

THE EFFECTIVENESS OF TEACHER EDUCATION AS PERCEIVED BY BEGINNING TEACHERS IN AGRICULTURAL EDUCATION

Barry Croom, North Carolina State University

Abstract

The presence of a highly qualified and certified teacher in every classroom is a noble goal, but one questions whether or not this goal is attainable given the present difficulty in finding enough certified career and technical education teachers to teach in America's schools. Beginning agriculture teachers in a Southern state were asked to determine the quality of their teacher-preparation experience. The study also sought to determine if a relationship exists between a teacher's overall sense of preparedness and teacher efficacy, and determine if a difference exists between agriculture teachers prepared through a pre-service program at a teacher education institution and agriculture teachers who had no formal preparation experience. Based upon the findings of this study, agriculture teachers with less than three years of professional experience believed that their teacher preparation programs, in most cases, adequately prepared them to teach. The study also determined that the teacher's degree of confidence in their ability to teach was positively related to their perceived effectiveness in the classroom. The study did not find any differences between methods of preparation by which a teacher enters the profession.

Introduction/Theoretical Framework

The Elementary and Secondary Education Act of 2000 influences how state education agencies and teacher education institutions prepare and certify teachers for the classroom. The presence of a highly qualified and certified teacher in every classroom is a noble goal, but one questions whether or not this goal is attainable given the present difficulty in finding enough certified teachers to teach in America's schools. The teacher turnover rate in the southern state in which this study was completed was 12.37 percent in the 2003-2004 academic year ([State] Department of Public Instruction, 2006).

In the late 1990's the State Board of Education realized the need to develop a series of standards that defined the profession of teaching ([State] Professional Teaching Standards Commission, 2000). With cooperation from the state legislative body and the governor, the Board created a professional teaching standards commission to develop these standards. Over the course of eighteen months, the commission received input from teachers, parents, and others in "teacher town meetings". As draft standards were created, the public had the opportunity to review them and make suggestions for improvement. ([State] Professional Teaching Standards Commission, 2000). The standards agreed upon by the [State] Professional Teaching Standards Commission (2000) are 1.) teachers know the content they teach, 2.) teachers know how to teach students, 3.) teachers be successful in teaching a diverse population of students, 4.) teachers be instructional leaders, 5.) teachers reflect on their practice, and 6.) teachers respect and care about students. These six core standards represent the base performance level to which every teacher should be prepared upon exit from an accredited teacher education institution in the state.

In an earlier analysis of the study by Darling-Hammond, Chung and Frelow (2002) that analyzed the variation in teacher preparation, Silvernail (1998) performed an earlier factor analysis that arrived at five basic groups similar to the [State] Professional Teaching Standards Commission. The results of Silvernail's analysis found the five factors that best described a teacher's sense of preparedness were: 1.) promoting student learning, 2.) teaching critical thinking and social development, 3.) using technology, 4.) understanding learners, and 5.) developing instructional leadership (Darling-Hammond, Chung, and Frelow, 2002).

Generally speaking, agriculture teachers are prepared for field service in two ways. The first method is through a pre-service agriculture teacher education program at a higher education institution. Students in a teacher education program generally complete a baccalaureate course of study that leads to teacher certification by a state education agency. Students complete courses in technical agriculture, educational psychology and pedagogy. This course of study helps teacher candidates develop into what Delnero and Montgomery (2001) define as the three basic roles of agriculture teachers: academic teachers, coaches and mentors. The second method involves the provisional certification of a person who is coming into the teaching profession from the private sector. Persons who wish to teach, but do not have teacher certification, usually complete a series of courses designed to provide them with an understanding of the teaching process. Whether or not these provisionally certified teachers are required to have a baccalaureate degree in technical agriculture depends upon the certification requirements of the particular state in which they are teaching or plan to teach. In recent years, these two methods have been amalgamated to form a third method of teacher preparation by which the teacher with a baccalaureate degree in technical agriculture completes one additional year of college work to earn teacher certification. In this method, the teacher education courses are reserved for this last year of academic work.

At issue is whether or not these certification pathways are valid. Darling-Hammond, Chung and Frelow (2002) surveyed 3000 teachers in the New York City school system to determine their attitudes toward their teacher preparation method. Their study found that teachers who received professional training through a pre-service teacher education program reported that they were significantly better prepared to teach when compared with the attitudes of their colleagues who were certified through a lateral-entry teacher preparation program. Specifically, teachers who had completed a formal teacher education program felt better prepared to manage student misbehavior, and teach higher order thinking skills. Castillo and Cano (1999) found that teachers were at least slightly satisfied with their jobs on the basis of personal achievement, advancement, recognition and responsibility. This finding is congruent with the findings performed of agricultural education studies by Moore (1975) and Bledsoe, Cox, and Burnham (1967). Of the teachers in their study, Darling-Hammond, Chung and Frelow (2002) found that black and Hispanic teachers experienced a greater sense of efficacy than Caucasians. Furthermore, their research found that those teachers with more teaching experience tended to report greater feelings of efficacy. However, the greatest predictor of teaching efficacy was in the participants' perception of how prepared they were to teach. Teachers who felt poorly prepared reported that they would most likely not remain in teaching for very long, and would not enter teaching again as a profession if given the choice (Darling-Hammond, Chung, and Frelow, 2002).

For urban schools, the deficiencies of teacher preparation are all too apparent. Students who graduate from teacher education programs do not wish to teach in an inner-city school system (Follo, Hoerr, & Vorheis-Sargent, 2002). The school system is forced to find alternative means for supplying teachers for the classrooms in these inner city schools. Johnson (2002) asked school administrators to identify the key factors that would significantly improve school leadership. The most strongly reported factor was the ability of administrators to remove poor teachers from the classroom (Johnson, 2002). As teacher education institutions move toward a more concentrated focus on student learning and away from routines that have proven to be ineffective, the chasm between teachers from teacher education institutions and provisionally certified teachers will most likely continue to grow (Darling-Hammond, 2000).

Objectives

The objectives of this research are to: 1.) Determine how agriculture teachers view the quality of their teacher-preparation experience; 2.) Determine if a relationship exists between a teacher's overall sense of preparedness and teacher efficacy; and 3.) Determine if a difference exists between agriculture teachers prepared through a pre-service program at a teacher education institution and agriculture teachers who had no formal preparation experience.

Methodology

The population for this study was agriculture teachers with five years or less formal teaching experience in a high school or middle school agricultural education program in the southeastern United States. Using the procedures identified by Gall, Borg and Gall (1996), a proportional random sample was drawn from a list of beginning teachers supplied by the state agency with responsibility for agricultural education.

This study employed a survey instrument developed by Darling-Hammond, Chung, and Frelow (2002). The survey instrument was comprised of three sections. The first section gathered demographic information about the participants in the study. Participants were asked to provide information about their years of teaching experience, ethnic background, and the grade level at which they taught. Darling-Hammond, Chung and Frelow (2002) did not find gender and age to be significant factors, and thus the researcher chose to omit these variables from the study. The second section of the instrument was comprised of 40 statements requiring the participant to choose a response form a Likert-based scale. The response scale ranged from 0 (not prepared at all) to 4 (well prepared).

The final section of the survey instrument asked subjects to rate their opinion of statements concerning the profession of teaching. Professional educators and teacher educators working in the New York public school system validated the instrument. An analysis of the instrument's reliability yielded a Cronbach's Alpha of .95. Data was analyzed using the Statistical Package for Social Sciences 11.5.0. For research objective one, means and standard deviations were computed for each item on the survey instrument. For research objective two, correlational statistics were computed for each item related to teacher preparedness and efficacy. The Davis convention was used to describe the magnitude of correlations (Davis, 1971). For objective three,

an independent samples T-test was performed by using the method of preparation as the grouping variable.

In order to protect the double blind review process of the completed manuscript, references and citations for specific documents are masked. Citations and reference referring to specific state agencies were masked by substituting the term “[State]” in place of the actual state name, and “[City]” in place of the city name. If this manuscript is accepted for presentation and publication in the conference proceedings, then citations and references will be unmasked. This is in accordance with the procedure described in the American Psychological Association Publication Manual (2001).

Findings

The population for the study was 58 instructors with five or less years of teaching experience. The survey instrument response rate was 77.5%. To achieve this response rate, one initial mailing was sent to all 58 instructors, and non-responders were sent a second or third follow-up mailing. Instructors who did not respond by mail after the third mailing were contacted by telephone. Those respondents who returned survey instruments prior to the second mailing were compared with respondents who returned instruments sent out in subsequent mailings. Comparisons were made on the basis of known demographic information including faculty size and estimated general method of teacher preparation. Although not a part of the data collection process, the geographic region in which the late respondents are employed was available to the researcher. Furthermore, the researcher used data available through the state director for agricultural education to determine whether or not the late responders were first-year teachers. Using the method prescribed by Miller and Smith (1983), the early and late responders were compared on the basis of known data, and no significant differences were discovered.

All of the instructors in this study have earned at least a bachelors degree in some field of agriculture or agricultural education. Twenty (44%) of these teachers completed their formal education through an undergraduate teacher education program. The remaining 25 teachers earned, or are in the process of earning, their teaching license through graduate school or alternate methods. One-third of the teachers in the study had also completed some type of post-baccalaureate work with eleven teachers earning a masters degree and their teaching license. The remaining four teachers in the study with graduate level experience received their teacher certification through provisional means. Of the remaining teachers in the study, one entered the teaching profession as a substitute teacher and worked into a permanent position in an agricultural education program. One teacher entered the teaching profession through participation in Teach for America. Of the teachers in the study, 13 entered the profession with no prior teaching experience, but with a college degree in an agriculturally related field. In summary, 62.2% of respondents (n=28) came into teaching via a teacher education program, and 84.4% of respondents (n= 38) had three years or less teaching experience. Most of the respondents work in a single-teacher program (n=28) with the remaining ones predominantly in two-teacher programs. The average age of respondents was 32, with 56% of respondents (n=25) at or below the age of 29.

One question on the survey instrument asked the participants to determine how well prepared they were to teach when they first started teaching. Teachers in this study reported that they were adequately prepared to teach ($M=1.86$, $SD=0.58$). With regard to teacher efficacy, participants were confident that they were making a difference in the lives of students ($M = 2.60$, $SD = 0.57$) and that they can handle most discipline problems in the classroom ($M = 2.33$, $SD = 0.63$). Participants also agreed that they have the ability to reach and teach students ($M = 2.26$, $SD = 0.44$) while maintaining a high standard of performance ($M = 2.00$, $SD = 0.67$). Conversely, participants in this study believe that they had an influence on the success of students, more so than students' peers and home environment. However, teachers expressed that they did not know how to teach some of their students, and that academic failure is due to the students' failure to apply their skills and abilities in the academic setting. Respondents disagreed with the idea that they had little influence over students. Table 1 describes the mean responses to items regarding teacher efficacy.

Table 1

Mean Scores of Respondents on Items Related to Teacher Efficacy

Item (n= 45)	Mean	SD
I am confident I am making a difference in the lives of students.	2.60	0.57
I am confident in my ability to handle most discipline problems that may arise in my classroom.	2.33	0.63
If I try hard I can get through to most of my students.	2.26	0.44
Students fail because they do not apply themselves.	2.26	0.65
I am confident in my ability to integrate information technology into my students' learning.	2.22	0.64
I am confident in my ability to teach all students to high levels.	2.00	0.67
I am uncertain how to teach some of my students.	1.75	0.65
My students' peers have more influence on their motivation and performance than I do.	1.60	0.57
Most of a students' experience depends on the home environment, so teachers can have little influence.	.99	0.58

Note. 0 = Not Prepared; 1 = Poorly Prepared; 2 = Adequately Prepared; 3 = Very Well Prepared

From among those items that addressed the promotion of student learning, participants in this study felt most prepared to use instructional strategies that helped students learn ($M = 2.22$, $SD = 0.70$). Respondents felt adequately prepared to set challenging and appropriate expectations for students ($M = 2.17$, $SD = 0.68$), and teach subject matter in a manner that enables students to learn ($M = 2.15$, $SD = 0.56$). Overall, respondents used their knowledge about teaching and the curriculum to plan instruction ($M = 2.15$, $SD = 0.63$). To a lesser extent, respondents reported that they were adequately prepared to create relevant curriculum materials ($M = 2.04$, $SD = 0.63$), create discipline-based curriculum materials ($M = 1.88$, $SD = 0.80$), evaluate curriculum materials ($M = 2.08$, $SD = 0.59$) and secure relevant teaching materials from community resources ($M = 2.06$, $SD = 0.86$). Not every respondent felt prepared to choose appropriate teaching strategies to meet individual student needs ($M = 2.04$, $SD = 0.67$) and help students meet rigorous academic standards ($M = 2.00$, $SD = 0.70$), but the majority of respondents did

feel at least adequately prepared to do these. The majority of respondents felt at least adequately prepared to assess student learning in a variety of ways ($M = 1.95$, $SD = 0.70$). Respondents indicated that they were prepared to help students assess their own learning ($M = 1.73$, $SD = 0.65$) and understood how different students learn ($M = 1.82$, $SD = 0.71$). Table 2 reports the mean responses to items related to student learning.

With regard to teaching critical thinking and social development, respondents indicated that they were adequately prepared to use questioning skills to stimulate student learning, and through their preparation were adept at developing students own questioning skills. Teachers also felt adequately prepared to use effective communication strategies to guide student learning and were able to engage students in cooperative group work as well as independent work. Teachers felt adequately prepared to help students learn to think critically, interpret ideas from different perspectives, and develop the classroom environment that promoted social development while helping students become self-motivated. Table 3 reports the mean responses to items related to critical thinking.

Table 2

Mean Scores of Respondents on Items Related to Promoting Student Learning

Item	Mean	SD
Use instructional strategies that promote active student learning.	2.22	0.70
Set challenging and appropriate expectations of students.	2.17	0.68
Teach subject matter in a way that enables students to learn.	2.15	0.56
Plan instruction by using knowledge of subject matter.	2.15	0.63
Evaluate curriculum materials for their appropriateness for students.	2.08	0.59
Identify and obtain resources to create a multicultural curriculum.	2.06	0.86
Choose teaching strategies to meet different student needs.	2.04	0.67
Develop curriculum that builds on students' interests and abilities.	2.04	0.63
Help students achieve high academic levels.	2.00	0.70
Use a variety of assessments to determine students' strengths.	1.95	0.70
Create discipline-based and interdisciplinary curriculum.	1.88	0.80
Understand how different students in the classroom are learning.	1.82	0.71
Help students learn how to assess their own learning.	1.73	0.65

Note. 0 = Not Prepared; 1 = Poorly Prepared; 2 = Adequately Prepared; 3 = Very Well Prepared

Table 3

Mean Scores of Respondents on Items Related to Teaching Critical Thinking and Social Development

Item	Mean	SD
Use questions to stimulate different kinds of student learning.	2.31	0.73
Develop students' questioning and discussion skills.	2.31	0.66
Use effective verbal and nonverbal communication strategies to guide student learning and behavior.	2.26	0.68
Engage students in cooperative group work as well as independent learning.	2.22	0.76
Help students learn to think critically and solve problems.	2.17	0.71
Develop a classroom environment that promotes social development and group responsibility.	2.17	0.64
Encourage students to interpret ideas from diverse perspectives.	2.04	0.63
Help students become self-motivated and self-directed.	2.00	0.67

Note. 0 = Not Prepared; 1 = Poorly Prepared; 2 = Adequately Prepared; 3 = Very Well Prepared

Respondents indicated that they were at least adequately prepared to support research and analysis. The primary method for doing this was through use of the World Wide Web. Teachers were also prepared to teach teamwork and collaboration skills, assess student progress and use technology to increase student interest in the subject matter. Teachers also indicated that they were prepared to use technology to communicate with others in the school and community. Teacher preparation programs adequately prepared respondents in this study to understand how family background may influence learning. Respondents felt at least adequately prepared to understand how students social, emotional, physical, and cognitive development influence their learning, and how factors in the students environment influenced their learning. To a lesser extent, respondents felt adequately prepared to engage parents in the learning process, and formulate instruction to meet special learning needs. As instructional leaders, teachers felt adequately prepared to assume leadership responsibilities in their respective schools. Teachers indicated that they are able to maintain an orderly learning environment and plan and solve problems collaboratively with their colleagues and students. Table 4 reports the mean responses to items related to using technology, understanding learners, and instructional leadership.

To determine whether a difference existed between teachers prepared at a pre-service program at a teacher education institution and agriculture teachers who had no formal preparation experience, an independent samples t-test was performed. The test variables were the mean scores for each of the following subscales: efficacy, content, practice, diversity, leadership, reflection, and rapport. Respondents in the survey were placed into two groups. One group included all those instructors who were prepared in a traditional preparation program in teacher education. The remaining instructors who enter the teaching profession through alternative licensure were placed in the other group. As a result by the independent samples t-test, only one significant difference was found to exist between the means of these two groups on item number

two on the survey instrument. This item asked teachers to rate their ability to determine how different students in the classroom were learning. The teachers prepared via the traditional method of teacher education indicated a higher level of preparation than their counterparts.

To determine if a relationship existed between teachers' perceptions of their teacher preparation method and their effectiveness in the classroom, a correlational test was performed on the data. The moderately strong positive correlation was found to exist between the respondents' sense of preparedness and their ability to handle discipline problems in the classroom, and their ability to teach students at a challenging level. A moderately strong positive correlation also exists between the respondents' preparedness and their confidence level in making a difference in students' lives. There also exists a moderately strong correlation between preparedness to teach and the delivery of a rigorous academic program that integrates information technology. A moderately negative correlation was found to exist between teacher preparedness and the likelihood that the teacher's opinion would indicate that student success is more dependent on the home environment than the classroom instructional environment. Table 5 reports the results of the correlational analysis.

Table 4

Mean Scores of Respondents on Items Related to Using Technology, Understanding Learners and Instructional Leadership

Item	Mean	SD
Using Technology		
Support research and analysis.	2.37	0.68
Enhance group collaboration and teamwork.	2.26	0.71
Communicate with others.	2.24	0.74
Increase student interest and learning.	2.11	0.57
Assess and track student achievement.	2.00	0.73
Understanding Learners		
Understand how students' cultural background influences learning.	2.08	0.63
Understand how students' social, emotional, physical and cognitive development influences learning.	2.04	0.70
Understand how factors in the students' environment influence learning.	2.02	0.69
Work with parents and families to support student learning.	1.82	0.74
Identify and address special learning needs and/or difficulties.	1.75	0.71
Instructional Leadership		
Assume leadership responsibilities in your school.	2.26	0.71
Maintain an orderly and purposeful learning environment.	2.11	0.71
Plan and solve problems with colleagues	2.06	0.78
Resolve interpersonal conflict in the classroom.	1.80	0.69

Note. 0 = Not Prepared; 1 = Poorly Prepared; 2 = Adequately Prepared; 3 = Very Well Prepared

Table 5

The Correlation Between Teacher Preparation and Teacher Efficacy

Items	Overall, how well prepared did you feel when you first started teaching?
If I try hard I can get through to most of my students.	.095
I am confident in my ability to handle most discipline problems that may arise in my classroom.	.480(*)
Students fail because they do not apply themselves.	-.060
My students' peers have more influence on their motivation and performance than I do.	.098
I am confident in my ability to teach all students to high levels.	.387(*)
I am confident I am making a difference in the lives of students.	.411(*)
I am uncertain how to teach some of my students.	.248
I am confident in my ability to integrate information technology into my students' learning.	.320(*)
Most of a student's experience depends on the home environment, so teachers can have little influence.	-.301(*)

Note: * $p < .05$.; 0 = Strongly Disagree; 1 = Disagree; 2 = Agree; 3 = Strongly Agree

Conclusions

Agriculture teachers with less than five years of professional experience believed that their teacher preparation programs, in most cases, adequately prepared them to teach. Teachers in this study indicated that they possessed a degree of competence in their ability to influence students in a positive way. They expressed competence in their ability to manage the classroom for effective student learning. A significant relationship exists between a teacher's overall sense of preparedness and certain aspects of teacher efficacy. Teachers who reported a sense of preparedness for the classroom also indicate a significant degree of confidence in an ability to handle visible problems, confidence in the ability to teach all students at challenging levels, and confidence in the ability to integrate technology into their learning. The method of preparation by which a teacher enters the profession does not seem to influence their perceptions of preparedness for field service. No differences were found between the two groups with regard to teacher efficacy, content area knowledge, practice, leadership within the school, professional reflection, and rapport with students.

Discussion

Agriculture teachers with less than five years of professional experience believed that their teacher preparation programs, in most cases, adequately prepared them to teach. Teachers in this study indicated that they possessed a degree of competence in their ability to influence students

in a positive way. They expressed competence in their ability to manage the classroom for effective student learning. A significant relationship exists between a teacher's overall sense of preparedness and certain aspects of teacher efficacy. Teachers who reported a sense of preparedness for the classroom also indicate a significant degree of confidence in an ability to handle visible problems, confidence in the ability to teach all students at challenging levels, and confidence in the ability to integrate technology into their learning. The method of preparation by which a teacher enters the profession does not seem to influence their perceptions of preparedness for field service. No differences were found between the two groups with regard to teacher efficacy, content area knowledge, practice, leadership within the school, professional reflection, and rapport with students. While the study did not find any differences between traditionally prepared teachers and alternatively certified teachers, the small sample size and population for this study make it imprudent to generalize the results of this study beyond its population.

With regard to how agriculture teachers view the quality of their teacher preparation experience, it is important to note that the respondents believe that they had been adequately prepared to teach. Overall, teachers feel good about the job they do in the classroom and they believe they possess the adequate skills necessary to promote student learning to acceptable levels. They also believe in their ability to teach critical thinking skills and help students develop socially within the classroom. The teachers believe that they were adequately prepared to use technology in the classroom to engage students in the lesson and that same technology can be used to assess and track student achievement. Teachers believe that the methods learned in pre-service enable them to understand learners better. Teacher preparation methods helped the respondents learn how to prepare good learning experiences for students by introducing them to the importance of understanding the whole student. A student is more than just the person sitting in a class during a given class period. Teachers in the survey indicated that they understood that students are complex individuals with unique cultural backgrounds, and that the student is influenced by their present state of social, emotional, physical and cognitive development.

Teachers in this study believe that their preparation for the classroom included the development of leadership skills. Consequently, our teachers are confident in assuming leadership responsibilities and have skills in collaborative problem solving. The mean scores for interpersonal conflict resolution in the classroom were relatively lower than other items related to instructional leadership. While the teacher education programs can teach prospective teachers the foundations of classroom management including conflict resolution, perhaps this skill is best refined on the job. Objective two of this study sought to determine if a relationship existed between a teacher's overall sense of preparedness and teacher efficacy. This study found some significant positive relationships between teacher preparation and efficacy. The more that a teacher felt prepared to teach, the more likely they were to feel that they were being effective in the classroom. Specifically, teachers who felt they were well prepared to teach also were confident in their ability to handle visible problems in the classroom. Furthermore, teachers who felt well prepared to teach also felt confident in their ability to teach students to high levels, and that they were making a difference in the lives of students. Teachers who were well prepared to teach were confident in the ability to integrate information technology in the classroom. This study found that the higher the teacher's sense of preparation, the less likely they were to feel powerless in their influence over students. This finding is congruent with other studies in the

profession. Because of the stress and workload associated with the first few years of teaching (Stoner and Wankel, 1986), it is a positive sign that teachers see pre-service preparation for the classroom as a key factor in their teaching effectiveness.

Objective three of the study sought to determine whether or not a difference existed between agriculture teachers prepared by teacher education institutions and those agriculture teachers who had no formal preparation experience with regard to readiness to teach. Although only 13 teachers in this study came into the profession with no prior teaching experience, this researcher had expected to see more than just the minor difference between those teachers and those prepared by a teacher education institution. The only difference that this research study found was in the area of learning styles. Teachers who graduated from teacher education institutions had a better grasp of how different students were learning in the classroom. While it is reassuring to know that the majority of teachers have indeed learned something about teaching from their teacher education institution, the responses from teachers who did not go through a teacher education institution raises a major concern. Either teacher education does not make a strong difference in the preparation of teachers for the classroom, or those teachers who have no pre-service experience do not have a valid interpretation of their skills and abilities. Since studies have found that teacher education does work, perhaps the reason teachers with no pre-service experiences rated their abilities so highly is because they do not know what they do not know.

There is one other possibility that may explain the lack of difference between teachers with pre-service experience and those teachers with no pre-service experience. In the state where this study was performed, teachers with no pre-service experience generally go to the teacher education institutions for coursework that fulfills provisional licensure requirements. So, the reason why so many teachers with no pre-service experience rated their abilities as comparable to teachers with pre-service experience could be due to the fact that they both received or are in the process of receiving instruction from the same teacher education institutions. This argument reduces the differences between pre-service trained teachers and in-service trained teachers to a matter of timing – some teachers took education courses in college and some took them, or are taking them, while actively engaged in teaching.

Recommendations

It is also recommended that this study be conducted on a regional or national level. Given the low number of alternatively licensed teachers in this study, it would be unwise to draw inferences between them and traditionally prepared teachers.

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