

TEACHER INDUCTION PROGRAMS AND THEIR EFFECTIVENESS
ON THE RETENTION OF SECONDARY TRADE AND
INDUSTRIAL TEACHERS IN MISSOURI

A Dissertation
presented to
the Faculty of the Graduate School
at the University of Missouri-Columbia

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
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JULY 2010

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

TEACHER INDUCTION PROGRAMS AND THEIR EFFECTIVENESS
ON THE RETENTION OF SECONDARY TRADE AND
INDUSTRIAL TEACHERS IN MISSOURI

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DEDICATION

I wish to dedicate this research effort to my three children, Shane, Elizabeth, and John. I hope to have inspired you to put forth your best effort and not be satisfied until you have found what you are looking for.

ACKNOWLEDGEMENTS

I would like to thank Dr. Bob Stewart for his patience and understanding as I completed the coursework and sometimes struggled to find the time and energy to complete the dissertation that made up my doctoral program. Occasionally, life seemed to get in the way during the time I was researching and writing my proposal but he was always ready to advise me as I renewed my efforts to continue on. I truly appreciate his insight and interest in seeing me complete my program.

I owe a debt of gratitude to Dr. Tony Barbis for serving on my committee and offering advice throughout the time I was engaged in writing and researching my dissertation. I am particularly grateful for the advice he gave me a couple of years ago when I was at a crossroads with my career and was not sure if there was a need to continue with the work I had already completed on my dissertation. All of us in education should never forget how we are sometimes all that stands in the way of a student abandoning their dreams and, instead, provide the motivation to keep going.

I also want to thank Dr. Michael Wright, Dr. Lloyd Barrow, and Dr. Paul Pitchford for taking the time from their busy schedules to make up the remainder of my doctoral committee. Your insight and advice during my dissertation proposal meeting and dissertation defense was sincerely appreciated.

My three children were a source of support and inspiration throughout my coursework and dissertation. They all offered words of encouragement, especially during the times I needed it the most. They are the reason I embarked on this journey in the first place. With the educational talents all three possess, I wanted to set a good example of dedication and setting goals so they might see the benefits of striving to achieve.

Last, but not least, I would like to thank my wife for believing in me and encouraging me to continue on with my dissertation in spite of political set-backs in my educational career. A teacher herself, she always reminded me of the positive impact I had on my students and of the importance in setting a good example by not giving up. It was difficult at times to forge ahead with the work of writing, but in the end, I feel blessed to have her as my best friend.

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ABSTRACT

The purpose of this study was to ascertain the effectiveness of beginning teacher induction methods experienced by high school Trade & Industrial Career and Technical Education teachers in the state of Missouri. Adequate support of new, nontraditional Trade & Industrial Career and Technical Education teachers has been a focus of the Missouri Department of Elementary and Secondary Education for many years. Most recently, additional support of new Trade & Industrial teachers has been the implementation of the content-area mentoring program.

All of the induction methods utilized in the state of Missouri have the purpose of providing specific skills and support to aid new Trade & Industrial teachers in the transition from industry to the classroom. The intent is to provide the training that is necessary for a new teacher to become successful as they develop into a more experienced teacher, thus gaining job satisfaction and improving retention rates.

Five research questions were developed for this study. The respondents that completed the survey were high school Trade & Industrial Career and Technical Education teachers that began teaching during the

2003 through 2007 school years. The data were collected with a survey developed specifically for this study using the research already completed on induction methods as a guide in developing the activities within each induction method. Descriptive statistics were used to analyze the data.

The data provided answers to the five research questions with a part of the findings paralleling prior research. Two of the questions provided insight into the perceptions of new teachers in regards to individual induction activities.

Conclusions to the research were: 1) induction methods have an impact on teacher retention; 2) not all teachers are able to participate in all induction methods during their first year of teaching; 3) time and facilities/resources and leadership induction methods appear to be the most effective; 4) high professional standards, class size, and writing lesson plans are the most helpful induction activities; 5) induction activities associated with helping teachers process paperwork were the least helpful; and 6) college course work prior to teaching is more likely to help in the transition into teaching.

Chapter 1

Introduction

Induction for new teachers is the term used to describe a process or series of processes a beginning teacher experiences so as to improve the skills necessary in being successful in the assigned teaching environment. To a degree, induction is similar to the professional development programs experienced by teachers of longer tenure. Induction methods and processes, however, focus on the basic principles of teaching. The overall concept of induction has been to anticipate the issues a new teacher will be faced with during the first and second years of teaching and then providing the new teacher with the information and knowledge to be successful in the classroom and the teaching environment in general. The more successful a beginning teacher and the quicker they experience success, the greater the likelihood they will remain in the teaching profession (Edmunds & Smith, 2001).

Rationale of the Study

The impact of teacher success (or lack of it) is significant to the educational system and to the economy. The No Child Left Behind Act of 2002 addresses, among other educational issues, the problem of teacher attrition and alludes to the possibility of funding for various means of teacher induction. The Texas Center for Educational Research's study conducted in 2000 estimated the cost of teacher attrition to be hundreds of millions of dollars each year in the state of Texas. With costs such as this associated with teacher

turnover and the promise of federal funding to address the issues, studies need to be conducted to determine the type of induction that produces the best results in reducing teacher attrition. In recent years, studies have been conducted but gaps in the research continue to exist. Just as serious are the gaps that may exist in the training of nontraditional teachers (Heller, 2004).

Ingersoll and Smith (2004) reported that education has always had a teacher attrition rate exceeding acceptable levels and unlike the corporate world, education has largely ignored this problem until recently. Ingersoll and Smith also reported a teacher shortage has never existed in high schools; teachers just do not remain in the profession. The loss of teachers from the classroom as a result of resignations is caused by one or a combination of many different reasons. Some of these reasons are the lower rate of pay compared to other professions, the lack of adequate time to accomplish the required teaching tasks, and the perception on the teachers part of lacking success with the educational process (Ingersoll & Smith, 2004). For those teachers leaving as a result of their perception of being unsuccessful, why did this occur?

Ultimately, teacher success is measured by the educational experiences they provided for their students which in turn allowed the students to be successful (Edmunds & Smith, 2001). A large cause of less than ideal educational experiences for the students can be from a lack of organization on the part of the teacher. This is generally the result of a combination of poor lesson planning and inadequate student assessment procedures. This along with several other ancillary responsibilities being performed inadequately can add

up to a new teacher being unsuccessful and slow in making the transition into a successful teacher possessing the skills necessary to be effective in the educational environment. Instructing new teachers and especially nontraditional teachers in the practical skills necessary in becoming successful has brought about several training concepts in recent years.

Statement of the Problem

Training and retaining nontraditional teachers in the classroom and/or laboratory has implications going beyond the economic costs. Student learning improves as the pedagogical skills of a teacher improves (Merseth, 2005). In losing a teacher after the first or second year, the process has to begin again without a program having a teacher long enough to develop acceptable teaching skills and acceptable student learning taking place.

This study will examine the effect various means of induction have on teacher retention of high school Trade and Industrial (T & I) Career and Technical Education (CTE) teachers in Missouri. Some work has been completed with high school academic teachers, especially on a nationwide basis, but some gaps exist in the research regarding the effect of various induction methods on Trade and Industrial CTE teachers. Determining the effectiveness of these induction methods and the impact, if any, they have on reducing the attrition rate of these teachers is the focus of this study.

Purpose of the Study

This study will first identify the different induction methods available to high school Trade and Industrial CTE teachers in Missouri. The study will then attempt to determine which, if any, induction methods are more effective in improving the retention rate of the aforementioned Missouri teachers.

Research Questions

This study addresses five research questions regarding induction methods for nontraditional high school Trade and Industrial CTE teachers in Missouri.

Question 1. To what extent are induction methods perceived to contribute to the retention of Missouri high school Trade and Industrial CTE teachers?

Question 2. To what extent did the number and timing of induction methods vary for Missouri high school Trade and Industrial CTE teachers?

Question 3. Which induction method(s), if any, are perceived to be the most effective for Missouri high school Trade and Industrial CTE teachers?

Question 4. What induction activities were perceived to be the most helpful for Missouri high school Trade and Industrial CTE teachers?

Question 5. What induction activities were perceived to be the least helpful for Missouri high school Trade and Industrial CTE teachers?

Definition of Terms

The following definitions are to clarify the use of the terms used throughout this study. Specific interpretation of some terms applies to the

study, as more general uses of these same terms would not provide an adequate description of the concepts being investigated.

Beginning Teachers' Assistance Program. Sponsored by the Missouri Association of Elementary School Principals and designed to assist new academic teachers in addressing questions and creating solutions to perceived problems in the school environment. These workshops are held near the end of the first quarter when new teachers have been in the classroom long enough to recognize the issues and concerns in which they need assistance.

Beginning Teacher Classes. Two classes are required early in a new T & I teacher's career. The requirements of when they are taken have changed in recent years and now must be completed during the first four years of teaching.

The first of these two classes is a curriculum course and enables the new teacher to effectively select and organize educational material for efficient and effective delivery to students. The second class is a methods course and expands the new teacher's awareness and use of effective teaching methods for the instructional area. These courses, sometimes referred to as the certification courses, are offered throughout the State of Missouri at institutions of higher education with career and technical education programs that include T & I teacher training.

Career and Technical Education (CTE). The phrase "career and technical education" in this study describes occupational and career training programs for high school students. Previously known as vocational education until the

past few years, the establishment of new industries and careers created the need to more accurately describe the broad purpose of this type of education. In the past vocational education addressed the training of students in skills that led to immediate employment upon completion of the specific course(s).

CTE continues to train students with skills that are dedicated to a specific occupation. Training is also provided, however, in career exploration and development, employability skills, and articulation with trade unions as well as sources of continued education. CTE no longer ignores the possible transition of a student from CTE training to a two- or four-year college for further training and study. Career and Technical Schools. Known as area vocational technical schools until the past few years. The name change was in conjunction with the change from vocational education to career and technical education so as to reflect the training that was taking place within the school. Variations on the above description can be “career centers” or “technical centers”. These schools continue to perform the function of providing occupational and career training to high school students from a given geographical area that is comprised of several public school districts. Students are transported from their home schools to the career and technical schools for programs that normally last three class periods. The students are then transported back to their home school districts.

Most of the students in these school settings are high school students from various school districts. Some students, however, are post-secondary

(have previously graduated high school or have obtained a General Equivalency Diploma [GED]) and attend the same classes as high school students.

Comprehensive High Schools. These schools have at least five CTE programs and the students attending these programs are from the school district in which the high school is located. Because of the number of students required to maintain five or more career and technical education programs, these schools are few in number and located primarily in the larger metropolitan areas of the state.

Mentor. An experienced individual employed by a school district that assumes the responsibility of working with a newly hired employee of the district, normally in the same professional capacity. Traditionally, this is an experienced teacher working with an individual new to the teaching profession as well as new to the district. Some individuals include, among the building mentor's responsibilities, the tasks of performing as a member of a welcoming committee to the community. This includes helping the new hire find a bank, the church of their choice, preferred doctors, housing, along with the other normal concerns someone new to a different environment/community will have.

The term "mentor" in this study refers to individuals in two different situations with somewhat different responsibilities. The first will be an experienced instructor, hopefully within the same building as the new hire and another trade and industrial instructor, even if the mentor teaches in an instructional area different from the new hire. This mentor's educational

responsibility will be to work with the new hire addressing issues with lesson plan writing, student assessment and grades, classroom and/or laboratory management issues, and general school district policy. This role is similar in many ways to the role of a supervising teacher working with a student teacher.

The second type of mentor for the new hire will be an experienced teacher teaching in the same trade/instructional area as the new teacher. This mentor is sponsored through the Missouri Department of Elementary and Secondary Education's mentoring program. For most career and technical schools, each program is comprised of only one teacher in a given trade or instructional area. This state sponsored mentor will most likely be teaching in another school district several hours away from the new teacher and the role of this mentor is one of a content expert.

Career and technical programs of today have certifying associations of national scope and the implementation of these curricula is complex. The content expert/mentor provides the new teacher with the necessary information to follow the national curriculum without spending unnecessary amounts of time adapting to the curriculum. The content expert/mentor also fulfills their role by advising the new teacher on student youth organization activities and contests specific to a given trade or technical area. The responsibilities of a content expert/mentor on occasion can overlap the responsibilities of the local supervising mentor. Student assessment and grading is one of these situations as well as student youth organizations and contests.

The role of both mentors is to guide the new teacher, help them avoid the pitfalls inherent of teaching, and to answer any questions the new teacher may have. In short, mentors are to make the new teacher as successful as possible during the new teachers' first and second year of teaching.

New Teacher Institute (NTI). Sponsored by the Missouri Department of Elementary and Secondary Education for the purpose of training new T & I and health science teachers from industry with the basic skills they will need to successfully manage a career and technical education classroom and/or laboratory. It is approached as both a pre-service and as an in-service for the new teachers and is a requirement of long-term teaching certification.

The pre-service aspect of NTI is conducted prior to the start of school in late summer and exposes the new teachers to lesson plan development, classroom management, special needs population awareness, professionalism, and the transition from industry to the classroom. The new teachers apply the material being presented to a lesson they develop and present during the time spent at the NTI pre-service.

The in-service segment of NTI is conducted with a series of "callback sessions" starting in the fall following the NTI pre-service. These in-service sessions are regional in scope and are usually held in the evenings during the week. The "new" teachers have now been in the classroom and/or laboratory long enough to realize the questions they need to be asking. These sessions also provide the opportunity to receive positive feedback.

The NTI pre-service has historically been a two consecutive week period of time. This changed with the institute held in 2006 by providing just one week of pre-service. The number of “callback sessions” increased, however, from the two previously held in the fall to four sessions. A final weekend session continues to be held the following spring.

Nontraditional Teacher. An individual that begins teaching in a formal classroom and/or laboratory setting without having first received a degree or certificate in teaching from a college or university. The nontraditional teachers in this study will have a minimum of three years experience in the trade they are teaching and in some cases, enough years of work experience to qualify as a “first career”. Leaving their industrial trade can be caused by an injury that prevents continued employment, company and/or industry downsizing, desired change in hours worked, or one of several other factors, including a developed interest in teaching.

Teacher Attrition. A reference to the reduction in the number of teachers not returning to the classroom and/or laboratory the following school year. These teachers do not sign a teaching contract with the current employing school district for another year as a result of retirement or resignation. The term “attrition” in this study defines the loss of trade and industrial teachers as a result of resignations.

Teacher Induction. The process or series of processes used in training new teachers in the skills necessary in being successful in the classroom. Most methods of induction can be classified as on-the-job training, allowing the new

teacher to immediately put into practice the skills and knowledge learned. The primary skills various induction methods focus on are classroom management and organization, lesson plan development, student assessment, and student motivation and discipline.

While the above skills are the core of many induction programs, other skills and resources are expanded upon during the induction process of a new teacher's first and second year of employment. Duplication of information and skill development occurs across many induction methods; however, some aspects of new teacher training are left to a single method of induction. This study will investigate the induction methods available to trade and industrial education instructors in Missouri's high school CTE programs.

Teacher Retention. This study applies the term "retention" in describing trade and industrial teachers renewing their contracts for classroom and/or laboratory instruction for the following school year in the same school district with the same teaching assignment. A school has retained a teacher for another school year when the teacher has signed a contract to teach for the next school year with the same district as the previous year. The teaching assignment can be different, however, from one year to the next. While the practice of reassignment can be commonplace for academic teachers, it seldom occurs in career and technical schools.

Trade and Industrial Education. This is one of several divisions of education within Career and Technical Education in Missouri. The philosophy of trade and

industrial education is the same as the overarching philosophy of career and technical education.

Students are trained in the knowledge and skills that are dedicated to a specific occupation along with training in employability skills, career development, and are exposed to transitional opportunities to further their education. In the state of Missouri, several clusters exist within trade and industrial education and one or more trade and/or craft are categorized within each cluster.

These clusters and corresponding trade/crafts are: (a) Construction cluster containing carpentry; (b) Manufacturing cluster containing welding, precision machining, and industrial maintenance; (c) Service cluster containing computer networking, cosmetology, culinary arts, heating, ventilation, and air conditioning (HVAC) and public safety; (d) Transportation cluster containing auto collision repair, automotive technology, diesel repair technology, and small gas engine technology. This study is focused on the instructors in Missouri associated with the above career and technical programs.

Limitations of the Study

1. The range in age of the individuals is a limitation of this study. While the induction methods examined are orientated toward the nontraditional teacher from industry, age of the new teacher can make a difference in how they perceive their role as a student learner. A 50-year old new teacher cannot be trained in the same manner as a 21-year old teacher. The younger adult is

more likely to have a greater tolerance for failure than the older adult (Heller, 2004).

2. A second limitation is the effect outside income available to some new T & I teachers might have on retention. These teachers have just come from industry with a skill and might be drawn back into their previous industry with the offer of a better salary than teaching provides.

3. Because of the age of some of these new teachers, health may have played a role in retiring from industry and taking up teaching as a second career. This would cause these individuals to accept teaching situations and conditions that individuals capable of returning to industry would not necessarily wish to endure.

4. The study group size of new teachers entering the teaching profession during the 2003 through 2007 school years is small enough to cause a weaker study. Including T & I groups from earlier years may create a more solid basis for generalizations.

5. This is a self-reporting study and the respondents may conceal information on issues they do not wish to make public. Confidentiality of the responses will be stressed to the participants in an effort to improve the accuracy of the data collected. The survey instrument will also be constructed with the intentions of eliminating leading questions.

Delimitations of the Study

1. This study focused only on the retention rates of T & I teachers. Prior studies by others had included health sciences teachers. Health science

teachers as a group are more familiar with academic coursework compared to trade and industrial teachers (Moore, 1997).

2. This study examined only secondary level T & I teachers. Post-secondary T & I teachers traditionally do not have to deal with the same type of student discipline problems, classroom management, and other related issues compared to secondary teachers.

3. This study examined only Missouri teacher induction programs for T & I teachers. Other states have teacher induction programs in various forms but none were found with exactly the same induction components.

Assumptions of the Study

This study will be conducted with certain assumptions because of the difficulty in identifying sample groups and collecting data otherwise.

Assumption 1. All participants in the study entered the teaching profession with the desire to become a successful, professional T & I teacher.

Assumption 2. Becoming a successful, professional T & I teacher was the sole reason for entering the teaching profession. Taking a teaching assignment because of a desire to coach a sport will be difficult to determine accurately. Taking a teaching assignment as a “rebound job” because of a layoff from industry will also be difficult to determine accurately.

Assumption 3. All participants understood the data collection instrument and responded accurately.

Summary

Teacher retention beyond the first two years of teaching is, in part, the result of teacher success in the classroom and/or laboratory. Professional skills and attributes such as classroom management, administrative support, networking, among other facets, contribute towards teacher success.

Well-developed and executed induction programs should address most if not all of the concerns of a new teacher. This study will investigate the various methods of induction afforded new secondary T & I teachers in Missouri to determine the effectiveness of each method and combinations of induction methods.

Chapter 2

Review of Related Literature

Introduction

The issue of teacher attrition/retention has a significant impact on educational systems. To complicate the issue, in spite of decades of research on the matter, many questions are left unanswered. Reasons for teachers leaving the educational field have been identified along with resulting consequences. Appropriate solutions to the reasons teachers leave are what seems to be elusive.

Some observers claim the problems of teacher attrition have compounded during the past two decades as a result in the increase of alternative certified teachers entering the classroom. Most T & I teachers fit into this category of alternative certification and experience many of the same problems that traditionally certified teachers encounter.

States, along with many individual school districts, have made an effort to understand the causes of teacher difficulty during the early years in the educational system. Many have implemented various types of corrective measures but with mixed results in reducing the number of teachers prematurely leaving the profession. For some, the problem of teacher attrition seems to remain a predictable cycle. For others, the problem of teacher attrition needs to be addressed for the sake of a quality education for the youth of America.

Attrition Rates

Many studies have been conducted in recent years examining the attrition rates of teachers who experienced various certification programs; the relationship of the discipline taught to attrition rates; and formal induction programs and their effect on teacher retention.

To develop an understanding of the significance of attrition rates in the teaching profession it needs to be compared to national averages of all employee turnovers. Nationally, the average annual employee turnover rate for all companies is 12 percent (Pinkovitz, Moskal, & Green, 1997). Other studies show nationwide levels of employee turnover to be relative stable and averaging 11 percent per year (Ingersoll, 2002).

Compared to other professions, the employee attrition rate is disproportionately higher in education, and it is especially so among novice teachers (Liu & Meyer, 2005). Teacher turnover has been rising and stood at approximately 17 percent in 2001 (Ingersoll, 2002). Tabs (2004) reported this rate of attrition is nearer to 15 percent. This percentage is up from just 10 years earlier in the 1990's. Teaching still has one of the highest overall turnover rates of any profession, and not just in the first few years (Heller, 2004).

Harrell, Leavell, van Tassel, and McKee (2004) reported the teacher shortage problem is actually due to excessive teacher attrition. It is not from having enough new teachers to hire; rather it is hiring enough well prepared teachers who will stay in the teaching profession for an extended period of

time. Cochran-Smith (2004) echoed this observation by reporting it is not so much teacher recruitment being the problem in staffing the nations schools' as it is teacher retention. Ingersoll (2003) observed similar trends a year earlier and reported the demand for new teachers is not due to increased student enrollment or increased teacher retirement but rather increased pre-retirement turnover.

Throughout the nation, legislatures and state education agencies are concerned with the perceived teacher shortage and high attrition in the initial teaching years (Menchaca, 2003). Ingersoll (2003) posed the significance of teacher turnover as not one in being compared to other occupations but rather it be examined as an issue in schools' staffing quality teachers for improved student outcome.

Certain facets of teacher attrition are normal, such as teacher retirement. It is the teachers leaving education before retirement, however, that most researchers focus their investigations. Teachers in the first five years of their careers receive the most attention, as this is the time period new teachers are most likely to leave teaching.

Researchers have long held the idea that a low level of attrition is normal and even desirable as under-qualified teachers are allowed to attrition out of the school district and often times out of education altogether. While numerous studies have been completed on the causes of employee attrition and with mixed results, all studies accept the fact that low levels of attrition are

normal and advantageous for a “healthy” organization or school (Ingersoll, 2001).

Ingersoll (2003) continued to hold this belief and two years later stated that from an organizational perspective, some teacher turnover, especially of ineffective teachers, is necessary and beneficial. It could be asked, however, would various forms of teacher in-service reduce the number of ineffective teachers in the first place making it desirable to keep them and reduce attrition as a result? Or do these “ineffective” teachers require too many resources to be made effective and should be allowed to just move themselves out of education?

Attrition Percentages

In completing a meta-analysis of the literature reporting on the attrition rates of teachers, the actual attrition of teachers depends on many variables with findings indicating a wide range of attrition rates. The early years of teaching are traditionally known as the “sink or swim” years in which high rates of turnover have been casually accepted. It should be considered, however, that teachers are more likely to be terminated in their first two to three years, before achieving tenure, which may account for a higher portion of the teachers with zero to two years of experience (Strunk & Robinson, 2006).

Various studies have reported a 50% attrition rate for traditionally certified teachers during the first five years in the classroom (Joerger & Bremer, 2001; Merseth, 2005; Greiner & Smith, 2006).

Glickman, Gordon, and Ross-Gordon, (2007) reported that from one-third to one-half drop out of the profession within the first seven years with up to 15% leaving each of the first two years. Studies of CTE teachers late in the last century reported similar findings of an attrition rate nearing 50% during the first five years with approximately fifteen percent leaving at the end of the first year (Camp & Heath, 1988).

As recently as the year 2000, the Texas Center for Educational Research reported that 19% of traditionally certified beginning teachers in Texas left teaching at the end of their first year with a cost of approximately \$215 million per year. Harrell et al. (2004) determined that teachers certified through the University of North Texas between 1995 and 2000 had an attrition rate of 20.9 percent.

In another study conducted by Tabs (2004), one-third of the teachers that left during the 2000-01 school year had plans to stay until retirement when asked just one year earlier. Grant (2006) revealed in recent research that one in four beginning teachers quit after the second year and almost four in ten leave teaching within the first five years.

In recent years, well over 90% of new hires are simply replacements for recent departures and, more over, these departures have little to do with a graying workforce (Ingersoll, 2002). During the 1994-95 school year, retirements accounted for only 12% of the vacancies that needed to be filled. Most of the hiring of new teachers is simply to fill positions vacated by teachers who left the classroom (Ingersoll, 2003).

It would seem that a CTE teacher attrition rate of 11% or less could be considered acceptable as that would mirror the turnover rate of all employees as indicated by the Bureau of National Affairs. Ingersoll (2002) reported 11% of beginning teachers leaving the profession at the end of their first year. An additional 10% left at the end of their second year. After three years, a total of 29% had left and at the end of five years, 39% had left teaching.

Missouri experienced a lower attrition rate for all teachers during the first half of the 1990's with an average of 27.1% leaving during the first five years of teaching. This changed as the decade ended and the new century began with attrition during the first five years averaging 36% (Department of Elementary & Secondary Education [DESE], 2007). These percentages are for teachers leaving the classroom but not necessarily leaving public education in Missouri.

Types of Certification

Alternatively certified teachers are teachers that have earned a living in another profession prior to teaching and generally have made an informed decision regarding their career choice in teaching. Most T & I teachers are in the alternatively certified category. Several studies of attrition rates with alternatively certified teachers have been conducted in recent years and with mixed findings. Viadero (2005) reported that 85% of alternatively certified teachers are still teaching five years after they started in states such as Texas, California, and New Jersey.

Cochran-Smith (2006) suggested different influences may be responsible for the lower attrition of alternatively certified teachers. States with stronger standards, assessments, and accountability systems have lower turnover among beginning teachers.

Nontraditional or alternative certification programs frequently recruited individuals whose personal characteristics differed from those in standard teacher education programs and consequently, sometimes produced higher retention rates than traditional programs (Guarino, Santibanez, & Daley, 2006).

Other studies indicate the type of certification program completed did not influence a CTE teacher's likelihood to continue in the teaching profession (Ruhland & Bremer, 2002a). Jorissen (2002) reported that the evidence of alternatively certified teachers leaving the classroom at the same rate as traditionally certified teachers is inconclusive. Studies have, in fact, shown higher retention rates for alternatively certified teachers at the end of the first year (Jorissen, 2002).

Watson's (2000) research is supported with the above finding in which the attrition rate for the 1997-98 school year in Missouri for T & I teachers was 9.6%. This compares to almost 15% for traditionally certified teachers in the same study.

Johnson and Birkeland (2003) reported, however, that someone with traditional preparation and certification was more likely to remain in public school teaching than someone who had entered teaching through an alternative preparation and certification program. They also report that a first-career

teacher was more likely to remain in public school teaching than was a second career entrant. Allen (2003) observed in the same year, however, that research offers limited support for the conclusion that short-term retention rates for alternatively prepared teachers can be comparable to those for traditionally trained teachers. Subsequently, Allen (2005) noted that research provided limited support for the conclusion that the retention rates of alternative certified teachers can be comparable to, and even exceed, that of traditionally certified teachers.

Teachers with temporary certifications have higher likelihoods of attrition. Strunk and Robinson (2006) found that when researchers controlled for teacher certifications in their main subject fields, all teachers became less likely to leave the profession. Alternative certification programs that provide little to no pre-service support most likely will need to make up this deficiency in teacher preparation with higher levels of in-service support. If not, teacher attrition can become unacceptable. In the end, research indicates that teachers, regardless of teacher certification program, depart their jobs for a variety of reasons (Ruhland & Bremer, 2003).

Beginning versus Experienced Teachers

Research shows that while all teachers can be at risk for leaving the profession for numerous reasons, teachers new to the profession are at the greatest risk for leaving. New teachers leave at a faster rate than middle career path teachers do (Watson, 2000). Monsour (2003) reported three years

later the first year of teaching is critical for success and long-term retention in the profession.

Studies show teachers that are over 50 years of age or younger than 30 years of age are more likely to leave than teachers between this age band (Tabs, 2004). Other researchers have made similar observations as a result of their own research. Ingersoll (2001) reported before Tabs that the odds of young teachers leaving teaching are 171% higher than for middle-aged teachers.

Strunk and Robinson (2006) reported that teachers in the five to ten years of experience range are less likely to leave teaching than teachers in the first five years of teaching. Guarino et al. (2006) reported that a recurring and consistent finding is that attrition is higher for young or new teachers and lower for older or more experienced teachers.

Gender of Teachers

Another correlation researchers noted but with different results were gender and the attrition rate of teachers. Male teachers are less likely to depart than are female teachers (Ingersoll, 2001; Guarino et al., 2006; Strunk & Robinson, 2006). Conversely, Johnson and Birkeland (2003) reported a woman is more likely to remain in public school teaching than a man.

School Location

School location was cited by some researchers as contributing to attrition. Ingersoll (2001) reported that rural schools are less likely to experience the higher rates of teacher attrition found in urban schools. An

interesting twist to Ingersoll's report on school location is the observation that a teacher is more likely to leave a small school compared to teachers leaving larger schools. Strunk and Robinson (2006), however, did not find significant effects of school location on teacher attrition.

Subjects Taught

The literature provides limited evidence that teachers teaching in a field in which they have subject expertise or certification are less likely to leave than teachers with less appropriate qualifications. Moderate evidence does exist supporting the attrition of science and mathematics teachers and the chance of them being more likely to leave than secondary school teachers of other subjects (Allen, 2005).

Strunk and Robinson (2006) found in their study that attrition rates were dependent on the subject taught with mathematics and science teachers not as likely to leave as foreign language teachers. Foreign language teachers have significantly higher probabilities of leaving compared to teachers of other disciplines. This occurrence may be caused in part by the importance of foreign language ability in an increasingly global economy outside of education.

Vocational education teachers exhibited lower probabilities of leaving the classroom. This may result from fewer higher utility non-teaching opportunities (Strunk & Robinson, 2006).

Support of Teachers

Washer (2000) reported that teacher attrition is not nearly as severe if new teachers receive opportunities to participate in induction programs. New

teachers reporting a more positive outlook on their teaching experience also report a greater likelihood of staying in the teaching profession. This suggests that districts and administration can improve retention of new teachers by being active in the support of new teachers and their needs. In assuming that someone else or something else is addressing the needs of new teachers, administrators are allowing the new teachers to unnecessarily tolerate a difficult first year or two, as common as this may have become.

An emphasis on adequate preparation so that the first year of teaching is a positive experience should help improve retention of all teachers, whatever their certification route (Ruhland & Bremer, 2002a). There will always be a need for professional development for all teachers. Understanding the factors underlying teacher attrition and retention will help assure quality of teaching in our educational systems. Research has indicated that adequate pre-service preparation and in-service support of novice teachers are important to improving both teaching quality and retention (Ruhland & Bremer, 2003).

Guarino et al. (2006) has found the policies that promote recruitment of teachers also by default promote the retention of teachers and consequently, the rewards of becoming a teacher are the same rewards of remaining a teacher. Smith (2007) observed that while it is difficult to determine whether the turnover of any particular teacher is good or bad for a school, there are clearly organizational benefits to reducing relatively high levels of turnover. It should be noted not all attrition from teaching is permanent in that many individuals return to teaching after a few years (Guarino et al., 2006).

Unique Perspective of Attrition/Retention

Some researchers have approached the issue of attrition as one of supply and demand. This, known as the economic labor market theory, suggests that the willingness of individuals to work as teachers depends on the desirability of the teaching profession relative to alternative opportunities. Strunk and Robinson (2006) made an attempt to suggest this with the observation of low attrition rates for vocational education teachers. Guarino et al. (2006) defined the demand for teachers as:

The number of teaching positions offered at a given level of overall compensation and the supply of teachers as the number of qualified individuals willing to teach at a given level of overall compensation. In this study overall compensation included not only salaries (and all monetary compensation) but also any other type of reward derived from teaching including working conditions and personal satisfaction. (p. 174)

This approach to studying teacher retention is not so much one in improving a teacher's pedagogical skills along with all the other necessary skills in being a successful teacher, but rather in making a teaching career more attractive than any other career option.

Guarino et al. (2006) observed that the basic principle driving the supply of teachers is that individuals will become or remain teachers if teaching represents the most attractive activity to pursue among all activities available to them.

This method of improving teacher retention does not necessarily address the professional development of teachers as they continue with their teaching careers. High rates of retention are not automatically synonymous with teacher

quality and student learning. Only if student learning improves (or at least remains constant) is the method of economic labor market theory plausible in addressing teacher attrition.

Employee turnover, or teacher attrition, influences the performance and effectiveness of the given school district. High levels of teacher attrition are indicators of ineffectiveness and poor performance of a school district. Recruitment and retention of high quality teachers are now viewed as important challenges for public education in the United States (Kelley, 2004).

There is no consensus on what a reasonable rate of attrition in teaching might be. If one was to look at the cost of attrition, however, the response to the previous statement might become clearer.

Cost of Attrition

Turnover has a human cost for teachers who have invested significant time and resources to become teachers (Texas Center for Educational Research, 2000; Wong, 2004). While some former teachers are able to obtain employment that utilizes in some way a part of their teacher training/college degree, many do not find such employment. Short of having a college degree, which is a pre-requisite for some jobs regardless of the degree, many former teachers have wasted the time and money in obtaining a teaching degree.

Pinkovitz et al. (1997) identified intangible costs that remaining employees must sometimes bear. Examples of these additional costs include: the stress and tension caused by turnover, declining employee morale, and decreased productivity due to loss of work group synergy.

Not all teachers leaving the classroom leave the educational system. This is true for states including Missouri where many individuals that were once in a classroom have transitioned into administrative or other non-teaching positions within a school district (DESE, 2007).

Economic Costs of Attrition

Teacher attrition is an expensive and complex problem to address (Harrell et al., 2004). The more teachers decide to leave, the more costly it becomes in terms of valuable resources that could otherwise be spent on enriching teaching and learning environments (Weiss, 1999). The state of Texas reports the turnover cost per teacher is estimated to be equivalent to 150 percent of a teacher's salary. (Texas Center for Educational Research, 2000). With conservative estimates, Texas loses approximately \$330 million each year due to teacher turnover.

Wong (2002) observed the monetary cost to replace a teacher that left the classroom for any reason is approximately \$50,000. School districts must address and deal with the financial costs of new teacher recruitment and the expense of new teacher orientation and training for each teacher lost to attrition.

The financial costs of teacher turnover include but are not necessarily limited to separation costs; hiring costs; and training and support costs. Separation costs are the administrative expenses associated with the termination of employee benefits and services and any exit reports to be completed. The recruitment and hiring process requires an expenditure of

money. Hiring costs include processing applications, background checks, interviews and sign-on bonuses in some cases. Training costs include the costs associated with not only training the new hires but also the costs in training the support teams needed for the induction of the new hires (Pinkovitz et al., 1997; Texas Center for Educational Research, 2000).

The costs of induction programs can make the costs of new-teacher turnover even higher. It is important that expenditures on these programs be justified by improved outcomes. If induction programs succeed in increasing the retention of beginning teachers, this could make it easier for schools to maintain teacher cohesiveness and free up time for administrators to focus on curriculum and other instruction related activities (Smith, 2007).

Historically, school districts in the United States have paid insufficient attention to education's human resources, and this inattention has been and will continue to be financially and professionally costly (Kelley, 2004). Some of these costs and consequences of turnover are more easily measured and quantified than others (Ingersoll, 2003).

Student Learning as a Cost of Attrition

The indirect costs in extra work for existing employees, reduced teacher effectiveness, and most important, the lower student productivity are incalculable (Wong, 2002). Studies suggest that new teachers add less value to student learning during their first year of teaching (Smith, 2007). What the teacher knows and can do in the classroom is the most important factor resulting in student achievement (Wong, 2004).

When effective new teacher orientation and training is not provided for all teachers, a struggling novice teacher is faced with their own day-to-day survival rather than being able to focus on the needs of their students. Student learning, consequently, can be compromised (DESE, 2007). Wong (2004) confirmed that teacher and teaching quality are the most powerful predictors of student success.

Many of the most promising and gifted teachers are the ones leaving the profession early in their teaching careers (Self, 2001; Glickman et al., 2007). Schools with large numbers of new teachers can find it increasingly difficult to improve student achievement, especially in light of federal guidelines such as the No Child Left Behind Act.

Guarino et al. (2006), however, made the observation that if effective teachers are less likely to leave than less effective teachers, then high levels of teacher attrition may improve rather than decrease the overall quality of the teaching workforce. This might be true for the teachers that remain in teaching but doesn't necessarily apply to the students that teachers "left" in the classroom. These students have to endure a new teacher that might or might not succeed. In spite of Guarino et al. observations, other researchers see the advantages to any school district in being able to reduce high levels of teacher attrition (Smith, 2007).

Liu and Meyer (2005) noted that school-staffing problems attributed to high teacher turnover can lead to substandard instruction and low student achievement. Cochran-Smith (2004) made a similar observation regarding

student achievement but added that overall school cohesion is also affected by a high attrition rate. Ingersoll (2001) had previously made this observation and extended the effect of high attrition rates to overall school performance. In addition, temporary teaching staff can also compromise the quality of students' learning experiences as a result of their lack of adequate preparation and delivery of substandard instruction (Liu & Meyer, 2005).

A building administrator who invests time and energy in positive orientation and induction experiences will benefit their school in various positive ways. School improvement efforts require a stable group of teachers who are aware of and have the time to work toward the common goals of the school. New teachers are utilizing whatever spare time they can find to develop their own skills, both professional and survival.

When building administrators neglect to provide instructional and emotional support to new teachers, the new teachers will undoubtedly find that support from others in the school. Not all teachers demonstrate and exude the best teaching qualities and professional habits, and the possibility exists that a new teacher will be unnecessarily exposed to negative influences. A good administrator and their intervention with the new teachers will not only provide much needed support to the new teachers but also diminish the influence negative teachers have over a school (Hope, 1999).

There is a growing international realization that launching beginning teachers on the road to learning more about teaching is an investment that can yield enhanced instruction throughout a career lifetime, affecting the quality

of what hundreds, even thousands of pupils will learn in conjunction with each teacher (Britton, Paine, Pimm, & Raizen, 2003).

There is imminent danger that teaching will become a revolving door job (not a profession) and experienced “high quality” teachers will disappear from the classroom (Harrell et al., 2004). Only recently have researchers discovered retention is more of a problem than recruitment. With fewer people entering the profession, rising retirement numbers and the growth of school age populations, teacher shortages have become a concern nationwide (Greiner & Smith, 2006).

Well-qualified CTE teachers are key to preparing high-achieving students and workers who will have challenging, well-paid jobs that help the United States maintain a dominant position in the world economy (Joerger & Bremer, 2001). Across the nation, the areas represented in T & I education are experiencing a shortage of skilled workers. Unless efforts are made to slow the attrition rate of T & I teachers, the dwindling supply of qualified teachers will continue to exacerbate this shortage (Self, 2001).

Reasons for Leaving

Teacher recruitment programs alone will not solve the staffing problems of schools if they do not also address the organizational sources of low retention (Ingersoll, 2001). The overall conditions of work places and job sites significantly affect the attachment of employees to the organization. Researchers have found that among the most important of these organizational conditions are the compensation structure for employees; the level of

administrative support, especially for new employees; the degree of conflict and strife within an organization; and the degree of employee input into and influence over organization policies. Ingersoll (2001) found strong links between these kinds of organizational conditions and employee motivation, commitment, and turnover.

Schools with teacher recruitment problems are also more likely to have teacher retention problems. The data shows the schools reporting having difficulties filling their openings are almost twice as likely to have above-average turnover rates (Ingersoll, 2001).

Johnson and Birkeland (2003) identified two distinct categories existing for teachers that have left the classroom. One category is composed of teachers that regarded teaching as a short-term career in the first place. In 2004, Inman and Marlow reported that many beginning teachers simply view teaching as transitional to other jobs in education or in other occupations. Individuals new to the labor market may be exploring options and less likely to accept working conditions than more seasoned professionals (Guarino et al., 2006). The second category is the lack of success experienced in the classroom (Johnson & Birkeland, 2003). If the new teacher's first-year experience is not positive, if it is fraught with difficulty and disappointment, then there is more likelihood the teacher will not return (Heller, 2004), if they even complete the first year (Viadero, 2005).

Strunk and Robinson (2006) identified four broadly categorized levels of teacher attrition: teacher characteristics, school attributes, district traits, and the larger state context.

Some teachers leave the classroom to pursue other positions within education, while others leave for careers in different fields, often receiving higher salaries than they were paid in education (Texas Center for Educational Research, 2000). Men were more likely than women to report leaving their teaching position for a better salary or benefits, to pursue another career, or to take courses to improve their career opportunities within or outside the field of education (Tabs, 2004). Liu and Meyer (2005) reported that a teacher's propensity to leave the profession varies with years of service, gender, and ethnicity.

Weiss (1999) observed that new teachers with a degree in a specific discipline are more likely to leave teaching than those with a degree in education. Menchaca (2003) reported that secondary school teachers find it easier than elementary teachers to move into jobs in corporate America. Strunk and Robinson (2006) observed that teachers are more likely to leave teaching if they are specialized instructors, they have a probationary teaching certificate, or if they are less experienced.

Teachers leaving the classroom after the 1999-2000 school year compared their current job to their former teaching position on 17 occupational characteristics. Salary, intellectual challenge, availability of resources, and recognition and support from administrators and managers were

among the 17 occupational characteristics. Former teachers from the 1999-2000 school year in the study indicated that 15 of the 17 characteristics were better in their current position than in teaching with benefits and job security being the two exceptions (Tabs, 2004).

New and fully trained teachers leave the field at a high rate, in part due to the common practice of giving the newest teachers the most difficult teaching and advising assignments (Joerger & Bremer, 2001). Tabs (2004) observed the former teachers from the 1999-2000 school year reported that the manageability of their workload, opportunities for professional advancement, professional prestige, and general work conditions were better in their current positions.

Grant (2006) reported the key to understanding some of the reasons why novice teachers leave the classroom may include persistence and self-efficacy, or rather, the lack of it. According to studies on persistence, teacher retention may be more of an issue of personality than one of intellectual ability (Grant, 2006). A teacher who feels inadequate is unlikely to persist, while a teacher who feels adequately prepared to deal with stressful situations is more likely to persist. Strunk and Robinson (2006) reported that little is known about whether the causes of teacher attrition can be linked to individual teacher characteristics or to school attributes and/or district-wide traits.

The critical time for the development of self-efficacy is in the first years of teaching. If teachers experience more failures than successes in the classroom early on in their career, they may leave (Grant, 2006). Teachers'

perceptions about their job conditions hold promise for understanding the reasons for teacher turnover.

Job Dissatisfaction

Ingersoll (2001, 2002) reported of teachers leaving their jobs, about half report they departed due to job dissatisfaction or out of a desire to pursue a better job or career. The causes of job dissatisfaction were listed as low salaries, lack of support from administration, student discipline problems, poor student motivation, and lack of teacher influence over decision-making.

Teachers who moved from one school to another were generally more likely to report dissatisfaction with their previous teaching experience than teachers who left education altogether (Tals, 2004). Harrell et al. (2004) observed that workplace conditions play an important role in teacher attrition. These conditions include factors such as appropriate workloads, adequate resources, safe working conditions, and a desirable teaching assignment.

In 2001, Self reported the primary cause for teachers leaving the field to be dissatisfaction with teaching (45%), to pursue other career opportunities (33%), and to obtain a better salary and/or benefits (17%). The major reason T & I teachers left teaching was also due to dissatisfaction with teaching.

School climate factors that compromise a teacher's ability to experience success will hasten their decision to leave the teaching field rather than strengthen their commitment to remain in teaching. Teachers leave when they become overwhelmed by the demands of the job and see few prospects for improvement or success. The experiences of these teachers highlight causes of

teacher attrition that may be alleviated by practice or policy (Johnson & Birkeland, 2003).

When the school and the individual teacher do not make a good match and the teacher becomes dissatisfied, the only recourse a teacher may have is to seek a different placement (Woods & Weasmer, 2002). This often times is the case when a teacher leaves a given school but not the teaching profession. Too often quality teachers do not recognize that their current circumstances may be less rewarding than they may find elsewhere (Woods & Weasmer, 2002). In deciding whether to continue or leave teaching, teachers make ongoing assessments of the attractiveness of teaching relative to alternative occupations or activities that they might pursue (Inman & Marlow, 2004; Guarino et al., 2006).

Watson (2000) reported evidence that attrition rates in Missouri are related to the type of community, age of the teacher, the teaching field, and changes in the pecuniary incentives across specific teaching fields. Ingersoll (2001) observed that beginning teachers are primarily motivated by non-pecuniary and altruistic values, but if these kinds of expectations are frustrated, salaries can become a source of considerable dissatisfaction.

Strunk and Robinson (2006) observed if another occupation (or the choice of no occupation at all) offers them a higher total payout, they will leave teaching in favor of the alternative with the highest payout. In 2005, Allen suggested there is strong support that compensation plays a key role in the recruitment and retention of teachers. He also reported there was

moderate evidence that working conditions may, in some cases, trump salary as a factor in teacher retention. Concerning retention, the data indicates that teachers, regardless of teacher certification route, depart their jobs for a variety of reasons (Ruhland & Bremer, 2002a).

Salary Issues

Historically, teachers receiving low salaries tend to leave at a higher rate (Harrell et al., 2004). It would appear, however, that other factors influence this trend. If poor working conditions make it difficult or impossible to achieve success in the classroom, low pay becomes an increasing frustration (Ingersoll, 2001; Johnson & Birkeland, 2003).

The desire for a better salary is a factor reported by several researchers studying the attrition rates of teachers. Many leavers are dissatisfied with their jobs because of low salaries (Ingersoll, 2001 & 2002; Cochran-Smith, 2004; Guarino et al., 2006). Tabs (2004) reported obtaining a better salary or benefits was the third most listed reason for leaving the teaching profession.

Teachers capable of developing skills for other careers may also move to different professions because the economic reward outweighs the cost of their career change (Watson, 2000; Liu & Meyer, 2005). In regards to voluntary attrition, the notion of opportunity costs becomes a strong factor. Individuals whose opportunity costs outweigh the rewards gained from teaching will be more likely to leave the teaching profession (Guarino et al., 2006).

Watson (2000) made the observation that money lowers the attrition rates of teachers when other factors are held constant. Guarino et al. (2006)

observed that teachers were responsive to salaries outside their districts and their profession and that higher salaries were associated with lower teacher attrition.

Salary is not the only factor influencing a teacher's decision to stay or leave (Harrell et al., 2004). Self (2001) reported that while salary was one of the reasons T & I teachers felt dissatisfied with their positions, salary ranked a distant fourth place (10.3%) behind lack of recognition and support (31.6%), student discipline problems (16.6%), and poor student motivation (15.5%).

Issues Associated with Administrative Support

While money is important, it is not the only reason teachers leave. Insurmountable bureaucratic obstacles keep these teachers from feeling like they are really making a difference (Merseth, 2005). Inman and Marlow (2004) observed the reasons teachers have provided for leaving were less often due to insufficient salaries than to a lack of professionalism, collegiality, and administrative support.

Harrell et al. (2004) observed that 74.4% of respondents ranked problems with district administrators as a 1, 2, or 3 in level of importance. It does appear that building level administrators are key factors related to teacher attrition. Several studies have reported similar results with indifference or total lack of support from administration being listed as reasons for leaving (Self, 2001; Ingersoll, 2001 & 2002; Cochran-Smith, 2004; Angelle, 2006). Paese (2003) reported the majority of teachers leaving cited lack of support as the primary reason. Yost (2006) observed that dissatisfaction from

administration and the lack of opportunities for professional development are key factors in teachers choosing to transfer to other schools in the hope of finding better employment opportunities.

New teachers often cite reasons for leaving the teaching profession that include little or no administrative support and inundation with extra-curricular duties (Harrell et al., 2004). Smith (2007) suggested that beginning teachers feel they receive insufficient guidance about what to teach and how to teach. If an administrator tells a novice teacher that they can deal with a specific classroom management issue but does not provide any resources and tangible support, the administrator fails to cultivate trust and credibility with the novice teacher, thus affecting that teacher's persistence in handling difficult situations (Grant, 2006). When new teachers experience a lack of support and poor working conditions, their commitment to stay in the profession weakens (Kelley, 2004).

Inman and Marlow (2004) observed that teacher attrition is caused in part by administrators that stifle creativity in the school environment and where a teacher's ideas about teaching differ from those of other colleagues. Schools that provided teachers with more autonomy and administrative support had lower levels of teacher attrition and migration (Guarino et al., 2006).

T & I teachers consistently perceived the school administrators did not understand the complexity of a T & I teaching position since most administrators had never taught in a trades-related program (Self, 2001). T & I teachers perceived that the majority of problems they experienced would

“take care of themselves” if administration provided the needed support and interest in the trade-related programs. T & I teachers perceived they were craftsmen first and teachers second and when their expertise was not recognized by others in the school, they felt unappreciated (Self, 2001).

Classroom Management/Student Discipline Issues

One of the factors attributed to teacher turnover is burnout, specifically burnout in dealing with classroom management issues (Grant, 2006). Liu and Meyer (2005) reported that student discipline problems were a major reason for teachers’ dissatisfaction with their jobs second only to low compensation. They suggest that only after the reality of student indifference sets in does the level of compensation begin to appear inadequate. A number of negative student behaviors have been identified as factors that influence teachers to leave the classrooms. Tardiness, apathy, safety concerns, and student misbehavior are often cited as variables influencing a teacher’s decision to leave (Harrell et al., 2004).

Several studies reported classroom management and student discipline as factors affecting teachers’ decisions to leave the profession (Self, 2001; Ingersoll, 2001 & 2002; Cochran-Smith, 2004). Teachers enter the profession knowing what the compensation will be but do not have a realistic grasp of undesirable student behavior. Individuals new to the teaching profession have a tendency to believe they can reach young people and cause significant change in their lives. The perceptions about student discipline held by beginning teachers show that they may lack the knowledge, resources, and experience

necessary for dealing with classroom management issues. Resulting dissatisfaction with student discipline issues may actually be a reflection of a deficiency in their training or a lack of administrative support (Liu & Meyer, 2005).

Other Issues Affecting Teacher Attrition

There are many other reasons reported in the literature that accounted for teachers leaving the teaching profession. Tabs (2004) reported that the primary reason most teachers left the classroom during the 2000-01 school year was the result of retirement (29.1%), a much larger percentage than reported in other studies. Ingersoll (2001) reported that retirements account for only a small portion of total turnover citing only 12% of the total turnover during 1994-95.

It could be suggested that teachers wish to engage in the overall outcome of student learning by being involved in the process of decision-making and the implementation of the resulting policies. Ingersoll (2001, 2002) reported the lack of teacher influence over decision-making was cited by 15% of the teachers that had made the decision to leave the classroom. Other researchers have observed that one of the several causes of teacher dissatisfaction was the lack of opportunity of teachers to participate in decision making. (Self, 2001; Cochran-Smith, 2004).

Tabs (2004) observed that 59% of teachers leaving the classroom during the 2000-01 school year and obtaining employment elsewhere reported being employed by a local, state, or federal government agency. This could suggest

the reason for leaving the teaching profession was for reasons other than salary.

Hanushek, Kain, and Rivkin (2003) observed the annual salary gain averaged across all movers (from one school district to another) with less than ten years of experience is slightly more than 0.4% of annual salary or roughly \$100. In contrast to the modest changes in salary, teachers systematically favor higher achieving, non-minority, and non-low income students. Teachers are more likely to leave poor schools, leaving these schools to have higher percentages of new teachers that traditionally lack the skills to achieve above average success in teaching the students (Strunk & Robinson, 2006).

Accountability policies might lead to increased attrition in low-performing schools. Paese (2003) reported that pressure from high stakes testing and excessive paperwork were listed as significant reasons for leaving. Strictly imposed policies and accountability result in an attempt to improve student learning and complicates the attempts in improving teacher retention (Guarino et al, 2006; Strunk & Robinson, 2006). Smith (2007) reported that few empirical studies, however, have explored the relationship between standards-based reforms and the commitment and retention of new teachers.

Guarino et al. (2006) observed the attrition patterns in their research indicate that teachers exhibit preferences for better working conditions and greater intrinsic rewards and tend to move to other teaching positions or to jobs or activities outside of teaching that do offer these characteristics when possible. Educational researchers have shown that a lack of support systems,

professionalism, and collegiality contribute to teachers leaving teaching. A frequently cited reason for attrition is teacher isolation (Fluckiger, McGlamery, & Edick, 2006). Harrell et al., (2004) reported that 72.5% of respondents ranked lack of a mentor as a 1, 2, or 3 in level of importance in their decision to leave the teaching profession.

Washer (2000) reported that 93.3% of the new teachers attending Missouri's New Teachers Institute were required to attend by the administrator (72.4%) or strongly encouraged to attend by the administrators (20.9%). It could be inferred that it has become too easy for administrators to let someone else nurture their new teachers. A structured induction assistance program does not absolve school administrators of further responsibility to provide support and assistance to beginning teachers (Camp & Heath-Camp, 1991). Perhaps administrators are dodging their historical responsibility as a "Master Teacher" with the advent of various induction programs.

Institutions of higher education continue to train teachers while at the same time many new teachers are becoming disenchanted with the teaching profession and leave within a year or two (Watson, 2000). The causes of attrition appear to be many-fold but one of the most significant does not appear to be remedied by teacher training or continuing professional development. Strunk and Robinson (2006) observed that the research to date points to many factors in teachers' quit decisions but there is still much to be determined about what causes teachers to leave schools and how to keep teachers in the field.

Reasons for Staying

While accurate measures of teacher attrition are important if school systems, administrators, and potential teachers are to effectively plan for the coming years, the need to identify factors which cause teachers to remain in the profession is perhaps of greater importance (Inman & Marlow, 2004).

Success/Satisfaction

Teachers must find success and satisfaction in the classroom before they can make an informed decision regarding whether or not to continue to teach (Johnson et al., 2001). For teachers to stay in teaching, they need school conditions where they are successful (Cochran-Smith, 2004). Successes raise mastery expectations; repeated failures lower them, especially if the mishaps occur early in the course of events (Grant, 2006). Yost (2006) observed that high efficacy teachers tend to remain in teaching as opposed to leaving the profession.

Guarino et al. (2006) reported that 83% of teachers with less than five years teaching experience felt it was essential a job involve work that was enjoyable; 81% reported it was important for the job to allow time for family; and 72% said the job must allow them to contribute to society while performing their responsibility. Guarino et al. (2006) noted that an altruistic desire to serve society is one of the primary motivations for pursuing teaching. For the teachers that remain in teaching, Guarino et al. (2006) reported these teachers stayed for the same reasons they entered the profession. Teaching remains the

most attractive in terms of compensation, working conditions, and intrinsic rewards.

Teachers who have perceptions of school processes similar to their personal values will likely be held to that organization (Angelle, 2006).

Teachers that view the organization in a more positive light will be motivated and maintain an intention of remaining with the school.

Persistence/Commitment

Greiner and Smith (2006) observed the single strongest predictor of teacher retention was the initial commitment to teaching. Persistence plays a large role in a teacher deciding to return to the classroom each year (Grant, 2006). Factors related to persistence included withstanding discomfort to achieve a goal, keeping at a task, feelings of adequacy, and mental fluency. In correlational studies, researchers found that persistence is positively correlated with intelligence but is more positively correlated to school grades (Grant, 2006).

Ruhland and Bremer (2003) reported that teachers' sense of being well prepared was correlated with their sense of teaching efficacy, feeling responsible for student learning, and planning to stay in the teaching profession. A teacher who feels inadequate is unlikely to persist, while a teacher who feels adequately prepared to deal with stressful situations is more likely to persist. Teachers who return year after year feel that they can overcome setbacks (Grant, 2006). They learn from their experiences when a situation does not go smoothly.

Philosophical Differences

Larger schools have a greater degree of tolerance for alternative views and philosophies of education. Consequently, it is easier for a teacher to remain as opposed to a teacher at a smaller school where acceptance of views outside the mainstream policies are less tolerated. As discussed in the section on “Reasons for Leaving” earlier in this chapter, most of these teachers leaving because of philosophical differences do not necessarily leave the field of teaching but rather find a school that is a better fit for them.

Schools where teachers are given a greater voice in making decisions that affect their jobs have significantly less turnover (Ingersoll, 2002). Weiss (1999) reported a school culture that supports collaboration and teacher participation in decision-making was most strongly related to higher morale, stronger commitment to teaching, and intentions to remain in the profession. Allen (2005) reported that research provides limited support for the conclusion that schools with greater teacher autonomy have lower teacher attrition.

Student Discipline/Administrative Support

Policy interventions which normally use financial incentives to improve teacher retention may not be addressing the real issue. Liu and Meyer (2005) reported the correlation between teachers’ perceptions about student discipline problems and about compensation is very low. Increasing teachers’ salaries may not be enough compensation for the ongoing trials and tribulations experienced with student discipline. Liu and Meyer (2005) reported that fewer student discipline problems and professional support were correlated with high

teacher morale and career commitment. Ingersoll (2002) observed that reducing student discipline problems and increased support from school administration were significant factors that affect teacher retention. Watson (2000) noted similar findings and stated that non-salary issues affecting retention include administrative support and effectively handling student discipline issues.

Teachers remain with a district when they feel supported by administrators and have strong bonds with their colleagues (Wong, 2004). Fluckiger et al. (2006) observed the issues that promote teacher retention are providing needed support and collegiality by helping new teachers gain perspective, implementation of strategies to get new teachers started, avoiding isolation, and providing manageable workloads. As for influencing former educators to return to the classroom, Harrell et al. (2004) reported that increased income, administrative support, and an improved workplace were the strongest factors.

The quality of the administrator's monitoring not only socializes the beginning teacher into the school organization but also influences the teacher's intent to stay (Angelle, 2006). Schools that provided teachers with more autonomy, better working conditions, and administrative support had lower levels of teacher attrition and migration (Guarino et al., 2006). Yost (2006) observed that teacher satisfaction with the administration is a key factor in deciding to remain in teaching.

Administrators should focus on providing beginning teachers with positive experiences in support of the new ideas they bring with them from their teacher education programs (Inman & Marlow, 2004). Administrators must continue to promote teachers' accomplishments to one another, to the educational community, and enhance the public perception of teaching as a true profession.

In contrast, Allen (2005) reported the research provides limited support for the conclusion that schools with greater administrative support have lower teacher attrition.

Induction Programs/Professional Development

Interventions into the problem of teacher attrition may be more effective if programs are initiated that enable teachers to deal with classroom management more effectively. Menchaca (2003) reported that providing adequate training and support for beginning teachers increases the retention of more competent, qualified, and satisfied faculty. Wong (2004) observed that structured, sustained, intensive professional development programs that allow new teachers to observe others, to be observed by others, and to be part of networks keeps a good teacher in the classroom. Liu and Meyer (2005) reported that teacher induction programs were correlated with high teacher morale and career commitment. Professional development opportunities are a key factor in a teacher deciding to remain in teaching (Yost, 2006).

Smith (2007) reported there is lack of evidence that states with stronger implementation of testing and accountability under standards based reform are

having more difficulty in retaining beginning teachers than states that have not embraced standards-based reform. It could be suggested that standards-based curriculum clarifies the expectations of what is to be taught, a positive attribute of the job requirement as seen by new teachers.

Research in teacher retention indicates that teachers who are highly involved professionally are more likely to remain in teaching (Jorrison, 2002). It can be suggested that promoting professional integration during a new teacher's induction period is essential to retention of that teacher.

Role Models/Mentors

Exemplary modeling may provide motivation and lead to persistence for a new teacher. Teachers may leave or stay based on their observations of other teachers' successes in dealing with difficult or stressful situations. Perhaps this is why a mentor for new teachers is important (Grant, 2006). In contrast, Harrell et al. (2004) observed that over half of their respondents reported the lack of a mentor as "not at all important" with regard in deciding to stay in teaching.

Salary

Salary was the only external factor identified by beginning teachers as a reason for remaining in the teaching profession (Inman & Marlow, 2004). Guarino et al. (2006) reported a large number of studies offered evidence to suggest that teacher salaries were positively associated with retention. A significant factor that affects teacher retention is increased teacher salaries

(Ingersoll, 2002; Cochran-Smith, 2004). In contrast, Watson (2000) reported that CTE teachers' attrition rates increased as salary incentives increased.

Other Issues Affecting Teacher Retention

Teachers new to the profession tend to be less sure of how their ideology compares with that of others and whether or not the working conditions are compatible with their expectations for their life's work (Inman & Marlow, 2004). Professional socialization, the process whereby the new teacher learns about and becomes a part of the school, influences not only teacher quality but also longevity (Angelle, 2006).

Cochran-Smith (2004) reported that for teachers to stay in teaching, they need school conditions that provided opportunities to work with other educators rather than in isolation and advancement opportunities. Liu and Meyer (2005) reported that good facilities were correlated with high teacher morale and career commitment. Inman and Marlow (2004) reported the majority of beginning teachers view job security as a positive factor for remaining in the profession.

Competent individuals who are willing and able to serve as teachers are required to provide a high-quality education to students. In promoting recruitment/retention, it would seem that policymakers should focus on increasing the rewards of teaching relative to those of the competing occupations available.

Nontraditional Teachers

Trade and industrial CTE teachers make up approximately 4.5% of the secondary school teacher population (Walter & Gray, 2002). The historical route in T & I education has been, by definition, an alternative means to certification of experienced trades people, many of whom have not had the requisite college education expected in most other areas of education (Camp & Heath, 1988). T & I teachers typically use an alternative preparation/certification program that emphasizes work experience over academic work. This does not mean an alternatively certified teacher does not have a degree in the subject area for which they were employed. Some teachers have degrees, but not educational coursework (Ruhland & Bremer, 2003).

For preparing teachers to enter the classroom, CTE has the oldest ongoing alternative preparatory route to teaching. Camp and Heath (1988) reported an acceptable alternative model for teacher preparation that produces high quality teachers with the competencies needed to be successful and identified three important characteristics of alternative teacher training. First, early introduction of pedagogical skills, and preferably, before the new teacher entered the classroom is important for teacher success. Second, continuing professional development on a frequent basis, which allows for the immediate needs and issues of the new teacher to be addressed, is also a requirement for the success of a new teacher. A third important characteristic

of alternative teacher training is the presence of an experienced veteran teacher that provides a model for the new teacher to learn from.

Nontraditional versus Traditional: Similarities

Nontraditional teachers enter the teaching field for many of the same reasons as traditionally trained teachers. Ruhland and Bremer (2002b) observed that 57% of respondents reported reasons to become a teacher as the ability to make a difference, sharing knowledge, or wanting to work with young people. Availability of teaching jobs and school holidays/summer break were also mentioned as reasons for becoming a teacher.

Ruhland and Bremer (2002a) observed that, in general, procedures do not vary greatly for alternative certification of secondary academic and CTE teachers. Camp and Heath-Camp (1991) observed that both nontraditional and traditionally trained teachers need ongoing in-service programs.

Allen (2003) reported a basic understanding of pedagogy prior to teaching might be just as beneficial as pre-service field experience. Supervision by well-trained teachers and support from administration may also be just as effective as pre-service field experience supervision.

Nontraditional versus Traditional: Differences

Teachers coming from nontraditional teaching routes have a ready-made understanding of workplace demands, bring life experience to the classroom, and demonstrate a commitment to their new careers. They are more prepared for teaching and more prepared for work than the traditional teachers who come right out of undergraduate programs (Viadero, 2005). Camp and Heath-

Camp (1991) observed the differences in age and experience were very powerful advantages - advantages such as being able to adjust more readily to the "working" environment.

Heller (2004) observed that alternative route teachers bring a wide range of experience and readiness to the classroom. There is a large enough difference in new nontraditional teachers and new traditional teachers that the topics needing addressed by the two groups seemed to be different, at least in the beginning (Camp & Heath-Camp, 1991).

In training an older nontraditional teacher, they cannot be treated the same as a young teacher. A younger teacher is more likely to have a greater tolerance for failure and the need to start over compared to an older individual new to the teaching field (Heller, 2004). Nontraditional or alternative certification programs frequently appeared to recruit individuals whose characteristics differed from those in standard teacher education programs and sometimes produced higher retention rates than traditional programs (Guarino et al., 2006).

New Teacher Needs and Concerns

Administrators, other teachers, parents, and students express conflicting expectations of beginning teachers, leaving the neophyte in a quandary about whose expectations they should try to meet (Glickman et al., 2007). Very little time is left for the new teacher to meet their own expectations, perhaps the most important of all. When a new teacher is consumed with trying to be

“something to everyone”, seldom do they have the chance to address their own expectations of the job and ultimately, be themselves.

Fuller (1969) observed a discrepancy between what teachers say they need and what is supplied them in teacher preparation. Camp and Heath-Camp (1991) observed that induction assistance programs serving beginning vocational teachers should be designed to accommodate their unique needs. The best way to learn what are the professional development needs of teachers is from teachers themselves. Current professional development opportunities are often unfocused, fragmented, low-intensity activities that lead to no significant changes in teaching practices (Ruhland & Bremer, 2002b).

Without support in the early years, new teachers are not afforded a vision of the competence they may later develop (Woods & Weasmer, 2002). Beginning teachers want to know what is expected and how to demonstrate meeting those expectations (Olebe, 2005). Second career beginning teachers are often overlooked in the mentoring process. These older beginning teachers are also novices and are in need of guidance and encouragement just as much as younger new teachers (Woods & Weasmer, 2002).

New Teacher Needs

All new CTE teachers experience problems and situations that are foreign to them. This situation is amplified with non-degreed CTE teachers that have not had the benefit of adequate pedagogical training (Camp & Heath, 1988). Beginning teachers with certification based on industry experience need immediate help in lesson planning and familiarization with the curriculum

(Camp & Heath-Camp, 1991). Beyond the need to learn pedagogy, the needs of vocational teachers from industry were very similar to the needs of vocational teachers trained in teacher education programs (Camp & Heath-Camp, 1991). The beginning vocational teacher does not have the experience to know where to look or who to call for help. Camp and Heath-Camp (1991) developed a prioritized listing of induction assistance needs as identified by first and second year vocational teachers. In the years to follow, other researchers identified lists of similar needs as reported by novice vocational teachers. These needs can be summarized into the following eleven different categories.

1. Time and organization-More preparation time and assistance with organization, lower class load, no extra duties the first year, extra preparation period, time prior to school start-up, and others as ways to provide more preparation time (Camp & Heath, 1988; Weiss, 1999; Joerger & Bremer, 2001; Self, 2001; DESE, 2007).
2. Professional development-Workshops, courses, and various materials to assist them with instructional development and delivery (Camp & Heath, 1988; Weiss, 1999; Joerger & Bremer, 2001; DESE, 2007;). Ruhland and Bremer (2002b) reported that when beginning teachers were asked about improving professional development, they noted the need for more practical and in-depth pre-service training, including the need for more workshops.
3. Support-Support needed from a number of sources but predominantly the administration, parents, the business community, and guidance departments (Camp & Heath, 1988; Joerger & Bremer, 2001; DESE, 2007). Weiss (1999)

reported that teachers' concerns with having supportive workplace conditions were more important than pay. How new teachers experience workplace conditions is often as important as the workplace conditions themselves.

4. Orientation-A through orientation and a new teachers' handbook with everything a new teacher needs to know (Camp & Heath, 1988; Joerger & Bremer, 2001). First year teachers could be supplied with a handbook that gives pertinent information in order to reduce their effort in searching for this information (Self, 2001).

5. Instruction-Observations of other teachers, workshops, curriculum and other materials, and information on teaching (Camp & Heath, 1988; Ruhland & Bremer, 2002b). Novice teachers need to observe more experienced teachers as they deal with stressful situations (Grant, 2006).

6. Facilities-Equipment, teaching materials, and classroom/laboratory supplies (Camp & Heath, 1988; Joerger & Bremer, 2001; DESE, 2007).

7. Mentor-A planned mentor program where a mentor provides feedback and helps them grow (Camp & Heath, 1988; Ruhland & Bremer, 2002b).

8. Interaction with other new teachers-Opportunities for new teachers to get together and a trouble-shooting line they can call for assistance (Camp & Heath, 1988; Weiss, 1999; DESE, 2007).

9. Positive feedback-Positive feedback from the administration and other teachers. Recognition for doing a good job (Camp & Heath, 1988; Joerger & Bremer, 2001; Grant, 2006).

10. Students-Most assistance items for students were mentioned in relation to workshops to handle discipline, student motivation, and students in general (Camp & Heath, 1988; Weiss, 1999; Joerger & Bremer, 2001; Ruhland & Bremer, 2002b; DESE, 2007). Beginning teachers often step into a classroom with apprehension in their ability to manage a classroom effectively. Induction programs should be designed to assist novice teachers to become better teachers and develop teaching styles that work best for their students (Menchaca, 2003). Beginning teachers are faced with challenges that are changing and complex (Fluckiger et al., 2006). Recently certified CTE teachers felt least prepared by their pre-service preparation in the area of working with special needs students (Ruhland & Bremer, 2002b; DESE, 2007).

11. Evaluation and feedback-More frequent observations of what they are doing and immediate feedback. They want to understand the evaluation system (Camp & Heath, 1988). In addition to sorting out what the performance criteria are, novices must learn to distinguish the processes and outcomes associated with evaluation from those associated with professional growth (Olebe, 2005). Olebe (2005) observed that some induction method practitioners evade the challenge of formatively assessing teachers to provide them with valid information about their performance and guidance for individualized professional development by focusing exclusively on employment orientation, emotional support, and mentoring.

New Teacher Concerns

Besides a comprehensive list of needs possessed by new vocational teachers entering the classroom, they also have a number of concerns that can affect their ability to be successful. With the computer technology age well underway, new teachers are recognizing the need to be proficient in the use of computers. Inadequate knowledge and skills in computer based instruction and related tasks are a concern for new teachers (Camp & Heath, 1988; Ruhland & Bremer, 2002b).

Student enrollment in a CTE program is an ever-present concern for a teacher, new or experienced. In many cases, a new teacher is taking over a program that has a low enrollment that resulted from a previous teacher losing interest in performing well and consequently, prospective students exercised enrollment options in other courses. Low enrollment can also be a problem as vocational courses are an elective credit. Ways to promote the program and finding the necessary funds to do so is a concern of new teachers. High enrollment in a program creates logistical problems in scheduling laboratory experiences (Camp & Heath, 1988; Joerger & Bremer, 2001).

Camp and Heath (1988) identified several other concerns of new teachers: a) involvement in CTE student organizations; b) more attractive employment opportunities in the industry from which they came; and c) lack of understanding of and indifference to CTE by guidance departments, administrators, and other teachers.

Meeting the Needs and Concerns

Heath-Camp, Camp, Adams-Casmus, Talbert, and Barber (1992) observed the extent to which the educational system contributed to negative influences and negative significant events was not expected and certainly cannot be considered encouraging. New teachers in schools where administrators and educators were willing to mentor them, or where formalized teacher induction programs were in place, reported having an easier time adjusting to their new careers (Viadero, 2005).

The mentoring of a new teacher is really the responsibility of the entire system, which should have as part of its mission the maintenance and nurturing of high standards in new generations of members of its professional ranks (Heller, 2004). An educational system should be just as interested in developing competent teachers as they make claims to be interested in fostering the education of the students. Teachers lacking a teacher education background need early intervention in curriculum and pedagogy along with time management strategies and orientation to the eccentricities of educational systems (Heath-Camp et al., 1992).

Deciding to become a teacher today raises many of the same concerns that teachers have encountered in U.S. public schools for more than a century -- low pay and prestige, subordinate status, isolating work, inadequate resources, and limited career opportunities (Johnson & Birkeland, 2003). Menchaca (2003) reported that novice teachers in secondary schools tend to

feel more isolated than those in elementary settings. Interactions at high schools tend to be superficial with minimal sharing or collaborative work.

Quality induction programs for first-year teachers would help address many of their problems, but only if those types of programs are not the only experiences for all first-year teachers (Paese, 2003). Even when pre-service education includes a balance of learning disciplinary content, learning about teaching and learning, and classroom experience, beginning teachers still need and want help as they face the challenges of achieving goals (Britton et al., 2003).

It is important to look at the failure of the social organization of schools to provide opportunities to augment new teachers' subject matter knowledge with pedagogical knowledge (Weiss, 1999). Weiss reported that perceived school leadership and culture along with teacher autonomy and discretion were the strongest variables associated with first-year teachers' feeling that it is worthwhile to exert their best effort, commitment to career path, and intentions to stay in teaching.

Weiss further observed that:

first-year teachers who experience autonomy and discretion are those who feel they have a say in developing curriculum, in selecting texts, content, teaching techniques, or discipline methods. These teachers do not feel discouraged about their work, would choose teaching again as a career, and plan to stay in teaching. (p. 865)

The role of the building administrator in professional integration is important for all teachers but particularly for those entering teaching through alternate routes (Jorissen, 2002). Jorissen observed that the active support of

administrators seemed to compensate for any resistance the new teachers experienced.

Districts and states can redirect their efforts to redesign the workplace so that it becomes more responsive to what new teachers themselves are saying they need to teach (Weiss, 1999). Weiss observed that top-down, narrowly defined mandates only reinforce already established beliefs that teachers are ineffective and uninvolved. By responding to new teachers, school organizations will learn how to capitalize on their strengths, rather than “fixing” their weaknesses.

Induction programs have the fundamental possibility of being about teacher learning, not just teacher “support” or even teacher “needs” (Britton et al., 2003). At a minimum, administrators need to be sensitive and responsive in finding ways to support new teachers while strengthening the schools’ professional culture (Jorissen, 2002). New teachers may be willing to stay in schools in which they feel supported by their administrators, even if they experience weak support from others within the school community.

Required New Teacher Competencies/Skills

Beginning vocational teachers need a mass of information, but if all of it is delivered at one time, “information overload” is likely to ensue (Camp & Heath-Camp, 1991). The most immediate needs of a new teacher should be met first. Parents along with policy makers have a limit to the amount of time they are willing to accept a “novice” teacher working with children. A critical challenge in supporting new teachers involves enhancing their instruction while

also providing them with opportunities to learn and grow (Britton et al., 2003). Another important aspect of beginning teachers' instruction involves helping them learn to manage classrooms.

Stages of Development

Fuller (1969) was at the forefront in identifying the needs and concerns of beginning teachers. Fuller classified the concerns of a beginning teacher into three distinct phases that are experienced by the new teacher.

The initial phase identified as *Concern with Self* and later shortened to *self* relates to the need of the beginning teacher to experience personal success, measured by the ability to survive the teaching experience. While new teachers appear to be concerned with teaching students and coping with the day-to-day operation of the class, they actually are trying to discover the parameters of the school situation (Fuller, 1969). This involved the new teacher determining how they "fit in" with the rest of the school personnel, the amount of support received from administrators and other supervisors, and in general, eliminating all the facets of uncertainty associated with starting a new job.

Once a new teacher is comfortable in "surviving", they become concerned with overt issues and Fuller identified this second phase as *How Adequate Am I* which later was renamed the *task* phase. New teachers' shift their focus to being able to efficiently manage their responsibilities and experiment with alternative ideas and practices. A new teacher in the second phase is concerned with class control, content adequacy, and supervisor

evaluations. In general, the new teacher is concerned with favorable assessments of their adequacy, both by their class and by the supervisor.

Fuller (1969) identified the third and final phase as *Concern with Pupils* which was later renamed the *impact* phase. Teachers are considered “experienced” when they enter this third phase since their concerns are focused on their students and whether or not the students are experiencing success. It is during this phase that a teacher is focused on self-evaluation and self-improvement for the benefit of their students and less concerned with evaluation by others.

Teacher success and ultimately, teacher retention, is related to the ease and speed in which a new teacher progresses through the above described phases. New teachers that get “stuck” in the first phase seldom continue teaching. School policy and protocol should be addressed early in the school year along with opportunities to acquire classroom management concepts (Camp & Heath-Camp, 1991).

While Fuller (1969) identified that student success was not a concern of new teachers in the self phase, instruction on the use of curriculum should be addressed before the teacher enters the classroom. For vocational administrators, one of the biggest challenges in day-to-day implementation of effective teaching practices and supervision of faculty are those teachers who come directly from business and industry with no pedagogical foundation upon which to function (Self, 2001).

Competencies and Skills

A range of complex skills and understandings is required for new teachers to progress through the phases of becoming experienced, successful teachers. Britton et al., (2003) identified four general categories of skills required by new teachers: (a) building on prior preparation, (b) focusing on instruction, (c) developing skills for management, and (d) establishing constructive relationships in schools.

There are matters that cannot be fully mastered in advance of taking on responsibility as a classroom teacher, but at the same time they are aspects of teaching in which novices must gain competence early on in their careers (Britton et al., 2003). Britton et al., (2003) observed:

These matters involved developing knowledge and skill in: (a) effective subject-matter teaching, (b) understanding and meeting students' needs, (c) assessing student work and learning, (d) reflective and inquiry-oriented practice, (e) dealing with parents, (f) understanding school organization and participating in the school community, and (g) understanding self and current status in one's career. (p. 319)

CTE teachers today are faced with a plethora of additional expectations and demands that tend to make CTE teachers of the 20th century obsolete (McCaslin & Parks, 2002). Career exploration for students has become an important part of their learning and CTE teachers are expected to have a broad working knowledge of their industry. Many CTE teachers are not aware of career choices beyond the employment niche from which they came and must develop a working knowledge of their entire industry. They must also acquire the knowledge and develop the skills of the segments of their industry in which they were not an active part.

Teachers of CTE must also train their students in non-vocational disciplines such as mathematics, science, and the communication arts. Policy makers near the end of the last century chose to use a broad brush to expose all students to higher levels of academic training. CTE funding became contingent on the practice of integrating academic disciplines with vocational training. Some states such as Missouri have transitioned from the concept of academic integration to the intent of embedding academic curriculum into vocational curriculum. This caused all CTE teachers to instruct students in academic subjects for which the teacher in most cases has not received any training. New CTE teachers must add this set of skills to the already extensive list of competencies and skills to become effective in the classroom.

Moore (1997) defined an effective teacher as one that had acquired a set of skills that teachers “need to know and be able to do”. This set of skills was identified by a focus group assembled by Moore for the purpose of determining what a new teacher needs to know and be able to do during the first three years of their teaching career.

Moore (1997) reported that secondary T & I teachers in Missouri identified a total of 63 competencies that a teacher should master within the first three years of teaching in order to have a sense of being successful. These 63 competencies are addressed either during a new teacher’s time at the New Teachers Institute or during the curriculum course and methods course a new teacher must complete during the first two years of teaching.

Along with the 63 competencies the teachers identified as important in developing the first three years of teaching, vocational administrators identified an additional 21 competencies they felt were important to acquire the first three years. Moore (1997) suggested these additional competencies should be considered for inclusion in subsequent certification experiences.

In examining the additional competencies identified by administrators as also being important, it would seem that these competencies could best be addressed by the administrators themselves on an as needed basis instead of burdening the new teachers with additional responsibilities. Currently, teacher education institutions sometimes have difficulty in filling certification courses with the minimum number of students required for funding the courses (Moore, 1997). Instead of making new teachers wait for courses to be offered to learn additional teaching skills, administrators can address these issues at the time in which the new teacher is most ready to absorb the information (teachable moment). Efforts such as these most certainly would go a long way in the new teacher's perception of support by the administrator.

In developing the competencies and skills required to become an experienced teacher, the novice must be aware of the variance in competing standards of competence. The beginning teacher might have a set of standards associated with their induction program, be evaluated for job performance with a local or regional set of standards, and be applying for an educator certification through their trade association using a completely different set of standards (Olebe, 2005).

Dimensions of Effective Teaching

Defining effective teaching depends to a large degree on who has been asked to provide a definition. In general terms, a teacher has to have both mastery of content and an approach to be an effective teacher. It is important for a teacher to have techniques in their repertoire for understanding the way students make sense of things. To be an effective teacher, you must understand your audience (Merseeth, 2005).

Inherent Skills

Whitaker (2004) used a simplistic approach in defining effective teachers. One criterion is the ability for a teacher to accurately self-reflect. Those who know how they are coming across to others, how their behavior is received, work more effectively. Ineffective teachers can think they are doing a good job but fail for one reason or another to accurately assess their actions and overall impact on their environment.

Effective teachers do their jobs and they do them well according to Whitaker (2004). Day after day and year after year they continue with enthusiasm for their work. They understand what really matters in their day-to-day engagement with students and adapt to change without the final outcome being adversely altered or affected.

While effective teaching is certainly affected by advanced subject area expertise; advanced degrees; and high scores on teacher achievement tests, these alone do not encompass the criteria of effective teachers (Whitaker, 2004). Aspects of a teacher's background and the ways of interacting with

others, along with specific and unique teaching practices are some of the many factors that result in effective teaching (Stronge, 2002).

Stronge (2002) summarized the description of an effective teacher with three overarching statements. First, effective teachers recognize complexity. Succeeding in the teaching and learning process, an effective teacher must have a sufficient mastery of content, pedagogy, and of the students themselves. Each student is a unique individual with specific goals and needs and must be recognized as such for a teacher to be effective. Furthermore, the composite of all of the students within a class, creating a complex mix of goals and needs with the inherent spectrum of personalities has to be recognized and taught to for a teacher to be effective. Recognizing and understanding these complexities enables an individual to become an effective teacher.

Second, an effective teacher communicates clearly. A teacher must not only have a working command of their subject matter but also be able to communicate material to the students in a manner to ensure student understanding and synthesis of the material. Depending on the grade level of the students, this communication task that must be carried out by an effective teacher can be challenging.

Third, an effective teacher will serve conscientiously. This is the third and final overarching statement summarized by Stronge (2002) and entails the dedication of time and energy of the teacher to their profession. Effective teachers have an attitude of being in charge. Glickman et al. (2007) observed

that although effective teachers face the same types of problems as ineffective teachers, they see them as challenges to be met, not suffering to be endured.

An effective teacher will continue to develop their own learning and level of professionalism by actively participating in professional development activities. Care about student achievement and the presence of a positive learning environment will be apparent with an effective teacher.

Individual Personalities

Rothman (2005) cited a seven-facet rubric developed by Haberman, with distinct categories: a) persistence; b) protecting learners and learning; c) application of generalizations; d) approach to "at risk" students; e) professional versus personal orientation to students; f) burnout, its' causes and cures; and g) fallibility.

Teachers are rated as "average", "high", and "star" in terms of effectiveness in each of the seven categories. A "star" teacher exhibits persistence by assuming the responsibility in the achievement of each student and does not stop trying until they have discovered the best ways in reaching every student. Glickman et al. (2007) noted that effective teachers spend whatever time and effort is necessary to assure all students learn. They provide the necessary extra attention and effort in reaching students experiencing problems in learning. They believe all students can learn basic knowledge and skills. Effective teachers expect their students to achieve.

In protecting learners and learning, a "star" teacher engages students in learning in any way they can even if it means going against standard practice.

“Star” teachers improve their own practice by taking principles and concepts from many different sources in the category of application of generalizations.

Rothman (2005) observed that “star” teachers hold strong feelings for their students but do not regard a “love” for them as a prerequisite for their academic success. They maintain a professional versus a personal orientation to the students. Glickman et al. (2007) reported an effective teacher maintains a realistic, professional attitude toward the students. They are neither romantic nor cynical toward their students.

Regardless of the students’ social conditions, a “star” teacher’s approach to “at risk” students revolves on the belief that schools and teachers have the responsibility to improve the educational opportunities of their students. “Star” teachers have and use strong support systems to help them during times of burnout with its causes and cures. In addressing fallibility, “star” teachers accept the fact they will make mistakes that can seriously affect relationships with others. New hires evaluated with the above assessment of effectiveness prior to teaching perform at least as well as other teachers and remain in the profession longer (Rothman, 2005).

Creative Skills

Effective instruction is seen as the teacher’s ability to use various ways of teaching according to a variety of learning goals and student learning styles (Glickman et al., 2007). In an attempt to improve a teacher’s effectiveness by forcing immediate changes in their teaching strategies that are in conflict with current practices will yield mixed results. This contradicts the principles of

adult learning and the ideology of educator professionalism. Greater gains will be realized when teachers are invited to implement one new strategy at a time and those that are similar or consistent with their current practices.

Understanding what is being defined by the word effective involves investigating the many facets and implications that can be associated with its use in describing teachers. Effective teaching, to a large extent, depends on what is being taught and the expected outcome (Glickman et al., 2007). Student mastery of basic skills will be approached differently from student mastery of problem solving. Student mastery of personal development will require yet another approach in presentation for teaching to be effective.

Competencies as Standards

Moore (1997) defined an effective teacher as possessing the knowledge and/or skills within a set of 105 different teaching competencies. For secondary T & I teachers in Missouri, Moore identified 63 of the 105 competencies as being important during the first three years of teaching. On this survey, 76% of the respondents in T & I programs had taught for longer than five years with slightly over one-half (53%) of the respondents teaching over 10 years.

Moore (1997) concluded a new teacher needs to acquire the identified teaching related competencies early in their teaching careers to be effective teachers. These competencies would be addressed with the New Teacher's Institute, a curriculum course, and a methods course. Carver and Katz (2004) suggested that state teaching standards should be used as goals for novice

teachers. The emphasis would be placed on professional growth of the new teacher as opposed to expectations of achieving all standards early in a teacher's career. This continual growth would be achieved through effective induction methods.

Individual Experience

Experienced teachers differ from novice teachers in that they have attained expertise through real-life experiences, classroom practice, and time (Stronge, 2002). Along with having the skills required to be an effective teacher, experienced teachers have been afforded the opportunities to develop those skills over a period of time. Teachers who are experienced and effective are content experts and know how to reach the students they teach. Ruhland and Bremer (2002b) observed that an effective teacher can bring a real world situation into the classroom or take the classroom into the real world.

Effective teachers are lifelong learners remaining interested in the material they teach and pursue all kinds of learning opportunities. Wong (2004) reported that to produce effective teachers, there must be a professional development program that improves professional skills for educators at every point in their careers.

Effective teachers vary their instructional techniques, try out new ideas, and work hard to reach every student. They have a good rapport with the students and have a personal interest in their success. Effective teachers have excellent classroom management skills and are well organized.

Allen (2003) reported the research provides limited support for the conclusion that preparation in pedagogy can contribute significantly to effective teaching, particularly subject-specific courses and those designed to develop core skills, such as classroom management, student assessment, and curriculum development. Less clear is how such knowledge and skills are best acquired -- through coursework, field experience, or on the job. Also unclear is the impact of other kinds of pedagogical coursework, such as classes in child development or learning theory.

History of Induction Methods

CTE has the oldest, continuous alternative route to teaching. This historical route in T & I education has been the certification of experienced trades-people, most without the college training acquired by the teachers in other areas of education. By the late 1980's, the concerns of new teachers in general were clear to those interested in teacher induction programs. Much is already known about the needs, concerns, and problems of the first-year teacher (Camp & Heath, 1988). The research on these issues, however, was at its' genesis. Camp and Heath observed how very little had been done up to that time on identifying specific content that would help teachers move more rapidly through the phases identified by Fuller (1969). Heath-Camp et al. (1992) reported the research on the effectiveness of teacher induction programs was limited, especially in the area of vocational education.

While the needs and concerns for teachers in general had been studied, very little had been done to identify the specific needs and concerns of CTE

teachers. Only in recent times in the history of American education has the success of new teachers, especially CTE teachers, been the concern of the educational system. The transition from novice to established teacher is too critical to be left to chance as it has been in the past (Joerger & Bremer, 2001).

To date, there is limited research related to the induction needs of alternatively certified CTE teachers (Joerger & Bremer, 2001). While the majority of induction needs of alternatively certified teachers are similar to those of traditionally certified teachers, differences do exist. CTE teachers require more of the same kind of help traditionally certified teachers need since alternatively certified teachers have not received college training in the pedagogical skills needed for effective teaching. Camp and Heath-Camp (1991) reported as many as one-fourth of the problems experienced by beginning vocational teachers are unique to vocational education. CTE teachers need additional help managing career and technical student organizations; assistance related to equipment and laboratories; and guidance in developing or maintaining community support (Joerger & Bremer, 2001).

The "Why" of Induction Methods

New teachers often begin the school year with the most inadequate resources of any teacher in the building. This often comes about when the previous teacher leaves and other teachers "scavenge" the vacant room for anything of use. Thus, for the incoming year, the novice teacher with the least amount of experience often steps into the least desirable classroom in the

school with few instructional materials and an inadequate budget (Glickman et al., 2007). This is compounded by the fact a new teacher does not have the financial resources to supplement classroom supplies compared to a teacher with several years experience on the salary scale.

These environmental problems can cause tremendous stress and eventually lead to physical and emotional problems. Novice teachers tend to have more negative attitudes about themselves, their teaching, their profession, and the students at the end of the year than at the beginning of their first year of teaching (Glickman et al., 2007). As a result of their initial negative experiences, many teachers who stay in teaching develop a survival mentality, limited teaching methods, and a resistance to change that may last throughout their teaching experience.

For too long, many in the teaching profession have viewed the trials and tribulations of the first year of teaching as a means of “weeding out” the weaker individuals (Glickman et al., 2007). Only the determined will survive and grow into the profession with the skills learned on-the-job to augment their teaching in future years. Beginners are often reluctant to request help from colleagues and/or administrators for fear this might be interpreted as a sign of incompetence.

Most of the teacher induction programs grew out of a concern for the lack of practical experience in the traditional teacher education programs (Camp & Heath, 1988). While teacher educators focused on teaching ideals,

school administrators addressed the issues affecting the school district, and the new teacher sought out solutions to aid in surviving.

Business leaders have recognized the importance of mentoring for decades, but the idea of using mentors to assist beginning teachers in a formal or structured way is relatively new (Camp & Heath, 1988). Mentoring in the educational system began in America as recently as the 1980's.

Camp and Heath-Camp (1991) observed that in spite of the growing recognition of the importance of induction assistance programs for beginning teachers, it appeared that vocational teachers are generally not being served by such programs. As recently as the early 1990's, beginning vocational teachers that had been assigned a mentor were not involved in any other form of organized induction assistance. Even the most fundamental induction assistance needs were not being met by a large proportion of beginning vocational teachers (Camp & Heath-Camp, 1991). Important means of support, such as a curriculum guide for the course being taught or evaluations and feedback by the building administrator, were non-existent for a large number of new vocational teachers.

Few other professions expect the first-year practitioner to immediately perform at the same level as their experienced colleagues (Joerger & Bremer, 2001). Added to this expectation is the increasing list of skills needed by vocational educators. In the first half of the last century, it was sufficient to be able to teach the skills of a particular occupation. During the second half of the last century, it became necessary to also have the skills to teach academically

disadvantaged students and integrate academic skills such as reading, writing, and mathematics while providing career exploration opportunities in class and with industry.

Self (2001) reported that more than 12% of all newly hired teachers enter the workforce without any training and another 15% enter without having fully met state standards. This culminates in programs that may be inconsistent, students who are less prepared to compete in a global market, and teachers who are less than qualified. These teachers also experience more stress and adjustment problems than should be necessary and are likely to become an attrition statistic. Requirements and expectations of classroom teaching are so numerous and varied that they overwhelm the novice teacher whose primary concern is to present a lesson.

Amendments to the vocational education funding through the Perkins Acts of 1998 and 2006 expect high school vocational programs to combine academic studies with vocational curriculums that include work-related applications and connections to postsecondary education. Teachers employed in these comprehensive reform settings are often expected to integrate, coordinate, and articulate on a regular basis (Finch et al., 1999). New teachers are not being well-prepared to combine academic and vocational curriculum, supervise students in community-based learning, or offer courses of study that prepare students both for work and for further education (Finch et al., 1999).

The literature is full of case studies and anecdotes that reflect adjustment difficulties faced by teachers entering the profession (Self, 2001).

Most first-year teachers tend to be both idealistic in their thinking and unrealistic in their expectations of teaching. Self (2001) reported some 45% of T & I teachers have less than a bachelor's degree.

The "How" of Induction Methods

The field of teacher education has recognized not just the importance of pre-service education but also the role of induction as a critical phase in the career trajectory of teachers - or at least deserving attention (Olebe, 2005). The term induction itself is not new, although it has a contemporary connotation. Induction often referred to the informal, often reactionary, and ritualistic socialization of new teachers. Induction now suggests a more sophisticated method of initiating, shaping, and sustaining the first work experience of prospective career teachers (Vierstraete, 2005).

During the last two decades, substantial empirical research has focused on determining which kinds of teachers are more prone to leave teaching and why (Ingersoll, 2001). This research has focused primarily on non-vocational teachers, but does show a strong correlation with the individual characteristics of the teachers.

A variety of research studies and projects relating to the needs, concerns, and limited experiences of beginning teachers were conducted throughout the 1980's and 1990's. Teacher induction programs are believed to benefit beginning teachers and students in many different ways. Though teacher induction programs were initially implemented to assist in the

improvement of teaching quality, beginning teachers also improved in self-confidence and classroom management skills (Joerger & Bremer, 2001).

Over the past two decades, teacher mentoring programs have become the dominant form of teacher induction (Smith, 2007). Participation rates in induction programs by beginning teachers have risen both in states that require induction as well as in states that do not. During the 1990's the increase was dramatic, rising from 40% of beginning teachers in 1990-91 to 80% in 1999-2000 (Smith & Ingersoll, 2004). There is wide variability, however, in the degree to which states have gotten involved in the design and regulation of induction-related activities for new teachers (Smith, 2007).

The educational system should be in the business of helping new teachers adjust to the job and succeed rather than interjecting impediments for the novice to overcome (Camp & Heath-Camp, 1991). Little is known about the extent to which teacher induction models have been implemented in CTE, or the results of such efforts. Given the interest in improving the effectiveness and retention of CTE teachers, it is unfortunate that prior research and model programs have not led to systematic implementation, and subsequent evaluation, to verify effectiveness. This work is critically important and remains to be done (Joerger & Bremer, 2001).

Induction is not simply or primarily to decrease teacher turnover, it stands as a key juncture of learning, growth, and support (Britton et al., 2003). While some research shows that a structured approach to induction is needed (Camp, Heath-Camp, & Adams, 1992), does such a structured approach meet

the needs of all new teachers? The reform literature of the past 20 years has emphasized the desire for teaching to be considered a true profession with accountable and excellent teachers in every classroom (Carver & Katz, 2004).

Push for Induction Programs

Some of the “push” for induction programs came because of the need to stem the potential teacher shortage and place teachers in the classroom. Non-traditional teaching pathways for academic teachers have been around for nearly 20 years (Viadero, 2005). The No Child Left Behind Act only increased the importance of new teachers being “highly qualified” as quickly as possible, creating the need for teacher induction programs. Whether or not this has been an effective way to reduce the academic teacher shortage after two decades is still not clear to the experts. The fact does remain that these teachers are better off than if nothing had been done at all to expedite their entry into the classroom. More research is required to determine the effectiveness of the various means of induction.

Need for Induction Programs

Glickman et al. (2007) reported many school districts in recent years have initiated beginning teacher assistance programs (sometimes called teacher induction programs) in an effort to address the problems normally associated with the first year of teaching. In order to determine what the content should be for an effective induction program for non-degreed vocational teachers, the purpose of induction must be defined (Camp & Heath, 1988). It is now accepted that a novice receive the information needed to

move successfully and as quickly as possible through the three stages of survival as defined by Fuller (1969).

As is typical in education, focus on how to measure teacher quality has taken precedence over defining what a quality teacher is and creating a process by which such teachers can be effectively prepared (Harrell et al., 2004). The use of high-stakes standardized test scores and exit testing as the primary indicators of quality instruction only distort the benchmark that should be used to determine effective and quality teachers.

Camp and Heath (1988) reported:

Induction programs are becoming more popular because (a) the demands placed on teachers are greater than ever before; (b) there is an expanded knowledge base about teaching that teachers are expected to employ; (c) the public holds high expectations for teachers; (d) present teacher education practices are inadequate to meet the demands of professional practice; (e) the high attrition rate for non-degreeed teachers is due in large part to the lack of a formal support system in the induction period; and (f) the final responsibility for quality control of teachers rests with the profession. (p. 77)

The various options of pre-service CTE preparation broadens the scope of induction needs of some new secondary CTE teachers (Joerger & Bremer, 2001). Those that entered the teaching field without first going through traditional teacher education programs have somewhat different induction needs during the early years of teaching.

Allen (2003) observed the research seemed to suggest that preparation in a given subject does not necessarily develop understanding of how particular concepts and procedures related to that subject are best learned. Applying this reasoning to trades people becoming T & I teachers, it is suggested that

induction programs are needed to ensure these content experts from industry can effectively disseminate what they know to their students.

Induction programs can help reduce the problems that arise when new teachers, in an effort to not appear incompetent, do not ask for assistance. Such is frequently the case for T & I teachers that have been in the workforce for some time and want to make an attempt to be self-sufficient.

Administrators who supervise secondary programs would do well to remember that in addition to teaching adolescent students, teachers also undergo major personal life changes when they become teachers (Self, 2001). More time is required of them "after-hours" to grade papers, plan for the next day, and to reflect on the current day.

Apparent Benefits of Induction Programs

Increasingly, professional development for novice teachers is considered a valuable strategy for improving both student achievement and teacher retention (Ruhland & Bremer, 2002b). Carver and Katz (2004) observed if marginal or unprepared teachers enter the profession, it is arguably the work of induction to assist their growth or, equally important, to facilitate their exit from the profession.

Retaining capable teachers is an important challenge for our nation's school districts, especially in the current political environment that emphasizes improved student learning for all students (Kelley, 2004). Kelley considered the approach to induction programs is misguided in that the focus should be on retaining the novice teachers that came through traditional teacher education

programs instead of focusing on alternatively certified second career teachers. This of course, is addressed toward academic teachers as opposed to T & I teachers but eliminating induction programs for the former could negatively impact induction programs for the latter.

Despite an introduction to instructional concepts and activities in pre-service preparation, only when teachers actually start teaching can they develop solid pedagogical content knowledge and see how it may be used (Britton et al., 2003). This suggests that in spite of prior training, the best time to learn is when the “student” has a question or concern regarding a particular matter. In education this is known as a “teachable moment” and suggests teacher induction programs (as well as continuing professional development) may be the most efficient means of developing effective, highly qualified teachers.

Induction Period

In a teacher’s career there is no more critical stage than the induction period. The induction phase consists of that period from the initial employment of the new teacher until he or she achieves an acceptable level of competence and comfort in the role of a professional teacher (Camp & Heath-Camp, 1991). Until the new teacher reaches a level of competence and comfort in their new role, they must learn to deal with classroom management problems, student learning difficulties, and environmental issues such as inadequate facilities and supplies. Neophytes are faced with the numbing realization that they are unprepared to deal with the harsh realities of teaching (Glickman et al., 2007).

In scrutinizing teaching as a career, difficulties facing the first-year teacher are revealed, challenges that are unique to the field of teaching (Angelle, 2006). Beginning teachers are often placed in classrooms with little preparation and no specific support structure (Heath-Camp et al., 1992). All too often the new vocational teacher must learn to teach in the way so many others were forced to teach - by trial and error (Camp & Heath, 1988).

Induction Defined

Induction programs are designed to assist beginning teachers (Ruhland & Bremer, 2002b). Many teacher induction programs focus on the instructional, professional, and personal needs of the beginning teacher once they have been hired for their first teaching position (Joerger & Bremer, 2001).

Britton et al. (2003) defined induction as a process of learning through a comprehensive system for a particular period of time in a specific phase of teaching. While perceptions of induction programs are often merely one of support of the new teacher, Britton et al. reported induction programs should have learning on the part of the new teacher at the center of the process.

Teacher induction programs often consist of a series of instructional, assessment, and support activities that assist beginning T & I teachers to become effective teachers. Well-designed and implemented induction practices aspire to hasten the successful acculturation and socialization of teachers into the profession (Joerger & Bremer, 2001). Improved teacher competence, performance, and effectiveness are three of the primary goals of quality teacher induction programs (Joerger & Bremer, 2001).

Wong (2004) observed that induction is a process that is organized by a school district to train, support, and retain new teachers and seamlessly progresses them into a lifelong learning program. Induction programs organized and sponsored by a school district should be comprehensive, coherent and relevant, and lead to a smooth transition into professional development for the tenure of a teacher.

Wong (2002) stated an induction program will teach the following:

(a) Effective classroom management procedures and routines; (b) effective instructional practices; (c) sensitivity to and understanding of the school community; (d) lifelong learning and professional growth; and (e) unity and teamwork among the entire learning community. (p. 7)

Learning to teach well is slow, difficult work (Johnson, 2001). Managing a classroom, choosing or creating curriculum, developing sound instructional strategies, assessing student achievement, and adjusting to student needs are complex tasks, and new teachers need time and support to develop the necessary knowledge and skills.

Britton et al. (2003) observed that induction is fundamentally about learning particular kinds of knowledge and acquiring certain skills at a particular point in a teacher's career, but the question is who can provide this knowledge. Britton et al. reported that multiple providers are necessary. No single individual could have the range of experiences, expertise, and personal qualities required for addressing everything a beginning teacher requires.

Induction is inherently complex, both in content and in the manner in which training and support must be provided. The very complexity of induction,

its' inevitable connecting of different institutions and resources, adds to the depth of the challenges (Britton et al., 2003).

Length of Induction Period

Since each teacher is an individual, the length of the induction period can be different for each teacher. This period of time is a transition from craftsman to teacher for T & I teachers, and can be quite lengthy for some. As a result, while certain components of an induction program should exist for all teachers, some individuals require more support and assistance and for a longer period of time, occasionally as long as five or six years (Joerger & Bremer, 2001).

Britton et al. (2003) reported the period of induction can be much longer than the first weeks of school and may well continue over more than a year. Smith (2007) observed an induction program can vary from a simple orientation meeting at the beginning of a school year to a highly structured program involving multiple activities and frequent meetings over a couple of years. Induction can be broadly characterized as professional education and development tailored for teachers in their first and second years of teaching (Olebe, 2005).

Wong (2004) reported that induction continues for the first two or three years of a new teacher's career. Wonacott (2002) noted that teacher induction usually takes five or six years and is the total of all the teacher's experiences from the moment the first teaching contract is signed until the teacher is comfortably established as a competent, effective, professional teacher.

Components of Induction

Camp et al. (1992) outlined the following components of an induction program:

(a) Systematic administrative support, (b) a detailed orientation structured around a specific set of topics, (c) a research-based beginning teacher handbook, (d) a structured mentoring program, (e) a peer support group, (f) an ongoing series of in-service workshops, (g) coaching in reflection, (h) certification courses for teachers with provisional or emergency certificates, (i) a professional development plan individualized to the beginning teacher, (j) a Professional Development Center, and (k) a Local Professional Development Coordinator. (p. ii)

Wong (2004) observed the most successful induction programs contain the following common components:

(a) Begin with an initial four or five days of induction before school starts; (b) offer a continuum of professional development through systematic training over a period of two or three years; (c) provide study groups in which new teachers can network and build support, commitment, and leadership in a learning community; (d) incorporate a strong sense of administrative support; (e) integrate a mentoring component into the induction process; (f) present a structure for modeling effective teaching during in-services and mentoring; and (g) provide opportunities for inductees to visit demonstration classrooms. (p. 47)

Other factors of a successful induction program should include such components as consideration of class structure, the size of the class, and the overall teaching load of the first-year teacher. A new teacher does not possess the total knowledge of classroom ecology that comes with years of experience (Hope, 1999). A comprehensive induction program for T & I teachers will provide instruction in teacher effectiveness; reduce the tribulations of the transition from the workplace into teaching; and increase the retention of highly qualified teachers.

As educational reforms place increasing demands on all vocational teachers, it is more important than ever that beginning teachers receive assistance in making the transition into teaching (Camp et al., 1992). Kelly (2004) observed that evidence to demonstrate how various induction programs specifically influence the novice teacher's competence, efficacy, or desire to stay in the profession is not adequate.

Olebe (2005) reported that focusing on induction is a good thing but we by no means have it all figured out. Conflicts still arise for those charged with designing and implementing induction programs and largely due to the organizational and legal characteristics of the education system in the United States.

Wong (2002) observed that an induction program is a district's message that they care about their teachers, teachers are valued, and they want their teachers to succeed and stay. Induction need not be solely about filling gaps or addressing deficiencies. It should not come from a deficit model of either the novices or the educational system from which they emerged, but from seeing the beginning teacher as both a professional and a learner (Britton et al., 2003).

Effectiveness of Induction Methods

For many teachers, the induction process may be relatively pleasant, leading to an early feeling of comfort and confidence in teaching (Camp & Heath, 1988). For others, it may be bitter, leading to personal and professional defeat and a premature departure from teaching. Britton et al. (2003) reported

that in North America, much of the discourse about and practice of induction frames it as a rather straightforward solution to a simple problem.

Orientating new teachers to the school and to administrators' expectations involves more than reviewing policy and procedures in a handbook. Ongoing contact is necessary with the intention of assisting in the new teacher's professional growth and development and engaging in discussions about the work of teaching. While the orientation phase of the process may conclude after the first year, induction should continue in order to develop teachers' repertoires of skills and to inculcate teaching as a career (Hope, 1999).

Induction is not simply the filling in of gaps. Induction programs can recognize that even fully prepared beginning teachers need to learn (and can use help in learning) more about teaching (Britton et al., 2003). Olebe (2005) noted it is essential at the outset of a teaching career to consider both what teaching means and the structures that undergird its practice.

Types of Induction Programs

Induction assistance programs can take many forms with varied results. Examples of such systems are: fifth year programs; alternative certification programs; and professional development models. While mentoring is sometimes considered an induction assistance program, Heath-Camp et al. (1992) reported the assignment of a mentor or buddy teacher was rated only as a moderate impact item overall.

The University of Missouri's Teaching Fellows Program, a fifth year program, produces a 90% retention rate with teachers completing this program (Ryder, 2006). The Teaching Fellows Program provides support to a new teacher and at the same time, allows for the new teacher to earn their master's degree.

Davis, Higdon, Resta, and Latiolais (2001) reported the Teacher Fellows Program in Texas has experienced an even greater success rate with 100% retention during the school years of 1998-99 and 1999-00. The program is very similar to the Teaching Fellows Program in Missouri. Among teacher preparation strategies frequently found to have specific benefits has been the cohort model, in which prospective teachers complete a program of study together (Jorissen, 2002).

After obtaining information about the characteristics and needs of each beginning teacher, induction programs should be customized and individualized, whenever possible, to meet the unique needs of each teacher (Joerger & Bremer, 2001). Knowing about teachers' prior preparation is essential for making sense of what occurs in teacher induction in each setting (Britton et al., 2003).

Ruhland and Bremer (2002a) reported it is more important to focus on strategies for developing teaching competence rather than the teacher certification route. In other words, investigations should not be about whether alternative certification works, but rather which programs of induction work best for alternatively certified teachers.

Ingersoll (2003) identified full induction as:

(a) a helpful mentor from the same field; (b) a common planning time with other teachers in their subject area; (c) regularly scheduled collaboration with other teachers on issues of instruction; (d) participation in a general induction program; (e) participation in a seminar for beginning teachers; (f) regular and supportive communication with the administrator; (g) participation in an external network; and (h) a reduced number of course preparations. (p. 20)

Need for Effective Induction Programs

Student discipline, student motivation, and classroom management as problems for alternatively certified beginning teachers suggests that alternative certification programs need to further strengthen the skills and understandings of prospective teachers in these areas (Joerger & Bremer, 2001).

Individuals with little pre-service preparation may need greater levels of in-service support in order to be successful. Smith (2007) reported that beginning teachers with few pre-service education experiences are more likely to leave teaching at the end of their first year in the classroom. This suggests that alternative route programs that skimp on pedagogy and practical experience may contribute to new teacher turnover.

Allen (2003) noted with the uncertainty about the ability of pre-service preparation to ensure the solid acquisition of core pedagogical skills, the door opens to the consideration of alternative preparation routes, which emphasize on-the-job training.

Outcomes of Effective Induction Programs

Vierstraete (2005) stated the purpose of induction programs includes:

(a) providing continuing assistance to reduce the problems known to be common to beginning teachers; (b) supporting development of the knowledge and the skills needed by beginners to be successful in their initial teacher positions; (c) integrating beginning teachers into the social system of the school, district, and community; and (d) providing an opportunity to analyze and reflect on teaching through a coaching relationship with veteran teachers. (p. 386)

New teachers fortunate enough to secure employment where administrators and educators were willing to mentor them, or where formalized teacher-induction programs were in place, reported having an easier time adjusting to their new careers (Viadero, 2005). Organized induction assistance programs serve to help in the retention of promising beginning teachers, many of whom leave teaching in frustration during their first years on the job (Camp et al., 1992; Viadero, 2005).

Britton et al. (2003) reported that policymakers and educators claim that induction programs might reduce teacher attrition in the early years. Teachers involved in induction programs have more positive attitudes toward teaching and plan to continue in the profession longer than those who have not participated in induction programs (Joerger & Bremer, 2001).

Increasingly, professional development for novice teachers is considered a valuable strategy for improving both student achievement and teacher retention (Ruhland & Bremer, 2002a). Wong (2002) noted the success of an induction program is measured by the retention rate of teachers. Providing meaningful assimilation into the profession is one way school districts can retain novice teachers but existing induction programs vary in their substance and quality (Kelly, 2004).

Research has indicated that adequate pre-service preparation and in-service support of novice teachers is important to improving both teaching quality and retention (Ruhland & Bremer, 2002a). The more quality components of induction experienced by a new teacher, the lower the probability of turnover. Ninety-five percent of beginning teachers who are nurtured through an induction program experience success during their initial years (Menchaca, 2003).

Characteristics of Effective Induction Programs

To be successful, any induction assistance program must involve officials of the state department of education; teacher education faculty members; local school administrators; and members of professional organizations (Camp & Heath-Camp, 1991).

Angelle (2006) reported:

- (a) overseers of induction programs should be certain that all types of assistance are provided to the novice rather than targeting only one aspect of induction, which is in most cases the final assessment;
- (b) state-mandated assistance/assessment programs should minimize paperwork associated with the programs so that the components of the program intended to support new teachers remain the priority;
- (c) administrators should take an active role in the induction of new teachers;
- (d) fulfilling the minimum requirements as mandated by the state will result in a minimally proficient staff; and
- (e) administrators should refrain from relegating all aspects of new teacher induction to other staff members. (p. 332)

Induction activities should have more impact in reducing new-teacher turnover if they facilitate communication, integration, and new teachers' understanding of their professional roles in the school. Induction activities with

these characteristics should be even more helpful for beginning teachers who enter teaching through alternative routes (Smith, 2007).

Joerger and Bremer (2001) reported:

Well designed teacher induction programs help assure successful entry into teaching when they include the following four elements: (a) ongoing personal support; (b) assessment and feedback on teaching performance and progress, including provisions for self-assessment and reflection; (c) continuing education opportunities that address current needs, while building upon and enriching pre-service education; and (d) positive socialization into the profession. (p. 7)

Yost (2006) reported self-efficacy has a relationship to a novice teachers' ability to effectively think about, cope with, and solve problems that arise in the classroom setting. Teachers need knowledge of how to reflect as well as time to think about their practice, both of which are essential to one's ability to problem-solve and cope with challenges. Teacher efficacy is strongly related to teacher resiliency and persistence (Yost, 2006).

Camp and Heath-Camp's (1991) research supported the importance of reflective self-examination for the beginning teacher of vocational education. If teachers feel confident in their ability to manage and problem-solve, they will be motivated to persist in finding solutions. Yost (2006) reported that positive school environments are not enough in themselves to support struggling teachers. New teachers have a need to develop self-reflective skills during their induction so they may discover and develop their own solutions to managing a classroom.

Beginning teachers with certification based on industry experience need immediate help in lesson planning and familiarization with the curriculum,

although Camp and Heath-Camp (1991) reported such teachers often failed to realize that need. Olebe (2005) reported that more effective induction programs should include standards-based formative assessments. Formative assessments provide specific information about a new teacher's progress and allow opportunities for adjustment of practices.

Teachers' thinking matters, and during induction, beginning teachers' thoughts about their practice and profession should be fostered and respected (Olebe, 2005). Induction programs that appear to be effective assume that the knowledge needed is close to the classroom, arising from practice. When it comes to assessing the effectiveness of induction programs, many of their effects may not yet be detectable, while they may nonetheless still be present and active (Britton et al., 2003). Wong (2004) noted that professional development is effective when it focuses on student learning, promotes collaboration, and ensures sustainability.

Mentoring as a Component of Induction

While mentoring should be considered a component of a comprehensive induction program, the research is mixed as to the importance and effectiveness of a new teacher having a mentor during their induction years. Ruhland and Bremer (2002a) reported when CTE respondents were asked to rate how important the availability of a mentoring program was to their decision about continuing to teach, 31% responded "not important".

Jorissen (2002) reported mentoring has been found to be a critical factor in the professional integration of new teachers, whether they are prepared

through traditional or alternative routes. Fluckiger et al. (2006) reiterated this observation and reported that quality mentoring during the first year of teaching is a key factor in why novice teachers stay in the profession and develop expertise.

Smith (2007) reported:

While the induction literature suggests that it is beneficial to match mentors and mentees by grade and subject taught, to train and compensate the mentor, and to have more than a trivial amount of contact between the mentor and mentee, there has been little research as to whether state-level mandates of these requirements are associated with increases in the quality of the mentorship experience of new teachers. (p. 274)

It appears that a number of entities depend on the mentor to “pull the new teacher through” the first year of teaching, providing the necessary information to fill the gaps other areas of induction can create. Too much emphasis might be placed on the mentor/mentee relationship and not enough emphasis on the other important areas of induction.

Administrators’ Role in Induction

While most new teachers are assigned a mentor, administrators need to be willing to assume the role of a master teacher and commit time to assisting new teachers. Since it is common for new teacher to feel isolated, administrators can prevent this sense of isolation by visiting new teachers’ classrooms on a regular basis and discussing current issues of the new teacher. Administrators should look for development opportunities which will offer new teachers the opportunity to develop new skills and improve present practices.

Smith (2007) reported that the quality of the relationship between new teachers and their administrators influence their commitment to the occupation. Although much of the literature centers on the importance of mentors in the beginning teachers' experience, administrators are arguably central figures as well (Angelle, 2006). The administrator sets the standards for the assistance the new teachers receive from all members of the educational community.

Most administrators are hired without the skills to nurture novice teachers effectively (Menchaca, 2003). Some, having limited teaching experience themselves, never developed the professional skills to be considered master teachers. Administrators often use short-term strategies to address new teacher issues with no follow-up. Short-term strategies are usually ineffective and may precipitate into novice teachers becoming disillusioned and discouraged, and eventually quitting the profession (Menchaca, 2003). Smith (2007) reported that schools with strong administrative support have considerably lower turnover among new teachers.

Johnson (2001) observed the success of school-based induction programs hinges on how teachers work together, and the administrator can play a central role in establishing faculty norms and facilitating interaction among teachers with various levels of experience. The success of an induction program will depend on how well it is supported by administrators. Enthusiasm and support by administrators for the program must be evident to new teachers (Menchaca, 2003).

Obstacles to Effective Induction

Some of the problems and barriers identified by research on the needs of beginning teachers can only be addressed by changing the system and teaching environment (Joerger & Bremer, 2001). The local school environment can also be a potential problem with a new teacher's success. Some problems can arise which can directly affect the end results of various methods of induction.

The amount of time teacher educators have for visiting and evaluating new teachers in their classrooms is limited by other responsibilities. The overall climate can be completely indifferent to the concerns and needs of the new teacher and fail to get involved until it is too late (Camp & Heath, 1988).

Another potential obstacle to the success of teacher induction methods is the interest and attitude of the new teacher themselves. Teachers' learning will be a function of their status on the following three interdependent factors: vision, motivation or commitment, and ability, both cognitive and practical (Shulman, 2004).

In spite of what a non-degreed teacher was or was not told about the responsibilities of being a teacher, the amount of work beyond traditional working hours is surprising to most new teachers. Managing their time efficiently quickly becomes a necessity and a skill some new teachers are slow to acquire if they ever do. This can raise the question of how committed the new teacher is and whether perceived obstacles become "gate keeping devices" or are truly challenges the new teacher must overcome with the help of others (Camp & Heath, 1988).

Ruhland and Bremer (2002b) reported that areas needing improvement in induction programs included dealing with special needs students, curriculum design, managing budgets, dealing with administration, classroom management, and student discipline. Good classroom management skills are most successful in an environment where teachers are supported by school administration.

Induction for CTE Teachers

Much can be done to help beginning CTE teachers. If the focus remains solely on improving the competencies of the teacher, only a portion of the possible improvement in teacher effectiveness, satisfaction, and retention will be achieved (Joerger & Bremer, 2001). Mentoring and induction programs, class sizes, the level of autonomy granted to teachers, and the amount of administrative support teachers received often appeared to play a prominent role in teachers' decisions to remain on the job or quit (Guarino et al., 2006).

The lack of rigorous evaluation of most induction programs suggests that this as an area where the link between policy and implementation has yet to be examined (Smith, 2007). Smith reported most studies attempting to link induction to teacher effectiveness tracked one or two indicators of teacher quality, typically employed weak measures, and had poor study designs.

CTE teachers vary in age, subject matter knowledge, pedagogical skills, and ability to learn. A one-size-fits-all professional development program will likely not meet the needs of most individuals in this diverse group (Ruhland & Bremer, 2002b). This is when the building administrator needs to have the

ability to assess the new teacher's needs and customize an induction program that will meet the needs of each individual teacher.

Individuals come into the profession with diverse backgrounds and understandings of what it means to teach; effective induction builds from this circumstance by embracing an array of complex professional activities that grow communities of practice among teachers (Smith & Ingersoll, 2004).

Guarino et al. (2006) reported that the more types of support beginning teachers received, the lower the likelihood of their leaving or changing schools. Little empirical evidence exists, however, about which specific aspects of induction are essential to achieve lower attrition rates from the teaching profession (Allen, 2005; O'Leary, 2005). The difficulty of distinguishing between the specific effects of induction and mentoring and those that could be attributed to other factors means the literature is inconclusive as to what makes programs successful.

Britton et al. (2003) noted for induction to work across a system, it needs to be understood as a system. Many different providers are necessary to meet the needs of a beginning teacher.

Teacher Success and Job Satisfaction

Job satisfaction is not guaranteed as it must be fostered by all staff, including administrators, and sought after by an individual. Ingersoll (2001) found that 27% of teachers who moved to other schools and 25% of those who left teaching did so because of dissatisfaction. Inadequate administrative

support, student discipline problems, lack of faculty influence in decision making, and lack of student motivation were cited as causes of dissatisfaction.

Smith and Ingersoll (2004) reported that the more components of induction experienced by a novice teacher, the lower the predicted probability of turnover. Their study suggested that induction with more components has a stronger impact on reducing the likelihood of teachers leaving, but does not address the quality of the induction. The quality of the components of induction is associated with the job satisfaction of new teachers.

Success as a Teacher

Teacher intent to stay is, in part, the result of the successes of the initial year. The more successful experiences a teacher candidate has working with diverse groups of students, the higher the confidence level of the teacher, which in turn, positively influences self-efficacy (Yost, 2006). In order for novice teachers to become successful, they require the tools necessary for coping with challenges they encounter.

It is evident that teacher preparation and sustained professional development are needed to increase the pedagogical knowledge necessary for teachers to be successful before and after entering the classroom (Harrell et al., 2004). The more prepared a teacher is to teach their first year, the more satisfied they will be and consequently, will be more likely to remain in the teaching field.

Fully prepared teachers feel more competent developing curriculum, addressing students' different learning styles and levels, managing classrooms,

motivating students, and knowing how to teach content (Jorissen, 2002). There is consensus that adequate subject knowledge is necessary for teachers to be successful (Allen, 2003). The evidence strongly suggests that fully prepared and certified teachers are more successful with students than teachers without preparation (Joerger & Bremer, 2001).

Intrinsic factors, such as the need to contribute to society and the ability to make a difference, contribute to teacher satisfaction. If teachers have enthusiasm and a love for their discipline and have ability, then they can bring a real world situation into the classroom or take the classroom into the real world - those teachers are successful (Ruhland & Bremer, 2002b).

Self (2001) reported that satisfied teachers would choose teaching again and plan to keep teaching as long as they can. Yost (2006) reported that self-efficacy, derived from successful teaching experiences and the ability to use reflection for problem solving, actually outweighed positive school climate as a factor in novice teacher success. If teachers feel confident in their ability to manage and solve problems, they will likely be motivated to persist in finding solutions.

Effect of School Climate on Teacher Satisfaction

Novice teachers enter the classroom with the optimism they will affect their students' lives and motivate them to succeed. A lack of administrative and collegial support, budget constraints, a flagging sense of personal teaching efficacy, and a controlled curriculum often squelches their enthusiasm (Woods & Weasmer, 2002). Most teachers also enter the profession knowing they could

earn more elsewhere but the intrinsic rewards of teaching can compensate for lower pay. It is when dissatisfaction with the working environment sets in that pay then becomes an issue. The working conditions that matter to teachers encompass a wide range of factors, from school facilities and bureaucracy to the competence of administrators and opportunities for professional development (Johnson & Birkeland, 2003).

Teacher job satisfaction, as well as the connection between teacher values and the daily life of the school, influences a novice's desire to commit to a teaching career (Angelle, 2006). Satisfaction can be derived, in part, when teachers are allowed to make contributions to their curriculum, when they become part of the school culture, and when they are made to feel that their contributions to education are valued.

Schools, which provide opportunities to develop professional competence through a system of support, professional growth, and reflective practice, may find job satisfaction increasing, which logically, may lead to teacher retention (Angele, 2006). Johnson and Birkeland (2003) reported teachers who felt successful with students and whose schools were organized to support them in their teaching were more likely to stay in their schools, and in teaching, than teachers whose schools were not so organized.

Organizational processes as perceived by beginning teachers were found to increase job satisfaction, thereby increase the beginning teacher's intention to continue to teach (Angelle, 2006). Collegiality in the workplace is a strong

contributor to job satisfaction (Woods & Weasmer, 2002; Johnson & Birkeland, 2003).

Collegiality, fostered by an administrator, ensures the teaching staff maintains a cohesive and supportive relationship. Administration either supports or stymies a teacher's search for success (Self, 2001; Jorissen, 2002; Johnson & Birkeland, 2003). Teachers who identified having less support and less effective leadership reported lower rates of satisfaction with teaching (Guarino et al., 2006).

Angelle (2006) observed that to be successful, the beginning teacher must seek the support of administrators and mentors before the higher order need of self-fulfillment can be reached. Among alternate route teachers, positive relationships with their administrators have been linked with high degrees of satisfaction and the choice to remain in teaching (Jorissen, 2002).

Guarino et al. (2006) reported on reasons teachers left teaching after the 1994-95 school year as a result of dissatisfaction. They found 15.3% cited inadequate administrative support. They also found 17.9% cited discipline issues and 17.6% cited student motivation. New teachers in schools with higher rates of behavioral problems and in which they felt they had less influence over their work reported lower rates of satisfaction with teaching (Johnson & Birkeland, 2003; Guarino et al., 2006). Strategies to increase job satisfaction aid in retention and improve the school climate (Woods & Weasmer, 2002).

Brewer and McMahan-Landers (2003) reported participants perceived stress related to lack of organizational support as more severe than stress

related to the job itself. The frequency of stress had a greater impact on participants' job satisfaction than did the intensity of stress.

Weiss (1999) reported it had been found that only minimal correlations exist between teacher job satisfaction and student behavior problems. It may be when new teachers see mismanagement of behavior problems (part of school leadership) that they think about leaving teaching.

Teachers who claim a voice in moving toward organizational goals increase their commitment to the district and enhance their job satisfaction (Woods & Weasmer, 2002). Jorissen (2002) reported that teacher satisfaction can be derived from opportunities to take part in workplace decision making along with opportunities for professional growth, financial support for attending conferences, and time to develop curricula. Having opportunities for recognition for a job well done is another source of job satisfaction (Self, 2001; Jorissen, 2002).

Along with poor working conditions, low pay can erode teacher satisfaction (Self, 2001; Johnson & Birkeland, 2003). While increasing pay and creating opportunities to earn more through programs such as career ladders attract interest from teachers, ultimately, little difference will be realized if a teacher is dissatisfied with teaching (Johnson et al., 2001).

Allen (2005) reported that several studies suggested that class-size reduction stems teacher attrition, but the actual impact reported is extremely small. Several studies suggest a reduction in teachers' workload is touted as a

measure that will increase teacher satisfaction and reduce attrition, however, the literature in support of this contention is inconclusive (Allen, 2005).

Summary

Joerger and Bremer (2001) observed the research on the experiences, concerns, and needs of beginning CTE and non-CTE secondary teachers leaves little room for controversy. The same needs have been identified repeatedly. The payback of efforts made to conduct induction programs will be in higher job satisfaction, lower teacher turnover, and improved student achievement.

Teacher satisfaction reduces attrition, enhances collegiality, improves job performance, and has an impact on student outcomes (Woods & Weasmer, 2002). Students are the direct beneficiaries of highly skilled and satisfied teachers, as reflected in higher levels of student achievement on standardized assessments (Joerger & Bremer, 2001). Since teachers have many perspectives about their satisfaction with their careers, measuring job satisfaction with definitive results is difficult.

Very few research studies exist that combine issues of retention with the issue of teacher quality (Guarino et al., 2006). Few sources of data exist that permit researchers to identify effective teachers and examine the factors that promote their retention. Extensive literature in organizational psychology does show a close relation between employee turnover and job satisfaction (Liu & Meyer, 2005).

Teacher induction programs are one answer to retaining and further developing the skills, satisfaction, and experience of beginning CTE teachers

(Joerger & Bremer, 2001). Induction components seem to improve a new teacher's performance and success, which can aid in retention but these same induction components can lack the quality that lends itself to job satisfaction, also a factor in teacher retention.

Chapter 3

Methodology

Introduction

This study was designed to determine the perceptions of T & I teachers in regards to the various methods of induction they had experienced as new teachers. The design of the study, population, and the method of selection are discussed in this chapter along with the description of the research instrument used. The variables, data collection, follow-ups, and the analysis of data complete the contents of this chapter.

Design of Study

This study used descriptive research to determine the perceptions of T & I teachers toward the various induction methods they experienced before and during their first two years of teaching secondary CTE programs in Missouri. Data were gathered at one point in time with a survey in this study. Most descriptive research involves reporting the characteristics of a sample at one point in time (Gall et al., 1999).

Research Questions

This study addresses five research questions regarding induction methods for nontraditional high school Trade and Industrial CTE teachers in Missouri.

Question 1. To what extent are induction methods perceived to contribute to the retention of Missouri high school Trade and Industrial CTE teachers?

Question 2. To what extent did the number and timing of induction methods vary for Missouri high school Trade and Industrial CTE teachers?

Question 3. Which induction method(s), if any, are perceived to be the most effective for Missouri high school Trade and Industrial CTE teachers?

Question 4. What induction activities were perceived to be the most helpful for Missouri high school Trade and Industrial CTE teachers?

Question 5. What induction activities were perceived to be the least helpful for Missouri high school Trade and Industrial CTE teachers?

Population

Study Sample

The target population for this study was secondary T & I teachers currently teaching in the state of Missouri. The beginning year of teaching for this group ranged from 2003 through and including 2007. This covered a consecutive five-year period and included a sample of 191 teachers throughout the state's high school CTE system.

The majority of these teachers were employed with school districts having area vocational technical schools as part of their campus. A small number of the T & I teachers were employed with school districts having only comprehensive high schools.

Selection of Subjects

Participants for this study were selected by searching the database in the Industrial Education Section at the Missouri Department of Elementary and Secondary Education for currently employed T & I teachers. T & I teachers that

began teaching during the 2003-04, 2004-05, 2005-06, 2006-07, and the 2007-08 school years were selected for this study.

The researcher received reports for each given year with the names of all T & I teachers employed throughout the state of Missouri for each year selected. The reports were sent electronically from the Industrial Education Division at DESE in a Microsoft Excel spreadsheet format. Each school in the state of Missouri has an assigned identification number and the data were received with the information organized by school in numerical order.

Additional information contained in the reports included the number of years the T & I teachers had taught in the district, the number of years the teachers had taught in Missouri, and the total number of years the teachers had taught. Each teacher's instructional discipline was listed and many of the teachers had e-mail addresses listed. E-mail addresses for some teachers, however, were missing.

Using the sort function of the spreadsheet software, individual entries were sorted first by "years in district", secondly by "years in Missouri", and sorted last by "total years in teaching". All three of these sort functions were performed in ascending order. This data sorting resulted in the individuals of interest being brought to the beginning of each of the approximately 575 line entry reports for ease in identification. Using this data sorting method, a total of 191 new hires were listed in the DESE data for the five years requested. A sample of this data from 2007-08 and how it appeared after sorting is shown in

Table 1. Only teachers in their first year of teaching in the district for each year studied were selected for further study.

Table 1

Sample of 2007-08 School Year Data after Sorting

School	Name	Total Years	MO Years	District Years
Sikeston R-6	Kimball	1	1	1
St. Louis City	Harris	1	1	1
Columbia 93	Parks	2	2	1
Lebanon R-III	Lynn	3	2	1
Carrollton R-7	Gorsett	8	8	1

Teachers with five or more additional teaching years in Missouri or additional years in the total years of teaching were eliminated from this study. Out of the 191 identified new hires, 44 had taught elsewhere, either in Missouri or in another capacity for more than five years. Teachers with more than five additional years in Missouri would have been too far removed from the initial induction experiences and would have provided data that may have been tempered with time. Teachers having additional total years in teaching would have had teacher training, at least in part, from another state or from sources not necessarily included in the survey of this study. They also may not have participated in all the induction programs offered by the state of Missouri as a result of training from another source.

The data received included T & I instructors employed in the state at post-secondary institutions. The 191 new hires included a total of 13 that taught at post-secondary institutions only. These individuals were deleted since the focus of this study is on high school T & I teachers. Consequently, individuals listed as post-secondary instructors were deleted from the data profile.

Participants were contacted by an electronically mailed (e-mail) invitation along with the web link for the survey. Of the remaining 134 new hires, e-mail addresses were included in the DESE data for 84 individuals. A small number of the e-mail addresses missing in the data received from DESE were gathered from the web sites of the school districts where the teacher was listed as employed. The majority of the missing e-mails were constructed by examining the e-mail format used by a given school district on the DESE website for Missouri schools. Administrative personnel were listed for respective school districts at this site and e-mail addresses were constructed by using the same format for the teacher name for that particular school district.

The survey was originally sent to 134 T & I teachers which immediately (upon sending the electronic mail) revealed 40 of the e-mail addresses were invalid. Of these, 23 were e-mail addresses in the DESE data and the remaining 17 addresses were constructed by the researcher. It was assumed these teachers were no longer employed with the districts as listed in the DESE data. A total of 94 e-mail addresses were considered valid as they were not returned

by the e-mail system. Table 2 details the selection of the subjects, both by year and aggregate total.

Table 2

Summary of Valid Participants

Year	New Hires	Over 5 yrs. Elsewhere	PS level Only	Invalid Addresses	Valid Participants
2003	30	8	2	3	17
2004	26	8	2	4	12
2005	33	5	2	8	18
2006	50	11	2	14	23
2007	52	12	5	11	24
Total	191	44	13	40	94

PS = Post-Secondary

Recruitment Statement

A recruitment statement for the survey was written from a template released by the University of Missouri Campus Institutional Review Board. The researcher added information to the recruitment statement regarding electronic surveys and a disclaimer in regards to the electronic content and any potential electronic viruses (Appendix A).

Research Instrumentation

An extensive search was made to find a survey that would measure the effectiveness of induction programs for T & I teachers in Missouri. With the

comprehensive nature of T & I teacher induction in Missouri, a survey assessing the individually identified components could not be found.

The search for a suitable instrument initially focused on the *Buros Institute of Mental Measurements* and the *Buros Institute for Assessment Consultation and Outreach*. Neither source contained an instrument capable of determining the effectiveness of the five individual components of Missouri's comprehensive teacher induction program.

An on-line search using the "Google" search engine and the keywords "teacher retention assessment survey" did not produce a match. The keywords without quotes did produce results for 10 web sites, most of which were related.

The *Center for Teaching Quality* had survey results for several states throughout the nation and did assess most of the environmental variables that affect teacher retention. These issues (time, facilities and resources, and leadership) certainly are a part of a new teacher's induction program but other components are also necessary. The shortfall of the *Center for Teaching Quality* survey was the limitation of additional professional development components as they would relate to alternatively certified T & I teachers. The only additional component assessed was mentoring.

As a result of a survey lacking the necessary content to effectively assess the components of a comprehensive induction program for T & I teachers, a self-reporting survey had to be developed for this study. The literature review

in Chapter Two was used as a guide in identifying the reasons teachers remain in the profession and the causes for teachers to leave the profession.

The five individually identified components of a comprehensive teacher induction program for Missouri's T & I teachers are: a) time, facilities and resources; b) leadership and collegiality; c) building and content area mentor; d) New Teacher Institute and New Teacher Institute call-back sessions; and e) the two certification courses. These five components along with a question on prior educational training were incorporated into the survey written for this study (Appendix B).

Using the causes affecting whether a teacher stayed in or left the profession from Chapter Two, questions were formed for each of the five identified components. Care was taken in writing the questions to avoid the development of leading questions in the survey. The potential of misinterpretation by the survey population was also kept in mind. The questions were also written and evaluated to minimize the risk of psychologically or economically threatening subject material. It was also assumed some of the respondents would not have responses to all the questions in the survey and directions were provided to skip over these questions or groups of questions.

The assessments of the New Teacher Institute and NTI call-back sessions and the certification courses were identical with the exception of whether or not a new teacher attended the New Teacher Institute and if so, when they attended. The environmental issues (time, facilities and resources and

leadership and collegiality) all contained assessments specific to each category. All five individual variables ended with the summary assessment asking the participant to rate the impact of that component to the degree of importance in affecting their decision to remain in the teaching profession.

The doctoral committee reviewed the proposal, the recruitment statement, and the survey instrument. The committee suggested changes to several of the questions and to the overall composition of the survey during the dissertation proposal meeting. The suggested modifications were made to the original survey instrument drafted by the researcher and the committee judged the instrument to be valid with the changes made.

Institutional Review Board Certification/Approval

The researcher had originally been granted an Education and Training Certificate for conducting human subjects research on March 3, 2004 while doing course work on the University of Missouri-Columbia campus. This research was started 18 months after that approval date and consequently, the initial certificate lapsed.

A second Education and Training Certificate was obtained on April 1, 2010 by completing the on-line basic course through the Collaborative Institutional Training Initiative. An IRB Exempt Application for human subjects research was completed and submitted to the UMC IRB along with the proposed recruitment statement and survey instrument. Approval for research being granted, the recruitment statement was converted to an electronic mail

format. The survey was converted to an electronic format using Survey Monkey as the survey software.

Variables

The independent variable in this study is the secondary T & I teachers in the state of Missouri. The dependent variables are the five methods of induction the T & I teachers, in most cases, have the opportunity to experience beginning before their first day in the classroom and continuing throughout the first couple of years of teaching.

Data Collection

The survey was written into a software program especially designed for electronic survey purposes. While several programs are available, Survey Monkey was chosen because of its popularity and ease of use, both for designing by the researcher and responding to by the participants.

The survey questions as identified in Appendix B were entered into the software in the same format. The software was set so the respondent could exit the survey at any time. Other variables set up allowed the respondent to move on to the next question or page without answering all the questions as they completed the survey. Only one response per question was allowed with the exception of the very last question, which allowed respondents to check all answers that applied. Text boxes to gather additional comments were not used with this survey. The survey was originally sent to the selected subjects on May 18, 2010.

Time constraints of the ending school year kept the researcher from gathering as many responses as was originally desired. The number of potential respondents was initially limited somewhat by the narrow range of years the potential respondents started teaching. The group was also restricted in size compared to similar studies in that only high school T & I teachers were surveyed. Other similar studies included post-secondary level T & I instructors and/or Health Science teachers/instructors.

Additional restriction on sample size inadvertently occurred when electronic mail addresses that had been obtained from the database were discovered to be invalid addresses. A total of 40 (30%) out of 134 surveys were returned as invalid electronic mail addresses. Time did not allow for an investigation into whether these teachers were still teaching or not and it was assumed an invalid electronic mail address indicated the teacher was no longer employed with the school district. Consequently, these individuals listed as T & I teachers in the DESE database did not receive a survey to complete. It is possible that a number of these teachers had transferred to another school district as one individual in the database had done. (The researcher worked in the same school district with this individual.)

A total of 30 surveys were received over a period of 15 days from 94 valid e-mail addresses providing a return rate of 32%. A participation rate of 33% is not unusual for self-selected respondents to a survey (advisement conversation with Dr. Bob Stewart, June 3, 2010).

The survey was closed at 30 respondents. The summary of the survey was printed and then each individual survey was printed for the purpose of archiving the results for analysis. The URL number on each individual survey was marked over with a black marker so identification of the survey could not be made.

Responses

Individual survey responses were printed for later use in entering the raw data into the SPSS software. A total of 3 (10%) of the 30 surveys included in the summary were not completed and were removed from the study. This was done since key information missing from the incomplete surveys was needed to group the responses for analysis.

A final count of 27 completed surveys yielded data for this study. This represents 29% of the 94 surveys sent to valid electronic mail addresses. While this was a lower completed response rate than was desired, data in this study closely resembles findings in a similar study completed 10 years ago that had a population six times as large as this study. These parallels in data will be pointed out later in this chapter.

Analysis of Data

The printed summary was examined for any discrepancies that might appear as obvious. None were found and patterns to the responses became apparent based on the literature review in Chapter Two.

Data were entered in the Statistical Programming for the Social Sciences (SPSS) software program using an IBM-compatible computer. The software version of SPSS was the 11.5 graduate package. The data were analyzed for the measures of central tendency and for measures of variability.

Using the individual surveys, observations were made by grouping participants based on individual factors, e.g. no formal training/schooling compared to those receiving some post-secondary training/schooling. Any variations in perceptions relating to the effectiveness of the various induction methods were noted.

Summary

The identification of participants for this study was adequate and yielded satisfactory data for analysis. All respondents to the survey were employed in teaching at the time of the survey. The survey instrument developed for this study was specific in its content and provided the information sought by the researcher. The data were entered into SPSS software in preparation for analysis.

Chapter 4

Presentation of Data

Introduction

The purpose of this study was to evaluate the perceived importance of the induction methods commonly used in the state of Missouri to assist new T & I CTE teachers in transition from industry to the classroom. The survey collected data that allowed descriptive information to be summarized and used in forming groups and answering one of the research questions.

The raw data of the survey was entered into the SPSS 11.5 software and descriptive statistics were analyzed for measures of central tendency, measures of variability, and distribution of data. The results of the data analysis were examined to address the remaining four research questions and to investigate additional trends based on teacher perceptions.

Descriptive Information

Five components of descriptive data were gathered from the respondents. One, the amount of education or training the teacher had prior to teaching, was used for grouping the responses. The other four were logical points of data collection as they were directly related to the methods of teacher induction being investigated.

Two of these remaining four separated local mentors from content area mentors. Whether or not the respondent attended New Teacher Institute and

at what time during the early years of teaching were the induction methods experienced comprised the fourth and fifth components of descriptive data. Formal Education/Training. Respondents were asked to indicate the types of training and/or education they had received after high school graduation. This was the only question in the survey that allowed a respondent to select more than one answer. However, all of the respondents selected only one answer to this question.

Two categories in this question had an equal number of responses. Respondents that had attended some college and those that indicated no formal training/education responded to a total of seven (26%) for each category. Washer (2000) reported similar findings with 29.6% not having an education beyond high school. Ten (37%) of the teachers surveyed had completed either a two-year or a four-year college degree, or had completed graduate work with four-year degrees reported the most often (Table 3).

Table 3

Types of Training and/or Education

Type of Training/Education	Frequency	Percent	Cumulative Percent
Military	1	3.7	3.7
Apprenticeship	2	7.4	11.1
Some college	7	25.9	37.0
Two-year degree	3	11.1	48.1
Four-year degree	4	14.9	63.0
Grad work/degree	3	11.1	74.1
No formal training/education	7	25.9	100.0
Total	27	100.0	

For grouping data, two groups were formed from these responses. Seventeen individuals (63%) were grouped as having college experience (some college, two-year degree, four-year degree, and graduate work/degree). The remaining 10 (37%) were grouped as not having any college experience. These two groups were compared in their perceptions of the importance of the five induction methods and any possible influence to remaining in the teaching profession.

Local Mentor. The survey asked respondents to indicate whether or not they had a building mentor to help them learn the responsibilities of a new teacher. If they did have a building mentor, they were asked to identify if this was during the first year only, the second year only, or during both the first and second year. No responses were made to having a building mentor during the second year only. Nine (33%) did report having a building mentor during the first year only. Three (11%) reported they did not have a building mentor either the first or second year. Slightly over one-half (56%) reported having a building mentor both the first and second year. Table 4 details the building mentor data.

Table 4

Building Mentor

Time Period	Frequency	Percent	Cumulative Percent
First-year only	9	33.3	33.3
Second-year only	0	0.0	33.3
Both first/second year	15	55.6	88.9
Neither year	3	11.1	100.0
Total	27	100.0	

Content Area Mentor. Respondents were asked to indicate whether or not they had a content area mentor. Sponsored by DESE, the content area mentor program was in place for new T & I teachers prior to any of these teachers' first year of teaching. In spite of this, seven (26%) indicated they did not have a content area mentor during either the first or second year of teaching (Table 5). Seventeen (63%) reported having a content area mentor for both the first and second year of teaching. There were three (11%) that had a content area mentor during the first year only and no responses were gathered indicating a content area mentor for the second year only.

Table 5

Content Area Mentor

Time Period	Frequency	Percent	Cumulative Percent
First-year only	3	11.1	11.1
Second-year only	0	0.0	11.1
Both first/second year	17	63.0	74.1
Neither year	7	25.9	100.0
Total	27	100.0	

Those respondents having a building mentor and/or content area mentor were asked to evaluate their experiences with the mentoring process. There was no one responding to the survey that did not have at least some mentoring provided, if not in the content area then in the building or vice versa for at least one year. Two respondents, however, did not complete the evaluation for their mentoring experience.

NTI and Call-Back Sessions. The survey contained a question regarding whether or not the respondent attended the New Teacher Institute and the related call-

back sessions. Five (19%) of the respondents indicated they did not attend NTI which is similar to Washer (2000) when he reported a response rate of 14% not attending NTI. A slight majority of those surveyed indicated they experienced NTI before they entered the classroom the first year (Table 6). Only one (4%) that attended NTI had to teach more than one year before attending NTI.

Those reporting attendance at NTI were asked to evaluate their experience with the summer session and the related call-back sessions during the following school year.

Table 6

NTI and Call-Back Sessions

Time Period	Frequency	Percent	Cumulative Percent
Before first year	16	59.3	59.3
Before second year	5	18.5	77.8
After second year	1	3.7	81.5
Did not attend	5	18.5	100.0
Total	27	100.0	

Completion of Induction Programs. The survey requested the respondents indicate when all five of the induction programs had been made available to them (Table 7). Seventeen (63%) indicated they had the opportunity to gain assistance and experience help from all five of the induction programs during their first year of teaching. Of the remaining 10 (37%) respondents, five had reported not attending NTI. The remaining five had indicated they had a mentor at least during the first year of teaching. The induction program that was not experienced by these remaining five respondents would have been one of the certification courses.

Table 7

Five Induction Programs Experienced by Teachers

Time Period	Frequency	Percent	Cumulative Percent
By end of first year	17	63.0	63.0
After beginning second year	5	18.5	81.5
Did not experience all five	5	18.5	100.0
Total	27	100.0	

Responses to Induction Methods

Responses from individual surveys were entered by induction program into the SPSS 11.5 software program. The data were analyzed for all three measures of central tendency (mean, median, and mode) and for all three measures of variability (range, standard deviation, and variance). An examination of the raw data warranted an analysis of the data for problems with normal distribution. This was accomplished with histograms and analysis for skewness and kurtosis.

Of the five induction methods studied, "mentors" was the only method having a normal distribution of data. The distribution did not contain double peaks on histograms for any of the activities and the skewness and kurtosis were within the standard deviations for all activities (Table 8). The other four methods of induction did contain activities within each induction program that did not contain normal distributions of data. Collaborate with colleagues and planning time induction activities within the time and facilities/resources induction method are two of several activities with double peaked distributions (Appendix C, Figures 1 & 2).

Table 8

Mentors-Skew and Kurtosis

Activity	Skew	ses	Kurtosis	sek
Instructional strategies	-.103	.464	-.655	.902
Curriculum assignment	-.025	.464	-.765	.902
Classroom management	-.367	.464	-.403	.902
Managing shop/lab	-.454	.464	-.163	.902
Advising skills contests	-.027	.464	-.869	.902
Assisting with paperwork	-.173	.464	-1.181	.902
Overall impact	.156	.464	-.677	.902

N = 25

“Time and facilities/resources” had the most activities (four) compared with the other induction programs for double peaked data on histograms. These were collaborate with colleagues, planning time, reduced paperwork, and adequate space. NTI and certification courses had three activities each with double peaked data. The three activities with NTI were student discipline, parent conferences, and manage paperwork. The three activities with the certification courses were motivation techniques, classroom management, and the overall impact statement.

The induction program having the largest deviation from a normal distribution of data for skewness and kurtosis was “leadership”. Seventy percent of the activities along with the overall impact statement were significantly, negatively skewed (Table 9). This was determined by comparing the skewness of each activity with two times the standard error of skewness. Values of two standard errors of skewness (*ses*) or more are skewed to a significant degree (Brown, 1997). Leptokurtic distributions occurred in two leadership activities, “high professional standard” and “constructive

feedback". Both of these activities were significantly leptokurtic with high professional standard being severely leptokurtic at a positive 11.458. Values of two standard errors of kurtosis (*sek*) or more differ from mesokurtic to a significant degree (Brown, 1997).

Table 9

Leadership-Skew and Kurtosis

<u>Activity</u>	<u>Skew</u>	<u>ses</u>	<u>Kurtosis</u>	<u>sek</u>
Raising issues	-1.086	.448	.445	.872
Expressing concerns	-.987	.448	.298	.872
Clear expectations	-1.264	.448	.376	.872
Enforced rules	-.264	.448	-1.442	.872
Communicated policies	-1.025	.448	-.126	.872
High professional standard	-2.542	.448	11.458	.872
District orientation (N=26)	-.638	.456	.508	.887
Constructive feedback	-1.108	.448	2.298	.872
Recognition	-.299	.448	-.407	.872
Assistance with discipline	-.973	.448	.013	.872
Overall impact	-.912	.448	1.517	.872

N = 27

"Time and facilities/resources" had four activities that were significantly, negatively skewed. These were class size, reasonable time, technology training, and adequate space (Table 10). Class size was the only activity that was significantly leptokurtic.

NTI had two activities (student discipline and write lesson plans) that were significantly, negatively skewed (Table 11). Only one NTI activity was significantly leptokurtic, write lesson plans. "Certification courses" had only one activity, evaluate learning, not having a normal distribution of data for skew and kurtosis (Table 12). This activity was significantly, negatively skewed and significantly leptokurtic.

Table 10

Time and Facilities/Resources-Skew and Kurtosis

<u>Activity</u>	<u>Skew</u>	<u>ses</u>	<u>Kurtosis</u>	<u>sek</u>
Class size	-1.666	.448	3.136	.872
Reasonable time	-.896	.448	.198	.872
Collaborate with colleagues	-.561	.448	-.751	.872
Planning time	-.242	.448	-1.148	.872
Protected from distractions	.144	.448	-1.060	.872
Reduced paperwork	.343	.448	-1.385	.872
Adequate materials	-.737	.448	-.104	.872
Technology training	-.937	.448	1.170	.872
Adequate space	-1.130	.448	.222	.872
Overall impact	-.438	.448	-.474	.872

N = 27

Table 11

NTI and Call-Back Sessions-Skew and Kurtosis

<u>Activity</u>	<u>Skew</u>	<u>ses</u>	<u>Kurtosis</u>	<u>sek</u>
Motivation techniques	-.501	.491	-.591	.953
Classroom management	-.934	.491	.806	.953
Student discipline	-1.087	.491	.331	.953
Write lesson plans	-1.087	.491	2.987	.953
Parent conferences	-.552	.491	-1.177	.953
Student assessments	-.446	.491	-.659	.953
Manage paperwork	-.255	.491	-1.539	.953
Reflective thinking	-.835	.491	1.025	.953
Overall impact	-.396	.491	-1.060	.953

N = 22

Violations of the assumptions of normality are not problematic with this data, however, since the results of the data collection are scaled with negatively skewed data and leptokurtic distributions being desirable. These types of distributions indicate favorable responses to the activities being surveyed.

Table 12

Certification Courses-Skew and Kurtosis

<u>Activity</u>	<u>Skew</u>	<u>ses</u>	<u>Kurtosis</u>	<u>sek</u>
Motivation techniques	-.453	.448	-1.011	.872
Classroom management	-.862	.448	-.074	.872
Develop lesson plans	-.777	.448	.967	.872
Reflective thinking	-.174	.448	-.700	.872
Evaluate learning	-1.380	.448	2.592	.872
Complete paperwork	-.057	.448	-.846	.872
Interact with parents	-.179	.448	-1.386	.872
Overall impact	-.191	.448	-.681	.872

N = 27

An analysis of the histograms did not provide two (or more) distinct groups that were causing the double peaks on the histograms. Potential patterns were investigated such as, attending NTI/not attending and experiencing all five programs by the end of the first year/those that took longer, etc. but no clear, consistent pattern developed. Five individual respondents were consistently on the lower end peak when a double peak was present but there was not anything else in common with these individuals.

Since there were no obvious groups, the researcher wanted to group the respondents by college coursework prior to teaching and lack of college coursework prior to teaching to determine if the perceptions differed on induction programs such as NTI and the certification courses. Seventeen (63%) had reported at least some college coursework and were placed into one group as "college". The remaining 10 (37%) were placed in a second group as "no college".

Time and Facilities/Resources. Nine activities along with an overall impact statement comprised this phase of the induction program (Appendix B).

All 10 categories received 27 responses from those surveyed. The means ranged from 1.96 to 4.07 on a scale of five with two means being below 3.0, the mid-range of the scale (Table 13).

When grouped, the descriptive data changed somewhat. For the group with at least some college, the means for all the activities ranged from 1.88 to 3.94 with two activities sharing the upper end of the mean range (class size and technology training). This sub-group also had two activities with a mean below 3.0 (Table 13).

The group with no college experience had a means range on induction activities from 2.10 to 4.30. This group had only one induction activity with a mean below 3.0 (Table 13).

Leadership. Ten induction activities and an overall impact statement made up the leadership component of the various induction programs surveyed (Appendix B). Nine of the activities and the overall impact statement received 27 responses from those surveyed. One induction activity, orientation to the district, had one (4%) missing response making a total of 26 responses to this activity. The means ranged from 3.00 for "enforcing rules" to 4.11 for "high professional standard" with no activity having a mean below 3.0 (Table 14). In analyzing the means for the group with some college, the range was from 3.00 for "enforcing rules" to 4.24 for "high professional standard". This group did not rate any of the activities below a mean of 3.0 (Table 14). All of the induction activities and the impact statement had 17 responses except the

Table 13

Time and Facilities/Resources-Total and by Groups

<u>Activity</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Median</u>
Total N = 27			
Class size	4.07	1.00	4.00
Reasonable time	3.59	1.15	4.00
Collaborate with colleagues	3.33	1.18	4.00
Planning time	3.19	1.21	4.00
Protected from distractions	2.81	1.30	3.00
Reduced paperwork	1.96	.98	2.00
Adequate materials	3.33	1.07	4.00
Technology training	3.67	.96	4.00
Adequate space	3.67	1.33	4.00
Overall impact	3.78	.93	4.00
College N = 17			
Class size	3.94	1.20	4.00
Reasonable time	3.71	1.10	4.00
Collaborate with colleagues	3.35	1.32	4.00
Planning time	3.12	1.22	3.00
Protected from distractions	2.59	1.23	3.00
Reduced paperwork	1.88	1.05	1.00
Adequate materials	3.47	1.07	4.00
Technology training	3.94	.83	4.00
Adequate space	3.65	1.37	4.00
Overall impact	3.76	.97	4.00
No College N = 10			
Class size	4.30	.48	4.00
Reasonable time	3.40	1.26	4.00
Collaborate with colleagues	3.30	.95	4.00
Planning time	3.30	1.25	4.00
Protected from distractions	3.20	1.40	3.50
Reduced paperwork	2.10	.88	2.00
Adequate materials	3.10	1.10	3.50
Technology training	3.20	1.03	3.50
Adequate space	3.70	1.34	4.00
Overall impact	3.80	.92	4.00

Table 14

Leadership-Total and by Groups

Activity	Mean	Standard Deviation	Median
Total N = 27			
Raising issues	3.41	1.12	4.00
Expressing concerns	3.44	1.15	4.00
Clear expectations	3.41	1.12	4.00
Enforced rules	3.00	1.41	4.00
Communicated policies	3.26	1.16	4.00
High professional standard	4.11	.75	4.00
District orientation (N=26)	3.81	.80	4.00
Constructive feedback	3.67	.88	4.00
Recognition	3.30	1.14	3.00
Assistance with discipline	3.37	1.15	4.00
Overall impact	3.74	.94	4.00
College N = 17			
Raising issues	3.53	1.18	4.00
Expressing concerns	3.53	1.23	4.00
Clear expectations	3.41	1.18	4.00
Enforced rules	3.00	1.37	3.00
Communicated policies	3.24	1.25	4.00
High professional standard	4.24	.44	4.00
District orientation (N=16)	3.81	.83	4.00
Constructive feedback	3.71	.99	4.00
Recognition	3.47	1.23	4.00
Assistance with discipline	3.35	1.22	4.00
Overall impact	3.82	1.01	4.00
No College N = 10			
Raising issues	3.20	1.03	3.50
Expressing concerns	3.30	1.06	4.00
Clear expectations	3.40	1.07	4.00
Enforced rules	3.00	1.56	4.00
Communicated policies	3.30	1.06	4.00
High professional standard	3.90	1.10	4.00
District orientation	3.80	.79	4.00
Constructive feedback	3.60	.70	4.00
Recognition	3.00	.94	3.00
Assistance with discipline	3.40	1.07	4.00
Overall impact	3.60	.84	4.00

“orientation to the district” activity. This activity had missing data from one respondent giving this activity a total of 16 responses.

The group comprised of teachers with no college experience before teaching had two activities at the low end of the range of activity means. These two induction activities sharing a mean of 3.00 were “enforcing rules” and “recognition for accomplishments”. The upper end of the range for activity means was 3.90 for “high professional standard” (Table 14). Each induction activity and the impact statement had 10 responses.

Mentors. The mentor section of the survey had six activities and the overall impact statement for the respondents to evaluate (Appendix B). All of the 27 respondents had a mentor of one kind for at least the first year of teaching but two (7%) of the respondents chose to not respond to any of the mentor points of evaluation. This left 25 respondents for the total group. The range of the means for the activities ranged from 3.12 to 3.60, the tightest range of means for the five induction programs surveyed (Table 15).

The group with college course work experience contained the two individuals that chose to not respond to the mentoring evaluation. This group totaled 15 respondents for mentoring evaluation and had a mean range from 3.20 to 3.73. The mentoring activities “curriculum assignment” and “advising skills contests” shared the low end of the range with the means of 3.20 (Table 15).

The group with no college course work experience responded to all the mentoring questions, giving a total of 10 responses to each activity. The means

of all questions ranged from 2.90 to 3.40 with “managing shop/lab” and “assisting with paperwork” sharing the top end of the range (Table 15).

Table 15

Mentors-Total and by Groups

Activity	Mean	Standard Deviation	Median
Total N = 25			
Instructional strategies	3.32	1.11	3.00
Curriculum assignment	3.12	1.05	3.00
Classroom management	3.44	1.08	4.00
Managing shop/lab	3.56	.82	4.00
Advising skills contests	3.16	1.21	3.00
Assisting with paperwork	3.60	1.08	4.00
Overall impact	3.20	1.12	3.00
College N = 15			
Instructional strategies	3.33	1.11	3.00
Curriculum assignment	3.20	.94	3.00
Classroom management	3.67	.90	4.00
Managing shop/lab	3.67	.82	4.00
Advising skills contests	3.20	1.32	3.00
Assisting with paperwork	3.73	1.16	4.00
Overall impact	3.40	1.12	3.00
No College N = 10			
Instructional strategies	3.30	1.16	3.00
Curriculum assignment	3.00	1.25	3.00
Classroom management	3.10	1.29	3.00
Managing shop/lab	3.40	.84	3.00
Advising skills contests	3.10	1.10	3.00
Assisting with paperwork	3.40	.97	3.50
Overall impact	2.90	1.10	3.00

New Teachers Institute and Call-back Sessions. Five (19%) individuals out of the 27 completed surveys did not attend NTI. Consequently, they did not complete the evaluation of NTI and the call-back sessions. The remaining 22 individuals did complete the questions in this section. The section contained eight activities along with the impact statement and had means ranging from

Table 16

NTI and Call-Back Sessions-Total and by Groups

Activity	Mean	Standard Deviation	Median
Total N = 22			
Motivation techniques	3.23	1.02	3.50
Classroom management	3.64	.73	4.00
Student discipline	3.09	1.02	3.00
Write lesson plans	3.86	.64	4.00
Parent conferences	2.95	1.13	3.00
Student assessments	3.41	.85	4.00
Manage paperwork	2.82	1.37	3.00
Reflective thinking	3.36	.90	3.50
Overall impact	3.14	1.36	3.50
College N = 12			
Motivation techniques	3.42	.90	4.00
Classroom management	3.58	.79	4.00
Student discipline	3.50	.67	4.00
Write lesson plans	3.75	.45	4.00
Parent conferences	3.17	1.11	4.00
Student assessments	3.42	.79	4.00
Manage paperwork	2.92	1.24	3.50
Reflective thinking	3.25	.97	3.50
Overall impact	3.50	1.24	4.00
No College N = 10			
Motivation techniques	3.00	1.15	3.00
Classroom management	3.70	.67	4.00
Student discipline	2.60	1.17	3.00
Write lesson plans	4.00	.82	4.00
Parent conferences	2.70	1.16	3.00
Student assessments	3.40	.97	3.50
Manage paperwork	2.70	1.57	3.00
Reflective thinking	3.50	.85	3.50
Overall impact	2.70	1.42	3.00

2.82 to 3.86. The low end of the range was “manage paperwork” and the high end was “write lesson plans” (Table 16).

Of the five individuals not attending NTI, two (7%) had four-year degrees and three (11%) had completed graduate work or had a graduate degree

(Appendix D, Table 30). The remaining 12 (71%) in the group with college experience did complete the survey question regarding NTI and the call-back sessions. The means of the nine questions ranged from 2.92 for “manage paperwork” to 3.75 for “write lesson plans” (Table 16).

The group with no college course work experience completed the NTI section with the means ranging from 2.60 for “student discipline” to 3.70 for “classroom management”. While “student discipline” had the lowest mean at 2.60, this group of teachers evaluated “parent conferences”, “manage paperwork”, and the “overall impact” statement with a means of 2.70 for all three activities (Table 16).

Certification Courses. All respondents completed the seven activity questions and the overall impact statement for the certification courses. The means ranged from 2.63 for “interact with parents” to 3.78 for “develop lesson plans” (Table 17).

In grouping the respondents (as with the previous induction programs), the group with at least some college course work experience had activity means ranging from 2.76 to 3.82. The low-end mean was for “interact with parents” and the high end mean represented two activities, “develop lesson plans” and “evaluate learning” (Table 17). The 10 respondents grouped as no college course work experience had a range of means from 2.30 to 3.70. The low-end mean represented “complete paperwork” and the high-end mean represented “develop lesson plans (Table 17).

Table 17

Certification Courses-Total and by Groups

<u>Activity</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Median</u>
Total N = 27			
Motivation techniques	3.00	1.30	3.00
Classroom management	3.41	1.25	4.00
Develop lesson plans	3.78	.75	4.00
Reflective thinking	3.56	.93	4.00
Evaluate learning	3.70	.99	4.00
Complete paperwork	2.78	1.12	3.00
Interact with parents	2.63	1.15	3.00
Overall impact	3.04	1.29	3.00
College N = 17			
Motivation techniques	3.18	1.24	4.00
Classroom management	3.53	1.23	4.00
Develop lesson plans	3.82	.73	4.00
Reflective thinking	3.53	1.07	4.00
Evaluate learning	3.82	.95	4.00
Complete paperwork	3.06	1.14	3.00
Interact with parents	2.76	1.09	3.00
Overall impact	3.29	1.10	3.00
No College N = 10			
Motivation techniques	2.70	1.42	3.00
Classroom management	3.20	1.32	3.50
Develop lesson plans	3.70	.82	4.00
Reflective thinking	3.60	.70	3.50
Evaluate learning	3.50	1.08	4.00
Complete paperwork	2.30	.95	2.00
Interact with parents	2.40	1.26	2.00
Overall impact	2.60	1.51	3.00

Research Questions and Teachers' Perceptions

The perceptions of T & I teachers towards the state required and the local induction methods for new teachers during their first two years of teaching is noteworthy. Of the five induction programs surveyed, mentors, NTI, and the certification courses are directly supported by DESE and are required

with very few exceptions. The other two induction programs, time and facilities/resources and leadership are provided by the local school district even though they both are supported by DESE through funding and other means.

Research Question One stated: To what extent are induction methods perceived to contribute to the retention of Missouri high school T & I CTE teachers? Examining the mean of the overall impact statement for each induction method indicates the importance of each method in retaining the teachers surveyed. Using 3.0 as the cut point on the scale of one to five, the five induction methods had a mean above 3.0 for the participants surveyed. As a whole, the respondents indicated the five induction methods had a positive impact in their decision to remain in teaching.

This changes somewhat when the data is divided into the two groups investigated. The means of all five "impact" statements for the group with at least some college coursework experience were above the 3.0 cut point. Once again, as a group, the respondents with at least some college coursework experience indicated all five of the induction methods had a positive impact in their decision to remain in teaching.

The group with no college coursework experience perceived the importance of the induction methods differently. They indicated their experiences with time and facilities/resources and leadership that are provided by a local school district as being the only ones important in their decision to remain in teaching (Table 18).

Table 18

Teacher Perceptions of Induction Methods - Mean (Standard Deviation)

Induction Method	Total	College	No College
N	27	17	10
Time and facilities/resources	3.78(.93)	3.76(.97)	3.80(.92)
Leadership	3.74(.94)	3.82(1.01)	3.60(.84)
Mentors	3.20(1.12)	3.40(1.12)	2.90(1.10)
NTI	3.14(1.36)	3.50(1.24)	2.70(1.42)
Certification courses	3.04(1.29)	3.29(1.10)	2.60(1.51)

Another question was related to the perceived importance of the various induction methods in relation to when the methods were experienced, whether early in the teaching career compared to later, if at all. Question Number Two stated: To what extent did the number and timing of induction methods vary for Missouri high school T & I CTE teachers? The survey asked T & I teachers to identify the period of time they experienced the five induction methods. The choices given were: a) by the end of my first year of teaching; b) after I began my second year of teaching; and c) I did not experience all five of these induction components. All 27 respondents answered this question with one of the three choices.

Seventeen (63%) of those surveyed indicated they experienced all five of the induction methods during the first year. Five (18.5%) did not experience the five induction methods until after they began their second year of teaching and five (18.5%) did not experience the five induction methods (Table 19). This last group of five would have been referring to NTI as they did not attend NTI at any time. All respondents had a mentor (either local or content) during their first year leaving the certification courses as the induction method the other

group of five did not experience until after beginning their second year of teaching.

Table 19

Teacher Perception of the Number and Timing of Induction Methods - Mean (Standard Deviation)

Induction Method	Total	All 5 Programs during 1 st year	<5 Programs/ After 1 st year
N	27	17	10
Time and facilities/resources	3.78(.93)	3.82(.81)	3.70(1.16)
Leadership	3.74(.94)	3.82(.64)	3.60(1.35)
Mentors	3.20(1.12)(a)	3.13(1.15)(b)	3.33(1.12)(c)
NTI	3.14(1.36)	3.24(1.25)	2.80(1.79)(d)
Certification courses	3.04(1.29)	2.82(1.07)	3.40(1.57)

(a) = 25 respondents for this activity

(b) = 16 respondents for this activity

(c) = 9 respondents for this activity

(d) = 5 respondents for this activity

The research question was developed to ascertain the teachers' perceptions of the induction methods in relation to when they were experienced. In other words, were teacher perceptions more positive when the induction methods were experienced during the first year when any and all assistance might be appreciated. Or did the teachers perceive induction methods experienced later as more beneficial because they had taught long enough to realize the issues that needed to be addressed?

Of the five induction methods surveyed, there was little difference in the perceptions of the two groups towards time and facilities/resources, leadership, and mentors (Table 19). All 10 teachers in the group that did not experience the five induction programs or did not experience all five until after beginning the second year of teaching did indicate in the survey they were

assigned a mentor, either local or content or both. One respondent, however, did not answer the survey questions regarding their mentoring experience (Table 19). Only two (20%) did not have a local mentor assigned but did have a content mentor.

The perceptions of NTI and the certification courses did vary between the two groups. The five teachers in the group (experienced induction methods after beginning the second year of teaching) indicated NTI was not of particular importance to them staying in teaching (mean < 3.0). Three of these five teachers attended NTI before their first year of teaching. The respondents in the group experiencing the five induction methods before the end of their first year of teaching indicated NTI had some impact (mean > 3.0) in remaining in the teaching profession (Table 19).

The perceptions of these two groups switched when they indicated the impact certification courses had in their decision to remain in teaching, the group in which at least half of them did not attend certification courses until after beginning their second year of teaching indicated the certification courses had a positive impact (mean > 3.0) on their decision to remain in teaching (Table 19). Seven (70%) of these teachers had college coursework experience and six of those seven had completed degrees.

The group experiencing the five induction methods before the end of the first year of teaching indicated the certification courses did not have a positive impact (mean < 3.0) in their decision to stay in teaching. In this group, ten (59%) had degrees or some coursework experience prior to teaching.

It might be suggested the teachers' perceptions of the certification courses follow Fuller's (1969) three phases of development as a teacher. Participating in the certification coursework too early in a teaching career comes at a time when the new teacher is still in the initial phase of *self* when their real concerns are discovering the parameters of their new working environment, not experimenting with new ideas and practices. Taking the certification courses after beginning the second year of teaching would find most new teachers advanced to the second phase of *task* in which they are ready to explore the alternative ideas and practices that are presented in the certification courses.

Question Number Three stated: Which induction method(s), if any, are perceived to be the most effective for Missouri high school T & I CTE teachers? This question can be answered by looking further at the data used in answering question number one. Initial examination of the means indicates "time and facilities/resources" as having the largest impact of all the induction methods for teachers to remain in the teaching profession (Table 18). In looking at the mean, the experiences of those surveyed for the leadership method of induction came in a close second with a mean of 3.74 for the group reporting. Since the negative skew of this induction method is significant (Table 9), the median of 4.00 should be used to identify the central tendency. If distributions are severely skewed, the median instead of the mean should be used to describe the central tendency (Shannon & Davenport, 2001). A central tendency of 4.00 would place the leadership method of induction as being

perceived by the teachers surveyed as the most significant contribution to them staying in teaching with “time and facilities/resources” indicated as the second most important to remaining in teaching.

The group with college coursework repeated the same placement of induction methods with leadership being perceived as having the greatest impact (median of 4.00) and time and facilities/resources being indicated as a strong second (mean of 3.76). The median was used for leadership with this group because of a significantly, negative skew to the distribution of data (Table 9). The remaining three induction methods, while having means above 3.0, were perceived as relatively less important in the impact to remain in teaching (Table 18).

The group with no college coursework experience reversed the placement of the induction method perceived as having the largest impact in their remaining in teaching. This group indicated “time and facilities/resources” as being the most important with a mean of 3.80 and “leadership” as second in importance with a mean of 3.60. This group indicated the remaining three induction methods had a less significant impact (means below 3.0) in their remaining in the teaching profession (Table 18).

Question Number Four stated: What induction activities were perceived to be the most helpful for Missouri high school T & I CTE teachers? Using the mean of each of the 40 activities and a cut point of 4.00, two activities were perceived by the entire group surveyed to be the most helpful. “High professional standard” as an activity in the “leadership” induction method was

perceived to be the most helpful of the activities with a mean of 4.11. “Class size” in the “time and facilities/resources” induction method was ranked a close second with a mean of 4.07 (Table 20).

Establishing a second cut point of 3.50, twelve more activities from the five induction methods were perceived to be helpful (Table 20). The cut point of 3.50 was established since it is the half-way point between “neither agree or disagree” at 3.00 and “agree” at 4.00.

Table 20

Induction Activities Perceived as Most Helpful - Total

Induction Method	Induction Activity	Mean	Standard Deviation
Leadership	High Professional Standard	4.11	.75
Time & Facilities/Resources	Class size	4.07	1.00
NTI	Write lesson plans	3.86	.64
Leadership	District orientation	3.81	.80
Certification Courses	Develop lesson plans	3.78	.75
Certification Courses	Evaluate learning	3.70	.99
Time & Facilities/Resources	Technology training	3.67	.96
Time & Facilities/Resources	Adequate space	3.67	1.33
Leadership	Constructive feedback	3.67	.88
NTI	Classroom management	3.64	.73
Mentors	Assisting with paperwork	3.60	1.08
Time & Facilities/Resources	Reasonable time	3.59	1.15
Mentors	Managing shop/lab	3.56	.82
Certification Courses	Reflective thinking	3.56	.93

The perceptions of the two groups differed on what was indicated as activities being the most helpful. The “no college” group ranked two activities above a mean of 4.00 with “class size” in the “time and facilities/resources” induction method being ranked first with a mean of 4.30. The second activity with a mean of 4.00 was “write lesson plans” in the NTI induction method

(Table 21). The “college” group ranked only one activity above a mean of 4.00 with “high professional standard” in the leadership induction method having a mean of 4.23 (Table 21).

All of the respondents as a group indicated four activities from time and facilities/resources; three activities from leadership; two activities each from mentors and NTI; and three activities from the certification courses induction method as being helpful. The helpful activities were distributed evenly throughout the induction methods when considering the number of activities in each induction method.

Table 21

Induction Activities Perceived as Most Helpful - College and No College

Induction Method	Induction Activity	College Mean	No College Mean
Leadership	High professional standard	4.24	3.90
Time & Facilities/Resources	Class size	3.94	4.30
Time & Facilities/Resources	Technology training	3.94	
Certification Courses	Develop lesson plans	3.82	3.70
Certification Courses	Evaluate learning	3.82	3.50
Leadership	District orientation	3.81	3.80
NTI	Write lesson plans	3.75	4.00
Mentors	Assisting with paperwork	3.73	
Time & Facilities/Resources	Reasonable time	3.71	
Leadership	Constructive feedback	3.71	3.60
Mentors	Classroom management	3.67	
Mentors	Managing shop/lab	3.67	
Time & Facilities/Resources	Adequate space	3.65	3.70
NTI	Classroom management	3.58	3.70
Leadership	Raising issues	3.53	
Leadership	Expressing concerns	3.53	
Certification Courses	Classroom management	3.53	
Certification Courses	Reflective thinking	3.53	3.60
NTI	Student discipline	3.50	

Bold print indicates additional activities identified as helpful by college group

The difference of the number and the type of activities falling between a mean of 3.50 and 3.99 for the two groups is especially noteworthy. The “college” group indicated a total of 19 activities from the five induction methods as being of help to them (Table 21). The “no college” group indicated 10 activities from four of the induction methods as being helpful (Table 21). This group of teachers without any college coursework experience did not perceive any of the activities from the mentoring induction method as being helpful.

The group with college coursework experience indicated four activities from time and facilities/resources; five activities from leadership; three activities each from mentors and NTI; and four activities from the certification courses induction method as being helpful activities. These activities perceived as helpful were also evenly distributed throughout the five induction methods.

The group with no college experience indicated two activities from time and facilities/resources; three activities from leadership; no activities from mentoring; two activities from NTI; and three activities from the certification courses induction method as being helpful activities. With the exception of no activities being identified as helpful in mentoring, these activities were evenly distributed albeit at a smaller percentage compared to the “college” group.

Both groups indicated the same 10 activities as helpful (Table 21). The group with college experience indicated an additional nine activities as being helpful and these nine activities are identified by the bold print in Table 21.

Question Number Five stated: What induction activities were perceived to be the least helpful for Missouri T & I CTE teachers? Using the mean of each activity to answer this question, an activity with a mean less than 3.0 was considered not being helpful as indicated by the respondents. The entire group surveyed identified six activities as not being helpful to them (Table 22). The activity of “reduced paperwork” in the time and facilities/resources induction method was indicated as the least helpful with a mean of 1.96. The group as a whole indicated two activities in the time and facilities induction method; two activities in NTI; and two activities in the certification courses as being the least helpful (Table 22). The leadership and mentors induction methods did not have any activities indicated as being least helpful.

Table 22

Induction Activities Perceived as Least Helpful - Total

Induction Method	Induction Activity	Mean	Standard Deviation
Time & Facilities/Resources	Reduced paperwork	1.96	.98
Certification Courses	Interact with parents	2.63	1.15
Certification Courses	Complete paperwork	2.78	1.12
Time & Facilities/Resources	Protected from distractions	2.81	1.30
NTI	Manage paperwork	2.82	1.37
NTI	Parent conferences	2.95	1.13

The group with college coursework experience indicated fewer activities as least helpful compared to the group as a whole. This group identified four activities as least helpful with “reduced paperwork” in the time and facilities/resources induction method being the least helpful with a mean of 1.88 (Table 23). Two of the identified activities were in the time and

facilities/resources induction method; one was in the NTI induction method; and one was in the certification courses induction method (Table 23). Once again, the leadership and mentors induction methods did not have any activities indicated as being least helpful.

The group without college coursework experience indicated seven activities as being least helpful to them. As with the “college” group, this group identified “reduced paperwork” in the time and facilities/resources induction method as being the least helpful with a mean of 2.10 (Table 23). This was the only activity identified in this induction method as least helpful and the NTI and certification courses induction methods had three activities each that were identified as least helpful (Table 23). This group did not identify any activities in the leadership or mentors induction methods as least helpful.

Table 23

Induction Activities Perceived as Least Helpful - College and No College

Induction Method	Induction Activity	College Mean	No College Mean
Time & Facilities/Resources	Reduced paperwork	1.88	2.10
Time & Facilities/Resources	Protected from distractions	2.59	
Certification Courses	Interact with parents	2.63	2.40
NTI	Manage paperwork	2.92	2.70
Certification Courses	Complete paperwork		2.30
NTI	Student discipline		2.60
NTI	Parent conferences		2.70
Certification Courses	Motivation techniques		2.70

Bold print indicates activities identified by only one group

The two groups had similarities in the activities they indicated as least helpful and these are identified in Table 23 in regular print. There were also

differences in the two groups' perceptions as the least helpful activities and these are identified in bold print in Table 23. The "college" group identified one activity, "protected from distractions" in time and facilities/resources, which the "no college" group perceived as somewhat helpful. The "no college" group identified four additional activities not identified by the "college" group as least helpful (Table 23).

Additional Observations

The data collected from the surveys yielded additional information that is noteworthy and less related to the research questions. Two patterns developed from the two groups formed after the data collection. The first of these observations relates to the group that felt more positive about the 40 activities within the five induction methods.

Time and facilities/resources had five activities plus the impact statement rated higher by the "no college" group than by the "college" group. The "college" group rated four activities higher than the "no college" group (Table 24). The higher of the two means for each activity is in bold print for ease of identification.

The leadership induction method with 10 activities had five activities plus the impact statement rated higher by the "college" group. The "no college" group had only two activities rated higher than the "college" group (Table 25).

Table 24

Time and Facilities/Resources - Mean (Standard Deviation)

Activity	Total	College	No College
N	27	17	10
Class size	4.07(1.00)	3.94(1.20)	4.30(.48)
Reasonable time	3.59(1.15)	3.71(1.10)	3.40(1.26)
Collaborate with colleagues	3.33(1.18)	3.35(1.32)	3.30(.95)
Planning time	3.19(1.21)	3.12(1.22)	3.30(1.25)
Protected from distractions	2.81(1.30)	2.59(1.23)	3.20(1.40)
Reduced paperwork	1.96(.98)	1.88(1.05)	2.10(.88)
Adequate materials	3.33(1.07)	3.47(1.07)	3.10(1.10)
Technology training	3.67(.96)	3.94(.83)	3.20(1.03)
Adequate space	3.67(1.33)	3.65(1.37)	3.70(1.34)
Overall impact	3.78(.93)	3.76(.97)	3.80(.92)

Bold print indicates the higher of the two means

Unlike any of the other induction methods, both groups rated three activities the same (or very nearly so). The "college" group was 0.01 higher than the "no college" group on two of the three means but the "no college" group had a lower standard deviation on these two activities.

Table 25

Leadership - Mean (Standard Deviation)

Activity	Total	College	No College
N	27	17	10
Raising issues	3.41(1.12)	3.53(1.18)	3.20(1.03)
Expressing concerns	3.44(1.15)	3.53(1.23)	3.30(1.06)
Clear expectations	3.41(1.12)	3.41(1.18)	3.40(1.07)
Enforced rules	3.00(1.41)	3.00(1.37)	3.00(1.56)
Communicated policies	3.26(1.16)	3.24(1.25)	3.30(1.06)
High professional standard	4.11(.75)	4.24(.44)	3.90(1.10)
District orientation	3.81(.80)(a)	3.81(.83)(b)	3.80(.79)
Constructive feedback	3.67(.88)	3.71(.99)	3.60(.70)
Recognition	3.30(1.14)	3.47(1.23)	3.00(.94)
Assistance with discipline	3.37(1.15)	3.35(1.22)	3.40(1.07)
Overall impact	3.74(.94)	3.82(1.01)	3.60(.84)

(a) = 26 respondents for this activity (b) = 16 respondents for this activity

Bold print indicates the higher of the two means

The “college” group had a higher mean on all six of the activities plus the impact statement for the mentors induction method (Table 26). The “no college” group rated all six activities with a mean of 3.00 or above, but rated the statement regarding the impact mentors had on their decision to stay in teaching at a mean of 2.90.

Table 26

Mentors - Mean (Standard Deviation)

Activity	Total	College	No College
N	25	15	10
Instructional strategies	3.32(1.11)	3.33(1.11)	3.30(1.16)
Curriculum assignment	3.12(1.05)	3.20(.94)	3.00(1.25)
Classroom management	3.44(1.08)	3.67(.90)	3.10(1.29)
Managing shop/lab	3.56(.82)	3.67(.82)	3.40(.84)
Advising skills contests	3.16(1.21)	3.20(1.32)	3.10(1.10)
Assisting with paperwork	3.60(1.08)	3.73(1.16)	3.40(.97)
Overall impact	3.20(1.12)	3.40(1.12)	2.90(1.10)

Bold print indicates the higher of the two means

The “college” group had a higher perception of five of the NTI activities plus the impact statement. The “no college” group had a higher perception of three of the activities, one of which they rated with a mean of 4.00, one of only two rated this high or higher (Table 27).

The “no college” group rated only one activity higher than the “college” group with the certification courses induction method. The “college” group had a higher perception of the remaining six activities plus the impact statement than the “no college” group (Table 28).

Table 27

NTI and Call-Back Sessions - Mean (Standard Deviation)

Activity	Total	College	No College
N	22	12	10
Motivation techniques	3.23(1.02)	3.42(.90)	3.00(1.15)
Classroom management	3.64(.73)	3.58(.79)	3.70(.67)
Student discipline	3.09(1.02)	3.50(.67)	2.60(1.17)
Write lesson plans	3.86(.64)	3.75(.45)	4.00(.82)
Parent conferences	2.95(1.13)	3.17(1.11)	2.70(1.16)
Student assessments	3.41(.85)	3.42(.79)	3.40(.97)
Manage paperwork	2.82(1.37)	2.92(1.24)	2.70(1.57)
Reflective thinking	3.36(.90)	3.25(.97)	3.50(.85)
Overall impact	3.14(1.36)	3.50(1.24)	2.70(1.42)

Bold print indicates the higher of the two means

The “college” group had a higher perception than the “no college” group on the value of 26 (65%) activities. The “no college” group had a higher perception on the value of 11 (27%) activities and three (8%) activities were tied in the two groups perception of the value.

Table 28

Certification Courses - Mean (Standard Deviation)

Activity	Total	College	No College
N	27	17	10
Motivation techniques	3.00(1.30)	3.18(1.24)	2.70(1.42)
Classroom management	3.41(1.25)	3.53(1.23)	3.20(1.32)
Develop lesson plans	3.78(.75)	3.82(.73)	3.70(.82)
Reflective thinking	3.56(.93)	3.53(1.07)	3.60(.70)
Evaluate learning	3.70(.99)	3.82(.95)	3.50(1.08)
Complete paperwork	2.78(1.12)	3.06(1.14)	2.30(.95)
Interact with parents	2.63(1.15)	2.76(1.09)	2.40(1.26)
Overall impact	3.04(1.29)	3.29(1.10)	2.60(1.57)

Bold print indicates the higher of the two means

Of the five impact statements, one for each induction method, the “college” group had a higher perception of four of the induction methods than the “no college” group. Only the induction method of time and

facilities/resources did the “no college” group have a higher perception of the impact with this induction method than did the “college” group (Table 29).

The group as a whole had a higher perception of the impact made by the time and facilities/resources and leadership induction methods.

Table 29

Perceived Means of Induction Method Impact Statements - Total

Induction Activity	Total Mean	College Mean	No College Mean
N	27	17	10
Time & Facilities/Resource	3.78	3.76	3.80
Leadership	3.74	3.82	3.60
Mentors	3.20	3.40	2.90
NTI	3.14	3.50	2.70
Certification Courses	3.04	3.29	2.60

Summary

This study examined the five induction methods all new teachers should have available to them during their first two years of teaching. The activities within each induction method encompassed the support necessary for a new teacher to feel successful and remain in teaching. The literature reviewed in chapter two indicated the importance of new teachers being assisted by these activities throughout their first two years of teaching and the study was designed to identify the impact these activities had on the teachers remaining in the teaching profession. Since all of these teachers were still employed in teaching, observations could be made regarding the perceptions these teachers had of the 40 induction activities contained within the five induction methods.

From the data collected for this study, it was found that some induction activities are perceived by those experiencing them to be more helpful than other activities. It depended on the groups as to the type of induction activity perceived to be helpful as well as the number of induction activities that were perceived to be helpful. It was also found that some induction activities, while not preventing the teachers from returning each year, could be improved to some extent.

This study observed the differences in the perceptions of teachers that had college experiences prior to teaching to the perceptions of teachers that did not have any college experience prior to teaching. It can be suggested that teachers with college experience prior to teaching had more positive perceptions about a larger number of the induction activities. The overall perceptions for each induction method was observed to vary by group.

Chapter 5

Summary, Findings, Conclusions, and Recommendations

Summary

The purpose of this study was to examine the effectiveness of the various induction methods most new T & I teachers experience during their first two years of teaching. T & I teachers are generally considered content experts in their trade but begin their teaching career lacking the knowledge and experience in teaching the technical skills they possess to high school students who have diverse academic backgrounds and learning styles. Traditionally trained teachers begin their careers with most of the knowledge needed to write lesson plans, assess student learning, and manage classroom environments. They just need to implement their new knowledge into practices that are effective.

T & I teachers enter the classroom with little knowledge or experience, if any at all, in writing lesson plans, or assessing student learning. Measurable levels of success early in the school year does not come easily unless an effective system is in place that allows the new T & I teachers to acquire the knowledge necessary for successful teaching (Britton et al., 2003; Menchaca, 2003).

The various induction methods used in Missouri are for the purpose of providing these new T & I teachers with the knowledge of teaching practices along with auxiliary training to provide the means for them to be successful. A major component in the retention of teachers is the teacher's awareness of

success in the classroom (Joerger & Bremer, 2001; Jorissen, 2002; Harrell et al., 2004; Yost, 2006).

Literature Review

The focus of the literature review was to determine the extent of the research completed to date regarding the reasons teachers stay in teaching and the reasons teachers leave teaching. An overview of attrition rates and the multiple costs of teacher attrition was written so the significance of teacher retention could be emphasized. The needs and concerns of new nontraditional teachers were examined along with the required competencies and skills of new teachers. The dimensions of effective teaching, as defined by research, were examined and related to the effectiveness of induction methods in past studies. The research indicated that effective teaching results in teacher success, and a body of research has connected teacher success to job satisfaction. As with any profession, the research indicated that job satisfaction results in employee retention, and for the purpose of this study, teacher retention.

The literature review was also used to identify the various induction activities within each induction method. Prior research indicated that certain induction methods should provide the opportunities for new teachers to gather information and gain support for the issues that are important in their development. Ultimately, the survey used to gather data for this study was developed using the information revealed in the literature review as important to the retention of teachers.

Research Questions

Five research questions regarding induction methods for nontraditional high school T & I CTE teachers in Missouri were developed for this study. Research Question One was written to examine the extent induction methods are perceived to contribute to the retention of Missouri high school T & I CTE teachers. Research Question Two was written to examine the extent the number and timing of induction methods varied for Missouri high school T & I CTE teachers. Research Question Three was written to examine which induction method(s), if any, were perceived to be the most effective for Missouri high school T & I CTE teachers. Research Question Four investigated what induction activities within the various induction methods were perceived to be the most helpful to new Missouri high school T & I CTE teachers. Research Question Five sought to investigate which induction activities within the various induction methods were perceived to be the least helpful to Missouri high school T & I CTE teachers.

The data were collected using an electronic survey which had a link attached to an electronic mail sent to the teachers selected for the study. Measures of central tendency, measures of variability, and tests for skewness and kurtosis were run on the data collected. Histograms were produced for each induction activity in examining the data for distribution and sub-groups in the data collected.

Findings

This study examined the data collected and applied the findings to the five research questions. Additional observations were made from the grouping of the data. The results provide helpful information and persons responsible for supporting new teachers with their respective induction methods may find information useful to them in reaching all new teachers in the quest to assist new teachers in being successful and remain in teaching.

Research Question One asked to what extent are induction methods perceived to contribute to teacher retention? From the data collected, it appears the five induction methods examined did contribute to the retention of the teachers surveyed. Each of the five induction methods had a mean above 3.0 (with the scale ranging from 1.0 to 5.0).

Research Question Two did reveal there are still variables involved in getting all induction methods to the new teachers as soon as possible. Almost two-thirds (63%) of the new teachers did experience the five induction methods by the end of their first year of teaching. Almost one-fifth (18.5%) did not experience the five induction methods until sometime after they had started their second year of teaching. The remainder of the group (18.5%) did not receive the benefit of the five induction methods.

Research Question Three examined the data to determine if any of the induction methods were perceived to be more effective than the others. The data suggests the methods of leadership and time and facilities/resources are perceived to be the more effective induction methods.

Research Question Four went beyond the induction methods and sought to ascertain the most helpful induction activities based on the perceptions of the respondents. A total of fourteen induction activities were rated to be the most helpful based on each activity having a mean of 3.50 or above. The induction method of time and facilities/resources contained four of these activities. Leadership and certification courses contained three activities each and mentors and NTI contained two activities each.

Research Question Five took a different approach and sought to ascertain which induction activities within the induction methods were perceived to be the least helpful. Six activities had means below 3.0 as indicated by the respondents. The induction methods of time and facilities/resources, NTI and certification courses had two activities each perceived as least helpful. Three (50%) of these activities involved the amount of paperwork new teachers are required to process as part of their jobs.

Additional findings independent of the research questions became apparent in working with the data. Two groups were formed from the original group of respondents and this was based on whether or not a respondent had completed any college courses prior to teaching. Seventeen (63%) of those surveyed had some type of college degree or at least completed some college. This formed the group identified as "college" and the remaining respondents (37%) were grouped as "no college".

The college group had higher perceptions regarding the benefits of the majority of the induction activities compared to the no college group. The

college group also indicated a higher number of the induction activities (19) as being most helpful compared to the no college group with 10 induction activities perceived as being most helpful.

The college group perceived four induction activities as being least helpful compared to the no college group that indicated seven activities as being least helpful to them. The college group had higher perceptions of the benefit of the three induction methods that involved time away from home and additional paperwork/homework (mentors, NTI, and certification courses) than did the no college group.

Discussion of the Findings

The perceptions of the respondents in regards to the contributions the five induction methods made to the teachers' success and decisions to remain in teaching were consistent with the results of the research in the literature review (Kelly, 2004; Viadero, 2005; Smith, 2007). An individual new to the responsibilities of teaching needs to acquire many different skills and depend on many different entities to support them during the first two years of teaching. As was discussed in the literature review, the task of accomplishing this is too large and comprehensive for any one entity to be successful in addressing all of the issues. Several different entities within their own area of expertise are more efficient in presenting the information needed by a new teacher so they can develop into a successful teacher, and consequently remain in the teaching profession.

The data collected for this study supports prior research (Self, 2001; Jorissen, 2002; Johnson & Birkeland, 2003; Angelle, 2006) in assessing the positive contributions all induction methods make in aiding new teachers in the development of their skills and competencies. A noteworthy finding in analyzing the data collected was the perceptions of these contributions varying from those with college experience to those without college experience. The group without college experience (but with company experience) may have expected the organizational support that comes with leadership and having adequate time and resources to accomplish a job. At the same time, they may not have placed as much emphasis on the longer term training that was involved with mentoring programs, NTI, and the certification courses. They came from industry that predominately provides short-term training to gain the skills for new responsibilities.

The data collected in the study indicates that not all new teachers are able to gain skills and experience from the five induction methods during their first year of teaching. The perceptions of those surveyed allude to the fact that, at least with the certification courses, waiting until after the first year of teaching was more beneficial. This may have occurred as a result of these teachers knowing what they needed to learn from the material addressed in the courses.

The respondents of this study indicated time and facilities/resources and leadership being the most effective methods of induction. This again supports prior research (Self, 2001; Jorissen, 2002) and appears to be the foundation on

which all other induction methods are built. Without support from the leadership in an organization and without adequate resources to utilize in completing tasks, all other issues become insurmountable and result in attrition. The respondents of this study perceived both leadership and resources as being effective in allowing them to complete their tasks of teaching.

In analyzing the individual activities, the teachers indicated that being held to a high professional standard was the most helpful induction activity which was a component of the leadership induction method. It might be suggested the teachers recognized a benefit in being held accountable for the responsibilities of teaching and placed an emphasis on achieving higher standards. As a result, additional benefits may have been realized in becoming more successful.

The teachers recognized the significance of an appropriate class size in being instrumental in allowing more time for each student. A manageable class size is important in having the time to teach to every student and, for a new teacher, is a crucial component in achieving early success in the classroom. When the data were examined with the two groups formed in this study, the group with no college experience indicated the induction activity of writing lesson plans as being more helpful than a high professional standard although this latter activity was placed third in perceived importance.

A related observation of the sub-group data is the number of induction activities each group perceived as helpful. The college group indicated a total

of 19 induction activities compared to the no college group of 10 activities that were perceived to be helpful. It might be suggested this group of new teachers with no college experience placed more emphasis on induction activities that were more tangible in nature such as manageable class size and district orientation.

When items are ranked, some are going to be listed as last or least helpful. The data collected for this study was no different but what was perceived as least helpful is noteworthy. The total group perceived six induction activities as least helpful with three of these involving assistance with the paperwork required in being a teacher. The respondents may be suggesting that they are being overwhelmed at times with paperwork without adequate assistance in completing it or they may be suggesting the training they are receiving in processing the paperwork is inadequate. In either case, it appears the teachers surveyed are expressing a concern with their expected responsibilities. It was noteworthy in examining the least helpful induction activities of the two groups. The college group perceived only four activities as least helpful while the no college group perceived seven activities as least helpful. Four of these activities involved interacting with the students or the parents. It may be suggested the lack of college experience (such as educational psychology courses) prior to teaching increased the level of difficulty these teachers had in addressing issues face-to-face.

Additional observations to the data collected revealed individuals with college experience had a higher perception on more of the induction activities

than did the group with no college experience. This might suggest the teachers with prior college experience realized more readily the opportunities to learn new knowledge and skills compared to their counterparts with no college experience.

Implications

The data collected for this study indicates the presence of two sub-groups within the high school T & I CTE teachers in Missouri. In answering the research questions with the data from the two sub-groups, patterns emerged in the needs of these two groups. While not being traditionally trained teachers, the group of CTE teachers with college experience seemed to adapt more easily (based on their perceptions to the induction activities) to the traditional methods of induction.

It may be feasible to modify some of the induction methods and time lines for completion for the truly nontraditional teacher. This may include but not be limited to:

1. Keep training short term. This may involve more of the certification courses but each one shorter in duration. "Themes" for each short course would mimic the type of professional development these individuals are already accustomed to experiencing.
2. Customized induction methods. Writing a plan of action for each new T & I teacher that has not had prior college experience so immediate needs can be met first and the

remaining skills developed over a customized time line.

3. A separate NTI for the individuals that do not have prior college experience. This would allow these new teachers to learn the basics of classroom teaching in a lower population environment and enable the NTI instructors to intensify their focus on the individual needs of these new teachers.

Economics would be a determining factor in the feasibility of the above concepts. As the literature review highlights, however, the cost of attrition in student learning and dollars is also rather high.

Conclusions

1. Induction methods are perceived to have a positive impact on the retention of Missouri's high school T & I CTE teachers.
2. There is still some variance in how quickly Missouri's high school T & I CTE teachers are involved with all the induction methods available.
3. Locally directed activities related to time and facilities/resources and leadership induction methods are perceived by Missouri's high school T & I CTE teachers as being the most effective of the induction methods.
4. Being held to a high professional standard, class size, and writing lesson plans should continue to be emphasized induction activities.

5. Induction activities designed to assist Missouri's high school T & I CTE teachers in processing paperwork required of the teaching profession should be revised to better meet the needs of these teachers.
6. College course work prior to teaching is more likely to help in the transition into teaching.

Recommendations for Further Research

The following recommendations for research are based on this study.

1. A study to determine what would improve the induction activities perceived as least helpful. Respondents would have the opportunity to identify why these induction activities were not perceived as beneficial and state concrete solutions to improve these activities in the future.
2. A study to investigate the needs of new teachers not having college experience prior to teaching. This study should be longitudinal and follow these new teachers from their first semester until at least the end of the second year.
3. A study in which a pilot group (cohort) of new teachers were allowed to complete the certification courses as a series of "themed" short courses with an equal amount of time between each short course. The perceptions of these teachers to these courses would then be compared to a comparable group completing the traditional certification courses.

4. A study to determine if T & I CTE teachers follow Fuller's stages of development as they acquire the skills of a competent high school teacher. The study would need to follow these teachers closely, identifying when they transitioned from the *self* phase to the *task* phase and observing the length of time required to make this transition. This same group of teachers would continued to be followed to determine the length of time needed in order to transition from the *task* phase into the *impact* phase.

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Appendix A
Recruitment Statement

Recruitment Statement for Research Participation

Tim Gill, a graduate student in the College of Education at the University of Missouri-Columbia, invites you to participate in this research study.

PROJECT BACKGROUND: The title of this study is “Teacher Induction Programs and their Effectiveness on the Retention of Secondary Trade and Industrial Teachers in Missouri”. This project involves gathering data from teachers with the “linked” survey and will investigate the effectiveness of various programs used in new teacher induction.

PURPOSE: Rates of teacher retention by a school district appear to be affected by comprehensive teacher induction programs. The purpose of this study is to determine if induction programs of new teachers are effective and if certain programs of induction are more effective than others. The study will also determine if new teachers are being afforded the various programs of induction that are available to new teachers.

VOLUNTARY: This survey is entirely voluntary. You may refuse to answer any question or choose to not participate. You may also choose to withdraw from the electronic survey without answers of the partially completed survey being recorded. You may also request a survey on paper if you wish by calling 660-232-2021 or e-mailing tlggd4@mail.missouri.edu.

WHAT DO YOU DO? The participant will complete the attached survey that is made up of five different components of comprehensive teacher induction programs. The survey asks specific questions about your new teacher induction experiences and should not take over five to ten minutes to complete.

BENEFITS: Your participation in this research project will allow for an improved awareness of effective teacher induction programs. Improvements can be made if necessary, with induction programs that may be found to be less than effective in improving teacher retention. While the benefits of this study may not affect you directly, you will be providing information that will benefit future new teachers.

RISKS: This project does not involve any risks greater than those encountered in everyday life.

CONFIDENTIALITY: Your confidentiality will be maintained in that a participant’s name will not appear on the survey or in the published study. The data will only be reported in aggregate form.

NOTICE: This electronic mail transmission (including any accompanying attachments) is intended solely for its authorized recipient, and may contain

confidential and/or legally privileged information. If you are not an intended recipient, or responsible for delivering some or all of this transmission to an intended recipient, be aware that any review, copying, printing, distribution, use or disclosure of the contents of this message is strictly prohibited. If you have received this electronic mail message in error, please contact sender immediately by reply e-mail, or by calling 660-232-2021, so that the address records can be corrected. Then please delete this from your computer system without copying it.

Although this e-mail and any attachments are believed to be free of any virus or other defect that might negatively affect any computer system into which it is received and opened, it is suggested the recipient have up-to-date software to ensure that it is virus free. No responsibility is accepted by the sender for any loss or damage arising in any way in the event that such a virus or defect exist.

It is understood that by returning the completed survey to the researcher, consent is being granted by you to participate in this study.

Thank you for your assistance in providing current information on the effectiveness of teacher induction programs for secondary trade & industrial education teachers in Missouri. Your time is greatly appreciated. If you have questions about this research study, you can contact Tim Gill at tlggd4@mail.missouri.edu. If you have questions about your rights as a participant in this research, please feel free to contact the University of Missouri-Columbia Campus Institutional Review Board at (573) 882-9585.

To begin the survey, click on the following link:

<http://www.surveymonkey.com/s/DGGYDHT>

Thank you for taking the time from your teaching schedule to complete this survey. Your input is very valuable in the overall analysis of this study.

Appendix B

Teacher Induction Methods Survey

Teacher Induction Programs Survey

Below is a survey that is part of a research project conducted by Tim Gill, a graduate student in the College of Education at the University of Missouri-Columbia. This project is designed to gather information about the effectiveness of induction programs for new trade and industrial teachers in the state of Missouri. Please be aware of the following:

Participation in this survey is voluntary and you will not receive compensation for your participation. You will, however, receive a copy of the summary results by participating in this survey.

The researcher will not identify you by name or name your school district while using information obtained from this survey and your confidentiality as a participant in this study will remain secure.

The data from this survey will be used in the final product of the study, a dissertation written by the researcher in meeting the requirements of a degree from the College of Education at the University of Missouri-Columbia. Parts of the findings may also be used in an article for publication in a professional journal and/or a presentation at a professional conference.

This research study and all documents related to it have been reviewed and approved by the Institutional Review Board (I.R.B.) for Studies Involving Human Subjects at the University of Missouri-Columbia.

If you have any questions about the details of this study, you may contact the researcher at tlggd4@mail.missouri.edu.

Teacher Induction Programs Survey

Time and Facilities/Resources

Exit this survey

Please rate how strongly you agree or disagree with the following statements about the amount of time and adequacy of facilities and resources you had during your first and second year of teaching.

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. I had reasonable class sizes to meet the educational needs of all students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I had reasonable time to meet the educational needs of all students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I had time available to collaborate with colleagues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The planning time provided for me was sufficient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I was protected from duties that interfered with my role of educating students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Efforts were made to reduce the amount of routine administrative paperwork I was required to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I had sufficient access to adequate instructional materials and resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I had sufficient training and support to utilize the available instructional technology.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I had adequate professional space to work productively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The time and resources available had an impact in my deciding to stay in my position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Leadership

Exit this survey

Please rate how strongly you agree or disagree with the following statements about the leadership in your school during your first and second years of teaching.

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. I felt comfortable raising issues that were important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I felt comfortable expressing concerns that were important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The school leadership communicated clear expectations to teachers and staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The school leadership consistently enforced rules for student conduct.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. School leaders effectively communicated policies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I was held to a high professional standard for delivering instruction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. My general orientation to the district was adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I received fair and constructive feedback that helped improve my teaching.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I was recognized for accomplishments, both personally and with my students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I had adequate assistance with classroom management/ discipline strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The level of leadership in my building had an impact in my deciding to stay with my position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mentors

Exit this survey

Did you have a formal building mentor during your first and second years of teaching?

- First year only
- Second year only
- Both the first and second year
- I did not have a building mentor

The content area mentor is the individual assigned by the Department of Elementary and Secondary Education. They teach the same subject/trade that you teach and were probably teaching in another school district somewhere else in the state of Missouri. (You may or may not have had this type of mentor.) Did you have a formal content area mentor during your first and second years of teaching?

- First year only
- Second year only
- Both the first and second year
- I did not have a content area mentor

Respond to the following statements only if you had an assigned building and/or content area mentor. Please rate how strongly you agree or disagree with the following statements about the experience you had with your mentors.

My mentors were effective in providing support in the following areas:

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. Instructional strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Curriculum assignment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Classroom management and discipline strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Ideas for managing my shop/lab area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Advising/coaching me in preparing my students for skills contests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Completing other school or district paperwork (purchase orders, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Assistance from my mentors impacted my decision to stay in my position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

At what point during your first two years of teaching did you attend the New Teacher Institute at the University of Central Missouri in Warrensburg, MO?

- Before my first year of teaching
- Before my second year of teaching
- After my second year of teaching
- I did not attend the New Teacher Institute

Respond to the following statements only if you attended the New Teacher Institute at some point in time.

Please rate how strongly you agree or disagree with the following statements about the benefits you received from attending the New Teacher Institute and call-back sessions.

The New Teacher Institute was effective in providing the information for me to:

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. Acquire student motivation techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Develop classroom management skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Manage student discipline.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Write lesson plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Manage parent conferences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Develop student assessments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Manage the required paperwork.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Develop reflective thinking skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. New Teacher Institute and the call-backs had an impact in my decision to stay in my position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Certification Courses

Exit this survey

Please rate how strongly you agree or disagree with the following statements about the benefits you received from attending the college credit courses which were referred to as the "certification" courses.

The certification courses were effective in providing the information for me to:

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree
1. Acquire student motivation techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Develop/improve classroom management skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Develop/identify effective lesson plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Develop/improve reflective thinking skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Evaluate student learning and skill development.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Complete required paperwork.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Interact with parents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. What I learned in the certification courses had an impact in my decision to stay in my position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

General Note: All five of these induction components (time, leadership, NTI, etc.) were made available to me:

- By the end of my first year of teaching.
- After I began my second year of teaching.
- I did not experience all five of these induction components.

1. Before you began your current teaching position, how much teacher training and/or teacher education had you received? (check all that apply)

- Military
- Union apprenticeship
- Some college
- Two-year degree
- Four-year degree
- Post-graduate work/degree
- No formal training/schooling

Thank you for taking the time from your schedule to complete this survey. Your input is very valuable in the overall analysis of this study.

End of Survey

Appendix C
Histogram Examples

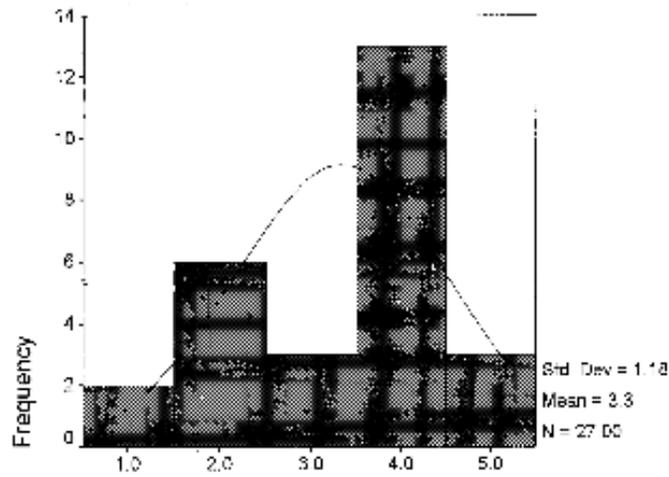


Figure 1.

Collaborate with Colleagues Induction Activity Histogram

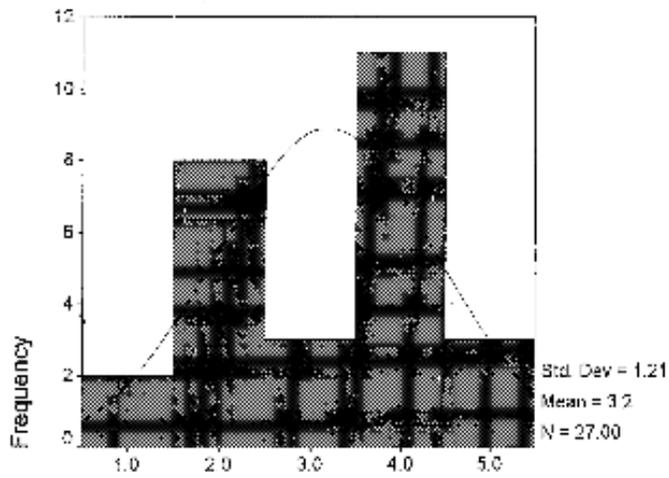


Figure 2.

Planning Time Induction Activity Histogram

Appendix D
Teacher Information Summary

Table 30

Teacher Information Summary

Respondent	Local Mentor	Content Mentor	NTI	Experienced Induction	Training/Education
1	Both years	None	Before 1 st yr.	End of 1 st yr.	None
2	Both years	None	Before 1 st yr.	End of 1 st yr.	Some coll.
3	Both years	None	Before 1 st yr.	End of 1 st yr.	2-yr. deg.
4	None	Both years	Before 1 st yr.	End of 1 st yr.	Some coll.
5	Both years	Both years	Before 2 nd yr.	End of 1 st yr.	None
6	1 st year only	Both years	Before 1 st yr.	After 2 nd yr.	None
7	1 st year only	Both years	Before 1 st yr.	End of 1 st yr.	Some coll.
8	Both years	Both years	Before 1 st yr.	End of 1 st yr.	Some coll.
9	Both years	Both years	Before 1 st yr.	End of 1 st yr.	4-yr. deg.
10	None	Both years	Before 1 st yr.	After 2 nd yr.	None
11	1 st yr. only	Both years	None	Not all five	grad work
12	Both years	Both years	Before 1 st yr.	End of 1 st yr.	None
13	1 st yr. only	Both years	Before 1 st yr.	End of 1 st yr.	None
14	None	1 st yr. only	None	Not all five	4-yr. deg.
15	1 st yr. only	1 st yr. only	Before 1 st yr.	End of 1 st yr.	4-yr. deg.
16	Both years	Both years	Before 1 st yr.	End of 1 st yr.	2-yr. deg.
17	1 st yr. only	None	None	Not all five	grad work
18	Both years	Both years	Before 2 nd yr.	End of 1 st yr.	Some coll.
19	1 st yr. only	None	None	Not all five	grad work
20	Both years	Both years	Before 2 nd yr.	End of 1 st yr.	Union
21	Both years	Both years	Before 1 st yr.	End of 1 st yr.	Military
22	Both years	Both years	Before 1 st yr.	After 2 nd yr.	Some coll.
23	Both years	Both years	Before 2 nd yr.	After 2 nd yr.	2-yr. deg.
24	1 st yr. only	1 st yr. only	Before 2 nd yr.	End of 1 st yr.	Union
25	1 st yr. only	None	After 2 nd yr.	After 2 nd yr.	None
26	Both years	None	None	Not all five	4-yr. deg.
27	Both years	Both years	Before 1 st yr.	End of 1 st yr.	Some coll.

VITA

Timothy L. Gill was born July 3, 1957 and raised on a crop and livestock farm near Shelbina, MO. It was on the farm where he learned the value of putting in the extra effort to succeed. He graduated from the Shelby County RIV school district in 1975 and attended the University of Missouri-Columbia in the fall of the same year. He met his wife, Debby Tebow, while working on an undergraduate degree in Agricultural Education then graduated and married his wife during May, 1979.

While teaching vocational agriculture, he completed a M.S. in Agricultural Education in July, 1981. He taught vocational agriculture a total of five years before leaving teaching and worked in industry for 10 years. He returned to teaching in the fall of 1994, this time teaching Industrial Welding in an area vocational technical school. In 2006, he began teaching adjunct classes at the Business and Technology College in Kansas City, MO and just recently acquired a full-time position on the campus serving in the capacity of program coordinator and instructor.

He lives on a farm near Richmond, MO with his wife Debby and enjoys visiting his three children who are currently enrolled in college.