

Words Speak Louder than Action?: A Mixed-Methods Case Study

Stacy K. Vincent¹ and Andrea T. Kirby²

Abstract

The purpose of this mixed-methods case study was to examine the dynamic of Culturally Responsive Pedagogy (Gay, 2010) among nine secondary agriculture teachers in ethnically diverse schools. By reviewing the diversity of student enrollment in the agriculture programs, the participants were separated by two groups: diverse and non-diverse. A hybrid coding system of axial and magnitude allowed an unbiased panel to quantify the comments of each teacher. Results showed a difference in magnitude codes between comments provided by teachers with a diverse student enrollment and teachers with a non-diverse student enrollment. A large difference existed among four of the six characteristics of Culturally Relevant Pedagogy (CRP) and a medium difference existed in the latter two. Recommendations toward teacher home visits, implementation of curriculum modifications and diverse community engagement were directed toward the participants and practicing secondary teachers. Additional research and opportunities for CRP among teacher training institutions are also recommended.

Keywords: Culturally Relevant Pedagogy, diverse, non-diverse, agricultural education programs, mixed-methods, magnitude

In the midst of educational reform, the need for secondary teachers who are culturally relevant could be considered greater today than ever before. According to the Johnson (2012), like urban populations, rural communities are becoming more ethnically and culturally diverse. As these trends continue to grow, so is the need for teachers who can showcase a culturally relevant philosophy (Banks & Banks, 2001; Spring, 2007).

The need for teachers who can successfully educate students from cultures different from their own is documented throughout educational research. Ladson-Billings (2000) explained how many teacher preparation programs seek to prepare teachers for urban education, but not methods for teaching African American youth. In 2002, Wortham and Contreras noted the growing concerns regarding schools lacking the ability to understand and educate rural Latino youth. On a similar note, Black and Hispanic secondary youth in the state of Florida reported feeling more disconnected with their teacher than their Asian and White colleagues (Griffin, 2002).

Educational research attributed to the presence of culturally competent teachers resulted in an increase of school districts seeking teachers with such skillsets. In two parallel studies conducted by Doherty, Hilberg, Pinal, and Tharp (2003), student achievement on standardized assessments improved when teachers modified their lessons in order to connect to students' lives. In 1995, Sheets found that students considered remedial learners in a secondary school received passing grades in their AP courses after teachers implemented culturally relevant instruction. Higher academic achievement and higher academic standards were recorded among schools

¹ STACY K. VINCENT is an Assistant Professor of Agricultural Education in the Department of Community and Leadership Development at the University of Kentucky, 505 Garrigus Building, Lexington, KY 40546, stacy.vincent@uky.edu.

² ANDREA T. KIRBY is a teacher of agriculture in the Career and Technical Education Department at Montgomery County High School, 724 Woodford Drive, Mt Sterling, KY 40353, andrea.kirby@montgomery.kyschools.us.

identified as having multiple professional development workshops that prepared teachers for diverse cultures (Bazron, Osher, & Fleischman, 2005).

Teacher educators would generally agree that effective classroom instruction includes proficiency in content knowledge as well as distinguished skills in pedagogy. Within agricultural education, the evaluation of teaching practices extend in various areas of the teaching discipline. One of the first to study teacher effectiveness, Miller, Kahler, and Rheault (1989), provided a foundation for teaching and research in agricultural education by describing seven performance areas. In 2011, Maxwell, Vincent, and Ball proposed a model to serve as a tool for identifying effective college teaching. In the midst of teaching effectiveness, Roberts and Dyer (2004) displayed a list of strategies in becoming an effective secondary agriculture teacher. However in each of these studies was the absence for evaluating cultural relevance as a method of teacher effectiveness. Buriak, McNurlen, and Harper (1996) proposed a scientific model for identifying the concepts of an effective learner in order to develop effective agriculture educators. Although, scientific models are helpful in generalizing student populations, it does not factor the cultural background and its effect on learning within each student.

The cultural understanding and inclusion continues to grow in popularity among teaching evaluations and state developed teaching standards. Recent reform in the United States displays an implementation of standards that include the evaluation of and/or the preparation of, teachers who showcase an ability to educate, and relate to, students of diverse cultures (Durden, 2008).

Conceptual and Theoretical Framework

The theoretical framework for this analysis resides from Geneva Gay (1993). Gay developed the culturally responsive pedagogy paradigm with socio-cultural minority students in mind. In order for teachers to adopt this paradigm into everyday use, Gay identifies six characteristics (validating, comprehension, multidimensional, empowering, transformative, and emancipatory) that culturally responsive teaching exemplifies.

The first three characteristics (validating, comprehension, and multidimensional) address the teacher authenticating diverse cultures. The first characteristic is validating because culturally responsive teachers incorporate and promote all cultures. Teachers must acknowledge the students' cultural heritage and how the heritage affects the students as a learner. Once this realization has occurred, then the teacher can begin to build "bridges of meaningfulness between home and school experiences" (Gay, 2010, p. 31). This meaningfulness is incorporated into the classroom through instructional strategies and content to meet the needs of all students. The second characteristic of culturally responsive pedagogy is comprehension. Teachers demonstrate this characteristic by striving to develop the "whole child" by using culturally diverse resources and situations to teach the content. The students are held accountable for their learning as well as their peer's learning. The third characteristic of culturally responsive pedagogy is multidimensional. The teacher incorporates all aspect of the classroom to showcase cultures. This can be shown in student-teacher relationships to performance assessments.

The last three characteristics (empowering, transformative, and emancipatory) focus on the teacher developing the students. The fourth characteristic of Gay's paradigm is empowering. The teacher is an enabler of the students' success, however the teacher is aware of the risks involved in learning and provides opportunities for success along the way. The fifth characteristic is transformative. A transformative teacher not only respects and acknowledges other cultures, but he or she uses those cultures for meaningful resources when teaching. Transformative teaching does not negotiate academic success, but instead makes academic success an attainable goal for every student. The teacher recognizing strengths in culturally diverse students and teaches them to be proud of their cultural background rather than ashamed. The sixth and final characteristic of culturally responsive pedagogy is emancipatory. Emancipatory teaching breaks away from mainstream thinking and teaches students to apply new knowledge to problems and

experiences. Teaching students this new way of thinking encourages them to find their own voice and take responsibility for their learning (Gay, 2010).

Researchers have developed earlier paradigms to address the need for culturally responsive pedagogy; (Giovanni, 1970; Barbe & Swassing, 1979; Gagne, 1985; Shade, 1989) however, none have been able to incorporate every aspect Gay (2010) has included in the culturally responsive pedagogy paradigm. As researchers learn new aspects of teaching culturally diverse students, revised and recreated paradigms will meet the needs of all student (Gay, 2002).

Purpose and Research Objectives

The purpose of this comparable group, qualitative case study was to identify culturally responsive pedagogy, as defined by Gay (2010), and determine if a difference exists among secondary teachers with a diverse student enrollment. The research questions were:

1. Determine the number of responses for each characteristic (comprehension, emancipatory, empowering, multidimensional, transformative, and validating) of culturally responsive pedagogy.
2. Identify responses coded to the characteristics (comprehension, emancipatory, empowering, multidimensional, transformative, and validating) of culturally responsive pedagogy.
3. Determine the perceived magnitude codes for each characteristic (comprehension, emancipatory, empowering, multidimensional, transformative, and validating) of culturally responsive pedagogy by teacher classification (diverse and non-diverse).

Methods and Procedures

The researchers applied an intensity sampling design for this exploratory sequential design (Creswell & Plano Clark, 2007) case study. Intensity sampling involves selecting participants who exhibit different levels of the phenomenon of interest to the researcher (Ary, Jacobs, Razavieh, & Sorensen, 2006). When the case study allows research to associate two various levels within the phenomenon then comparable group research is necessary in qualitative design (Ryan & Bernard, 2000). In this study, the participants selected represent various levels of ethnic diverse enrollment in their secondary agriculture program.

Participant Selection

Ten participants were purposively selected for this study due to two distinct factors: 1) proximity to researcher; and 2) met the developed qualifications. Qualifications of the participants included: secondary agriculture teacher; 4+ years of teaching experience at current school; white male teacher; school is located in a designated rural area, as assigned by the USDA; and a 30% ethnic minority school enrollment. Then the participants were divided into two categories: diverse and non-diverse. Qualifications for diverse participants include an agricultural education program with over 30% ethnic minority enrollment. Non-diverse participants taught in an agricultural education program with under a 30% ethnic minority enrollment. The 30% threshold is considered a critical mass representation of diversity according to (Kanter, 1977).

Procedures

Gay's (2010) theory of culturally relevant pedagogy guided the research process. An interview protocol was developed that sought to determine the presence of culturally relevant pedagogy, more specifically, the six characteristics. After receiving approval from an Institutional Review Board, ten selected participants were contacted for a face-to-face interview. One

participant, following their interviews, asked that their responses not be used for publication purposes, therefore, this case study consisted of the nine participants. In order to establish trust and to receive honest responses, the moderating researcher traveled to each participant's school or home to conduct the interview (Denzin & Lincoln, 2005). This exploratory sequential design, mixed methods study consisted of three different phases of data analysis. Phase 1 and Phase 2 consisted of two separate interviews. The first interview lasted two to three hours during the participants' academic planning time or after school. The second interview was for clarification in responses as well as additional questions that emerged from the transcription; total time for the second interview was less than one hour. The data were summated with a final interpretation of the data collected. Figure 1 represents the data collection and analysis process as recommended utilizing a mixed methods design (Creswell & Plano Clark, 2007).

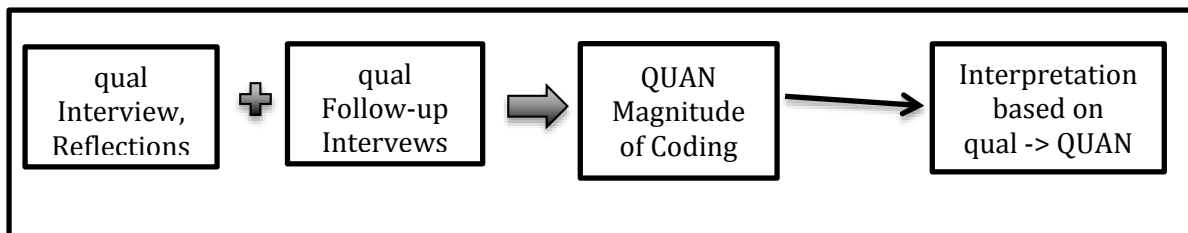


Figure 1. Representation of data collection and analysis process

During phase 1 the researchers acknowledged a worldview of constructivist then transitioned to a post-positivist during phase 2 of the study.

Data Analysis

The data was attained from the personal interviews. The researchers used triangulation through multiple data points (observation of field notes, reflections of the researchers, and interview transcriptions). Both researchers analyzed the data separately to establish inter-rater reliability ($K = .78$), which was interpreted as "substantial agreement" (Viera & Garrett, 2005, p. 362). A hybrid coding system was utilized, as defined by Saldana (2009), which included axial coding followed by magnitude coding. The participants' responses were separated by the six characteristics established by Gay (2010) and then magnitude coded. The interview protocol was guided by the six characteristics of culturally relevant pedagogy to ensure equal representation when separating the participants by diverse student enrollment. The confidentiality of the participants was protected throughout the entire process by coding the participants through numbers. Following a magnitude coding technique, codes were identified through the use of central tendency values.

Trustworthiness

Each interview was recorded and then transcribed. The researchers conducted content verification by calling the participants to verify the transcriptions. This assisted the researchers in establishing data confirmability (Denzin & Lincoln, 2005). An outside source was utilized for cross-checking the codes determined by the researchers. In addition, the participants received the findings for confirmation. The researchers established data credibility through peer debriefing and reference materials. Peer debriefing occurred throughout the entire process by an outside source. The interviews, transcriptions, coding, and the researcher's reflections were maintained for the confirmability and dependability of the results and the feasibility to guide future studies.

Researcher Reflexivity

In order to establish data confirmability and objectivity, the researchers identified potential biases through several different methods. The researchers utilized reflexive journals (Moustakas, 1994) and peer debriefing to note any personal biases. According to Creswell (2013), identification of the researchers' backgrounds is important for transparency. The lead researcher taught agriculture at the secondary level for seven years and participated in numerous diverse organizations and cultural awareness groups. Once in graduate school, he sought to examine the cultural competence among secondary classroom teachers and its effects on underserved populations. The other member of the research team graduated in 2011 with a Bachelors of Science in Agricultural Education. Now, the researcher is a secondary agriculture teacher completing their graduate work under the lead researcher's tutelage.

Coding

The hybrid coding process served a significant role in addressing each research objective. Saldana (2009) posits that a hybrid coding process assists in the unique needs and disciplinary concerns of a study. In this study, an axial coding process served as the first phase of the mixed method study. Gay's (2010) six characteristics of culturally relevant pedagogy served as the guide for the axial coding. The coded responses were separated by one of the six characteristics of culturally relevant pedagogy. Phase 2 was evaluated through a magnitude coding technique. Miles and Huberman (1994) believed magnitude coding is appropriate for mixed methods studies in social science disciplines that support quantitative measures as evidence of outcomes. The magnitude-coding instrument followed the steps provided by Saldana (2009). The magnitude-coding instrument was developed, which consist of each axial coded response placed into the six characteristics of culturally relevant pedagogy. In addition, the instrument included a polar scale with the following anchors: -3 = strongly negative response; -2 = slightly negative response; 1 = negative response; 0 = Neutral; +1 = positive response; +2 slightly positive response; and +3 = Strongly Positive Response. A panel of experts, with experience in instrument design, reviewed the magnitude-coding instrument for face validity.

The magnitude-coding instrument was completed by a panel of professionals ($n = 12$) experienced in multicultural pedagogy and education. Each panel member were provided a definition of each characteristic and then charged with a task of rating the intensity of the coded response as a negative or positive comment. The panel members had no contact with, awareness of, and identity of the responses they were coding. In addition, the panel members represented diverse ethnic backgrounds, social categories, and geographical regions. The magnitude coding allowed the researchers to quantify the data by evaluating the intensity score of each code, from each character, of each reviewer. Once received, each intensity score was summated by characteristic and reported in areas of central tendencies. Cohen's d was utilized to explain the difference of intensity scores by teacher classification (diverse and non-diverse).

Results and Findings

The purpose of research objective one was to determine the number of coded responses for each characteristic (comprehension, emancipatory, empowering, multidimensional, transformative, and validating) of culturally responsive pedagogy. The majority of the responses were classified as comprehension ($f = 69$; 25.94%) followed by transformative ($f = 68$; 25.56%), empowering ($f = 54$; 20.30%), validating ($f = 45$; 16.92%), emancipatory ($f = 20$; 7.51%), and multidimensional ($f = 10$; 3.76%). Table 1 provides the number of responses for each characteristic of culturally responsive pedagogy details included in the study.

Table 1

Separation of Axial Coded Responses by Characteristics of Culturally Responsive Pedagogy (N = 266)

Characteristic	<i>f</i>	%
Comprehension	69	25.94
Emancipatory	20	7.51
Empowering	54	20.30
Multidimensional	10	3.76
Transformative	68	25.56
Validating	45	16.92
Total	266	100.00

The purpose of research objective two was to determine the perceived magnitude codes for each characteristic (comprehension, emancipatory, empowering, multidimensional, transformative, and validating) of culturally responsive pedagogy. In order to do so, each coded response ($n = 266$) was placed on a magnitude scale/code, which was then rated by a selected panel of professionals (see Table 2). The characteristic receiving the highest summated mean rating was multidimensional ($M = 1.20$; $SD = 2.57$) followed by validating ($M = 0.46$; $SD = 2.52$), comprehension ($M = 0.78$; $SD = 1.36$), transformative ($M = -0.40$; $SD = 1.65$), empowering ($M = -0.44$; $SD = 2.32$), and emancipatory ($M = -0.70$; $SD = 2.92$).

Table 2

Perceived Magnitude Codes for Culturally Responsive Pedagogy Characteristic Responses

Characteristic	<i>M^a</i>	<i>SD</i>	Range
Comprehension	0.78	1.36	-2.00 – 3.00
Emancipatory	-0.70	2.92	-3.00 – 3.00
Empowering	-0.44	2.32	-3.00 – 3.00
Multidimensional	1.20	2.57	-3.00 – 3.00
Transformative	-0.40	1.65	-3.00 – 3.00
Validating	0.46	2.52	-3.00 – 3.00

^aBased upon magnitude codes: -3 = strongly negative response; -2 = slightly negative response; 1 = negative response; 0 = Neutral; +1 = positive response; +2 slightly positive response; and +3 = Strongly Positive Response

As an example of two polar responses that fell into the “empowering” category of Culturally Relevant Pedagogy for which were evaluated can best be described as follow:

John: “Trying to put it back onto them [Black students] so they realize that the decisions they make are going to affect their life.”

Marcus: “You have other kids that you’re wasting your breath talking about college and I have never seen the likes of it, but still I will try.”

In both responses, the teacher mentions an effort to empower the student, but the approach, method, and thought are completely different. Again, this is an example of polar magnitudes. In some essence, coded responses were neutral or similar in scores.

Research objective three sought to determine the difference in perceived magnitude codes for each characteristic (comprehension, emancipatory, empowering, multidimensional, transformative, and validating) of culturally responsive pedagogy by teacher classification

(diverse and non-diverse). Cohen’s *d* was utilized as the method for identifying the effect size difference in means among the two teacher groups. A medium difference was found within the magnitude codes between the diverse and non-diverse teachers in the areas of comprehension (*d* = 0.31) and emancipatory (*d* = 0.34). A large effect size was discovered in the magnitude codes of each teacher group in the characteristic areas of validating (*d* = 1.69), multidimensional (*d* = 2.10), empowering (*d* = 0.75), and transformative (*d* = 0.57). In the characteristic area of validating, the diverse teachers yielded a mean score of 1.92 (*SD* = 1.96) and the non-diverse teachers reported a mean score of -1.35 (*SD* = 1.90). The comprehension characteristic revealed a mean score of 1.04 (*SD* = 1.15) for the diverse teachers and a mean score of 0.63 (*SD* = 1.46) for the non-diverse teachers. The characteristic area of multidimensional reported a mean score of 2.43 (*SD* = 1.51) for the diverse teachers and a mean score of -1.67 (*SD* = 2.31) for the non-diverse teachers. For the characteristic of empowering, diverse teachers had a mean score of 0.18 (*SD* = 2.31), while non-diverse teachers had a mean score of -1.43 (*SD* = 1.99). In the characteristic area of transformative, the diverse teachers received a mean score of 0.03 (*SD* = 1.72) and the non-diverse teachers received a mean score of -0.88 (*SD* = 1.48). In the area of emancipatory, the diverse teachers reported a mean score of -0.50 (*SD* = 2.97) and the non-diverse teachers generated a mean score of -1.50 (*SD* = 3.00).

Table 3

Perceived Magnitude Codes for Culturally Responsive Pedagogy Characteristic Responses by Diverse and Non-Diverse Teachers

Characteristic	<i>M</i>	<i>SD</i>	Range	Cohen’s <i>d</i>
Comprehension				Medium
Diverse	1.04	1.15	-2.00 – 3.00	0.31
Non-Diverse	0.63	1.46	-2.00 – 3.00	
Emancipatory				Medium
Diverse	-0.50	2.97	-3.00 – 3.00	0.34
Non-Diverse	-1.50	3.00	-3.00 – 3.00	
Empowering				Large
Diverse	0.18	2.31	-3.00 – 3.00	0.75
Non-Diverse	-1.43	1.99	-3.00 – 3.00	
Multidimensional				Large
Diverse	2.43	1.51	-1.00 – 3.00	2.10
Non-Diverse	-1.67	2.31	1.00 – -3.00	
Transformative				Large
Diverse	0.03	1.72	-3.00 – 3.00	0.57
Non-Diverse	-0.88	1.48	-3.00 – 2.00	
Validating				Large
Diverse	1.92	1.96	-3.00 – 3.00	1.69
Non-Diverse	-1.35	1.90	-3.00 – 3.00	

^aBased upon magnitude codes: -3 = strongly negative response; -2 = slightly negative response; 1 = negative response; 0 = Neutral; +1 = positive response; +2 slightly positive response; and +3 = Strongly Positive Response

Conclusions, Implications and Recommendations

The purpose of this mixed-methods study is descriptive in nature. To describe the dynamic of Culturally Relevant Pedagogy (CRP) within the discussion of nine secondary

agriculture teachers, all teaching in a school where at least 30% of the student's ethnicity were considered a minority. Although teaching in a school where ethnic diversity was present, only half the teachers had a agriculture student enrollment that matched that of the school, however, the researchers identified the presence of Culturally Relevant Pedagogy from each participating teacher. Potential for teachers to discuss CRP is present, but the approach, the method of explaining, and viewpoint is slightly different between the two identified teachers. Gay (2010) believed that all teachers have the opportunity to gain CRP, but identification of own biases must first be addressed. It is recommended that further investigation of the teachers exist and each receive the opportunity to highlight their own bias.

A panel, expert in CRP, professors of agricultural education, and teachers of multicultural education, closely examined all 266 comments. Without knowing the identity and personal background of each teacher, were able to read the coded comments, by characteristic, and assign a magnitude code, within a range of -3 to +3. As a result, the teachers identified as diverse received a higher mean magnitude code than the non-diverse teachers in each characteristic. This does not reveal that diverse teachers are identified as experts or that they are better proponents of CRP. Nevertheless, it does reveal that the language used to discuss the method of teaching students from diverse backgrounds is different. Frymier and Houser (2000) explained that the tone of conversation and use of vocabulary are important when teaching youth who are culturally different from the instructor. This posits that the comments provided by the diverse teachers could correlate with the ethnically diverse enrollment in their agriculture classes, as opposed to their non-diverse teaching colleagues. A quality communicator coincides with Roberts and Dyer's (2004) characteristics of an effective agriculture educator. In order to help non-diverse teachers understand how reflection, communication, and bias can play a role in the diversity of their student enrollment, it is recommended that each review their identified comments and seek understanding how their discussed philosophy could relate to the shallow enrollment of ethnic diversity. On a larger scale, teacher educators are encouraged to review and address pre-service teachers' bias and understand the impact on enrollment, prior to entering a classroom. By doing so, pre-service teachers can address bias prior to teaching and extend their ability to instruct a variety of learners.

The researchers found the characteristics of validating, multidimensional, empowering, and transformative to have a large effect size. Gay (2010) believed that when a teacher embraces the validating characteristic they have the ability to acknowledge a student's cultural heritage, thus shortening a gap between home and school for the student. Throughout the interview, diverse teachers displayed a better understanding of the validating characteristic. Many of which believe that home visitations and community immersed activities helped with shortening the gap between home and school. It is encouraged that teachers who teach students of ethnically diverse backgrounds, use home visitations and community activities to assist in the improvement of CRP, more specifically, the validating characteristic.

Multidimensional teachers incorporate cultures in every aspect of their classroom (Gay, 2002). This incorporation of cultures in the classroom extends beyond the scope of famous individuals and holidays (Villegas & Lucas, 2002). In addition, Gay (2010) explained that teachers seek and/or extend a personal relationship with their students in order to gain the multidimensional characteristic. From the results of this study, the diverse teachers' comments revealed a large difference in magnitude coding than the non-diverse teaching participants. The results do not explain that diverse teachers have a better relationship with their students, but it does posit that they may extend more trust to a variety of their students. Riehl (2000) revealed that principals who demonstrated trust toward students who were culturally different from themselves were in schools with more school spirit, high academic performances, and a higher perceived school spirit than administrators lacking trust did. The researchers realized that a recommendation to teachers to gain trust in students can be arbitrary, therefore, it is encouraged that teachers understand how to design CRP lessons that encompass the multidimensional

characteristic. As a method of improving CRP, it is recommended that school administrators place an emphasis on professional development that prepares their teaching staff for teaching all students. Furthermore, it is encouraged that teacher educators seek methods for improving pre-service teachers to teach in culturally different school settings.

A teacher who exemplifies the empowering characteristic encourages and helps students succeed while realizing the risks that are involved (Gay, 2010). Agriculture teachers already serve as an encourager to their students as it is showcased in the youth organization. Culturally diverse students have to overcome adversity that students from a dominant culture do not realize exist. Teachers who help students overcome adversity due to cultural heritage should be recognized.

Gay (2010) described transformative teaching as including cultures as resources. By using existing cultures as a teaching tool, the teacher is increasing the opportunity for every student to succeed in their classroom. Therefore, it is recommended educators capitalize on cultural stakeholders in the community by inviting as guest speakers and recognizing them for their contributions. Teachers should teach and implement civic responsibilities into the curriculum to close a gap of understanding between student to student and teacher to student. Furthermore, transformative teachers help their students transform as productive citizens, following graduation. Although the findings in this study do not highlight successful transition of ethnically diverse students, it does exemplify that diverse teachers provide a stronger philosophy than non-diverse teachers do in their willingness to aid ethnically diverse students in their transformation. It is recommended that research examine the transition of students enrolled in each of the participants' classes.

Need for Additional Research

The researchers recognize this study is limited to the secondary agriculture teachers who participated in the interviews. Future studies are vital to continue to gain an understanding toward the adoption of culturally responsive pedagogy as a key methodology for agricultural education. Therefore, the researchers recommend future investigations toward CRP as a tool of effective teaching, CRP's role in student achievement, best practices of CRP in agricultural education, and methods of teaching CRP among teacher preparatory programs. In addition, it is recommended that a longitudinal comparative study begin that examines the results of student performances between teachers who received training in CRP and teachers who did not. Furthermore, previous research on effective teaching, such as Roberts and Dyer (2004) should be reexamined and modified to include methods of including CRP within its recommendations.

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