rewards. Extrinsic rewards are those rewards, such as earnings, that exist independent of the person who occupies the role. Ancillary rewards are rewards that flow from the

[44]Ibid, 9.

nature of the work and are experienced by all, but are not viewed as a reward by all persons. Intrinsic rewards are subjective valuations made by a person.[45]

Herzberg states that rewards are realized from the personal satisfaction people sense from their work. He also suggests that the best way to motivate people is to give them the opportunity to achieve satisfaction from their jobs. Motivating factors that Herzberg found to be intrinsic to work are: recognition, achievement, the work itself, responsibility, and professional and personal growth. Factors that are extrinsic are: company policy, supervision, salary, interpersonal relationships, working conditions, and security.[46]

Broedling states that people are intrinsically motivated to perform an assignment when the only apparent reward is the activity itself and the enjoyment and satisfaction they have gained by completing the activity. On the other hand, a person is extrinsically motivated to perform a task when the assignment is performed primarily for an external reward.[47]

Mitchell, Ortiz and Mitchell argue the contemplation in advance that an experience will be rewarding produces the possibility that the reward will become an incentive. The anticipation of rewards leads people to change their behavior in a way that will lead them to securing the reward. The mere existence of an incentive depends on its prior existence as a reward. They also assert that if a person cannot see a way to tie an action toward the realization of a reward, the reward cannot serve as an incentive. Rewards with incentive value must be seen as attainable through an individual's changes in effort and behavior.

---

[45]Dan Lortie, Schoolteacher: A Sociological Study, (Chicago: University of Chicago Press, 1975), 101.

[46]Fredrick Herzberg, The Managerial Choice: To be Efficient and to Be Human. (Homewood, IL: Dow Jones-Irwin, 1976), 48.

[47]Laurie A. Broedling, "The Uses of Intrinsic-Extrinsic Distinction in Explaining Motivation and Organizational Behavior," Academy of Management Review 2 (April 1977): 28.

In a study of Dade County, Florida teachers, Lortie found that 76 percent of the teachers consider intrinsic rewards to be their major source of satisfaction.[48] Twenty years later, Kottkamp, Provenzo, and Cohn using Lortie's baseline data found that teachers still valued intrinsic rewards more than extrinsic and ancillary rewards. In the later study the proportion of teachers who chose extrinsic rewards declined slightly, as did the percentage of teachers who found intrinsic rewards the most satisfying. However, 6% more of the teachers in 1984 saw ancillary rewards as most important. In the end, intrinsic rewards were still the most satisfying.[49] This finding has been supported by other studies as well. Goodlad reported that a majority of teachers in his study entered the teaching profession because of the kind of work that it offered.[50] Bartell found that intrinsic rewards were mentioned by 53 percent of the teachers in her study as the major source of work satisfaction.[51]

Mitchell and Peters go one step further when they stated that the most potent rewards for good teaching are intrinsic in nature. They see intrinsic rewards as exciting work, interesting co-workers, and the satisfaction derived from performing important tasks. Extrinsic rewards are described as promotions, wages, working conditions, and public recognition.[52]

Calder and Staw conducted a study where they tried to determine the impact of introducing extrinsic rewards into tasks that involve high intrinsic interest. Their results showed that when they introduced an extrinsic monetary reward to a low level intrinsically motivating puzzle, the enjoyable rating of the participants increased. When

---

[48]Lortie, 104.

[49]Robert Kottkamp, Eugene Provenzo, and Marilyn Cohn, "Stability and Change in a Profession: Two Decades of Teacher Attitudes, 1964-84," Phi Delta Kappan 67 (April 1986): 565.

[50]John Goodlad, A Place Called School: Prospects for the Future, (New York: McGraw-Hill, 1984), 64.

[51]Bartell, 3.

[52]Douglas E. Mitchell and Martha Jo Peters, "A Stronger Profession Through Appropriate Teacher Incentives," Educational Leadership 46 (November 1988): 75.

using a high level intrinsically motivating puzzle, the introduction of a monetary reward decreased the enjoyable rating of the exercise. This led to their conclusion that people may have behaviors that are intrinsically motivated in some cases and extrinsically motivated in others.[53]

Deci reported that when money was paid for performing intrinsically motivated activities, people were less intrinsically motivated after the experiment when compared to people who participated in the activity without any pay. Deci, by controlling conditions, found that when subjects were threatened with punishment, intrinsic motivation decreased. However, positive verbal feedback increased intrinsic motivation, while negative feedback caused a decrease in intrinsic motivation. In two other experiments where conditions were controlled, Deci found that when monetary rewards were contingent upon performance, intrinsic motivation decreased. On the other hand, when monetary rewards were not contingent upon performance, intrinsic motivation did not decrease.[54]

McGee investigated incentives that encourage teachers to adopt computers. In his study he found that economic incentives are not as important as what he calls "political" incentives. McGee cites the following political incentives: 1) Providing public recognition for individual staff members; 2) Formally recognizing computer use in a memo to the central office; 3) Arranging for media coverage; 4) Tying computer use to job security; 5) Tying computer use to potential promotion; 6) offering an enhanced job title for successful computer use.[55]

---

[53]Bobby J. Calder and Barry M. Staw, "Self-Perception of Intrinsic and Extrinsic Motivation," Journal of Personality and Social Psychology, 48 (May 1975): 599-600.

[54]Edward L. Deci, "The Effects of Contingent and Non-Contingent Rewards and Controls on Intrinsic Motivation." Organizational Behavior and Human Performance 8 (October 1972): 217-229.

[55]Glenn W. McGee, The Effectiveness of Incentives on the Implementation of a Technological Innovation, Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA., 6, April 16-20, 1986.

Sederberg and Clark investigated the motivational and organizational incentives for exemplary classroom teaching performance by Minnesota teachers of the year. These teachers described their motivation in terms of replicating teacher role models from their past, an inner dedication to their students, and finally the feeling of playing a significant role in the lives of their students. Organizational incentives included adequate salary, involvement in decision-making, released time for collegial relationships, professional "booster shots" and sabbatical leaves.[56]

Winkler and Stasz surveyed teachers in an effort to determine what encourages participation in staff development programs. Their study found that traditional incentives used by administration to teachers have little effect in encouraging teachers to get involved with computers. They concluded that both intrinsic and extrinsic incentives may stimulate participation in staff development. Extrinsic incentives were identified as salary credit and special recognition, and intrinsic incentives were identified as release time and opportunities to experiment with technology. Technical support is what mattered most to the teachers surveyed.[57] In developing administrative policies, Winkler, Statz, and Shavelson argue that some type of extrinsic reward may have to be used to motivate teacher participation by those who have little interest in staff development.[58]

Bierly and Berliner argue that if teachers do not view staff development to be in their best interests professionally, extrinsic rewards will not encourage them to participate. They go on to say that while teachers may enjoy receiving extra pay for

---

[56]Charles H. Sederberg and Shirley Clark, "Motivation and Organizational Incentives for High Vitality Teachers: A Qualitative Perspective, Journal of Research and Development in Education, 24, (Fall 1990), 9-13.

[57]John D. Winkler and Cathleen Stasz, A Survey of incentives for staff Development of Computer-Based Instruction, (Santa Monica, California: Rand Corp., 1985), 8, ERIC, ED 268996.

[58]John D. Winkler, Cathleen Stasz and R. Shavelson, Administrative Policies for Increasing the Use of Microcomputer in Instruction. (Santa Monica, California: Rand Corp., 1985), ERIC, ED 276415.

attendance and participation in a staff development program, this will not motivate them to learn new skills.[59]

Davis conducted a study designed to identify staff development incentives that were viewed as important by secondary teachers, and to identify these teachers' involvement in staff development programs. In this study he found that the top two incentives for teachers were both intrinsic, but determined that both intrinsic and extrinsic incentives were important to secondary teachers.[60]

Mitchell, Ortiz and Mitchell found that teachers view intrinsic rewards more attractive than extrinsic rewards, and the teachers respond to very different intrinsic rewards within their work. This conclusion implies that it will be difficult to develop reward systems that enhance teacher effectiveness.[61]

## Computer Staff Development

Turkle takes the position that only when teachers have learned to use the computer as a tool to enhance their own thinking, can they encourage their students to do the same. She believes that the computer is an "expressive medium" that requires a hands on experience in order to have any kind of sense of what can be done with it. Turkle also suggests that the educational system is the "only institution that provides tools for its clients rather than its workers."[62]

Fontana suggests that change is inevitable as students and teachers learn how to use technology. She goes on to state that there are four basic issues that will influence

---

[59]Margaret Bierly and David C. Berliner, "The Elementary School Teacher as Learner," Journal of Teacher Education, 33 (November-December 1982) : 40.

[60]H.A. Davis, "Incentives, Involvement, and teacher satisfaction with staff development programs in Wisconsin Secondary Schools," (Ed.D. Diss., University of Wisconsin-Madison, 1982), U M I Dissertation Information Service, DA 82-24032.

[61]Mitchell, Ortiz, and Mitchell, 193-194.

[62]Lewis A. Rhodes, "On Computers, Personal Styles, and Being Human: A Conversation with Sherry Turkle," Educational Leadership, 43 (February 1986): 12-16.

whether teachers and administrators take the lead in the use of technology. These four issues are as follows:[63]

1) Professional attitudes toward innovation and change.
2) Knowledge about the role of technology and its relationship to educational goals.
3) Professional attitudes toward instructional use of technology.
4) Professional skills in using technology.

Technology can serve to extend the communication capability of education, but one must tie in the use of technology to the educational goals of the institution. Fontana further states that to get teachers involved in technology, districts must provide explicit incentives for teachers through a combination of enriching educational experiences, community recognition, salary increases, and release time.[64]

In 1985, Henry Becker conducted the second of two studies on instructional uses of school computers. This study is viewed as the most comprehensive study of computer use throughout the United States. This survey gathered information from more than 10,000 teachers and principals in a sample of over 2,300 U.S. elementary and secondary schools. In this study, Becker found that over 90% of U.S. school children attended schools that had at least one computer. Schools were also continuing to obtain large numbers of computers.[65]

In a two year span between the studies, Becker found the following related to computer use in schools throughout the U.S.:[66]

-The number of computers used in U.S. elementary and secondary schools quadrupled from 250,000 to over one million.

-The proportion of secondary schools with 15 or more computers rose from about 10% to 56%.

-The typical computer-using high school went from five computers in use to 21.

---

[63]Lynn A. Fontana, "What are the Issues for Teacher Training?", NASSP Bulletin, 69 (April 1985) : 16.

[64]Ibid, 18.

[65]Henry J. Becker, "Instructional Uses of School Computers: Reports from the 1985 National Survey - Issue No. 1" (Baltimore: Johns Hopkins University, 1986), 1.

[66]Ibid.

-During the 1984-1985 school year, approximately 15 million students and 500,000 teachers used computers as part of their schools' instructional programs.

-One-fourth of all U.S. teachers used computers "regularly" with students.

In a baseline study prepared for Glenbard High School District #87 on staff and student attitudes regarding newer educational technology, it was found that 59% of the teachers use a computer to help them prepare for instruction. Of these computer using teachers, 64% believed that their students benefited because they were able to use technology in the classroom.[67]

In this study, 55% of the teachers using a computer felt that they were better teachers because of their use of the technology. Students' attitudes showed that they believed that a little over half of their teachers know how to use computers, but only 27% of them believed that their teachers used the technology in class.[68]

The Center for Technology in Education conducted a nationwide survey of over 600 teachers who use technology. Results of this survey showed that the use of technology enabled teachers to: 1) expect more from their students; 2) give more complex material to students; 3) better meet individual needs; 3) enable them to become facilitators of learning as opposed to information givers; 4) spend more time with small groups; 5) increase the amount of collaborative learning among students. It is also suggested in this study that when technology is integrated into instruction there is; 1) an increase in motivation; 2) better attendance; 3) a lower dropout rate; 4) a higher level of student engagement; 5) a reduction in learning time; 6) increased time spent with weaker students; 7) a greater incidence of different students learning different things.[69]

---

[67]Gayla Nieminen, "Staff and Student Attitudes Regarding Newer Educational Technology: Baseline Year-Glenbard West," (Glen Ellyn, IL: Institute for Educational Research, 1991), 4.

[68]Ibid, 5.

[69]"The Impact of Technology on Teaching and Learning," ...teacher today, No. 5 (1992): 1.

According to Simmons, teachers' support is necessary to successfully implement technology programs. He states:

> Teachers are the key to any effective implementation of technological media. Their opposition guarantees failure of even the best systems. Even if adoption of particular technological systems or projects must be postponed, educating teachers in the philosophy and implementation of technology is prerequisite to any successful implementation. No proposed project should be adopted and moved into the state of implementation until the teachers whom it will affect have been educated to the point where they can contribute largely to the plan and implementation of the project.[70]

Wedman and Heller concluded that teacher adoption of computer technology would be enhanced if teachers were given enough time, equipment and proper training.[71] At the same time Cicchelli found that release time, use of consultants, availability of equipment and software, intensive hands on training, and peer interaction opportunities were significant factors toward successful computer technology adoption through inservice efforts.[72]

A survey of Minnesota teachers in 1989 revealed the following findings:[73]

-A majority of teachers do not have "Teacher Only" workstations in their building.
-Teachers with more than 26 years of experience rate their computer skills and interest lower than other teachers.
-Teacher interest in learning more about computer applications is high.
-Teachers with five years or less experience are more interested in learning how to use computer technology more than other teachers.

Overall it is their impression that teachers who are properly trained, supported with access to computers and other peripheral devices can become more effective teachers.

Collis in reviewing research between 1985-1989 wrote that the research suggests that teachers support the value of computers in education, but have not made use of the

---

[70]Computer Tools for Teachers: A Report, (St. Paul: Minnesota State Department of Education - Instructional Design Section, 1989), 2.

[71]John Wedman and Marvin Heller, "Concerns of Teachers about Educational Computing," AEDS Journal, 18 (November 1984): 31-40.

[72]Terry Cicchelli, Richard E. Baecher, and Jan Nygren, Turning Teachers on to Microcomputers: Results of a two-Year Staff Development Project, Paper presented at the Annual Meeting of National Council of States on Inservice Education, Orlando, FL, 1984, ERIC, ED 279 613.

[73]Computer Tools for Teachers: A Report, 27.

technology themselves because there are not enough inservice or staff development programs available. She found that the research shows that effective inservice programs should relate directly to classroom instruction, but that overall teacher inservice or staff development is a difficult problem.[74]

After reviewing 180 different studies about computers in education, Collis has arrived at the following conclusions:[75]

> -There are no easy answers or simple conclusions about the impact of computer use in education.
> -Teachers are critically important in whatever happens whenever computers are used or not used in education.
> -It is a challenging task to implement computers in the classroom.
> -Computers have been and continue to be remarkable catalysts for educational excitement, self-examination and growth.

A 1989 survey of Oregon secondary principals, computer coordinators, and department heads revealed some interesting data regarding computer usage and teacher attitudes throughout the state. This report concluded that even though schools are spending between $4,000-$8,000 per year on computer technology, the impact these machines have had on instruction is limited. However, it is noted that this may be due to the lack of time teachers have to plan and prepare for computer integration into their curriculum. One of their conclusions may provide a solution in that they found that teachers need more formal training and need an opportunity to borrow or purchase a computer to use at home. The study revealed that a majority of the departments in today's secondary schools have less than 50% of their staff using computers.[76]

---

[74]Betty Collis, "The Best of Research Windows: Trends and Issues in Educational Computing," The Computing Teacher, (June 1989): 94.

[75]Ibid, 18.

[76]William E. Lamon and James Sanner, Microcomputers in Secondary Schools. Oregon's Coordinators Perspective. The 1989 Statewide Survey of the Oregon Educational Computer Consortium, (Salem: Oregon State Department of Education, 1989), 23-24.

Cady identified ten principles for effective staff development, and recognized six problems in designing a computer staff development program. The ten principles for effective staff development are as follows:[77]

1) Decision making about inservice is a shared responsibility between target participants and organizers.

2) Staff development programs are related to the participants' needs and teaching assignment.

3) Participants are actively involved in the activity rather than passive recipients of content.

4) Provisions are made for adequate released time during the school day, adequate support services, and essential resources.

5) The expected outcomes and objectives of the inservice are explicitly known before the program and evaluated after the program.

6) Inservice activities are planned, continuing features of a comprehensive district-wide staff development program.

7) Opportunities exist for individualization within the program and permit some degree of self-direction and self-initiative.

8) Staff development programs are not isolated, one-time events; they always include provision for appropriate follow-up.

9) The person or persons delivering the program is involved during the planning stages.

10) The administration, both building and district level, have made known its purposes and commitment regarding the staff development program.

These principles are general in nature and apply to all staff development programs.

Cady notes however that a number of special problems exist in the development of activities related to computer technology, and their use in curriculum and instruction. These problems include the following:[78]

1) Computers are threatening to many people.

---

[77]Lillian Cady, Computer Technology in Curriculum and Instruction Handbook: Design for Staff Development, (Olympia: Washington Office of the State Superintendent of Public Instruction, 1982), 2.

[78]Ibid, 2-3.

2) Many people lack minimal knowledge about computers which makes it difficult to determine the level of interest and receptivity to staff development.

3) Appropriate hardware and software is not available.

4) Trainers are difficult to find.

5) Obtaining a firm administrative commitment and adequate resources may be difficult.

6) Deciding the specific focus of staff development programs requires time and involvement of many people.

While this is by no means a complete list, it signifies some of the struggles that staff development coordinators must address if programs are to be successful.

Stecher and Solorzano asked thirty individuals familiar with educational computing to identify school districts or agencies that were doing an outstanding job of training teachers to use computers. A list of potential subjects was completed, which was followed by interviews and direct observation. The study resulted in the identification of twelve practices related to effective inservice programs for computers. These practices are as follows:[79]

1) Extensive practice with computers

2) Comfortable and relaxed atmosphere

3) Appropriate balance between lecture and guided practice

4) Individualized attention

5) Knowledgeable trainers

6) Detailed curriculum guides and lesson plans

7) Clear and relevant objectives

8) Lesson-related materials and handouts

9) Inservice lessons linked to instruction

10) Peer interaction

---

[79]Brian M. Stecher and Ronald Solorzano, Characteristics of Effective Computer Inservice Programs, (Pasadena: Educational Testing Service, 1987), 54, ERIC, ED 291 357.

11) Voluntary participation

12) Strategies for teaching heterogeneous classes

## Summary

This chapter has focused on the research and literature in four main areas; motivational theory, staff development and incentives, incentives and rewards, and computer staff development research. This literature review has shown that effective incentive systems can motivate teachers to perform more effectively in the classroom. The review also indicated that both intrinsic and extrinsic incentives are reported to be motivators, but that in most cases intrinsic incentives appear to be valued more by teachers. It was also evident that appropriate incentives for staff development are lacking in most schools. It was found that these incentives impact on a teacher's decision as to whether or not to participate in staff development. It was apparent that few staff development opportunities are available to teachers who are interested in using computers in curriculum and instruction. Consequently, teachers feel that they lack the time to learn the appropriate hardware and software.

# CHAPTER 3

# RESEARCH DESIGN & METHODOLOGY

## Introduction

This study was designed to investigate staff development incentives, in particular those that deal with microcomputer staff development programs. Important to this study were teachers' perspectives as to what are the most important incentives in assuring their participation in any microcomputer staff development program. This information is important to school administrators as they determine the most effective way to use limited resources.

The study design included the following procedures:

1. problems to be investigated
2. selection of population
3. selection of sample
4. survey instrument
5. instrument administration
6. statistical treatment of data
7. analysis of results

## Problem to be Investigated

A review of literature showed little research published on the effects incentives have on teachers' decisions to participate in microcomputer staff development programs. Specifically, six research questions will be addressed:

1. Are suburban Chicago high schools offering microcomputer staff development programs?

2. What incentives are considered most important by teachers in suburban Cook and DuPage county public high schools in order to encourage their participation in microcomputer staff development programs?

3. Is there any relationship between intrinsic incentives and participation in microcomputer staff development programs?

4. Is there any relationship between extrinsic incentives and participation in microcomputer staff development programs?

5. From a teacher's perspective, what are the most important incentives in soliciting teacher participation in microcomputer staff development programs?

6. Do computer and non-computer using teachers place the same importance on specific incentives?

## Selection of the Population

The population for this study was considered to be all teachers in public high schools in suburban Cook and DuPage counties. It was assumed that each school contained computer using teachers as well as noncomputer using teachers.

## Selection of Samples

The samples included in this study were drawn from 78 public high schools in suburban Cook and DuPage counties. Table 3 identifies the breakdown by county as well as the percent surveyed.

TABLE 3

SUBURBAN COOK AND DUPAGE COUNTY HIGH SCHOOLS SURVEYED

| County | # of High Schools | # of High Schools Surveyed | % of Total Districts | % of Identified Population |
|---|---|---|---|---|
| Cook | 57 | 57 | 100% | 100% |
| DuPage | 21 | 21 | 100% | 100% |
| **TOTAL** | 78 | 78 | 100% | 100% |

Before survey instruments were mailed, a personal phone call was made to the building principal or another administrator to ask for their school's participation in the

study. The phone calls resulted in a 90% positive response to the request for participation. The other 10% were sent packets explaining that a contact was attempted and a request for participation was put in writing.

Each building was asked to identify three computer using teachers and three noncomputer using teachers to participate in this study. Table 4 shows the numeric breakdown for each group.

TABLE 4

SUBURBAN COOK AND DUPAGE COUNTY TEACHERS SURVEYED

| County | # Teachers Surveyed | # Computer Using Teachers Surveyed | % of Total | # Non-computer Using Teachers Surveyed | % of Total | % of Sample Surveyed |
|---|---|---|---|---|---|---|
| Cook | 342 | 171 | 50% | 171 | 50% | 100% |
| DuPage | 126 | 63 | 50% | 63 | 50% | 100% |
| **TOTAL** | 468 | 234 | 100% | 234 | 100% | 100% |

## Survey Instrument

The survey instrument used in this study was developed by William I. Jordan for his study titled, "Staff Development Incentives and their Influence on Teacher Decisions to Participate in Staff Development Programs." This study was validated through three separate activities. The first was a review of the literature in which each question used was supported by the literature. The second activity involved testing each item against the definitions established for "rewards" and "incentives" ensuring that the item would beperceived to offer the potential of a reward. Table 5 shows the breakdown for each question. This activity also involved determining if an item was intrinsic or extrinsic through testing. The third activity was a review of the instrument by a panel of experts.

TABLE 5

QUESTIONNAIRE ITEM IDENTIFICATION/DESIGNATION

| Questionnaire Item | Intrinsic | Extrinsic |
|---|---|---|
| Part I | | |
| 1. Monetary stipend | | X |
| 2. Specific inservice | X | |
| 3. Attend on school time | | X |
| 4. Supportive of goals | X | |
| 5. Participate in planning | X | |
| 6. Develop confidence | X | |
| 7. Principal encourages | X | |
| 8. Reduced cost computers | | X |
| | | |
| Part II | | |
| 9. Salary schedule | | X |
| 10. Student success | X | |
| 11. Learning with peers | X | |
| 12. Gain additional income | | X |
| | | |
| Part III | | |
| 13. A. Release time | X | |
| 13. B. $75 stipend | | X |
| **Questionnaire Item** | **Intrinsic** | **Extrinsic** |
| 14. A. Units for salary | | X |
| 14. B. Innovative strategies | X | |
| 15. A. Professional growth | X | |
| 15. B. Interest free computers | | X |
| 16. A. Release time | X | |
| 16. B. Units for salary | | X |
| 17. A. $75 stipend | | X |
| 17. B. Innovative strategies | X | |
| 18. A. Release time | X | |
| 18. B. Interest free computers | | X |
| 19. A. $75 stipend | | X |
| 19. B. Professional growth | X | |
| 20. A. Units for salary | | X |
| 20. B. Professional growth | X | |
| 21. A. Innovative strategies | X | |
| 21. B. Interest free computers | | X |

Source: William I. Jordan, Staff Development Incentives and their Influence on Teacher Decisions to Participate in Staff Development Programs, (Ed.D. dissertation, Washington State University, 1990), 60-61, Table 5.

This panel consisted of five people familiar with or directly responsible for staff development programs.[80]

While Jordan's study involved staff development in a broad sense, this study narrowed its focus to microcomputer staff development programs. Therefore, the survey instrument was slightly altered to reflect this focus. Where Jordan used the term "staff development," the survey for this study replaced it with the term "microcomputer staff development." This forced respondents to answer the questions based on their experience with microcomputer staff development programs.

The demographic information also differs from Jordan's in that this study is interested only in teacher responses. However, this study made the distinction between computer users and noncomputer users. Comparing these two groups' perceptions was important to this study. Appendix B contains the complete survey instrument used in this study.

## Instrument Administration

In early November 1992, personal phone calls were made to 57 public high schools in suburban Cook County and to 21 public high schools in DuPage County. This contact was made with mainly building principals, but in some cases other administrators or teachers were used as contacts due to their relationship with the author. The breakdown was as follows: 53 Principals, 14 Assistant Principals, 2 Teachers, 4 Vocational Directors, and 2 Assistant Superintendents. In a few cases, only one person was contacted to obtain information from a multi-building district. While a personal phone call was made to each school, a contact was not established in each case. Every school where a contact was made by phone agreed to participate in the study. In the five schools where phone contact was not established, a letter was sent inviting their participation in the study.

---

[80]Jordan, 55.

On November 6, 1992, packets were sent to all schools who were contacted and verbally agreed to participate in the study. In this packet was a letter confirming the phone conversation and giving directions on how to administer the instrument. Also included in this packet were the six questionnaires for teachers with cover letters explaining how to complete the survey. Each contact person was asked to give the survey to three computer users and three nonusers. Attached to each questionnaire was a pre-addressed stamped envelope. On November 13, 1992, packets were sent to the five schools where a contact was not made. The same material was sent with exception of the letter to the principal. This letter gave more background information and asked for their participation. Appendix A contains copies of all correspondence with each school.

On December 7, 1992, follow-up letters were sent to schools who had not yet returned all surveys. This letter asked each contact person to check with those people to whom they gave a survey in order to encourage them to complete the instrument. Included with this follow-up letter were additional questionnaires in case the original was lost or damaged.

On January 4, 1993, thank you letters were sent to all contact persons. This letter asked them to thank the people who participated in this study. Copies of all correspondence can be found in Appendix A.

## Treatment of the Data

An analysis of responses was conducted to determine areas of agreement and disagreement among computer users and noncomputer users in two main areas. The areas of concern involved incentives available to teachers as well as whether incentives to participate are intrinsic or extrinsic in nature.

The following seven demographic variables were identified for inclusion in the survey in addition to the individual activity ratings:

1. Age
2. Sex
3. Years with current district
4. Years in education
5. Computer user or nonuser
6. Availability of microcomputer staff development programs
7. Size of school

## Analysis of Results

The data received from the questionnaire were analyzed using the StatView 4.0 software application for the Macintosh computer. Eleven distinct calculations were applied to the data. The calculations are as follows:

1. Calculated a frequency distribution and percentage on a five-point scale for items 1-12. Items 13-21 were calculated for frequency distribution and ranked by sample populations.
2. Age distribution of the respondents was calculated.
3. Gender distribution was calculated.
4. Distribution by total years of service in education was calculated.
5. Distribution by total years in the present district was calculated.
6. Distribution by computer use was calculated.
7. Distribution by availability of staff development programs was calculated.
8. Distribution by size of school was calculated.
9. The mean and standard deviation for each questionnaire items was calculated.
10. A statistical analysis of response patterns for each sample group using an ANOVA with the Scheffe' F-Test to check for significance in items 1-12 was calculated. The Scheffe' F-Test was used because of its conservative nature meaning that differences between groups must be substantial in order to achieve significance.
11. A statistical analysis of response patterns for each sample group using the Spearman r correlation coefficient test.

# CHAPTER 4

# PRESENTATION AND ANALYSIS OF DATA

## Introduction

The general purpose of this study was to investigate suburban Chicago high school teachers' perceptions regarding staff development incentives, and the effect these perceptions have on teachers' decisions to participate in microcomputer staff development programs. The following questions were investigated:

1. Are suburban Chicago high schools offering microcomputer staff development programs?
2. What incentives are considered most important by teachers in suburban Cook and DuPage county public high schools in order to encourage their participation in microcomputer staff development programs?
3. Is there any relationship between intrinsic incentives and participation in microcomputer staff development programs?
4. Is there any relationship between extrinsic incentives and participation in microcomputer staff development programs?
5. From a teacher's perspective, what are the most important incentives in soliciting teacher participation in microcomputer staff development programs?
6. Do computer and non-computer using teachers place the same importance on specific incentives?

Table 6 indicates that 468 surveys were disseminated to computer and noncomputer teachers in 78 suburban Chicago high schools. There were 382 responses returned for a response rate of 81.6%. For purposes of studying computer and non-computer using teachers, each school was asked to identify three computer users and three noncomputer users. The responses returned indicate a larger sample than anticipated was returned for computer users, with 258 teachers, or 110.2%, indicating that they use computers in their classroom. There were 124 responses returned from non-computer using teachers for a response rate of 53.0%.

TABLE 6

ALL RESPONDENTS TO QUESTIONNAIRE

| Response Group | Sample Size | No. Returned | % Returned |
|---|---|---|---|
| Computer using teachers | 234 | 258 | 110.3% |
| Non-computer using teachers | 234 | 124 | 53.0% |
| **Totals** | 468 | 382 | 81.6% |

Table 7 shows that 143, or 55.4% of the computer using teachers who participated in the survey were male. One hundred fifteen, or 44.6% of those teachers who indicated that they use computers in their classroom were female. With regard to noncomputer using teachers, there were 81 males and 43 females for a breakdown of 65.3% and 34.7% respectively.

TABLE 7

DISTRIBUTION OF RESPONDENTS BY GENDER

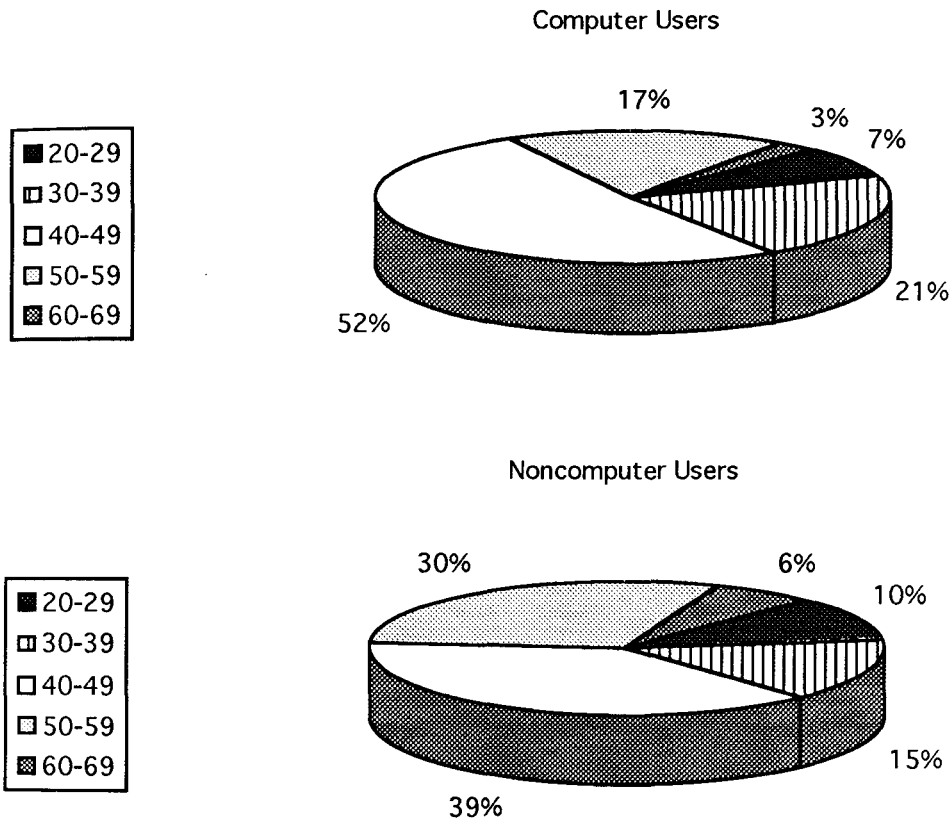
| | Computer Users | | Noncomputer Users | |
|---|---|---|---|---|
| **Gender** | **Number** | **Percentage** | **Number** | **Percentage** |
| Male | 143 | 55.4% | 81 | 65.3% |
| Female | 115 | 44.6% | 43 | 34.7% |
| Total | 258 | 100% | 124 | 100% |

Graph 1 shows the breakdown of the computer user respondents by age. Nineteen, or 7.4%, of those that use computers are between the ages of 20-29. For noncomputer users in this age bracket there were 13 respondents or 10.5%. Between the ages of 30-39 there were 54 computer users or 20.9%, as compared to 19 or 15.3% noncomputer users. Within the 40-49 age bracket there were 133 computer users or 51.6%. For noncomputer users, this same age bracket showed 47 or 38.0% of the

respondents. The 50-59 age bracket revealed 45 computer users or 17.4%, and 37 noncomputer users or 29.8%. Finally, the 60-69 bracket showed 7 computer users or 2.7%, and 8 noncomputer users or 6.5%.

GRAPH 1

AGE DISTRIBUTION OF RESPONDENTS




Graph 2 indicates that computer staff development programs are available to most teachers in 78 suburban Cook and DuPage county high schools. Two hundred thirty two computer users, or 89.9% of the respondents said that staff development programs are available in their school district. Of the noncomputer users, 97 or 78.2% indicated that staff development programs are available to them. Only 26 or 10.1% of computer users and 27 or 21.8% of noncomputer users said that there were no staff development programs available in their district for them to participate in to enhance their skills.

GRAPH 2

STAFF DEVELOPMENT PROGRAMS AVAILABLE

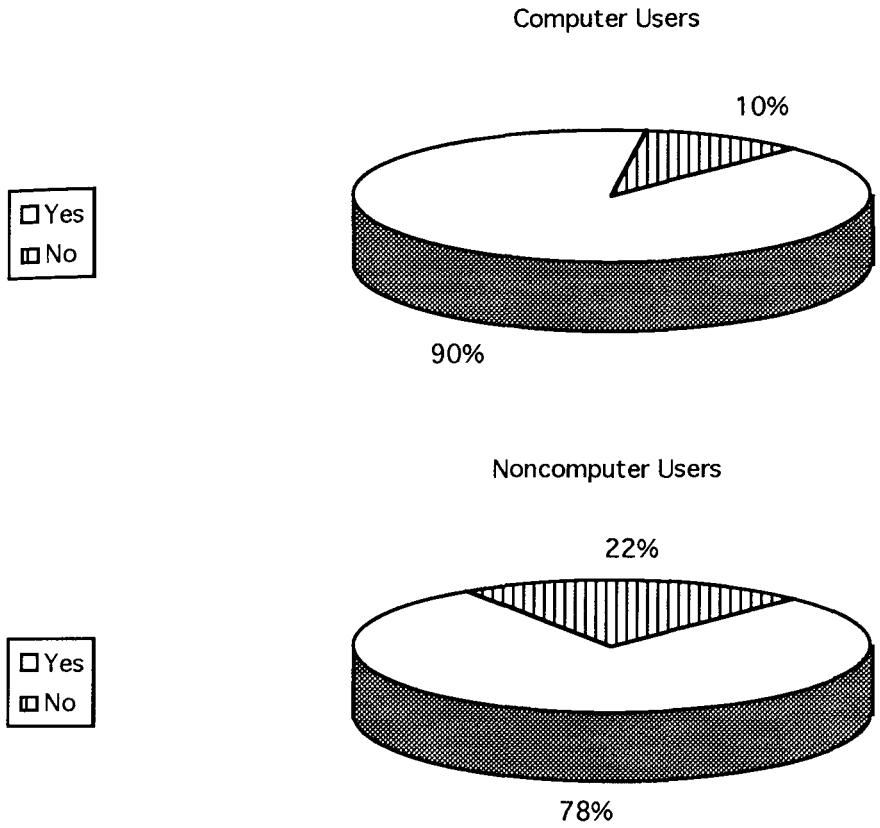



Table 8 shows that 38 or 14.7% of computer using teachers and 19 or 15.3% of the noncomputer using teachers have been in their current district five years or less. Forty-one or 15.9% of those respondents indicated that they use computers and sixteen or 12.9% of those that do not use computers have been in their district between 5 and 10 years. Thirty-one or 12.0% of the computer users and fourteen or 11.3% of the noncomputer users have between 11 and 15 years in their district. Forty-nine or 19.0% of those respondents indicated that they use computers and twenty-three or 18.5% of those that do not use computers have been in their district between 16 and 20 years. Sixty-seven or 26.0% of the computer users and twenty-eight or 22.6% of the noncomputer users have between 21 and 25 years in their district. Twenty-five or 9.7% of those

respondents indicated that they use computers and sixteen or 12.9% of those that do not use computers have been in their district between 26 and 30 years. Seven or 2.7% of the computer users and seven or 5.6% of the noncomputer users have between 31 and 35 years in their district. Finally, one noncomputer user indicated that they have been in their district between 36 and 40 years.

TABLE 8

RESPONSES REGARDING YEARS OF SERVICE IN CURRENT DISTRICT

| | Computer Users | | Noncomputer Users | |
|---|---|---|---|---|
| Years | Number | Percentage | Number | Percentage |
| 5 and under | 38 | 14.7% | 19 | 15.3% |
| Between 6-10 | 41 | 15.9% | 16 | 12.9% |
| Between 11-15 | 31 | 12.0% | 14 | 11.3% |
| Between 16-20 | 49 | 19.0% | 23 | 18.5% |
| Between 21-25 | 67 | 26.0% | 28 | 22.6% |
| Between 26-30 | 25 | 9.7% | 16 | 12.9% |
| Between 31-35 | 7 | 2.7% | 7 | 5.6% |
| Over 36 | 0 | 0.0% | 1 | 0.8% |
| Totals | 258 | 100.0% | 124 | 100.0% |

Table 9 shows that seventeen or 6.6% of computer using teachers and eight or 6.5% of the noncomputer using teachers have been in education five years or less. Twenty-eight or 10.9% of those respondents indicating that they use computers and twelve or 9.7% of those that do not use computers have been in education between 5 and 10 years. Thirty-one or 12.0% of the computer users and nine or 7.3% of the noncomputer users have between 11 and 15 years in education. Sixty or 23.3% of those respondents indicated that they use computers and twenty-six or 21.0% of those that do

not use computers have been in education between 16 and 20 years. Sixty-seven or 26.0% of the computer users and twenty-two or 17.7% of the noncomputer users have between 21 and 25 years in education. Thirty-five or 13.6% of those respondents indicated that they use computers and twenty-one or 16.9% of those that do not use computers have been in education between 26 and 30 years. Seventeen or 6.6% of the computer users and eighteen or 14.5% of the noncomputer users have between 31 and 35 years in education. Finally, two or 0.78% of computer users, and eight or 6.5% of noncomputer users indicated that they have been in education more than 36 years.

TABLE 9

RESPONSES REGARDING YEARS OF SERVICE IN EDUCATION

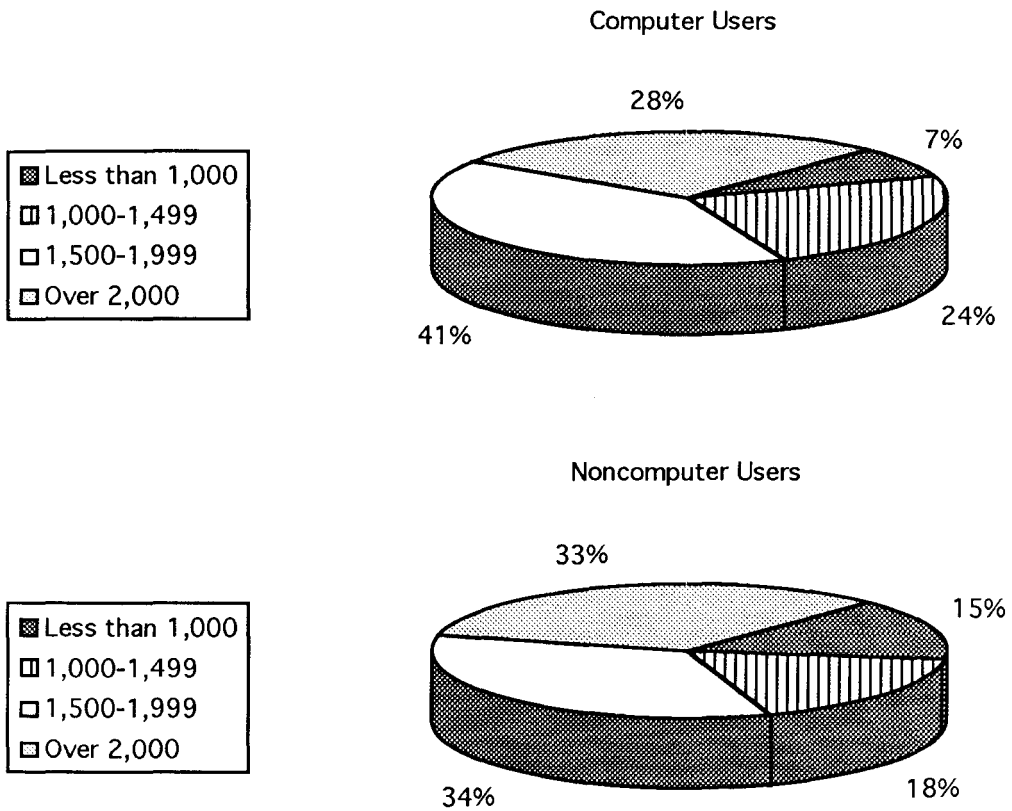
| | Computer Users | | Noncomputer Users | |
|---|---|---|---|---|
| Years | Number | Percentage | Number | Percentage |
| 5 and under | 17 | 6.6% | 8 | 6.5% |
| Between 6-10 | 28 | 11.0% | 12 | 9.7% |
| Between 11-15 | 31 | 12.0% | 9 | 7.3% |
| Between 16-20 | 60 | 23.3% | 26 | 21.0% |
| Between 21-25 | 67 | 26.1% | 22 | 17.7% |
| Between 26-30 | 35 | 13.6% | 21 | 16.9% |
| Between 31-35 | 17 | 6.6% | 18 | 14.5% |
| Over 36 | 2 | 0.8% | 8 | 6.4% |
| Totals | 258 | 100.0% | 124 | 100.0% |

Graph 3 displays the responses of computer and noncomputer using teachers regarding the enrollment of their building. Nineteen or 7.4% of those teachers who use a computer indicated an enrollment in their building of less than 1,000 students. Eighteen or 14.5% of noncomputer using teachers indicated an enrollment less than 1,000 students. Sixty-two or 24.0% of computer using teachers responded that their enrollment is

between 1,000 and 1,499, while twenty-two or 17.7% of noncomputer using teachers fall within the same category. Most respondents appear to be in districts between 1,500 and 1,999. One hundred-four or 40.3% of computer users and forty-three or 34.7% of noncomputer using teachers fall within this category. In districts over 2,000 there were seventy-three or 28.3% computer users and forty-one or 33.1% of noncomputer users.

GRAPH 3

COMPUTER AND NONCOMPUTER USERS RESPONSES REGARDING ENROLLMENT



## Survey Responses
## Part I and II - Questionnaire Items 1-13

Questionnaire items 1-8 asked teachers to respond to a series of questions regarding their beliefs and experiences with microcomputer staff development programs. For each question teachers responded based on two sets of circumstances. First, they were asked to respond to each questionnaire item based on "previous experience" with microcomputer staff development programs. They were then asked to respond to the same question based on what they felt "ought to be" with regard to microcomputer staff development programs.

Graph 4 shows responses to item 1, "A monetary stipend is an important factor in my decision to participate in microcomputer staff development programs" based on their "previous experience." For both users and nonusers, monetary stipends do not appear to be an important factor in their decisions to participate in microcomputer staff development programs. Approximately 60% of users and 72% of nonusers indicated that monetary stipends are "almost never" or "infrequently" an important factor to them in deciding to participate in microcomputer staff development programs.

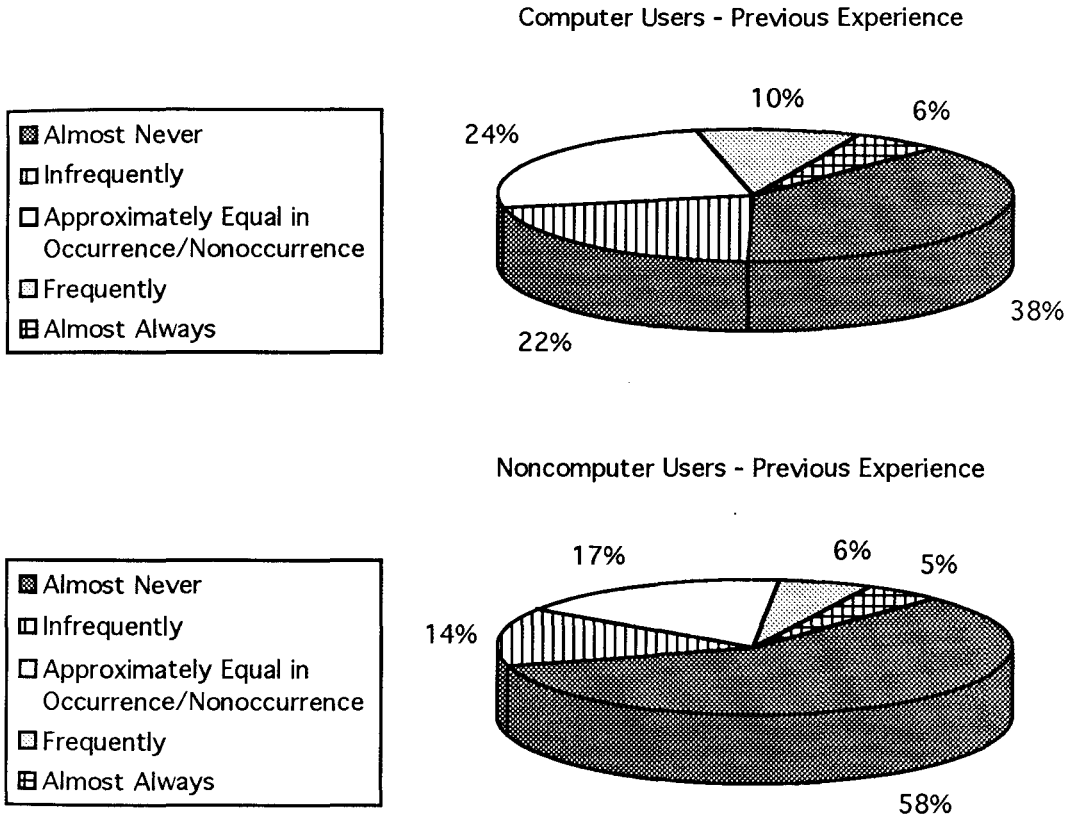
A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to their "previous experience" regarding monetary stipends. The ANOVA for this item showed that p=.0047.

Graph 5 shows responses to item 1, "A monetary stipend is an important factor in my decision to participate in microcomputer staff development programs" based on their "what ought to be." For users, monetary stipends appear to have crept up in importance when asked "what ought to be," but seemed to remain an unimportant factor among nonusers. Approximately 47% of users indicated that monetary stipends are "frequently" or "approximately equal in occurrence/nonoccurrence," an important factor to them in deciding to participate in microcomputer staff development programs. Approximately

47% of nonusers indicated that monetary stipends are "almost never" or "infrequently" an important factor in their decision to participate in microcomputer staff development programs.

GRAPH 4

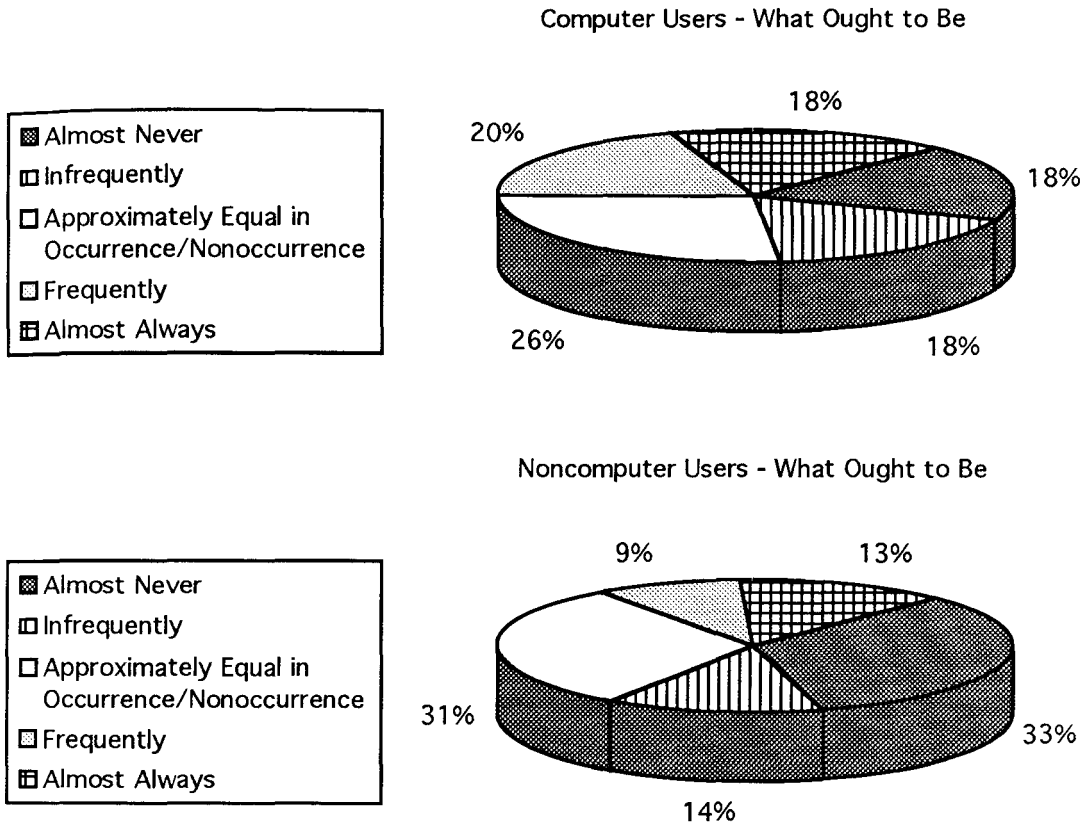
PART 1-QUESTION 1: A MONETARY STIPEND IS AN IMPORTANT FACTOR IN MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS - PREVIOUS EXPERIENCE




A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to their opinions on "what ought to be" regarding monetary stipends. The ANOVA for this item showed that p=.0029.

GRAPH 5

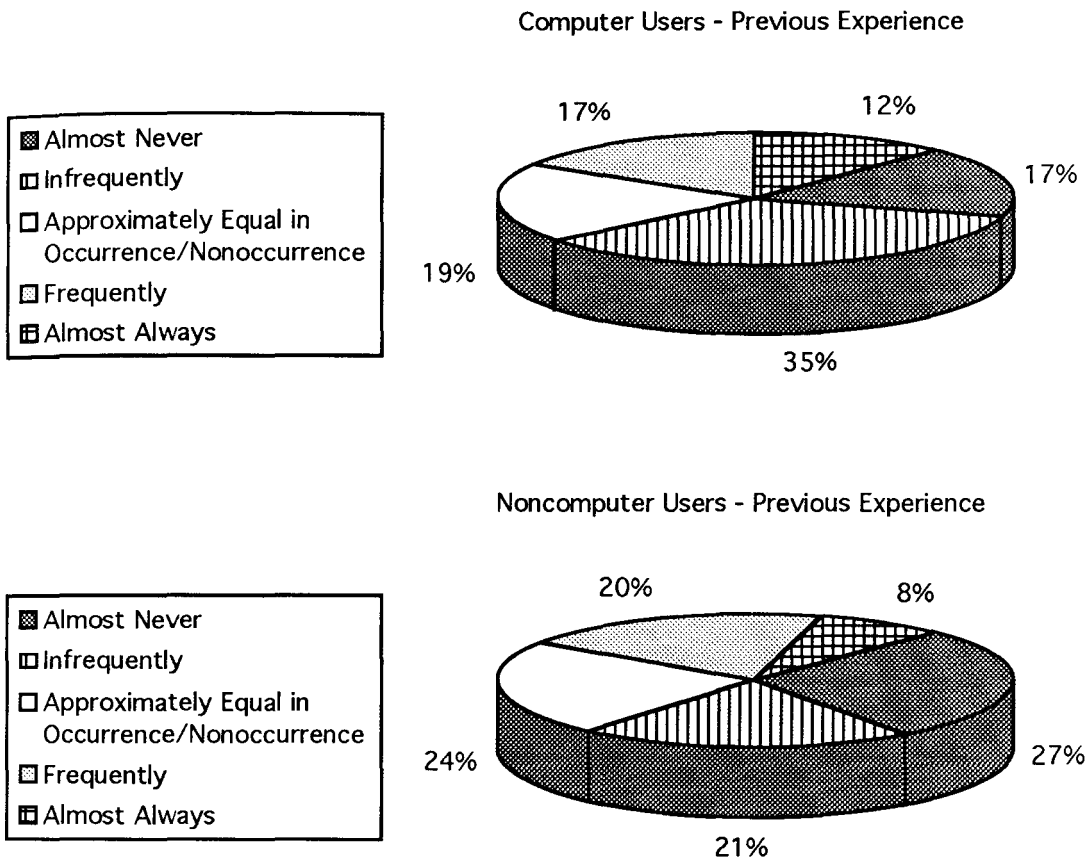
PART 1-QUESTION 1: A MONETARY STIPEND IS AN IMPORTANT FACTOR IN MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS - WHAT OUGHT TO BE




Graph 6 shows responses to item 2, "Teachers are given specific inservice training for implementing microcomputer technology into their teaching" based on their "previous experience." For both users and nonusers, specific inservice training does not appear to be available to teachers who want to implement microcomputer technology. Approximately 52% of users and 49% of nonusers indicated that inservice training for implementing microcomputer technology into their classroom are "almost never" or "infrequently" available in their school.

GRAPH 6

PART 1 - QUESTION 2: TEACHERS ARE GIVEN SPECIFIC INSERVICE TRAINING FOR IMPLEMENTING MICROCOMPUTER TECHNOLOGY INTO THEIR TEACHING - PREVIOUS EXPERIENCE

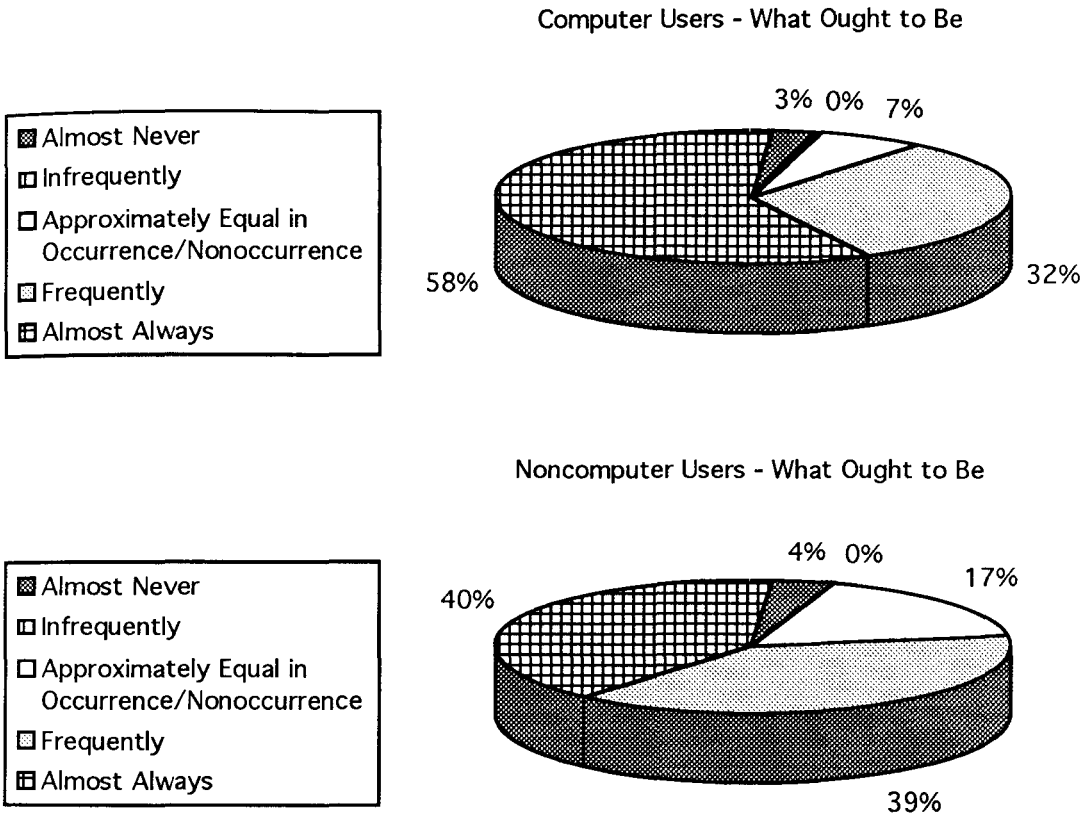



A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed no significant difference between response patterns of users and nonusers with regard to their "previous experience" concerning inservice training dealing with implementing microcomputer technology. The ANOVA for this item showed that p=.3506.

Graph 7 shows responses to item 2, "Teachers are given specific inservice training for implementing microcomputer technology into their teaching" based on their belief as

GRAPH 7

PART 1 - QUESTION 2: TEACHERS ARE GIVEN SPECIFIC INSERVICE TRAINING FOR IMPLEMENTING MICROCOMPUTER TECHNOLOGY INTO THEIR TEACHING - WHAT OUGHT TO BE



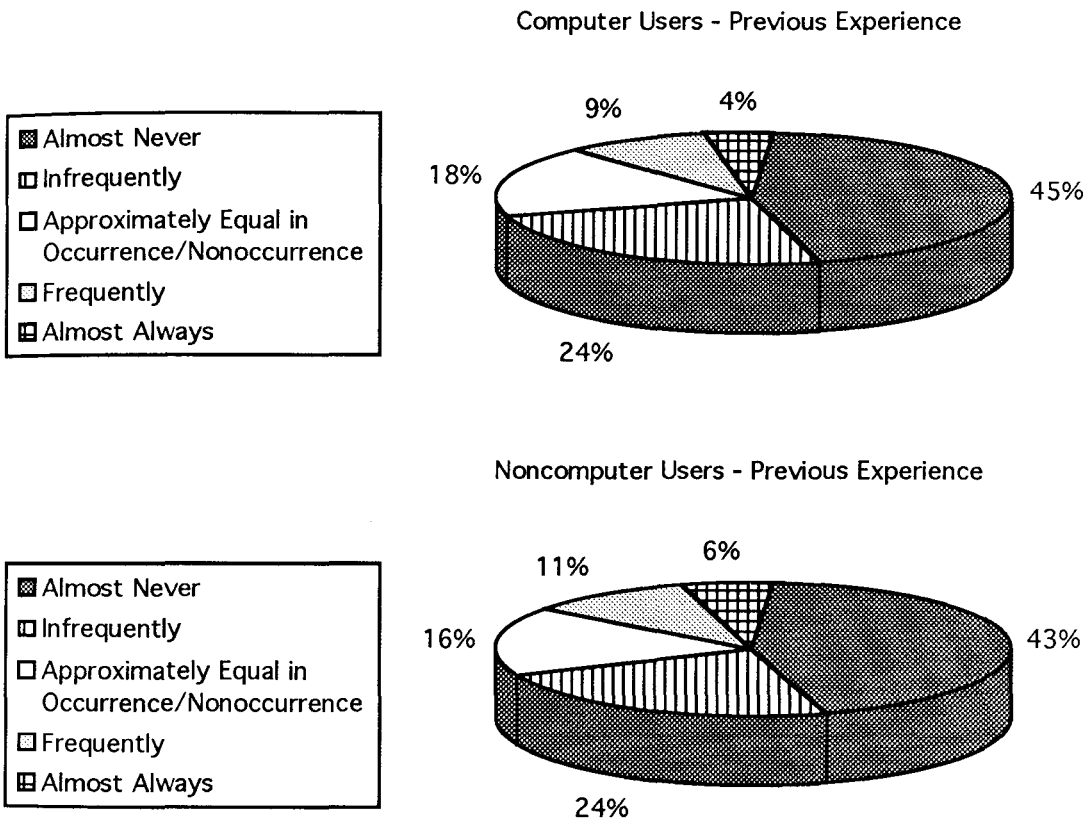

to what ought to be. For both users and nonusers, specific inservice training does appear to be valued by teachers who want to implement microcomputer technology. Approximately 90% of users and 79% of nonusers indicated that inservice training for implementing microcomputer technology into their classroom ought to be available in their school "almost always" or "frequently."

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to beliefs about "what ought to be" concerning inservice

training dealing with implementing microcomputer technology. The ANOVA for this item showed that p=.0009.

GRAPH 8

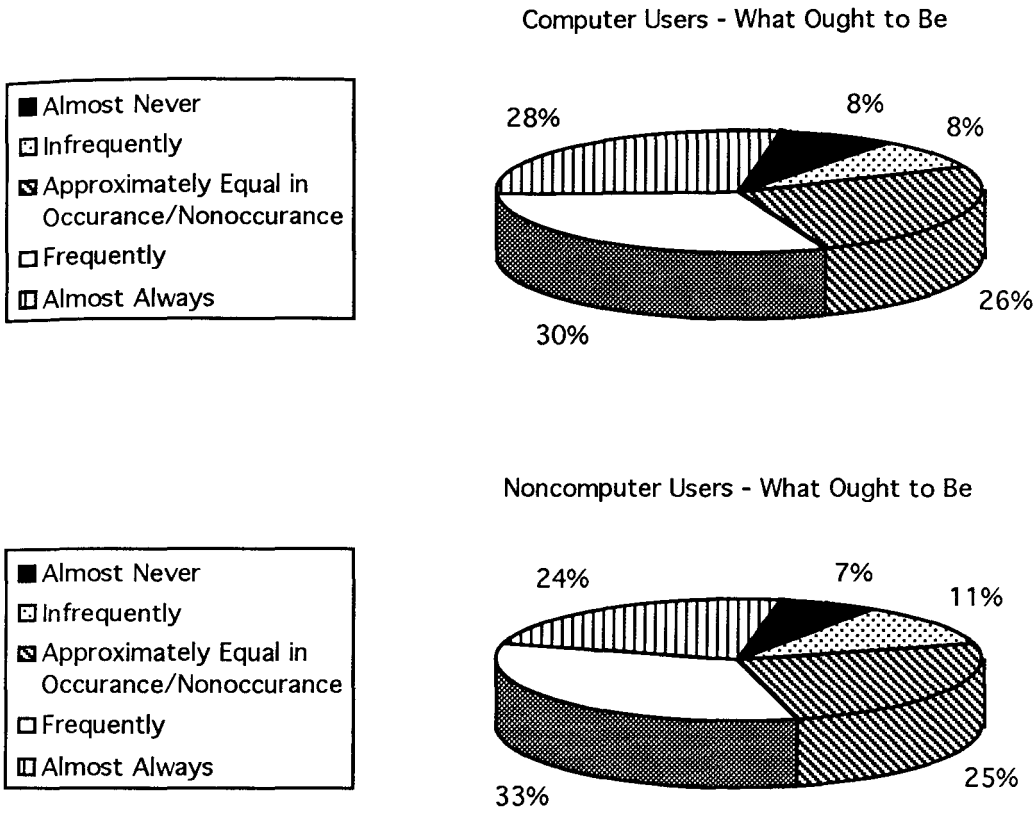
PART 1 - QUESTION 3: TEACHERS ATTEND MICROCOMPUTER WORKSHOPS ON SCHOOL TIME - PREVIOUS EXPERIENCE




Graph 8 shows responses to item 3, "Teachers attend microcomputer workshops on school time" based on their "previous experience." For both users and nonusers, microcomputer workshops do not appear to be available on school time. Approximately 69% of users and 66% of nonusers indicated that microcomputer workshops are available in their school "almost never" or "infrequently."

GRAPH 9

PART 1 - QUESTION 3: TEACHERS ATTEND MICROCOMPUTER WORKSHOPS ON SCHOOL TIME - WHAT OUGHT TO BE



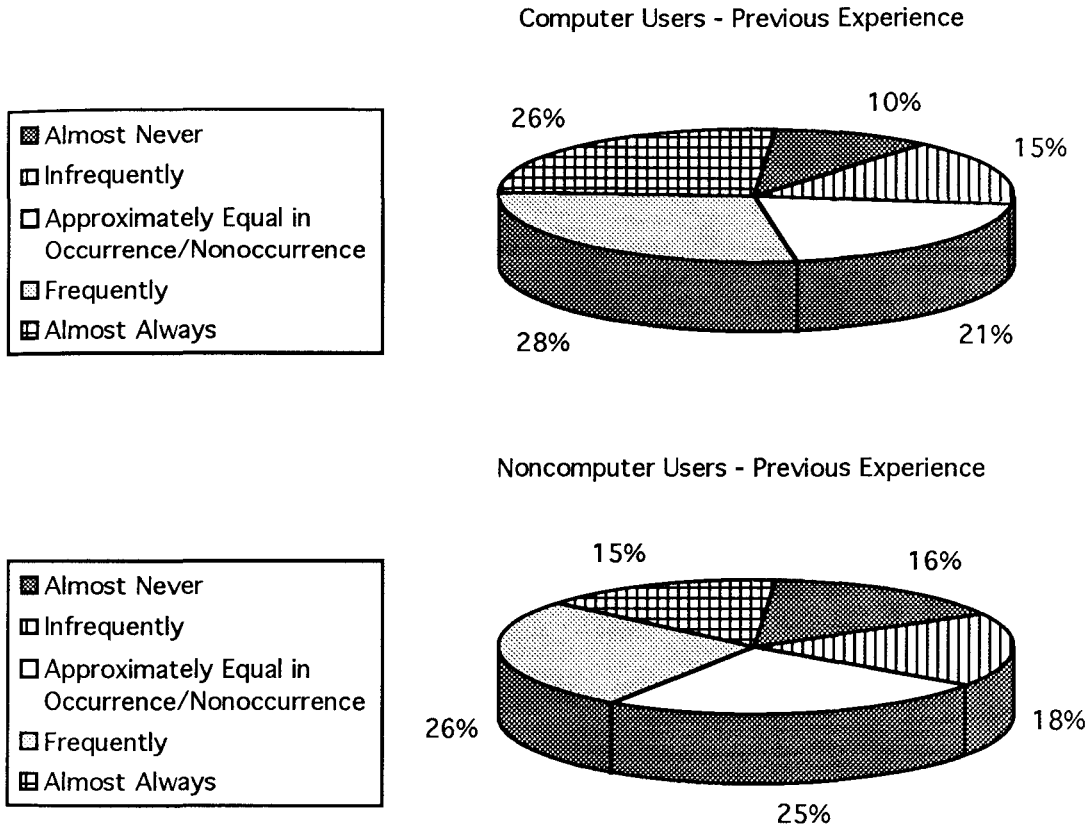

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed no significant difference between response patterns of users and nonusers with regard to their "previous experience" with attending computer workshops on school time. The ANOVA for this item showed that p=.6089.

Graph 9 shows responses to item 3, "Teachers attend microcomputer workshops on school time" based on their belief of "what ought to be." Both users and nonusers, seem to believe that microcomputer workshops should be available on school time. Approximately 48% of users and 66% of nonusers indicated that microcomputer

workshops should be able to attend microcomputer workshops in their school "almost always" or "frequently."

GRAPH 10

PART 1 - QUESTION 4: MICROCOMPUTER STAFF DEVELOPMENT WORKSHOPS, ACTIVITIES, COURSES, OR PROGRAMS ARE SUPPORTIVE OF BUILDING LEVEL OR SCHOOL DISTRICT GOALS - PREVIOUS EXPERIENCE




A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed no significant difference between response patterns of users and nonusers with regard to their "what ought to be" with attending computer workshops on school time. The ANOVA for this item showed that p=.5767.

Graph 10 shows responses to item 4, "Microcomputer staff development workshops, activities, courses, or programs are supportive of building level or school

district goals" based on their "previous experience." For both users and nonusers, microcomputer workshops, activities, courses, or programs appear to support building level or district goals. Approximately 54% of users and 42% of nonusers indicated that microcomputer workshops, activities, courses, or programs support building level and/or district level goals "almost always" or "infrequently."

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed no significant difference between response patterns of users and nonusers with regard to their "previous experience" with attending computer workshops on school time. The ANOVA for this item showed that p=.6089.

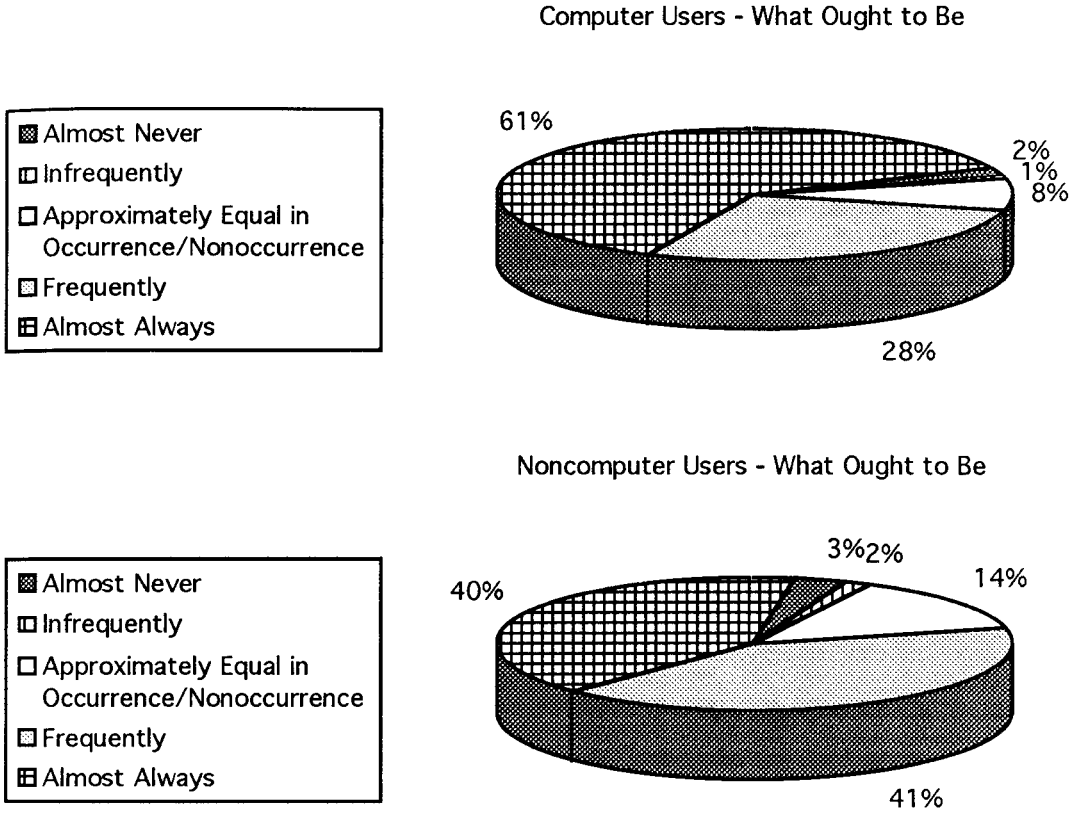
Graph 11 shows responses to item 4, "Microcomputer staff development workshops, activities, course, or programs are supportive of building level or school district goals" based on their belief of "what ought to be." Both users and nonusers, seem to believe that microcomputer workshops, activities, courses, or programs should support building and district goals. Approximately 89% of users and 81% of nonusers indicated that microcomputer workshops, activities, courses, or programs should support building or district level goals "almost always" or "frequently."

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to "what ought to be" concerning microcomputer workshops, activities, courses, or programs supporting building and district level goals. The ANOVA for this item showed that p=.0006.

Graph 12 shows responses to item 5, "Teachers participate in the planning of microcomputer staff development programs or activities." For both users and nonusers, teachers previous experience indicates little participation in the planning of microcomputer staff development programs or activities. Approximately 45% of users

GRAPH 11

PART 1 - QUESTION 4: MICROCOMPUTER STAFF DEVELOPMENT WORKSHOPS, ACTIVITIES, COURSES, OR PROGRAMS ARE SUPPORTIVE OF BUILDING LEVEL OR SCHOOL DISTRICT GOALS - WHAT OUGHT TO BE

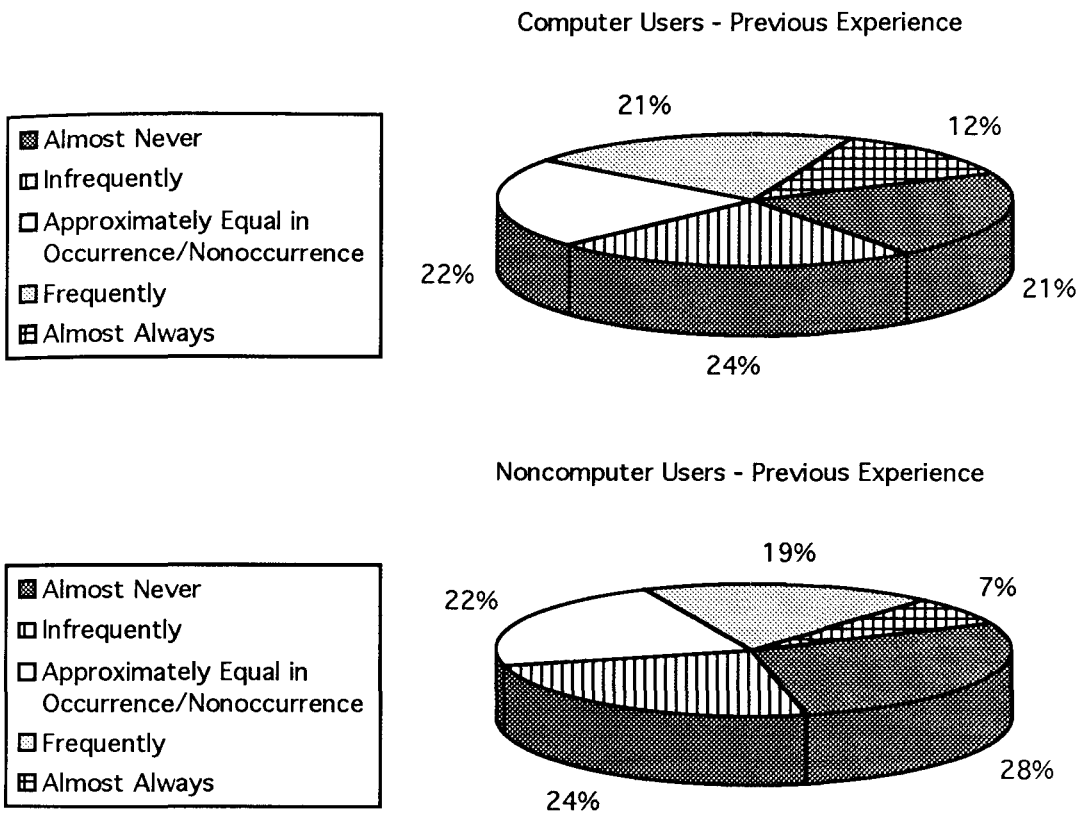



and 53% of nonusers indicated that teachers participate in the planning of microcomputer staff development programs or activities "almost never" or "infrequently."

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to their "previous experience" with participating in the planning of microcomputer staff development programs or activities. The ANOVA for this item showed that p=.032.

GRAPH 12

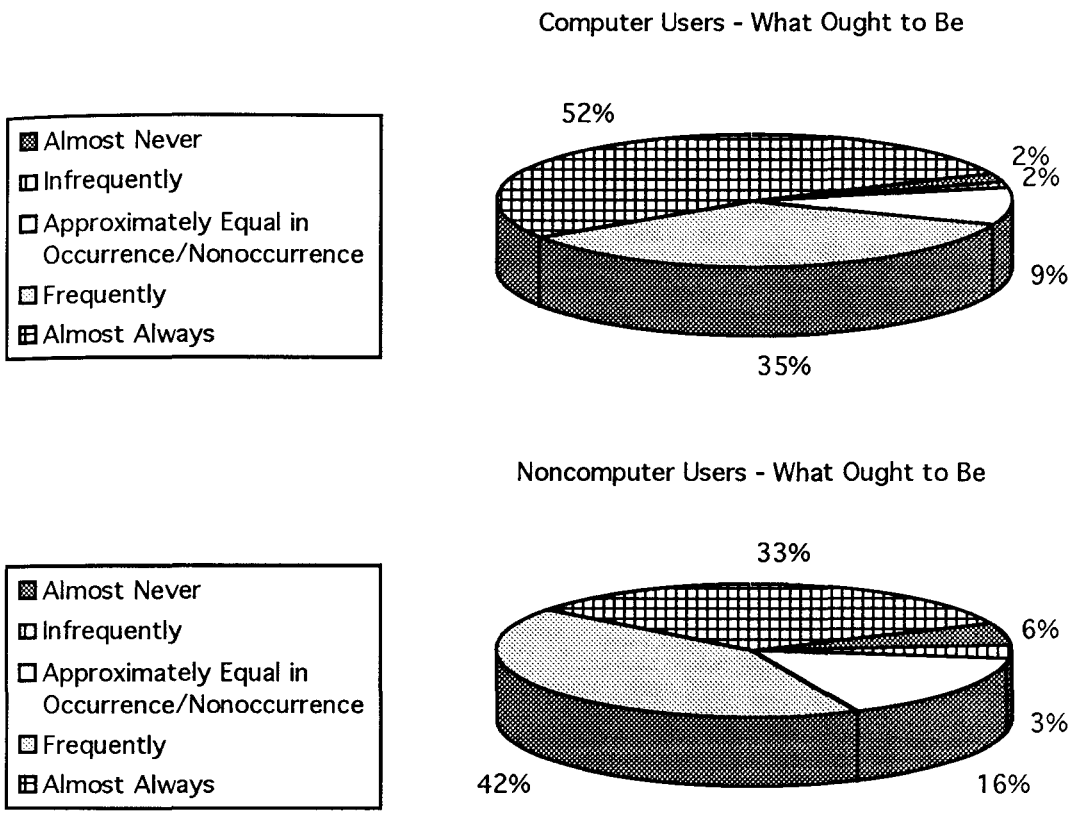
PART 1 - QUESTION 5: TEACHERS PARTICIPATE IN THE PLANNING OF MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - PREVIOUS EXPERIENCE




Graph 13 shows responses to item 5, "Teachers participate in the planning of microcomputer staff development programs or activities" based on their belief of "what ought to be." Both users and nonusers, seem to believe that teachers should be involved in the planning of microcomputer staff development programs or activities. Approximately 87% of users and 75% of nonusers indicated that microcomputer teachers should be involved in planning microcomputer staff development programs "almost always" or "frequently."

GRAPH 13

PART 1 - QUESTION 5: TEACHERS PARTICIPATE IN THE PLANNING OF MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - WHAT OUGHT TO BE

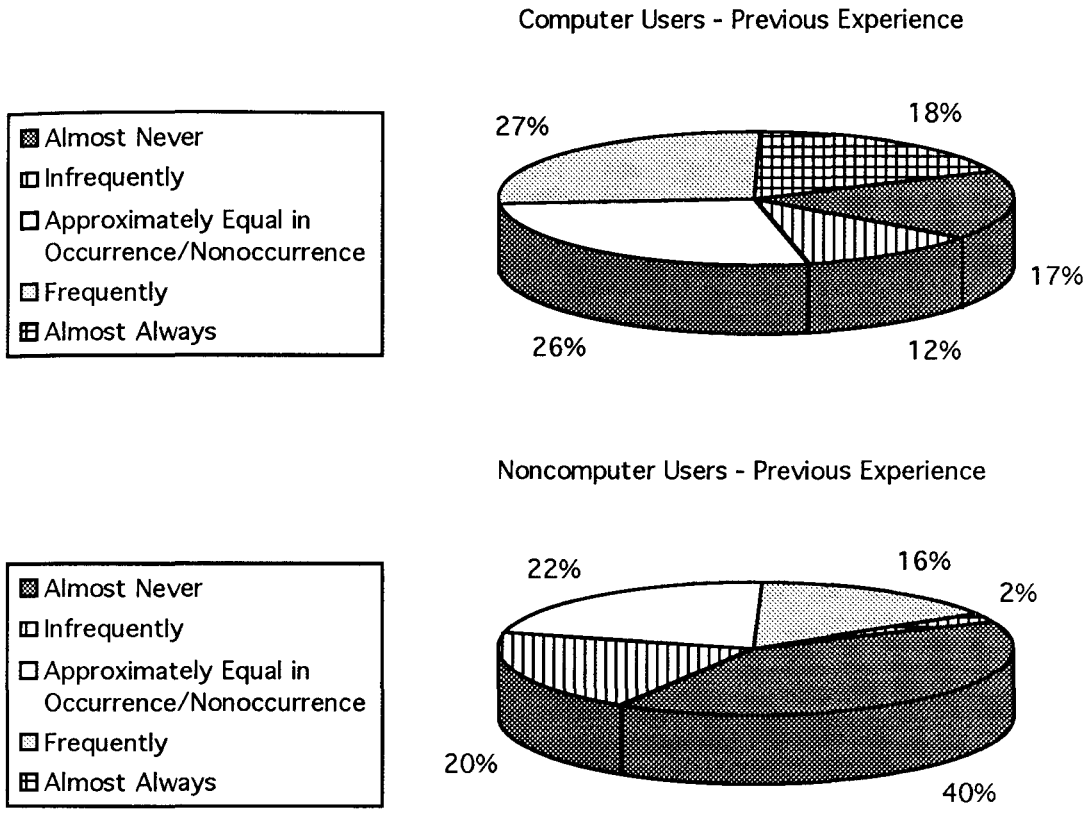



A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to "what ought to be" concerning teachers participation in the planning of microcomputer staff development programs or activities. The ANOVA for this item showed that p=.0001.

Graph 14 shows responses to item 6, "Microcomputer staff development programs provide me with an opportunity to develop more confidence in my teaching ability" based on previous experience. Computer users seemed to indicate that microcomputer staff development programs helped them develop more confidence in their teaching ability.

GRAPH 14

PART 1 - QUESTION 6: MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS PROVIDE ME WITH AN OPPORTUNITY TO DEVELOP MORE CONFIDENCE IN MY TEACHING ABILITY - PREVIOUS EXPERIENCE

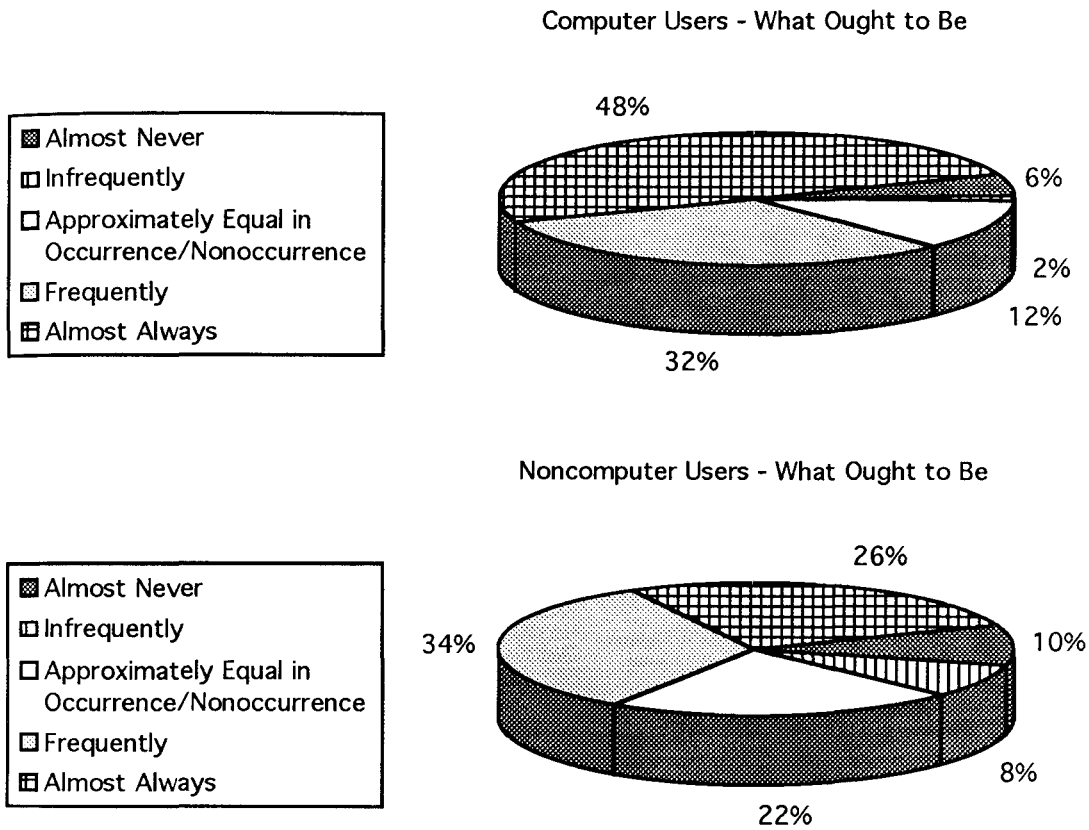



Approximately 44% of users indicated that microcomputer staff development programs "almost always" or "frequently" helped them develop more confidence in their teaching ability. However, approximately 60% of nonusers seemed to indicate that these staff development opportunities had positive effect on their confidence.

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to their "previous experience" with participating in the planning of microcomputer staff development programs or activities. The ANOVA for this item showed that p=.0001.

GRAPH 15

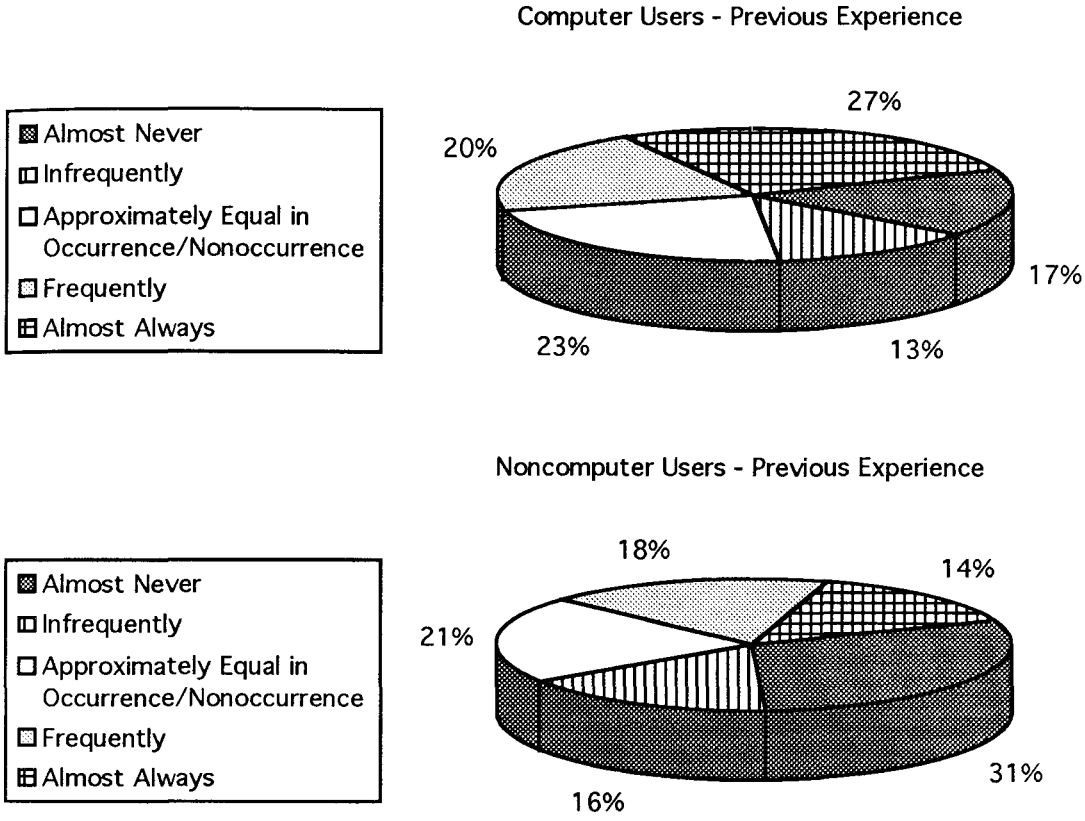
PART 1 - QUESTION 6: MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS PROVIDE ME WITH AN OPPORTUNITY TO DEVELOP MORE CONFIDENCE IN MY TEACHING ABILITY - WHAT OUGHT TO BE




Graph 15 shows responses to item 6, "Microcomputer staff development programs provide me with an opportunity to develop more confidence in my teaching ability" based on their beliefs as to what should be the practice. For both users and nonusers, teachers seem to feel that microcomputer staff development programs would help develop more confidence in their teaching abilities. Approximately 81% of users and 59% of nonusers indicated that microcomputer staff development programs ought to develop more confidence in their teaching abilities "almost always" or "frequently."

GRAPH 16

PART 1 - QUESTION 7: MY PRINCIPAL ENCOURAGES MY PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - PREVIOUS EXPERIENCE




A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to their "previous experience" with participating in the planning of microcomputer staff development programs or activities. The ANOVA for this item showed that p=.0001.

Graph 16 shows responses to item 7, "My principal encourages my participation in microcomputer staff development programs or activities" based on previous experience. Computer users seemed to indicate that principals played an important role in encouraging their participation in microcomputer staff development programs.

Approximately 47% of users indicated that principals "almost always" or "frequently" encouraged them to participate in microcomputer staff development programs. However, an equal percentage, approximately 47% of nonusers seemed to indicate that their experience has been that the principal has provided little encouragement to participate in microcomputer staff development programs.

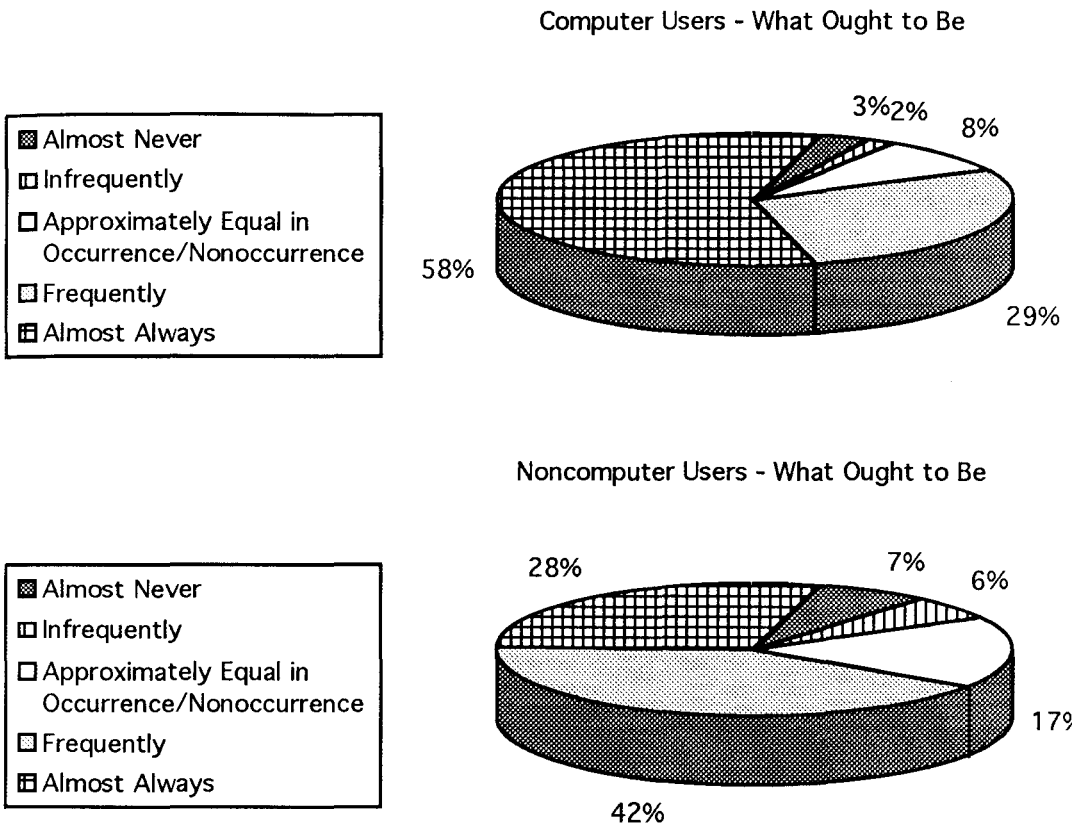
A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to their "previous experience" with principals encouraging their participation in microcomputer staff development programs. The ANOVA for this item showed that p=.0002.

Graph 17 shows responses to item 7, "My principal encourages my participation in microcomputer staff development programs or activities," with regard to what teachers felt ought to be. Both computer users and noncomputer users seemed to indicate that principals should play an important role in encouraging their participation in microcomputer staff development programs. Approximately 87% of users and 70% of nonusers indicated that principals "almost always" or "frequently" should encourage them to participate in microcomputer staff development programs.

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers with regard to their beliefs as to "what ought to be" with regard to principals encouraging their participation in microcomputer staff development programs. The ANOVA for this item showed that p=.0001.

GRAPH 17

PART 1 - QUESTION 7: MY PRINCIPAL ENCOURAGES MY PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - WHAT OUGHT TO BE



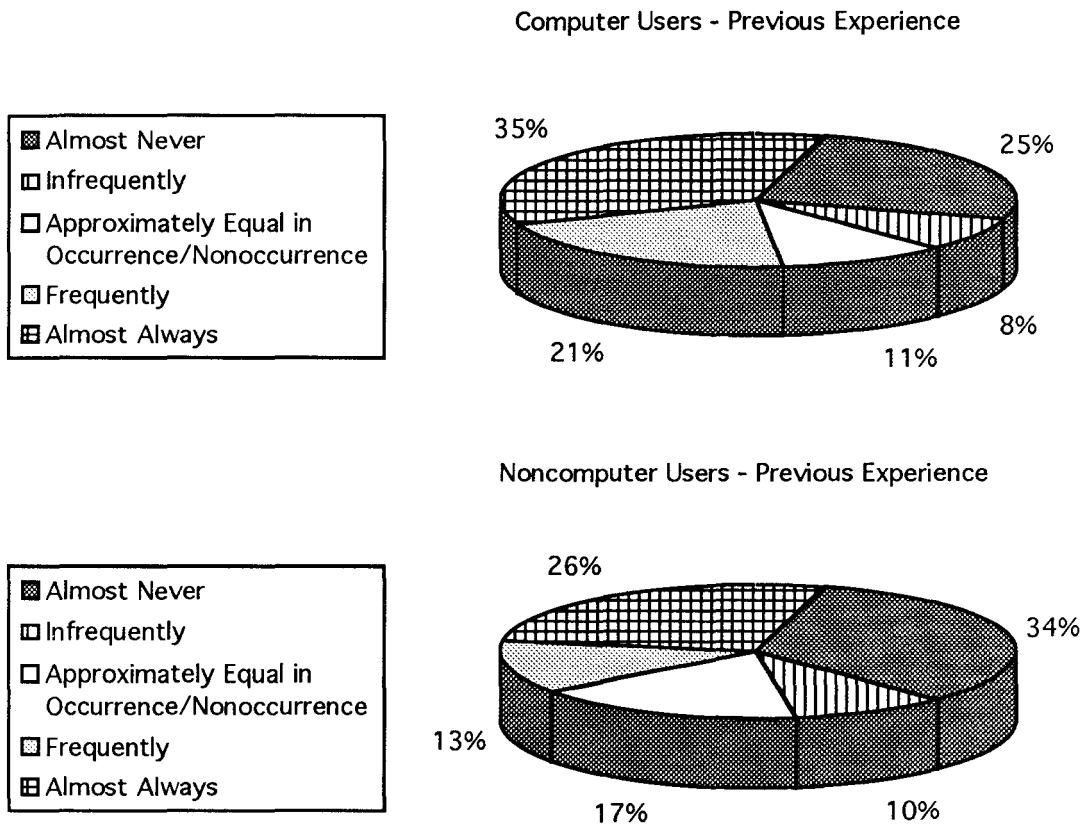

Graph 18 shows previous experience responses to item 8, "Teachers are able to participate in district sponsored microcomputer buy programs that offer computers at no or reduced cost." Computer users seemed to indicate that these microcomputer buy programs are available to them. Approximately 56% of users indicated that district sponsored microcomputer buy programs that offer computer at no or reduced cost are available "almost always" or "frequently." Approximately 44% of nonusers seemed to indicate that these programs are available "almost never" or "infrequently."

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of

users and nonusers with regard to "previous experience" of school districts offering microcomputer buy programs to teachers at no or reduced cost. The ANOVA for this item showed that p=.016.

GRAPH 18

PART 1 - QUESTION 8: TEACHERS ARE ABLE TO PARTICIPATE IN DISTRICT SPONSORED MICROCOMPUTER BUY PROGRAMS THAT OFFER COMPUTERS AT NO OR REDUCED COST - PREVIOUS EXPERIENCE

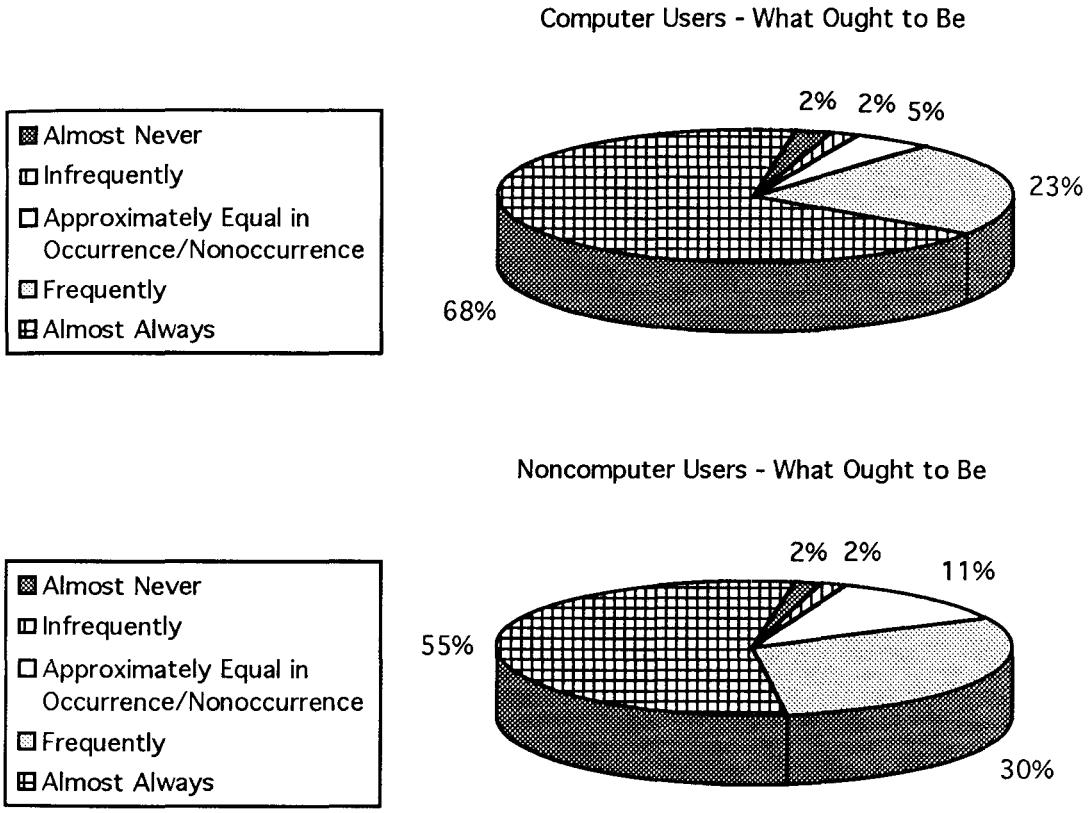



Graph 19 shows responses to item 8, "Teachers are able to participate in district sponsored microcomputer buy programs that offer computers at no or reduced cost," with regard to what teachers felt ought to be. Both computer users and noncomputer users seemed to indicate that teachers should be able to participate in district sponsored microcomputer buy programs. Approximately 90% of users and 85% of nonusers

indicated that teachers should be able to participate in district computer buy programs "almost always" or "frequently."

GRAPH 19

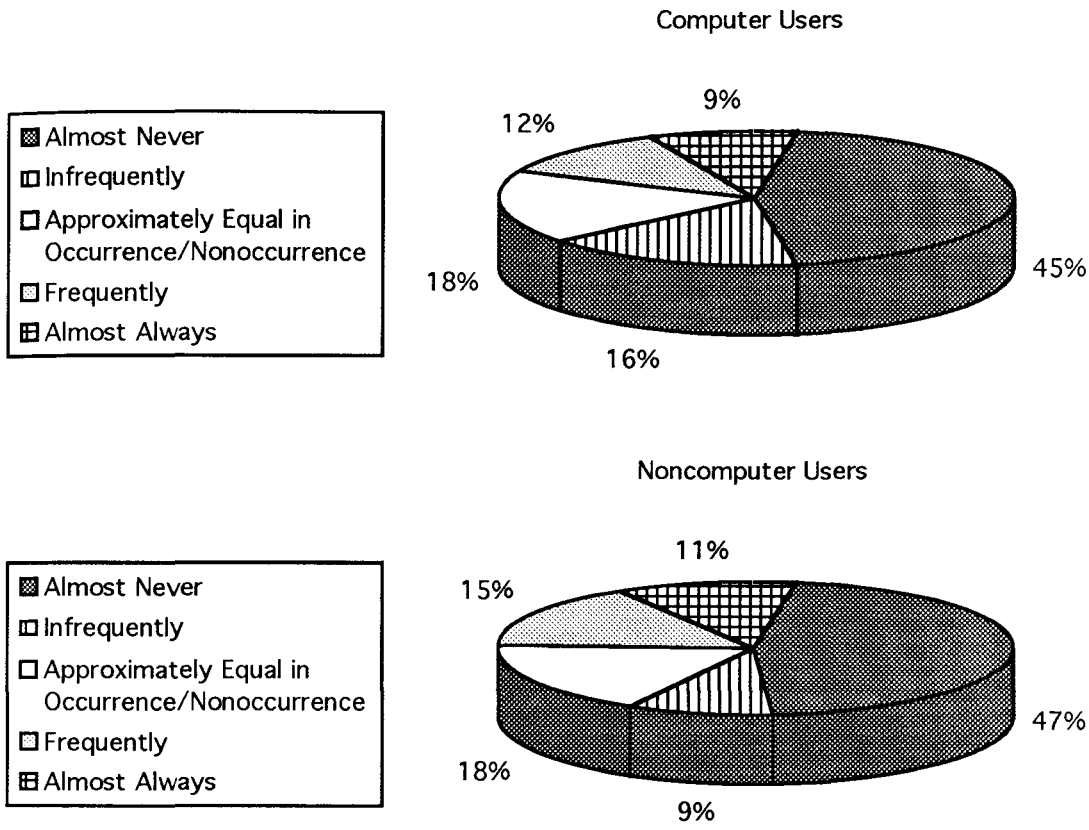
PART 1 - QUESTION 8: TEACHERS ARE ABLE TO PARTICIPATE IN DISTRICT SPONSORED MICROCOMPUTER BUY PROGRAMS THAT OFFER COMPUTERS AT NO OR REDUCED COST - WHAT OUGHT TO BE




A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed no significant difference between response patterns of users and nonusers with regard to "what ought to be" with school districts offering microcomputer buy programs to teachers at no or reduced cost. The ANOVA for this item showed that p=.0624.

GRAPH 20

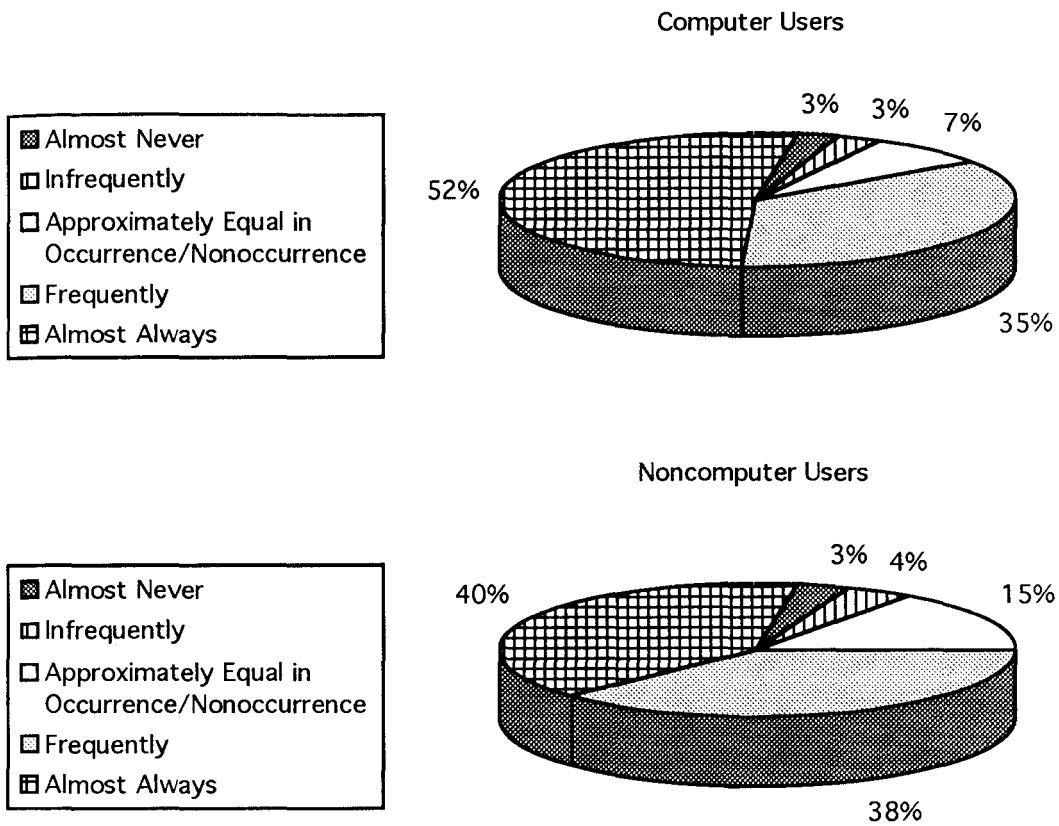
PART II - QUESTION 9: THE POTENTIAL FOR SALARY SCHEDULE ADVANCEMENT IS AN IMPORTANT PART OF MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS




Graph 20 shows responses to item 9, "The potential for salary schedule advancement is an important part of my decision to participate in microcomputer staff development programs." Both computer users and noncomputer users seemed to indicate that salary schedule advancement is not important when making a decision to participate in microcomputer staff development programs. Approximately 60% of users and 45% of nonusers indicated that salary schedule advancement is an important factor in their decision to participate in microcomputer staff development programs "almost never" or "infrequently."

GRAPH 21

PART II - QUESTION 10: IT IS IMPORTANT THAT MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS HAVE THE PROMISE OF AN IMPACT ON STUDENT SUCCESS




A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed no significant difference between response patterns of users and nonusers when asked if salary schedule advancement is important when deciding whether or not to participate in microcomputer staff development programs. The ANOVA for this item showed that p=.4442.

Graph 21 shows responses to item 10, "It is important that microcomputer staff development programs have the promise of an impact on student success." Both computer users and noncomputer users seemed to indicate that microcomputer staff development programs that promise to have an impact on students are important factors

when making a decision to participate in that program. Approximately 87% of users and 78% of nonusers indicated that microcomputer staff development programs that have a promise of impacting on student success influence their decision to participate "almost always" or "frequently."

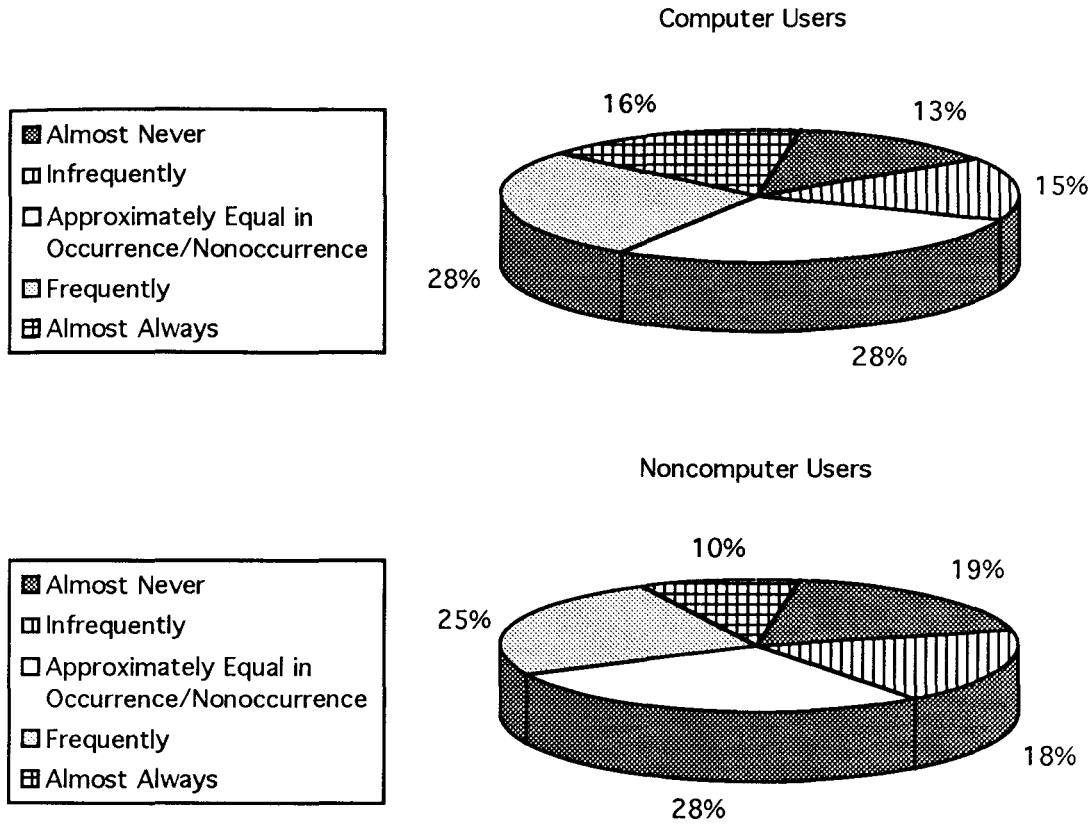
A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers when asked if microcomputer staff development programs that promise to impact student success would influence their decision to participate in microcomputer staff development programs. The ANOVA for this item showed that p=.0233.

Graph 22 shows responses to item 11, "My decisions to participate in microcomputer staff development programs are influenced by an enjoyment of learning with fellow teachers." Both computer users and nonusers indicated a slight positive response when asked if their decision to participate in microcomputer staff development programs where influenced by the enjoyment of learning with their colleagues. Approximately 55% of users and 53% of nonusers indicated that the decision to participate in microcomputer staff development programs were influenced by the enjoyment of learning with fellow teachers "frequently" or "approximately equal."

A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed a significant difference between response patterns of users and nonusers when asked if their decision to participate is influence by an enjoyment of learning with fellow teachers. The ANOVA for this item showed that p=.0347.

GRAPH 22

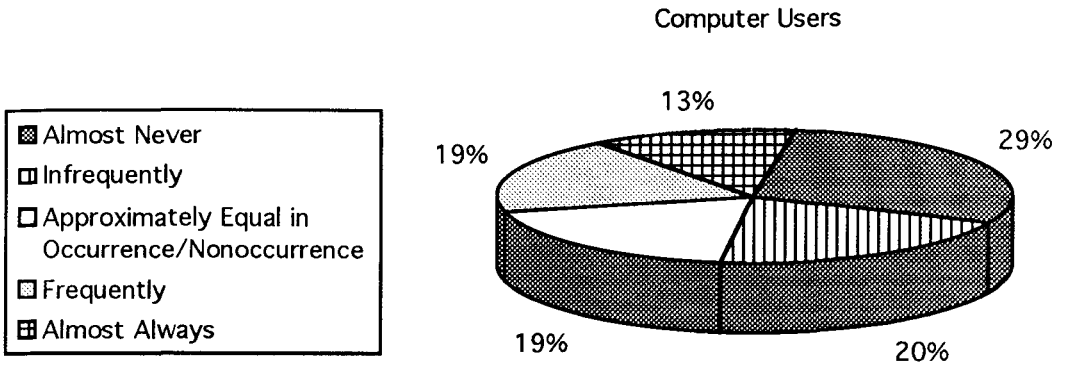
PART II - QUESTION 11: MY DECISIONS TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS ARE INFLUENCED BY AN ENJOYMENT OF LEARNING WITH FELLOW TEACHERS

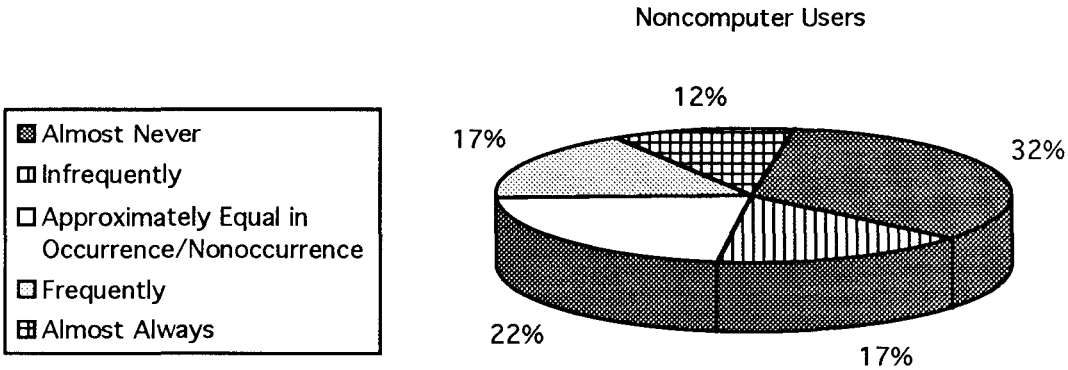



Graph 23 shows responses to item 12, "My involvement in district sponsored staff development programs allows me to gain additional income or benefits." Both computer users and nonusers believe that their involvement in district sponsored staff development programs do not allow them to gain additional income or benefits. Approximately 49% of users and nonusers believed that their involvement in these programs resulted in additional income or benefits "infrequently" or "almost never."

GRAPH 23

PART II - QUESTION 12: MY INVOLVEMENT IN DISTRICT SPONSORED STAFF DEVELOPMENT PROGRAMS ALLOWS ME TO GAIN ADDITIONAL INCOME OR BENEFITS




A statistical analysis of the data using a one-way analysis of variance (ANOVA), with an alpha level of .05, showed no significant difference between response patterns of users and nonusers when asked if their participation in district sponsored staff development programs allowed them to gain additional income or benefits. The ANOVA for this item showed that p=.5557.

Responses to Questionnaire Items 13-21

Table 10 shows the responses to questionnaire items 13-21. These statements forced choices between paired items in an effort to determine the most important factors the influence a teachers' decision to participate in microcomputer staff development programs. Teacher choices also helped determine whether the most important influences when deciding whether or not to participate in microcomputer staff development programs were intrinsic or extrinsic in nature. The "N" represents the number of sample respondents and the "PNR" represents the maximum possible number of responses a statement could receive if it were named as the most important factor each of the three times it was paired with another factor.

Six factors were paired against each other. Three of these items were extrinsic factors. These included:

1) A $75 stipend for job related inservice.
2) Job related inservice hours granted for salary schedule advancement.
3) Interest free loans to purchase a computer in exchange for participation in microcomputer staff development programs.

Three items were intrinsic factors and included:

1) One-half day release time for on-the-job inservice.
2) Inservice training in innovative microcomputer teaching strategies.
3) A microcomputer staff development or inservice opportunity that supports personal and professional growth.

Computer users and nonusers had identical response patterns. Both groups ranked intrinsic incentives 1st, 2nd, and 3rd. Ranked first was innovative inservice training in microcomputer teaching strategies. A microcomputer staff development or inservice opportunities that support personal and professional growth was ranked second by both groups. Ranked third by both groups was a one-half day release time for on-the-job inservice.

Extrinsic factors were ranked 4th, 5th and 6th by both groups. The most important extrinsic factor was inservice hours approved toward salary schedule

advancement which was ranked 4th. In the 5th position was interest free loans to purchase computers in exchange for participation in microcomputer staff development programs. In the last position was a $75 stipend for inservice participation.

TABLE 10

COMPUTER USERS AND NONUSERS RESPONSES RELATED TO FACTORS CONSIDERED MOST IMPORTANT TO PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS

| **Response Categories** | **Computer Users P=258 PNR=774** | | **Noncomputer Users P=124 PNR=372** | |
|---|---|---|---|---|
| | No. | Rank | No. | Rank |
| **Extrinsic** | | | | |
| $75 stipend for inservice | 200 | 6 | 105 | 6 |
| Inservice credit for salary schedule advancement | 272 | 4 | 128 | 4 |
| Interest free loans to purchase computers in exchange for participation | 260 | 5 | 107 | 5 |
| **Intrinsic** | | | | |
| One-half day release time for inservice | 473 | 3 | 245 | 3 |
| Training in innovative teaching strategies | 558 | 1 | 265 | 1 |
| Inservice opportunities that support personal and professional growth | 541 | 2 | 264 | 2 |

The Spearman rho correlation coefficient test was used for statistical analysis of the rank order relationship between the two groups. The results showed a high positive correlation, Rho=1.0, p=.0253, between computer users and nonusers.

A summary of the findings and conclusions of the study are found in Chapter 5. Statistical information related to Chapter 4 is found in Appendix C. Implications for practice and recommendations for further research are also found in this chapter.

# CHAPTER 5

# FINDINGS AND CONCLUSIONS

## Introduction

The purpose of this study was to investigate staff development incentives as they apply to microcomputer staff development programs. Specifically, the study targeted suburban Cook and DuPage county high school teachers, and divided them into two groups - computer users and computer nonusers. The study was also designed to determine whether these teachers were influenced to participate in microcomputer staff development programs more by intrinsic or extrinsic incentives. Furthermore, the study attempted to determine if there were any differences between computer users and nonusers.

After a review of the literature, the Jordan questionnaire was determined to be the best instrument to use in order to pursue this study. The instrument was modified in order to apply specifically to microcomputer staff development programs. The questionnaire assessed the importance of incentives as well as the extent of agreement between computer users and nonusers. A copy of the questionnaire can be found in Appendix B.

In order to assure a positive response, phone contact was made with 73 of 78 public high schools in suburban Cook and DuPage counties to solicit their participation in the study. Where phone contact could not be established, a letter was sent to the school inviting their participation. A majority of the phone contacts were with the building principal. However, in some cases another administrator was contacted. This contact was made as means of introducing the study as well as the researcher.

All 78 schools agreed to participate in the study. Within two weeks, each school was sent a packet of questionnaires and directions. Each school was asked to identify

three computer users and three computer nonusers. The teachers identified were then asked to complete the questionnaire and return it in a pre-addressed stamped envelope. A follow-up letter was sent to schools who after four weeks had returned three or less questionnaires. Appendix A contains all correspondence that was conducted with each school.

A total of 468 questionnaires were sent, and within two months 382 were returned. This return equates to a 81.6% rate of return. Overall, a total of 258 respondents, or 67.5% indicated that they used computers in the classroom, while 124 or 32.5% of the respondents indicated that they were noncomputer users. However, when considering the 234 teacher sample size for each group the response rates equate to 110.3% for users and 53% for nonusers.

The comparability of these two groups is evident when considering other demographic data. Similarities can be found in the following areas:

- There is a 10% difference between the number of male and female teachers in both groups.
- Sixty-nine percent of the respondents in both groups are between the ages of 40-59.
- Years of service in their current district is approximately the same in each category for each group.
- Both groups come from like schools with regard to enrollment in that approximately 68% of the respondents from each group are in schools that are at least 1,500 students.

This supports the comparability of the data, and supports the findings that follow.

## Findings

There are a number of findings that resulted from this study. The data revealed that a majority of the computer users and nonusers in suburban Cook and DuPage county high schools are male. However, in both cases males represented only a small majority in each group.

An overwhelming number of computer users and noncomputer users indicated that microcomputer staff development programs are available through their high school. A larger percentage of users stated that these programs are available.

The data revealed that most teachers in both groups have been in their present district between 21 and 25 years. When looking at the number of years in education, the data revealed that most of the computer users have been in education between 21 and 25 years. On the other hand, most noncomputer users have been in education between 16 and 20 years.

A majority of the schools have an enrollment between 1,500 and 1,900 students. Very few of the public high schools in suburban Cook and DuPage county are less than 1,000 students.

When investigating each of questionnaire items 1-12, there was a significant difference between the two groups on a majority of the questions. Only "previous experience" items 2 and 3, "what ought to be" items 3 and 8, and questions 9 and 12 were found to have no significant difference between the groups.

With regard to monetary stipends, both computer users and nonusers experience indicated that these stipends are not important factors affecting participation decisions. However, when asked "what ought to be" computer users were not as decisively against the importance of these factors. Noncomputer users remained consistent in their belief that monetary stipends would not positively affect their decision to participate.

Both groups indicated that presently specific inservice training on how to implement microcomputer technology into their classroom is available on a somewhat limited basis. However, both groups believed strongly that this type of inservice should be made available more often.

Presently, both computer users and nonusers indicated that they were not given the opportunity to attend microcomputer workshops on school time. A majority of both

groups indicated that they almost never are given this opportunity. This area is one of interest to both groups as they indicated that there should be more opportunities to attend conferences on school time.

It was important to both groups that microcomputer staff development programs be tied into building or district level goals. Both groups indicated that this presently is the case in their building, and that it should continue to be an important part of microcomputer staff development programs.

From this study it is evident that teachers, in many cases, do not participate in the planning of microcomputer staff development programs. However, this is something that both groups felt should be changed. Overwhelmingly, computer users and nonusers would like to opportunity to participate in planning these programs.

The ability to develop more confidence in one's teaching ability through participation in microcomputer staff development programs was more evident in computer users as compared to nonusers. Nonusers felt strongly that present microcomputer staff development programs do not help them become more confident in their teaching abilities. Both groups, however, felt strongly that microcomputer staff development programs should help give them greater confidence in their teaching ability.

The impact of the building principal on a teacher's decision to participate in microcomputer staff development programs was very important to computer users as compared to nonusers. The responses were diametrical between users and nonusers in that as strongly as the principal played an important role for computer users, they played an equally uninspiring role for nonusers. Both groups concurred however that the principal should play an important role in encouraging participation in microcomputer staff development programs.

The study also showed a difference between users and nonusers with regard to their ability to participate in microcomputer buy programs. Users indicated that they

were able to participate in district sponsored microcomputer buy programs that offer computers at little or no cost to the teacher. However, a majority of the nonusers indicated that these programs are not available to them. Both groups strongly indicated that districts should offer this opportunity to teachers.

When considering salary schedule advancement as a condition of participation in microcomputer staff development programs, both computer users and nonusers indicated that this was not an important factor in influencing their decision.

However, the impact on student success was extremely important to both groups. Both groups felt strongly that microcomputer staff development programs must have the promise of positively impacting student success in the classroom.

While teachers in both groups believe the principal is important in influencing their decision to participate, they did not have the same feeling toward their colleagues. Teachers in both groups were ambivalent toward the influence the enjoyment of learning with a fellow teacher has on their decision to participate in microcomputer staff development programs.

Computer users and noncomputer users for suburban Cook and DuPage county did not view participation in microcomputer staff development programs as a chance to gain additional income or benefits.

When both groups were forced to make a choice between intrinsic and extrinsic incentives, they chose the opportunity to be involved with inservice training in innovative microcomputer strategies as the most important factor when considering microcomputer staff development programs.

## Conclusions

Below are the six research questions that were addressed through this study and the conclusions drawn based on the data:

1. Are microcomputer staff development programs being offered in suburban Cook and DuPage county public high schools?

Most public high schools in suburban Cook and DuPage county have microcomputer staff development programs available to their staff. While staff development programs are offered through the Educational Service Centers, many high schools appear to be offering their own programs. Many of the staff development programs are tied into computer buy programs available to teachers. A phone survey of the four Educational Service Centers that service this area confirm this shift.

2. What incentives are considered most important by teachers in suburban Cook and DuPage county public high schools in order to encourage their participation in microcomputer staff development programs?

Inservice training in innovative microcomputer teaching strategies is the most important incentive when teachers are considering microcomputer staff development programs. Teachers also value the opportunity to grow both personally and professionally from microcomputer staff development activities, and want release time in order to participate. All of these incentives are intrinsic in nature.

3. Is there a relationship between intrinsic incentives and participation in microcomputer staff development programs.

Intrinsic incentives have the strongest influence on a teacher's decision to participate in microcomputer staff development programs. The strong relationship between both groups support this conclusion. Both groups ranked intrinsic incentives first, second, and third when compared to extrinsic incentives. This conclusion is consistent with Jordan's (1990) work on staff development incentives, as well as the work of Mitchell, Ortiz and Mitchell (1987) on teacher rewards and incentives. It is also supported by the theories of Herzberg and Maslow.

4. Is there any relationship between extrinsic incentives and participation in microcomputer staff development programs?

Extrinsic incentives are not as important to teachers in deciding whether or not to participate in microcomputer staff development programs. The study showed the extrinsic incentives were ranked fourth, fifth and sixth by users and nonusers alike.

However, extrinsic incentives should not be ignored. All teachers responded positively to extrinsic incentives in questions that asked what they felt should be occurring in school districts. For example, teachers would like to participate in some sort of district sponsored microcomputer buy program. This view was consistently upheld throughout the questionnaire, and supported by users and nonusers alike. The study showed that this was one of the main areas of difference between users and nonusers in that nonusers felt that this option was not available to them.

5. From a teacher's perspective, what are the most important incentives in soliciting teacher participation in microcomputer staff development programs?

Teachers overwhelmingly perceive intrinsic incentives as being the most influential in soliciting their participation. Teachers want to improve their skills, but only if it will have an impact in the classroom or on them personally. The students are their main concern, and are the driving force behind any decision that they make regarding staff development.

6. Do computer and noncomputer users place the same importance on specific incentives?

There is a strong relationship between computer users and nonusers with regard to the importance of incentives. The study showed a strong positive correlation between users and nonusers. Each group ranked incentives identically when forced to make a choice between them.

## Implications for Practice

Below are areas that should be considered by administrators who are planning microcomputer staff development programs:

1. The principal plays a key role in the success of microcomputer staff development programs. Principals should encourage computer users and nonusers alike to improve their skills and take advantage of programs that are available throughout the district. Teachers need and want this encouragement.

2. Teachers should be involved in the planning of microcomputer staff development programs. As the ultimate end user, they must feel part of the process from the beginning in order to best see the pedagogical implications of using such tools.

3. When developing microcomputer staff development programs, intrinsic incentives should be used to enhance teacher participation in such programs. This study and other literature support the importance teachers place on these types of incentives.

4. District sponsored microcomputer buy programs should be considered as a way to encourage noncomputer users to participate in microcomputer staff development programs. This represented one of the main areas of difference between users and nonusers in that users felt that they had access to such programs, while nonusers felt that they did not have the same type of access. It also was evident from technology coordinators at the Educational Service Centers that these programs were a catalyst to bringing more staff development programs directly to a building.

## Implications for Research

Below are implications for further research as a result of this study:

1. This study showed that teacher decisions are greatly influenced by learning new and innovative teaching strategies that have a positive impact on students. A study should be conducted to identify microcomputer staff development programs that offer such promise to teachers.

2. A study should be conducted on district sponsored microcomputer buy programs and their impact on teachers' use of technology in the classroom. This appeared to be a strong incentive for noncomputer users, as well as a way for school districts to make a positive statement about microcomputer staff development.

# BIBLIOGRAPHY

Barro, Stephen. The Logic of Teacher Incentives. Alexandria: National Association of State Boards of Education, 1985. ERIC, ED 270 888.

Bartell, Carol A. Incentives that Enhance the Teaching Profession: Background Paper. One in a Series of Reports on Attracting Excellence: The Call for Teacher Incentives. Elmhurst: North Central Regional Educational Lab, 1987.

Becker, Henry J. Instructional Uses of School Computers: Reports from the 1985 National Survey - Issue No. 1. Baltimore: Johns Hopkins University, 1986.

Bierly, Margaret, and David C. Berliner, "The Elementary School Teacher as Learner," Journal of Teacher Education, 33 (November-December 1982) : 40.

Boe, Erling E. "Teacher Incentive Research with SASS." Paper presented the Annual Meeting of the American Educational Research Association. Boston, April 17-20, 1990.

Brodinsky, Ben. "Teacher morale: What Builds It, what Kills It?," Instructor 93 (April 84): 36-38.

Broedling, Laurie A. "The Uses of Intrinsic-Extrinsic Distinction in Explaining Motivation and Organizational Behavior," Academy of Management Review 2 (April 1977): 28.

Calder, Bobby J., and Barry M. Staw. "Self-Perception of Intrinsic and Extrinsic Motivation," Journal of Personality and Social Psychology, 48 (May 1975): 599-600.

Cicchelli, Terry, Richard E. Baecher, and Jan Nygren. Turning Teachers on to Microcomputers: Results of a two-Year Staff Development Project. Paper presented at the Annual Meeting of National Council of States on Inservice Education, Orlando, FL, 1984. ERIC, ED 279 613.

Computer Tools for Teachers: A Report. St. Paul: Minnesota State Department of Education - Instructional Design Section, 1989.

Cresap, McCormick, and Paget. Teacher Incentives: A Tool for Effective Management. Reston, VA: National Association of Secondary School Principals, 1984.

Davis, H.A. "Incentives, Involvement, and teacher satisfaction with staff development programs in Wisconsin Secondary Schools," Ed.D. Diss., University of Wisconsin-Madison, 1982. U M I Dissertation Information Service, DA 82-24032.

Deci, Edward L. "The Effects of Contingent and Non-Contingent Rewards and Controls on Intrinsic Motivation." Organizational Behavior and Human Performance 8 (October 1972): 217-229.

Dorman, Arthur, and Carol A. Bartell, Incentives for Teaching: LEA Programs and Practices in Seven States. One in a Series of Reports on Attracting Excellence: The Call for Teacher Incentives. Elmhurst: North Central Regional Educational Lab, 1988.

Eller, Ben F. "The New World Order for Education and Technology," Phi Kappa Phi Journal 71 (Summer 91): 44.

Fontana, Lynn A. "What are the Issues for Teacher Training?", NASSP Bulletin, 69 (April 1985) : 16.

Friedrich, Otto. "The Computer Moves In," Time 121 (January 3, 1983): 14.

Fullan, Michael G. "Staff Development, Innovation, and Institutional Development," in Changing School Culture Through Staff Development: 1990 ASCD Yearbook, 3. Alexandria, VA: Association for Supervision and Curriculum Development, 1990.

Goodlad, John. A Place Called School: Prospects for the Future. New York: McGraw-Hill, 1984.

Herzberg, Frederick, Bernard Mausner, and Barbara B. Snydermen, The Motivation to Work. New York: John Wiley & Sons, Inc., 1959.

Herzberg, Fredrick. The Managerial Choice: To be Efficient and to Be Human. Homewood, IL: Dow Jones-Irwin, 1976.

Illinois Goals: World-Class Education for the 21st Century, (Springfield: Illinois State Board of Education, 1992), 6.

Jordan, William. "Staff Development Incentives and their Influence on Teacher Decisions to participate in Staff Development Programs" Ed.D. diss., Washington State University, 1990.

Kottkamp, Robert, Eugene Provenzo, and Marilyn Cohn. "Stability and Change in a Profession: Two Decades of Teacher Attitudes, 1964-84," Phi Delta Kappan 67 (April 1986): 565.

Lortie, Dan. Schoolteacher: A Sociological Study. Chicago: University of Chicago Press, 1975.

Maslow, Abraham H. Toward a Psychology of Being. 2nd ed. Princeton: Van Nostrand, 1968.

McGee, Glenn W. The Effectiveness of Incentives on the Implementation of a Technological Innovation, Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA., 6, April 16-20, 1986.

McGregor, Douglas. The Human Side of the Enterprise. New York: McGraw-Hill, 1960).

Mitchell, Douglas E., and Martha Jo Peters, "A Stronger Profession Through Appropriate Teacher Incentives," Educational Leadership 46 (November 1988): 75.

Mitchell, Douglas E., Flora I. Ortiz, and Ted K. Mitchell. Work Orientation and Job Performance: The Cultural Basis of Teaching Rewards and Incentives. Albany: State University of New York Press, 1987.

Nieminen, Gayla "Staff and Student Attitudes Regarding Newer Educational Technology: Baseline Year-Glenbard West," (Glen Ellyn, IL: Institute for Educational Research, 1991), 4.

O'Malley, Christopher. "The Revolution is Yet to Come," Phi Kappa Phi Journal 71 (Summer 91): 12.

Orlich, Donald C. Staff Development: Enhancing Human Potential. Boston: Allyn and Bacon, 1989.

Rhodes, Lewis A. "On Computers, Personal Styles, and Being Human: A Conversation with Sherry Turkle," Educational Leadership, 43 (February 1986): 12-16.

Sederberg, Charles H. and Shirley Clark. "Motivation and Organizational Incentives for High Vitality Teachers: A Qualitative Perspective, Journal of Research and Development in Education, 24, (Fall 1990), 9-13.

Sergiovanni, Thomas J. "Factors Which Affect Satisfaction and Dissatisfaction of Teachers," The Journal of Educational Administration 5 (January 1967): 66-82.

Sergiovanni, Thomas J., and Robert J. Starratt. Supervision: Human Perspectives. 4th ed. New York: McGraw-Hill, 1988.

Sparks, Dennis. "Staff Development and School Improvement: An Interview with Ernest Boyer," The Journal of Staff Development, 5 (December 1984): 32-39.

Stecher, Brian M. and Ronald Solorzano. Characteristics of Effective Computer Inservice Programs. Pasadena: Educational Testing Service, 1987. ERIC, ED 291 357.

Sykes, Gary. "Teaching Incentives: Constraint & Variety", ed. Ann Lieberman, Schools as Collaborative Cultures: Creating the Future Now. Bristol, PA: The Falmer Press, 1990.

"The Impact of Technology on Teaching and Learning," ...teacher today, No. 5 (1992): 1.

Toch, Thomas. "Wired for Learning: Does Computer Technology Have the Power to Revolutionize Schooling?" U.S. News and World Report 111 (October 28, 1991): 77.

Vroom, Victor H. Work and Motivation. (New York: John Wiley & Sons, 1964.

Wedman, John and Marvin Heller, "Concerns of Teachers about Educational Computing," AEDS Journal, 18 (November 1984): 31-40.

Winkler, John D. and Cathleen Stasz. A Survey of Incentives for Staff Development of Computer-Based Instruction. Santa Monica, California: Rand Corp., 1985. ERIC, ED 268 996.

Winkler, John D., Cathleen Stasz, and R. Shavelson. Administrative Policies for Increasing the Use of Microcomputer in Instruction. Santa Monica, California: Rand Corp., 1985. ERIC, ED 276 415.

# APPENDIX A

# CORRESPONDENCE RELATED TO THE QUESTIONNAIRE

2308 Pennsbury Ct.
Schaumburg, IL 60194
November 9, 1992

Dear :

It was nice to talk to you the other day, and I would like to take this time to thank you for agreeing to let me survey six of your teachers. As you will recall, I am an assistant principal at Glenbard West High School working on my dissertation through Loyola University of Chicago.

I am studying staff development incentives, in particular those that deal with microcomputer staff development programs. I hope to be able to determine what are the most effective incentives in getting teachers involved in microcomputer staff development programs. Data will be collected through a questionnaire given to suburban Cook and DuPage county teachers. The questionnaire takes approximately five to ten minutes to complete.

Enclosed are six questionnaires for you to distribute. Please give three to computer using teachers and three to noncomputer using teachers. If you feel you don't have three noncomputer using teachers, please give them to teachers who reluctantly use computers. There is a pre-addressed stamped envelope with each questionnaire, so that teachers can return the survey on their own. However, I would appreciate it if after a few days you would follow up with the people you give the survey to in order to see if they have returned it.

I am very grateful for your willingness to help and contribute to this study. If you have any questions, please call me at 469-8600 x201. Thanks again for your help!

Sincerely,

Robert H. Johnson

2308 Pennsbury Ct.
Schaumburg, IL 60194
November 13, 1992

Dear :

I am an assistant principal at Glenbard West High School working on my dissertation through Loyola University of Chicago. Recently, I attempted to contact you to request your schools participation in my study but was unable to talk to you personally. I thought that rather than continue playing "telephone tag" I would send you my packet and ask for your help through this letter.

I am studying staff development incentives, in particular those that deal with microcomputer staff development programs. I hope to be able to determine what are the most effective incentives in getting teachers involved in microcomputer staff development programs. Data will be collected through a questionnaire given to suburban Cook and DuPage county teachers. The questionnaire takes approximately five to ten minutes to complete.

I would appreciate your help in distributing the six enclosed questionnaires to your teaching staff. Please give three to computer using teachers and three to noncomputer using teachers. If you feel you don't have three noncomputer using teachers, please give them to teachers who reluctantly use computers. There is a pre-addressed stamped envelope with each questionnaire, so that teachers can return the survey on their own. However, I would appreciate it if after a few days you would follow up with the people you give the survey to in order to see if they have returned it.

I hope that you will be able to participate in this study. If you have any questions, please call me at 469-8600 x201. Thanks again for your help!

Sincerely,

Robert H. Johnson

2308 Pennsbury Ct.
Schaumburg, IL 60194
November 9, 1992

Dear Colleague:

You have been selected by your principal or another outstanding educator to participate in a study on the effect of staff development incentives on teachers' decisions to participate in microcomputer staff development programs. I am presently a doctoral student at Loyola University of Chicago, and am pursuing this study in order to determine what are the most effective incentives districts can offer to teachers to get them to utilize computers in the classroom. Questionnaires have been sent to schools in suburban Cook and DuPage counties.

The attached questionnaire will take about five or ten minutes to complete. I assure you that all information will be kept strictly confidential. Please respond to all items and return to me in the attached self-addressed stamped envelope as soon as possible.

I truly appreciate your taking the time to complete this survey. Your input is very important to me as I work to complete this project. If you would like a summary of the results, please fill in your name and address on the back of the questionnaire and I will send them to you as soon as my work is completed.

Thanks for your help and your prompt response in returning this questionnaire. I hope you continue to have a good year.

Sincerely,

Robert Johnson

2308 Pennsbury Ct.
Schaumburg, IL 60194
December 4, 1992

Dear:

Several weeks ago, I sent you six questionnaires to be distributed to three computer using teachers and three noncomputer using teachers. As of December 4, I have received the following responses:

Computer User Questionnaires Received - <UTotRec>
Noncomputer User Questionnaires Received - <NUTotRec>

Please thank those who took the time to complete and return the questionnaire. I would also greatly appreciate it if you could take a few minutes to encourage those who haven't yet returned the survey to please return it by December 18. Your school's participation is very important to me and this study. I have included extra questionnaires in case the originals were lost or misplaced.

Thanks again for your help and participation.

Sincerely,

Robert Johnson

# APPENDIX B

# QUESTIONNAIRE

# *Staff Development Questionnaire*

Demographic Information:

1. Your age_____

2. Male_____ Female_____

3. How many years of service do you have with your current district?_____

4. How many total years of educational experience do you have?_____

5. Do you use microcomputers in your teaching? Yes No (Circle one)

6. Does your school offer any microcomputer staff development programs or activities? Yes No (Circle one)

7. What is the approximate enrollment of your school?
   a) Less than 1,000 b) 1,000-1,499 c)1,500-1,999 d)More than 2,000

## Part 1

Please respond twice for each statement listed in the center. In the left hand column circle one number that best represents your "previous experience" with microcomputer staff development programs. In the right hand column circle one number that best represents your opinion about "what ought to be." Use the code in the center for both columns.

| **Previous Experience** | 5-Almost always<br>4-Frequently<br>3-Approximately equal in occurrence/nonoccurrence<br>2-Infrequently<br>1-Almost never | **What Ought to Be** |
|---|---|---|
| 1 2 3 4 5 | 1. A monetary stipend is an important factor in my decision to participate in microcomputer staff development programs. | 1 2 3 4 5 |
| 1 2 3 4 5 | 2. Teachers are given specific inservice training for implementing microcomputer technology into their teaching. | 1 2 3 4 5 |
| 1 2 3 4 5 | 3. Teachers attend microcomputer workshops on school time. | 1 2 3 4 5 |
| 1 2 3 4 5 | 4. Microcomputer staff development workshops, activities, courses, or programs are supportive of building level or school district goals. | 1 2 3 4 5 |
| 1 2 3 4 5 | 5. Teachers participate in the planning of microcomputer staff development programs or activities. | 1 2 3 4 5 |
| 1 2 3 4 5 | 6. Microcomputer staff development programs provide me with an opportunity to develop more confidence in my teaching ability. | 1 2 3 4 5 |
| 1 2 3 4 5 | 7. My principal encourages my participation in microcomputer staff development programs or activities. | 1 2 3 4 5 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 8. Teachers are able to participate in district sponsored microcomputer buy programs that offer computers at no or reduced cost. | 1 | 2 | 3 | 4 | 5 |

## Part II

Please circle the number of the response to these statements which best represents your BELIEFS. Use the codes listed below.

| | 5-Almost always<br>4-Frequently<br>3-Approximately equal<br>2-Infrequently<br>1-Almost never |
|---|---|
| 9. The potential for salary schedule advancement is an important part of my decision to participate in microcomputer staff development programs. | 1 2 3 4 5 |
| 10. It is important that microcomputer staff development programs have the promise of an impact on student success. | 1 2 3 4 5 |
| 11. My decisions to participate in microcomputer staff development programs are influenced by an enjoyment of learning with fellow teachers. | 1 2 3 4 5 |
| 12. My involvement in district sponsored staff development programs allows me to gain additional income or benefits. | 1 2 3 4 5 |

## Part III

Please check one item in each of the following pairs as the most important to you in that pair when considering microcomputer staff development participation.

13. A.___ One-half day release time for on-the job inservice.

    B.___ A $75 stipend for job related inservice.

14. A.___ Job related inservice hours granted for salary schedule advancement.

    B.___ Inservice training in innovative microcomputer teaching strategies.

15. A.___ A microcomputer staff development or inservice opportunity that supports personal and professional growth.

    B.___ Interest free loans to purchase a computer in exchange for participation in microcomputer staff development programs.

16. A.___ One-half day release time for on-the job inservice.

    B.___ Job related inservice hours granted for salary schedule advancement.

17. A.___ A $75 stipend for job related inservice.

    B.___ Inservice training in innovative microcomputer teaching strategies.

18. A.___ One-half day release time for on-the job inservice.

    B.___ Interest free loans to purchase a computer in exchange for participation in microcomputer staff development programs.

19. A.___ A $75 stipend for job related inservice.

    B.___ A microcomputer staff development or inservice opportunity that supports personal and professional growth.

20. A.___ Job related inservice hours granted for salary schedule advancement.

    B.___ A microcomputer staff development or inservice opportunity that supports personal and professional growth.

21. A.___ Inservice training in innovative microcomputer teaching strategies.

    B.___ Interest free loans to purchase a computer in exchange for participation in microcomputer staff development programs.

**When completed, please return this document in the enclosed pre-addressed stamped envelope to:**

**Robert Johnson**
**2308 Pennsbury Ct.**
**Schaumburg, IL 60194**

# APPENDIX C

# STATISTICAL RESULTS

# DEMOGRAPHIC INFORMATION

## GENDER DISTRIBUTION

**$X_1$: Yes - Sex**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | Male | 143 | 55.426% | -Mode |
| 2 | Female | 115 | 44.574% | |

**$X_2$: No - Sex**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | Male | 81 | 65.323% | -Mode |
| 2 | Female | 43 | 34.677% | |

# AVAILABILITY OF STAFF DEVELOPMENT PROGRAMS

**$X_1$: Yes - SD Available**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | Yes | 232 | 89.922% | -Mode |
| 2 | No | 26 | 10.078% | |

**$X_2$: No - SD Available**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | Yes | 97 | 78.226% | -Mode |
| 2 | No | 27 | 21.774% | |

# YEARS TEACHING IN PRESENT DISTRICT

**$X_1$: Yes - Yrs. in Dist.**

| Bar: | From: (≥) | To: (<) | Count: | Percent: | |
|---|---|---|---|---|---|
| 1 | 1 | 6 | 38 | 14.729% | |
| 2 | 6 | 11 | 41 | 15.891% | |
| 3 | 11 | 16 | 31 | 12.016% | |
| 4 | 16 | 21 | 49 | 18.992% | |
| 5 | 21 | 26 | 67 | 25.969% | -Mode |
| 6 | 26 | 31 | 25 | 9.69% | |
| 7 | 31 | 36 | 7 | 2.713% | |
| 8 | 36 | 41 | 0 | 0% | |
| 9 | 41 | 46 | 0 | 0% | |
| 10 | 46 | 51 | 0 | 0% | |

**$X_2$: No - Yrs. in Dist.**

| Bar: | From: (≥) | To: (<) | Count: | Percent: | |
|---|---|---|---|---|---|
| 1 | 1 | 6 | 19 | 15.323% | |
| 2 | 6 | 11 | 16 | 12.903% | |
| 3 | 11 | 16 | 14 | 11.29% | |
| 4 | 16 | 21 | 23 | 18.548% | |
| 5 | 21 | 26 | 28 | 22.581% | -Mode |
| 6 | 26 | 31 | 16 | 12.903% | |
| 7 | 31 | 36 | 7 | 5.645% | |
| 8 | 36 | 41 | 1 | .806% | |
| 9 | 41 | 46 | 0 | 0% | |
| 10 | 46 | 51 | 0 | 0% | |

# YEARS TEACHING IN EDUCATION

**$X_1$: Yes - Yrs. in Ed.**

| Bar: | From: (≥) | To: (<) | Count: | Percent: | |
|---|---|---|---|---|---|
| 1 | 1 | 6 | 17 | 6.589% | |
| 2 | 6 | 11 | 28 | 10.853% | |
| 3 | 11 | 16 | 31 | 12.016% | |
| 4 | 16 | 21 | 60 | 23.256% | |
| 5 | 21 | 26 | 67 | 25.969% | -Mode |
| 6 | 26 | 31 | 35 | 13.566% | |
| 7 | 31 | 36 | 17 | 6.589% | |
| 8 | 36 | 41 | 2 | .775% | |
| 9 | 41 | 46 | 0 | 0% | |
| 10 | 46 | 51 | 0 | 0% | |

**$X_2$: No - Yrs. in Ed.**

| Bar: | From: (≥) | To: (<) | Count: | Percent: | |
|---|---|---|---|---|---|
| 1 | 1 | 6 | 8 | 6.452% | |
| 2 | 6 | 11 | 12 | 9.677% | |
| 3 | 11 | 16 | 9 | 7.258% | |
| 4 | 16 | 21 | 26 | 20.968% | -Mode |
| 5 | 21 | 26 | 22 | 17.742% | |
| 6 | 26 | 31 | 21 | 16.935% | |
| 7 | 31 | 36 | 18 | 14.516% | |
| 8 | 36 | 41 | 8 | 6.452% | |
| 9 | 41 | 46 | 0 | 0% | |
| 10 | 46 | 51 | 0 | 0% | |

ENROLLMENT DISTRIBUTION

a) Less than 1,000 b) 1,000-1,499 c) 1,500-1,999 d) More than 2,000

**$X_1$: Yes - Enrollment**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | a | 19 | 7.364% | |
| 2 | b | 62 | 24.031% | |
| 3 | c | 104 | 40.31% | -Mode |
| 4 | d | 73 | 28.295% | |

**$X_2$: No - Enrollment**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | a | 18 | 14.516% | |
| 2 | b | 22 | 17.742% | |
| 3 | c | 43 | 34.677% | -Mode |
| 4 | d | 41 | 33.065% | |

PART 1-QUESTION 1: A MONETARY STIPEND IS AN IMPORTANT FACTOR IN MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS - PREVIOUS EXPERIENCE
FREQUENCY DISTRIBUTION

$X_1$: Yes - PE1

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 98 | 37.984% | -Mode |
| 2 | 2 | 56 | 21.705% | |
| 3 | 3 | 63 | 24.419% | |
| 4 | 4 | 26 | 10.078% | |
| 5 | 5 | 15 | 5.814% | |

$X_2$: No - PE1

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 70 | 57.851% | -Mode |
| 2 | 2 | 17 | 14.05% | |
| 3 | 3 | 21 | 17.355% | |
| 4 | 4 | 7 | 5.785% | |
| 5 | 5 | 6 | 4.959% | |

# PART 1-QUESTION 1: A MONETARY STIPEND IS AN IMPORTANT FACTOR IN MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS - PREVIOUS EXPERIENCE
## ANOVA

**One Factor ANOVA  $X_1$: Computer User  $Y_1$: PE1**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 11.945 | 11.945 | 8.103 |
| Within groups | 377 | 555.712 | 1.474 | p = .0047 |
| Total | 378 | 567.657 | | |

Model II estimate of between component variance = .064

**One Factor ANOVA  $X_1$: Computer User  $Y_1$: PE1**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 258 | 2.24 | 1.224 | .076 |
| No | 121 | 1.86 | 1.192 | .108 |

**One Factor ANOVA  $X_1$: Computer User  $Y_1$: PE1**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .381 | .263* | 8.103* | 2.847 |

* Significant at 95%

PART 1-QUESTION 1: A MONETARY STIPEND IS AN IMPORTANT FACTOR IN MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS - WHAT OUGHT TO BE
FREQUENCY DISTRIBUTION

$X_1$: Yes - OB1

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 47 | 18.431% | |
| 2 | 2 | 45 | 17.647% | |
| 3 | 3 | 68 | 26.667% | -Mode |
| 4 | 4 | 50 | 19.608% | |
| 5 | 5 | 45 | 17.647% | |

$X_2$: No - OB1

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 40 | 33.058% | -Mode |
| 2 | 2 | 17 | 14.05% | |
| 3 | 3 | 37 | 30.579% | |
| 4 | 4 | 11 | 9.091% | |
| 5 | 5 | 16 | 13.223% | |

# PART 1-QUESTION 1: A MONETARY STIPEND IS AN IMPORTANT FACTOR IN MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS - WHAT OUGHT TO BE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB1**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 16.632 | 16.632 | 9.004 |
| Within groups | 374 | 690.897 | 1.847 | p = .0029 |
| Total | 375 | 707.529 | | |

Model II estimate of between component variance = .09

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB1**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 255 | 3.004 | 1.35 | .085 |
| No | 121 | 2.554 | 1.378 | .125 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB1**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .45 | .295* | 9.004* | 3.001 |

* Significant at 95%

# PART 1-QUESTION 2: TEACHERS ARE GIVEN SPECIFIC INSERVICE TRAINING FOR IMPLEMENTING MICROCOMPUTER TECHNOLOGY INTO THEIR TEACHING - PREVIOUS EXPERIENCE FREQUENCY DISTRIBUTION

**$X_1$: Yes - PE2**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 44 | 17.054% | |
| 2 | 2 | 90 | 34.884% | -Mode |
| 3 | 3 | 49 | 18.992% | |
| 4 | 4 | 43 | 16.667% | |
| 5 | 5 | 32 | 12.403% | |

**$X_2$: No - PE2**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 34 | 27.642% | -Mode |
| 2 | 2 | 26 | 21.138% | |
| 3 | 3 | 29 | 23.577% | |
| 4 | 4 | 24 | 19.512% | |
| 5 | 5 | 10 | 8.13% | |

# PART 1-QUESTION 2: TEACHERS ARE GIVEN SPECIFIC INSERVICE TRAINING FOR IMPLEMENTING MICROCOMPUTER TECHNOLOGY INTO THEIR TEACHING - PREVIOUS EXPERIENCE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE2**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 1.436 | 1.436 | .873 |
| Within groups | 379 | 623.136 | 1.644 | p = .3506 |
| Total | 380 | 624.572 | | |

Model II estimate of between component variance = -.001

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE2**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 258 | 2.725 | 1.275 | .079 |
| No | 123 | 2.593 | 1.298 | .117 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE2**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .131 | .276 | .873 | .935 |

# PART 1-QUESTION 2: TEACHERS ARE GIVEN SPECIFIC INSERVICE TRAINING FOR IMPLEMENTING MICROCOMPUTER TECHNOLOGY INTO THEIR TEACHING - WHAT OUGHT TO BE
## FREQUENCY DISTRIBUTION

**$X_1$: Yes - OB2**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 7 | 2.724% | |
| 2 | 2 | 1 | .389% | |
| 3 | 3 | 17 | 6.615% | |
| 4 | 4 | 81 | 31.518% | |
| 5 | 5 | 151 | 58.755% | -Mode |

**$X_2$: No - OB2**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 5 | 4.065% | |
| 2 | 2 | 0 | 0% | |
| 3 | 3 | 21 | 17.073% | |
| 4 | 4 | 48 | 39.024% | |
| 5 | 5 | 49 | 39.837% | -Mode |

# PART 1-QUESTION 2: TEACHERS ARE GIVEN SPECIFIC INSERVICE TRAINING FOR IMPLEMENTING MICROCOMPUTER TECHNOLOGY INTO THEIR TEACHING - WHAT OUGHT TO BE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB2**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 8.852 | 8.852 | 11.129 |
| Within groups | 378 | 300.684 | .795 | p = .0009 |
| Total | 379 | 309.537 | | |

Model II estimate of between component variance = .048

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB2**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 257 | 4.432 | .855 | .053 |
| No | 123 | 4.106 | .965 | .087 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB2**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .326 | .192* | 11.129* | 3.336 |

* Significant at 95%

# PART 1-QUESTION 3: TEACHERS ATTEND MICROCOMPUTER WORKSHOPS ON SCHOOL TIME - PREVIOUS EXPERIENCE FREQUENCY DISTRIBUTION

$X_1$: Yes - PE3

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 115 | 44.574% | -Mode |
| 2 | 2 | 63 | 24.419% | |
| 3 | 3 | 46 | 17.829% | |
| 4 | 4 | 23 | 8.915% | |
| 5 | 5 | 11 | 4.264% | |

$X_2$: No - PE3

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 54 | 43.902% | -Mode |
| 2 | 2 | 29 | 23.577% | |
| 3 | 3 | 20 | 16.26% | |
| 4 | 4 | 13 | 10.569% | |
| 5 | 5 | 7 | 5.691% | |

# PART 1-QUESTION 3: TEACHERS ATTEND MICROCOMPUTER WORKSHOPS ON SCHOOL TIME - PREVIOUS EXPERIENCE ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE3**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | .373 | .373 | .262 |
| Within groups | 379 | 539.238 | 1.423 | p = .6089 |
| Total | 380 | 539.612 | | |

Model II estimate of between component variance = -.006

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE3**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 258 | 2.039 | 1.17 | .073 |
| No | 123 | 2.106 | 1.24 | .112 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE3**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | -.067 | .257 | .262 | .512 |

# PART 1-QUESTION 3: TEACHERS ATTEND MICROCOMPUTER WORKSHOPS ON SCHOOL TIME - WHAT OUGHT TO BE FREQUENCY DISTRIBUTION

**$X_1$: Yes - OB3**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 20 | 7.782% | |
| 2 | 2 | 21 | 8.171% | |
| 3 | 3 | 66 | 25.681% | |
| 4 | 4 | 77 | 29.961% | -Mode |
| 5 | 5 | 73 | 28.405% | |

**$X_2$: No - OB3**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 8 | 6.557% | |
| 2 | 2 | 14 | 11.475% | |
| 3 | 3 | 31 | 25.41% | |
| 4 | 4 | 40 | 32.787% | -Mode |
| 5 | 5 | 29 | 23.77% | |

# PART 1-QUESTION 3: TEACHERS ATTEND MICROCOMPUTER WORKSHOPS ON SCHOOL TIME - WHAT OUGHT TO BE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB3**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | .441 | .441 | .312 |
| Within groups | 377 | 531.982 | 1.411 | p = .5767 |
| Total | 378 | 532.422 | | |

Model II estimate of between component variance = -.006

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB3**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 257 | 3.63 | 1.199 | .075 |
| No | 122 | 3.557 | 1.165 | .105 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB3**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .073 | .257 | .312 | .559 |

# PART 1-QUESTION 4: MICROCOMPUTER STAFF DEVELOPMENT WORKSHOPS, ACTIVITIES, COURSES, OR PROGRAMS ARE SUPPORTIVE OF BUILDING LEVEL OR SCHOOL DISTRICT GOALS - PREVIOUS EXPERIENCE FREQUENCY DISTRIBUTION

**$X_1$: Yes - PE4**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 26 | 10.117% | |
| 2 | 2 | 39 | 15.175% | |
| 3 | 3 | 53 | 20.623% | |
| 4 | 4 | 73 | 28.405% | -Mode |
| 5 | 5 | 66 | 25.681% | |

**$X_2$: No - PE4**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 19 | 15.574% | |
| 2 | 2 | 22 | 18.033% | |
| 3 | 3 | 30 | 24.59% | |
| 4 | 4 | 33 | 27.049% | -Mode |
| 5 | 5 | 18 | 14.754% | |

# PART 1-QUESTION 4: MICROCOMPUTER STAFF DEVELOPMENT WORKSHOPS, ACTIVITIES, COURSES, OR PROGRAMS ARE SUPPORTIVE OF BUILDING LEVEL OR SCHOOL DISTRICT GOALS - PREVIOUS EXPERIENCE ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE4**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 11.314 | 11.314 | 6.751 |
| Within groups | 377 | 631.768 | 1.676 | p = .0097 |
| Total | 378 | 643.082 | | |

Model II estimate of between component variance = .058

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE4**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 257 | 3.444 | 1.295 | .081 |
| No | 122 | 3.074 | 1.293 | .117 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE4**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .37 | .28* | 6.751* | 2.598 |

* Significant at 95%

# PART 1-QUESTION 4: MICROCOMPUTER STAFF DEVELOPMENT WORKSHOPS, ACTIVITIES, COURSES, OR PROGRAMS ARE SUPPORTIVE OF BUILDING LEVEL OR SCHOOL DISTRICT GOALS - WHAT OUGHT TO BE FREQUENCY DISTRIBUTION

**$X_1$: Yes - OB4**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 5 | 1.946% | |
| 2 | 2 | 2 | .778% | |
| 3 | 3 | 20 | 7.782% | |
| 4 | 4 | 72 | 28.016% | |
| 5 | 5 | 158 | 61.479% | -Mode |

**$X_2$: No - OB4**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 4 | 3.279% | |
| 2 | 2 | 2 | 1.639% | |
| 3 | 3 | 17 | 13.934% | |
| 4 | 4 | 50 | 40.984% | -Mode |
| 5 | 5 | 49 | 40.164% | |

# PART 1-QUESTION 4: MICROCOMPUTER STAFF DEVELOPMENT WORKSHOPS, ACTIVITIES, COURSES, OR PROGRAMS ARE SUPPORTIVE OF BUILDING LEVEL OR SCHOOL DISTRICT GOALS - WHAT OUGHT TO BE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB4**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 9.112 | 9.112 | 12.105 |
| Within groups | 377 | 283.8 | .753 | p = .0006 |
| Total | 378 | 292.913 | | |

Model II estimate of between component variance = .051

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB4**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 257 | 4.463 | .829 | .052 |
| No | 122 | 4.131 | .944 | .085 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB4**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .332 | .188* | 12.105* | 3.479 |

* Significant at 95%

# PART 1-QUESTION 5: TEACHERS PARTICIPATE IN THE PLANNING OF MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - PREVIOUS EXPERIENCE FREQUENCY DISTRIBUTION

**$X_1$: Yes - PE5**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 55 | 21.484% | |
| 2 | 2 | 59 | 23.047% | -Mode |
| 3 | 3 | 57 | 22.266% | |
| 4 | 4 | 54 | 21.094% | |
| 5 | 5 | 31 | 12.109% | |

**$X_2$: No - PE5**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 35 | 28.455% | -Mode |
| 2 | 2 | 30 | 24.39% | |
| 3 | 3 | 27 | 21.951% | |
| 4 | 4 | 23 | 18.699% | |
| 5 | 5 | 8 | 6.504% | |

# PART 1-QUESTION 5: TEACHERS PARTICIPATE IN THE PLANNING OF MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - PREVIOUS EXPERIENCE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE5**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 6.934 | 6.934 | 4.08 |
| Within groups | 377 | 640.775 | 1.7 | p = .0441 |
| Total | 378 | 647.71 | | |

Model II estimate of between component variance = .032

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE5**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 256 | 2.793 | 1.323 | .083 |
| No | 123 | 2.504 | 1.263 | .114 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE5**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .289 | .281* | 4.08* | 2.02 |

* Significant at 95%

# PART 1-QUESTION 5: TEACHERS PARTICIPATE IN THE PLANNING OF MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - WHAT OUGHT TO BE FREQUENCY DISTRIBUTION

**$X_1$: Yes - OB5**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 5 | 1.961% | |
| 2 | 2 | 4 | 1.569% | |
| 3 | 3 | 23 | 9.02% | |
| 4 | 4 | 89 | 34.902% | |
| 5 | 5 | 134 | 52.549% | -Mode |

**$X_2$: No - OB5**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 7 | 5.691% | |
| 2 | 2 | 4 | 3.252% | |
| 3 | 3 | 20 | 16.26% | |
| 4 | 4 | 52 | 42.276% | -Mode |
| 5 | 5 | 40 | 32.52% | |

# PART 1-QUESTION 5: TEACHERS PARTICIPATE IN THE PLANNING OF MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - WHAT OUGHT TO BE
# ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB5**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 14.517 | 14.517 | 16.744 |
| Within groups | 376 | 325.973 | .867 | p = .0001 |
| Total | 377 | 340.489 | | |

Model II estimate of between component variance = .082

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB5**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 255 | 4.345 | .859 | .054 |
| No | 123 | 3.927 | 1.065 | .096 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB5**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .418 | .201* | 16.744* | 4.092 |

* Significant at 95%

PART 1-QUESTION 6: MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS PROVIDE ME WITH AN OPPORTUNITY TO DEVELOP MORE CONFIDENCE IN MY TEACHING ABILITY - PREVIOUS EXPERIENCE
FREQUENCY DISTRIBUTION

$X_1$: Yes - PE6

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 43 | 16.797% | |
| 2 | 2 | 30 | 11.719% | |
| 3 | 3 | 69 | 26.953% | -Mode |
| 4 | 4 | 68 | 26.562% | |
| 5 | 5 | 46 | 17.969% | |

$X_2$: No - PE6

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 48 | 40.336% | -Mode |
| 2 | 2 | 24 | 20.168% | |
| 3 | 3 | 26 | 21.849% | |
| 4 | 4 | 19 | 15.966% | |
| 5 | 5 | 2 | 1.681% | |

# PART 1-QUESTION 6: MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS PROVIDE ME WITH AN OPPORTUNITY TO DEVELOP MORE CONFIDENCE IN MY TEACHING ABILITY - PREVIOUS EXPERIENCE
# ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE6**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 79.139 | 79.139 | 48.362 |
| Within groups | 373 | 610.37 | 1.636 | p = .0001 |
| Total | 374 | 689.509 | | |

Model II estimate of between component variance = .477

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE6**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 256 | 3.172 | 1.323 | .083 |
| No | 119 | 2.185 | 1.179 | .108 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE6**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .987 | .279* | 48.362* | 6.954 |

* Significant at 95%

PART 1-QUESTION 6: MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS PROVIDE ME WITH AN OPPORTUNITY TO DEVELOP MORE CONFIDENCE IN MY TEACHING ABILITY - WHAT OUGHT TO BE
FREQUENCY DISTRIBUTION

**$X_1$: Yes - OB6**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 14 | 5.512% | |
| 2 | 2 | 4 | 1.575% | |
| 3 | 3 | 30 | 11.811% | |
| 4 | 4 | 81 | 31.89% | |
| 5 | 5 | 125 | 49.213% | -Mode |

**$X_2$: No - OB6**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 12 | 9.917% | |
| 2 | 2 | 10 | 8.264% | |
| 3 | 3 | 27 | 22.314% | |
| 4 | 4 | 40 | 33.058% | -Mode |
| 5 | 5 | 32 | 26.446% | |

# PART 1-QUESTION 6: MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS PROVIDE ME WITH AN OPPORTUNITY TO DEVELOP MORE CONFIDENCE IN MY TEACHING ABILITY - WHAT OUGHT TO BE
ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB6**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 29.372 | 29.372 | 23.088 |
| Within groups | 373 | 474.532 | 1.272 | p = .0001 |
| Total | 374 | 503.904 | | |

Model II estimate of between component variance = .171

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB6**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 254 | 4.177 | 1.069 | .067 |
| No | 121 | 3.579 | 1.243 | .113 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB6**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .599 | .245* | 23.088* | 4.805 |

* Significant at 95%

PART 1-QUESTION 7: MY PRINCIPAL ENCOURAGES MY PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - PREVIOUS EXPERIENCE
FREQUENCY DISTRIBUTION

$X_1$: Yes - PE7

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 43 | 16.797% | |
| 2 | 2 | 33 | 12.891% | |
| 3 | 3 | 59 | 23.047% | |
| 4 | 4 | 52 | 20.312% | |
| 5 | 5 | 69 | 26.953% | -Mode |

$X_2$: No - PE7

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 37 | 30.328% | -Mode |
| 2 | 2 | 20 | 16.393% | |
| 3 | 3 | 26 | 21.311% | |
| 4 | 4 | 22 | 18.033% | |
| 5 | 5 | 17 | 13.934% | |

# PART 1-QUESTION 7: MY PRINCIPAL ENCOURAGES MY PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - PREVIOUS EXPERIENCE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE7**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 28.647 | 28.647 | 14.182 |
| Within groups | 376 | 759.473 | 2.02 | p = .0002 |
| Total | 377 | 788.119 | | |

Model II estimate of between component variance = .161

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE7**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 256 | 3.277 | 1.419 | .089 |
| No | 122 | 2.689 | 1.426 | .129 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE7**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .589 | .307* | 14.182* | 3.766 |

* Significant at 95%

PART 1-QUESTION 7: MY PRINCIPAL ENCOURAGES MY PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - WHAT OUGHT TO BE
FREQUENCY DISTRIBUTION

$X_1$: Yes - OB7

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 8 | 3.137% | |
| 2 | 2 | 5 | 1.961% | |
| 3 | 3 | 21 | 8.235% | |
| 4 | 4 | 73 | 28.627% | |
| 5 | 5 | 148 | 58.039% | -Mode |

$X_2$: No - OB7

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 9 | 7.317% | |
| 2 | 2 | 7 | 5.691% | |
| 3 | 3 | 21 | 17.073% | |
| 4 | 4 | 51 | 41.463% | -Mode |
| 5 | 5 | 35 | 28.455% | |

# PART 1-QUESTION 7: MY PRINCIPAL ENCOURAGES MY PARTICIPATION IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS OR ACTIVITIES - WHAT OUGHT TO BE
# ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB7**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 28.321 | 28.321 | 27.576 |
| Within groups | 376 | 386.156 | 1.027 | p = .0001 |
| Total | 377 | 414.476 | | |

Model II estimate of between component variance = .164

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB7**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 255 | 4.365 | .946 | .059 |
| No | 123 | 3.78 | 1.142 | .103 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB7**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .584 | .219* | 27.576* | 5.251 |

* Significant at 95%

# PART 1-QUESTION 8: TEACHERS ARE ABLE TO PARTICIPATE IN DISTRICT SPONSORED MICROCOMPUTER BUY PROGRAMS THAT OFFER COMPUTERS AT NO OR REDUCED COST - PREVIOUS EXPERIENCE FREQUENCY DISTRIBUTION

**$X_1$: Yes - PE8**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 65 | 25.292% | |
| 2 | 2 | 21 | 8.171% | |
| 3 | 3 | 28 | 10.895% | |
| 4 | 4 | 54 | 21.012% | |
| 5 | 5 | 89 | 34.63% | -Mode |

**$X_2$: No - PE8**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 41 | 33.607% | -Mode |
| 2 | 2 | 12 | 9.836% | |
| 3 | 3 | 21 | 17.213% | |
| 4 | 4 | 16 | 13.115% | |
| 5 | 5 | 32 | 26.23% | |

# PART 1-QUESTION 8: TEACHERS ARE ABLE TO PARTICIPATE IN DISTRICT SPONSORED MICROCOMPUTER BUY PROGRAMS THAT OFFER COMPUTERS AT NO OR REDUCED COST - PREVIOUS EXPERIENCE
# ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE8**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 15.291 | 15.291 | 5.859 |
| Within groups | 377 | 983.864 | 2.61 | p = .016 |
| Total | 378 | 999.156 | | |

Model II estimate of between component variance = .077

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE8**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 257 | 3.315 | 1.612 | .101 |
| No | 122 | 2.885 | 1.622 | .147 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: PE8**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .43 | .349* | 5.859* | 2.421 |

* Significant at 95%

PART 1-QUESTION 8: TEACHERS ARE ABLE TO PARTICIPATE IN DISTRICT SPONSORED MICROCOMPUTER BUY PROGRAMS THAT OFFER COMPUTERS AT NO OR REDUCED COST - WHAT OUGHT TO BE
FREQUENCY DISTRIBUTION

$X_1$: Yes - OB8

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 6 | 2.353% | |
| 2 | 2 | 4 | 1.569% | |
| 3 | 3 | 13 | 5.098% | |
| 4 | 4 | 58 | 22.745% | |
| 5 | 5 | 174 | 68.235% | -Mode |

$X_2$: No - OB8

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 2 | 1.639% | |
| 2 | 2 | 2 | 1.639% | |
| 3 | 3 | 14 | 11.475% | |
| 4 | 4 | 37 | 30.328% | |
| 5 | 5 | 67 | 54.918% | -Mode |

# PART 1-QUESTION 8: TEACHERS ARE ABLE TO PARTICIPATE IN DISTRICT SPONSORED MICROCOMPUTER BUY PROGRAMS THAT OFFER COMPUTERS AT NO OR REDUCED COST - WHAT OUGHT TO BE
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB8**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 2.584 | 2.584 | 3.493 |
| Within groups | 375 | 277.374 | .74 | p = .0624 |
| Total | 376 | 279.958 | | |

Model II estimate of between component variance = .011

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB8**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 255 | 4.529 | .855 | .054 |
| No | 122 | 4.352 | .871 | .079 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: OB8**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .177 | .186 | 3.493 | 1.869 |

# PART II-QUESTION 9: THE POTENTIAL FOR SALARY SCHEDULE ADVANCEMENT IS AN IMPORTANT PART OF MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS FREQUENCY DISTRIBUTION

**$X_1$: Yes - Q9**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 115 | 44.574% | -Mode |
| 2 | 2 | 42 | 16.279% | |
| 3 | 3 | 47 | 18.217% | |
| 4 | 4 | 30 | 11.628% | |
| 5 | 5 | 24 | 9.302% | |

**$X_2$: No - Q9**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 57 | 46.341% | -Mode |
| 2 | 2 | 11 | 8.943% | |
| 3 | 3 | 22 | 17.886% | |
| 4 | 4 | 19 | 15.447% | |
| 5 | 5 | 14 | 11.382% | |

# PART II-QUESTION 9: THE POTENTIAL FOR SALARY SCHEDULE ADVANCEMENT IS AN IMPORTANT PART OF MY DECISION TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q9**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 1.156 | 1.156 | .587 |
| Within groups | 379 | 746.661 | 1.97 | p = .4442 |
| Total | 380 | 747.816 | | |

Model II estimate of between component variance = -.005

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q9**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 258 | 2.248 | 1.37 | .085 |
| No | 123 | 2.366 | 1.473 | .133 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q9**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | -.118 | .302 | .587 | .766 |

# PART II-QUESTION 10: IT IS IMPORTANT THAT MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS HAVE THE PROMISE OF AN IMPACT ON STUDENT SUCCESS
## FREQUENCY DISTRIBUTION

**$X_1$: Yes - Q10**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 7 | 2.713% | |
| 2 | 2 | 7 | 2.713% | |
| 3 | 3 | 19 | 7.364% | |
| 4 | 4 | 91 | 35.271% | |
| 5 | 5 | 134 | 51.938% | -Mode |

**$X_2$: No - Q10**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 4 | 3.252% | |
| 2 | 2 | 5 | 4.065% | |
| 3 | 3 | 18 | 14.634% | |
| 4 | 4 | 47 | 38.211% | |
| 5 | 5 | 49 | 39.837% | -Mode |

# PART II-QUESTION 10: IT IS IMPORTANT THAT MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS HAVE THE PROMISE OF AN IMPACT ON STUDENT SUCCESS
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q10**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 4.675 | 4.675 | 5.188 |
| Within groups | 379 | 341.535 | .901 | p = .0233 |
| Total | 380 | 346.21 | | |

Model II estimate of between component variance = .023

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q10**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 258 | 4.31 | .924 | .057 |
| No | 123 | 4.073 | 1.001 | .09 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q10**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .237 | .205* | 5.188* | 2.278 |

* Significant at 95%

# PART II-QUESTION 11: MY DECISIONS TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS ARE INFLUENCED BY AN ENJOYMENT OF LEARNING WITH FELLOW TEACHERS FREQUENCY DISTRIBUTION

**$X_1$: Yes - Q11**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 34 | 13.178% | |
| 2 | 2 | 39 | 15.116% | |
| 3 | 3 | 72 | 27.907% | -Mode |
| 4 | 4 | 71 | 27.519% | |
| 5 | 5 | 42 | 16.279% | |

**$X_2$: No - Q11**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 23 | 18.852% | |
| 2 | 2 | 22 | 18.033% | |
| 3 | 3 | 34 | 27.869% | -Mode |
| 4 | 4 | 31 | 25.41% | |
| 5 | 5 | 12 | 9.836% | |

# PART II-QUESTION 11: MY DECISIONS TO PARTICIPATE IN MICROCOMPUTER STAFF DEVELOPMENT PROGRAMS ARE INFLUENCED BY AN ENJOYMENT OF LEARNING WITH FELLOW TEACHERS
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q11**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | 7.092 | 7.092 | 4.493 |
| Within groups | 378 | 596.685 | 1.579 | p = .0347 |
| Total | 379 | 603.776 | | |

Model II estimate of between component variance = .033

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q11**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 258 | 3.186 | 1.255 | .078 |
| No | 122 | 2.893 | 1.258 | .114 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q11**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .293 | .271* | 4.493* | 2.12 |

* Significant at 95%

PART II-QUESTION 12: MY INVOLVEMENT IN DISTRICT SPONSORED STAFF DEVELOPMENT PROGRAMS ALLOWS ME TO GAIN ADDITIONAL INCOME OR BENEFITS
FREQUENCY DISTRIBUTION

**$X_1$: Yes - Q12**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 74 | 29.134% | -Mode |
| 2 | 2 | 51 | 20.079% | |
| 3 | 3 | 49 | 19.291% | |
| 4 | 4 | 47 | 18.504% | |
| 5 | 5 | 33 | 12.992% | |

**$X_2$: No - Q12**

| Bar: | Element: | Count: | Percent: | |
|---|---|---|---|---|
| 1 | 1 | 40 | 33.058% | -Mode |
| 2 | 2 | 20 | 16.529% | |
| 3 | 3 | 27 | 22.314% | |
| 4 | 4 | 20 | 16.529% | |
| 5 | 5 | 14 | 11.57% | |

# PART II-QUESTION 12: MY INVOLVEMENT IN DISTRICT SPONSORED STAFF DEVELOPMENT PROGRAMS ALLOWS ME TO GAIN ADDITIONAL INCOME OR BENEFITS
## ANOVA

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q12**

Analysis of Variance Table

| Source: | DF: | Sum Squares: | Mean Square: | F-test: |
|---|---|---|---|---|
| Between groups | 1 | .681 | .681 | .348 |
| Within groups | 373 | 730.535 | 1.959 | p = .5557 |
| Total | 374 | 731.216 | | |

Model II estimate of between component variance = -.008

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q12**

| Group: | Count: | Mean: | Std. Dev.: | Std. Error: |
|---|---|---|---|---|
| Yes | 254 | 2.661 | 1.401 | .088 |
| No | 121 | 2.57 | 1.395 | .127 |

**One Factor ANOVA $X_1$: Computer User $Y_1$: Q12**

| Comparison: | Mean Diff.: | Fisher PLSD: | Scheffe F-test: | Dunnett t: |
|---|---|---|---|---|
| Yes vs. No | .091 | .304 | .348 | .59 |

## RESPONSE PATTERNS FOR THE INCENTIVE $75 STIPEND FOR INSERVICE

**$X_1$: Yes - $75 Stipend**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 1.869 | .848 | .082 | .719 | 45.351 | 107 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 200 | 450 | 151 |

**$X_2$: No - $75 Stipend**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.143 | .842 | .12 | .708 | 39.276 | 49 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 105 | 259 | 209 |

## RESPONSE PATTERNS FOR THE INCENTIVE INSERVICE CREDIT FOR SALARY SCHEDULE ADVANCEMENT

**$X_1$: Yes - Salary Schedule Advan**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.03 | .822 | .071 | .676 | 40.499 | 134 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 272 | 642 | 124 |

**$X_2$: No - Salary Schedule Advan**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.065 | .827 | .105 | .684 | 40.069 | 62 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 128 | 306 | 196 |

## RESPONSE PATTERNS FOR THE INCENTIVE INTEREST FREE LOANS TO PURCHASE COMPUTERS IN EXCHANGE FOR PARTICIPATION

**$X_1$: Yes - Int Free Loans**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.114 | .88 | .079 | .774 | 41.615 | 123 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 260 | 644 | 135 |

**$X_2$: No - Int Free Loans**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.14 | .948 | .134 | .898 | 44.291 | 50 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 107 | 273 | 208 |

## RESPONSE PATTERNS FOR THE INCENTIVE ONE-HALF DAY RELEASE TIME FOR INSERVICE

**$X_1$: Yes - Release Time for Inservice**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.14 | .833 | .056 | .694 | 38.92 | 221 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 473 | 1165 | 37 |

**$X_2$: No - Release Time for Inservice**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.311 | .821 | .08 | .674 | 35.509 | 106 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 245 | 637 | 152 |

## RESPONSE PATTERNS FOR THE INCENTIVE TRAINING IN INNOVATIVE TEACHING STRATEGIES

**$X_1$: Yes - Teaching Strategies**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.385 | .734 | .048 | .538 | 30.763 | 234 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 558 | 1456 | 24 |

**$X_2$: No - Teaching Strategies**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.387 | .753 | .071 | .567 | 31.534 | 111 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 265 | 695 | 147 |

## RESPONSE PATTERNS FOR THE INCENTIVE INSERVICE OPPORTUNITIES THAT SUPPORT PERSONAL AND PROFESSIONAL GROWTH

**$X_1$: Yes - Professional Growth**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.273 | .738 | .048 | .545 | 32.488 | 238 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 541 | 1359 | 20 |

**$X_2$: No - Professional Growth**

| Mean: | Std. Dev.: | Std. Error: | Variance: | Coef. Var.: | Count: |
|---|---|---|---|---|---|
| 2.4 | .732 | .07 | .536 | 30.499 | 110 |
| **Minimum:** | **Maximum:** | **Range:** | **Sum:** | **Sum of Sqr.:** | **# Missing:** |
| 1 | 3 | 2 | 264 | 692 | 148 |

# SPEARMAN RANK ORDER CORRELATION COEFFICIENT APPLIED TO INTRINSIC AND EXTRINSIC INCENTIVES

**Spearman Corr. Coef. $X_1$ : Users $Y_1$ : Nonusers**

| | |
|---|---|
| N | 6 |
| $\Sigma D^2$ | 0 |
| Rho | 1 |
| Z | 2.236 p = .0253 |

| | Incentive | Users | Nonusers | Ranking - Users | Ranking - Nonusers |
|---|---|---|---|---|---|
| 1 | Interest Free Loans | 260 | 107 | 5 | 5 |
| 2 | $75 Stipend | 200 | 105 | 6 | 6 |
| 3 | Salary Schedule Adv | 272 | 128 | 4 | 4 |
| 4 | Release Time | 473 | 245 | 3 | 3 |
| 5 | Teaching Strategies | 558 | 265 | 1 | 1 |
| 6 | Professional Growth | 541 | 264 | 2 | 2 |

APPROVAL SHEET

The dissertation submitted by Robert H. Johnson has been read and approved by the following committee:

Dr. Philip M. Carlin, Director
Associate Professor
Educational Leadership and Policy Studies, Loyola

Dr. Max A. Bailey
Associate Professor
Educational Leadership and Policy Studies, Loyola

Dr. Todd J. Hoover
Associate Professor
Curriculum and Instruction, Loyola

The final copies have been examined by the director of the disseration and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Education.

April 5, 1993
Date


Director's Signature