

Perceptions of Levels of Preparedness of Alternatively Licensed Career and Technical Education
Teachers in the State of Ohio

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Abstract

Background: Levels of preparedness of alternatively licensed career and technical education teachers were measured using a Likert-type scale across four tasks of a performance-based assessment as part of an induction program in the state of Ohio. **Purpose:** The purpose of this research study addresses the paucity of research that deals with licensure in the field of career and technical education for alternatively licensed teachers who completed a performance-based assessment. **Method:** Demographic data and levels of preparedness were analyzed quantitatively and effect sizes were reported. Qualitative data in the form of anecdotal evidence were also analyzed for themes. **Discussion:** Results of the study indicated levels of preparedness were not significantly different among selected demographic variables. However, further analysis of the data determined that alternatively licensed career and technical teachers perceived themselves to be less prepared on various tasks of the RESA and specified lower perceived levels of preparedness on all four sub-scales. **Conclusion:** The study established baseline data regarding levels of perceived preparedness to communicate to stakeholders in education which tasks alternatively licensed career and technical education teachers perceived themselves to be most prepared to complete. **Keywords:** Levels of preparedness, alternative licensure, performance-based assessment

Introduction

Implementing fair and adequate systems to evaluate educators based on teaching effectiveness has become ubiquitous in the field of education, especially in the kindergarten through twelfth grade levels. An increasingly popular form of assessing teacher effectiveness, whether it be for initial teacher licensure, continuing teacher licensure, or even national board certification, includes the usage of teacher-performance assessments (TPAs) (Darling-Hammond, 2013). Teacher-performance assessments are used throughout education as a way to gauge teacher effectiveness (Darling-Hammond, 2010a; 2016b.; Darling-Hammond, 2013; Darling-Hammond, Wei, & Johnson, 2009; Darling-Hammond, Wise, & Klein, 1999). These assessments require teachers to complete activities and tasks seen as more authentic to what is done in the classrooms. One way of evaluating a teacher's performance is by using performance-based assessments where the teacher demonstrates competence by providing evidence of effective instructional and pedagogical decision-making. These types of assessments are designed to evaluate both traditionally and alternatively licensed teachers, with teachers being evaluated using measures of effectiveness and by trained assessors (Darling-Hammond, 2010a; 2010b.; Darling-Hammond, 2013). Before performance-based assessments were implemented teachers were required to complete assessments that were not performance-based such as a traditional licensing examinations (McCaslin & Parks, 2002).

Nationally, four different states including Massachusetts, New Mexico, Ohio, and Washington have been utilizing performance-based assessments to gauge teacher effectiveness. This first performance-based assessment began in the state of New Mexico when the state department of education required teachers to submit a portfolio as part of the assessment process (Darling-Hammond, 2013). The state of Ohio has its own requirements for initial teacher licensure specific to traditionally and alternatively licensed teachers. Other requirements already exist about how to advance a teaching license by having teachers who are either traditionally or alternatively licensed by completing a performance-based assessment. After receiving a teaching license, teachers must participate in an induction program

and successfully complete a performance-based assessment to advance his or her teaching license (Ohio Department of Education, 2016).

Both traditionally and alternatively licensed teachers were required to successfully pass all tasks associated with the Resident Educator Summative Assessment (RESA) through the 2016 – 2017 school year. Those teachers who successfully passed all four tasks were then required to complete leadership modules in year four of the Resident Educator program, and after successfully completing that requirement, were able to advance to a professional license (Ohio Department of Education, 2016).

Context of the Problem

Teachers who were either traditionally or alternatively licensed in the state of Ohio must complete a performance-based assessment to advance their teacher licenses and demonstrate competence in making teacher-related decisions.

Areas of concern for those teachers who were alternatively licensed included their ability to absorb as much pedagogical content and ability to make effective instructional decisions because of their training, all while being full-fledged classroom teachers. It was noted in a research study by Myers et al., 2007 (as cited by Shen & Palmer, 2005), that alternately licensed programs may inadequately prepare alternatively licensed teachers to apply appropriate pedagogical knowledge for effective instructional decisions.

Alternatively licensed career and technical education teachers have reported different self-perceived levels of preparedness to make instructional and pedagogical decisions, while some felt inadequately prepared in comparison to those who reported they were prepared (Ruhland & Bremer, 2002a). The levels were quantified in another study by Ruhland and Bremer (2003) when the researchers concluded that eight percent of traditionally licensed career and technical teachers reported feeling inadequate to make pedagogical decisions, whereas 16% of alternatively licensed career and technical education teachers reported feelings of not being fully prepared. In addition, when it came to reporting feelings of “very adequate,” 25% of traditionally-licensed career and technical teachers reported that measure, whereas 16% of alternatively-licensed career and technical teachers reported a feeling of “very adequate.” The feelings of being unprepared between traditionally and alternatively licensed career and technical teachers are further exemplified by Ruhland and Bremer (2002b) stated, “Results from this study reported secondary CTE teachers who completed a traditional certification program had better pre-service preparation in pedagogy while alternatively licensed teachers felt more prepared in knowledge of subject matter” (p. 106). It was also noted by Kee (2011) that alternatively licensed teachers perceive themselves to be less prepared compared to traditionally licensed teachers in regard to making decisions due in part to having fewer (if any) field experiences and fewer courses related to instruction and pedagogy.

Purpose of the study

The purpose of this research study was to describe self-perceived levels of preparedness of alternatively licensed career and technical teachers in the state of Ohio, in regard to completing requirements of the Resident Educator Summative Assessment (RESA). Specifically, the study was designed to address four research questions:

1. What were the differences in self-perceived levels of preparedness of alternatively licensed career and technical teacher completing the first instructional cycle task of RESA among demographic variables including content area, gender, highest level of education, school type, background of school, and years of work experience outside of education?
2. What were the differences in self-perceived levels of preparedness of alternatively licensed career and technical teacher completing the formative and summative

assessment task of RESA among demographic variables including content area, gender, highest level of education, school type, background of school, and years of work experience outside of education?

3. What were the differences in self-perceived levels of preparedness of alternatively licensed career and technical teacher completing the second instructional cycle task of RESA among demographic variables including content area, gender, highest level of education, school type, background of school, and years of work experience outside of education?

4. What were the differences in self-perceived levels of preparedness of alternatively licensed career and technical teacher completing the communication and professional growth task of RESA among demographic variables including content area, gender, highest level of education, school type, background of school, and years of work experience outside of education?

Theoretical Framework

Guiding this study was the theory of Social Cognitive Career Theory (SCCT), and the relationship of the theory to those individuals who are changing careers and preparing for perceived hindrances associated with such change. Originally espoused by Lent, Brown, and Hackett (1994) and founded on Bandura's theoretical base of social cognitive theory (1986), SCCT can be used to describe the challenges associated with those who wish to pursue a new career, and the roles and decisions made in the career change which are dependent on certain variables. The variables included within SCCT are perceived levels of self-efficacy, outcome expectations, and goals. All three variables are interconnected and impact their decisions to stay with a new career choice (Foley & Lytle, 2015; Koivisto, Vinokur, & Vuori, 2011; Tang, Pan, & Newmeyer, 2008). In addition, SCCT was designed for those people changing careers with an emphasis on "understanding vocational interest formation, career choice, and academic/career performance" (Schaub & Tokar, 2005, p. 304). SCCT is based on three developments:

1. The development of both career and academic pursuits and goals;
2. Making pertinent career choices that are related to the pursuits and goals; and
3. Individuals increase new knowledge learned through both their educational and career pursuits and goals and feelings of preparedness to meet those goals (Lent & Brown, 1996; pp. 313-315).

Review of Literature

Teacher residency programs were originally established to recruit and retain those individuals who do not come from an education background (National Center for Teacher Residencies, 2015). At present, the teacher residency programs are designed to train and acclimate a novice teacher, known as a teacher resident, to the wide range of decisions that teachers make daily, as the individual works with a master teacher who trains and mentors the novice teacher. While also receiving on-the-job training, the novice teacher also takes courses towards a master's degree and also usually receives tuition reimbursement and a stipend (Thorpe, 2014). This model has also influenced the state of Ohio, and the induction program known as the Resident Educator program (Ohio Department of Education, 2016).

Whether a teacher was seeking licensure by completing a traditional pathway program or an alternative pathway program, each state established what an individual must complete to obtain a license or renew a provisional license. Teacher assessments, both computerized and performance-based, provided teacher preparation programs with multiple data points before granting licensure to preservice teachers (Butrymowicz, n.d.). Teacher preparation programs in the form of a college/university used multiple forms of assessments, and scores from those assessments in the decision-making process on whether to grant a license to a teacher (Lim, Stallings, & Kim, 2015).

Teacher performance assessment, in its current form, was initially piloted during the late 1980s when it was first used to assess teachers in New Jersey (Lim, et al., 2015). One of the first teacher assessments that was performance-based were the requirements set forth to become a nationally-board certified teacher through National Board for Professional Teaching Standards (NBPTS). The first piloted teacher performance was initiated by the Stanford Teacher Assessment, which then in turn become the foundation for the requirements used by the NBPTS (Pecheone, Pigg, Chung, & Souviney, 2005). The NBPTS framework was derived and launched in 1994, and teachers were assessed in a more “authentic” fashion by completing activities that were not paper-and-pencil based (Sato, 2014). Teachers had to have at least three years of teaching experience before they completed activities related to becoming nationally-board certified.

One of the first states to launch a preservice, performance-based assessment was California during the late 1990s. Lawmakers in the state of California wanted teachers to demonstrate competence on an authentic assessment before receiving a teaching license, and lawmakers in conjunction with teacher educators created and adopted the Performance Assessment for California Teachers (PACT) (Pecheone & Chung, 2006). The PACT was pilot-tested during the 2002-2003 school year and became an integral part of the teacher licensure process in California shortly after being field tested in the mid-2000s (Pecheone et al., 2005). Authentic assessments that required preservice teachers to demonstrate their teaching competence were related to the teacher’s ability to effectively plan, instruct, assess, and reflect on a teaching event (Pecheone et al, 2005). Teachers submitted evidence related to their teaching event including a description of the lesson; how they planned several learning segments; one to two segments of the lesson which included the teacher teaching the lesson and corresponding recordings; an assessment plan that included student assessment examples; and a reflection piece on how the instruction went and what the student outcomes were (Pecheone et al., 2005). Teachers were scored using a rubric which determined if they were proficient.

The perceived levels of preparedness of teachers from different content areas alternatively licensed can be mixed, or even contradictory, when describing just how prepared they perceive themselves in regards to instructional and pedagogical decisions (Cohen-Vogel & Smith, 2007). Teachers’ perceptions of their levels of preparedness when it comes to making pedagogical decisions across all content areas can vary tremendously. Some alternatively licensed teachers reported lower levels of preparedness in comparison to traditionally licensed teachers (Kee, 2011). Conversely, some alternatively licensed teachers reported the same or even higher levels of preparedness when it came to instructional and pedagogical decisions (Stoddart & Floden, 1995).

Differences in perceptions of levels of preparedness can differ between traditionally and alternatively licensed teachers even before completing a performance-based assessment as part of licensure. According to Houston, Marshall, and McDavid (1993), the researchers discussed findings related to the perceptions of preparedness among elementary school teachers who completed their training by either a traditional pathway or by an alternative pathway for certification. The researchers determined statistically significant differences in the perceptions of levels of preparedness related to instruction within the domains of student motivation and managing teacher time. Elementary school teachers who were traditionally licensed reported higher levels of preparedness in comparison to those elementary school teachers who were trained through an alternative pathway (Houston, et. al, 1993).

A major legislative change occurred for alternatively licensed career and technical education teachers in Ohio completing RESA with the passage of Senate Bill 3. The Bill created a new performance-based assessment was to be developed for alternatively licensed career and technical teachers only; alternatively licensed teachers from other content areas and traditionally licensed teachers still had to competently complete RESA for advancing licensure. It was a requirement per Senate Bill 3 that a new performance-based assessment be implemented no later than December 31, 2017. Therefore, this study sought to measure the levels of perceived preparedness before the implementation of Senate Bill Three.

Methodology

This investigation used a one-shot case study, pre-experimental design (Campbell & Stanley, 1963) and the research study was descriptive. The researchers wanted to establish baseline data over the perceived levels of preparedness of alternatively licensed career and technical teachers in the state of Ohio completing all four tasks of the Resident Educator Summative Assessment (RESA). This research design was chosen because it was appropriate in answering the study's research questions. At the time of the study, there was not enough data to compare and contrast alternatively licensed teachers with traditionally licensed teachers completing RESA.

The population studied included all career and technical education teachers who were alternatively licensed in the state of Ohio and who completed the RESA. The target sample was delimited to the school years of 2013-2014 through the 2015-2016 school year. The RESA was first required during the school year of 2013-2014, which would serve as the first point for data collection. Also, data collection occurred before the results of the following school year (2016-2017), so those teachers were not a part of the target sample. A change that impacted the timing and means of completing RESA occurred with the passage of Senate Bill Three in Ohio. It changed how RESA was to be completed including allowing colleges/universities to create and use their own type of performance-based assessment.

A purposive sampling method was used because the researchers focused on the characteristics in the form of demographics of alternatively-licensed career and technical teachers completing the RESA including a teacher's career and technical content area, gender, degree level attainment, type of school, background of the school, and years of work experience outside of education. This follows the guidelines of using a purposive sampling technique, and was chosen based upon the given characteristics of the population as well as the research aim of the study (Teddlie & Yu, 2007).

Alternatively licensed career and technical teachers who completed RESA during year three or year four of the Resident Educator program were included in the population, a requirement by the state of Ohio.

Face and content validity were established by using a panel of experts familiar with career and technical education and also RESA. The panel of experts included professors, post-secondary program coordinators, post-secondary teacher educators, and retired teachers. The questionnaire was edited and revised according to their recommendations.

In order to establish reliability, the researcher used a pilot-test of the questionnaire before it was disseminated to the actual participations. The participants involved in the pilot test of the questionnaire were from all content areas and all grade levels from kindergarten through twelfth grade. The teachers involved in the pilot test originated from a school district in central Ohio who had completed RESA. Cronbach alpha coefficients were derived, and the questionnaire had an overall rating of .943 (highly reliable) (Gliem and Gliem, 2003; Tavakol and Dennick, 2011).

To measure levels of perceived preparedness, the researchers used a Likert-type scale, and the participants selected a perceived level of preparedness level ranging from 1 to 4, and the questionnaire was completed by participants using Qualtrics. Participants self-identified all their demographic information on the questionnaire (i.e., background of school differentiating between urban, rural, and suburban). Table 1 includes further information related to the questionnaire about what information a teacher could select for each type of variable.

Table 1

Descriptions of selections of each sub-category of the independent variable

Type of Variable (independent variable)	Teachers could select one among the following on the questionnaire:
Career and Technical Content Area	Agriculture and Environmental Systems, Business, Finance, Marketing, and Information Technology, Health Occupations and Human Services, or Trade and Industry
Gender	Male or Female
Highest Level of Education	High School Diploma/GED, Associate's Degree, Bachelor's Degree, or Advanced Degree (including Master's and Doctorate degrees)
Type of School	Middle School, High School, Career Center, Charter School, Corrections Facility, or Other: Please Specify
Background of School	Urban, Suburban, Rural
Years of Work Experience Outside of Education	0-5, 6-10, 11-15, 16-20, 21-25, 26 or more years

Note. Teacher's self-selected their choices at the time they completed the RESA.

Electronic mail (e-mail) was the chosen method of delivery of the questionnaire. Also, no prenotice was used to inform the participants about the study due to a small window available for data collection and allowing ample time for participants to complete the questionnaire (Sue & Ritter, 2012). A five-contact e-mail strategy was used, and the researcher spread out the reminder messages over a time period of approximately five weeks beginning in April 2017, through May, 2017 (Dillman, Smyth, and Christian, 2014; Sue & Ritter, 2012).

Questionnaire

The scaling of the questionnaire itself was derived from a survey associated with the National Center for Education Statistics and teachers' perceived levels of preparedness from 1999. Additionally, questions specific to perceptions of preparedness as it coincided with the RESA instrument were derived from the perceptions of preparedness from the School and Staffing Survey (2011) which was also disseminated by the National Center for Educational Statistics. And lastly, a questionnaire developed from a study by researchers Darling-Hammond, Newton, & Wei (2013) was used for perceptions of preparedness.

Data Analysis

The researchers used both descriptive and inferential statistics to analyze data. Since a non-experimental research design was selected, survey research was used in the form of a questionnaire to collect data from the participants using only close-ended questions. Creswell (2012) also classified this as a survey research design, which is frequently used in educational research. Additionally, cross-sectional research was also used as participants were studied only once (Creswell, 2012). A questionnaire was used to gather data from participants. To assess the preparedness levels of alternatively licensed teachers on each task associated with RESA on the dependent variable, the Likert-type questions were converted to a

Likert-type summated scale. There were four tasks altogether, so four different summated scales were developed for analysis. The range of each summated scale was six to 24. Categorical data obtained from the questionnaire served as the independent variable. The categorical data included the content area of the teacher, gender, school type, background of the school, degree level, and number of years of work experience outside of education at the time the participant completed RESA.

Data for each research question were analyzed in two different ways. Descriptive statistics including the mean, standard deviation and mode and also percentage showing frequency and cumulative percent were first presented for each research question. Assumptions were first verified before any parametric test was conducted. If none of the assumptions were violated, then a one-way analysis of variance (ANOVA) between groups was used for categorical variables containing three or more groups, and an independent samples *t* test was performed for an independent variable of two groups using the summated scale of each task as the dependent variable. If an assumption of homogeneity of variances was violated, then the Welch's ANOVA was used. When one or more assumptions were violated, a Mann-Whitney *U* or Kruskal-Wallis *H* was used as a non-parametric alternative to the parametric test of the ANOVA (Rochon, Gondan, & Kieser, 2012).

The alpha level was set *a priori* at .0083 since six analyses were performed on each dependent variable and to control for committing a Type I error.

Additionally, some participants chose to e-mail the researchers details further elaborating and describing levels of perceived preparedness. The findings of the e-mails were reported as anecdotal evidence and analyzed qualitatively for themes.

Results of the study

Demographic Data

Initial findings from the study indicated that 37 males (52.86%) and 33 females (47.14%) completed RESA with an average age of 44 (*SD* = 11.77) years old. The last section of the questionnaire asked respondents to describe their career and technical content area, age, type of school, setting of their school, and their number of years of work experience outside of teaching at the time of completing the Resident Educator Summative Assessment. Table 2 includes information over the demographic data.

Table 2

Demographic data of participants

Variable	Percentage (%)
Gender	Male: 52.9 Female: 47.1
CTE content area	Agriculture and Environmental Systems: 8.57 Business, Finance, Marketing, and Information Technology: 27.14 Health Occupations and Human Services: 37.14 Trade and Industry: 27.14
Average age	44 (<i>SD</i> = 11.77)

Highest degree level earned	High School Diploma/GED: 30.43 Associate's degree: 23.19 Bachelor's degree: 24.64 Advanced degree: 21.74
School type	Middle School: 1.45 High School: 34.78 Career Center: 55.07 Corrections Facility: 7.25 Other: 1.45
Background of school	Rural: 53.62 Suburban: 23.19 Urban: 23.19
Years of work experience outside of education	0-5: 10.14 6-10: 8.70 11-15: 20.29 16-20: 24.64 21-25: 20.29 26 or more: 15.94

To account for any missing data, the researcher performed a missing data analysis using SPSS. Bennet (2001) had determined that missing data is irrelevant as long as it does not proliferate above ten percent. Any questionnaires which had more than 10% of missing data were excluded from the analysis, and five questionnaires were excluded from statistical analysis.

Percentages and Frequencies of Portages of Levels of Perceived Preparedness

Each research question has a frequency and frequencies of percentages associated with it detailing how often each number of the questionnaire was selected as well as how much. The following guidelines (as shown in Table 3) were applied when interpreting the frequency of the selected numbers related to perceived preparedness (1 = Very unprepared, 2 = Unprepared, 3= Prepared, 4 = Very Prepared) and the percentage of the frequencies of selection.

Table 3

Determining levels of preparedness from frequencies and percentages of frequencies from the questionnaire

Corresponding level of perceived preparedness	Range
6 – 12	Very Unprepared to Unprepared
13 – 18	Perceptions of both unprepared and prepared
18 – 24	Prepared to Very Prepared

Note. Values and ranges derived from questionnaire where 1 = Very unprepared and six questions per task ($6 \times 1 = 6$ /Very unprepared), 2 = Unprepared and six questions per task ($6 \times 2 = 12$ /Prepared), 3 = Prepared and six questions per task ($6 \times 3 = 18$ /Prepared), and 4 = Very prepared and six questions per task ($6 \times 4 = 24$ /Very prepared).

Results of Research Question #1

A total of 74 teachers were included in the data analysis for the first research question. Assumptions were first checked in several different ways before performing parametric testing including visual inspection of a boxplot, Levene's test of homogeneity of variances, and a Shapiro-Wilk test. Since assumptions of normality were not violated, data were analyzed using a one-way fixed-effects analysis of variance (ANOVA) for the variables of a teacher's career and technical content area, school type, background of the school, and work experience.

Results of an ANOVA for a teacher's career and technical content area indicated there were mean differences among the levels of the variable including Agriculture and Environmental Systems ($M = 17.00, SD = 7.10$), Business, Finance, Marketing, and Information Technology ($M = 19.00, SD = 16.89$), Health Occupations and Human Services ($M = 26.00, SD = 15.46$), and Trade and Industry ($M = 19.00, SD = 17.16$), but the differences between the groups was not statistically significant, $F(3, 66) = .675, p = .571$. Results of an ANOVA for school type indicated mean differences including Middle school/High school ($M = 17.20, SD = 4.44$), Career center/Compact school ($M = 16.56, SD = 4.37$), and Corrections facility ($M = 12.60, SD = 3.71$) but the differences between the groups was not statistically significant, $F(2, 66) = 2.33, p = .105$. Results of an ANOVA for the background of the school indicated there were mean differences among the levels of the variable including rural ($M = 16.67, SD = 4.74$), urban ($M = 15.93, SD = 3.79$), and suburban ($M = 16.75, SD = 4.54$) but the differences between the groups was not statistically significant, $F(2, 66) = .170, p = .844$. A small effect size for variables of a CTE teacher's career and technical content area, school type, background of the school, and work experience outside of education was derived using Cohen's d and eta squared (η^2) (Cohen, 1988). Table 4 displays the result of the ANOVA tests and task one variables. Results of a Whitney U test for gender was performed, and mean differences did exist between each level of the gender variable, but non-significant results ($\alpha > .0083$) were derived. A Kruskal-Wallis H test was performed on degree level, and mean differences did exist between each level of the highest level of education variable, but non-significant results ($\alpha > .0083$) were derived.

Table 4

ANOVA Calculations for Task One Variables That met Assumptions of ANOVA

Variable: CTE Content Area	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	40.494	3	13.498	.675	.571

Within Groups	1320.777	66	20.012		
Total	1361.271	69			
Variable: School Type	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	88.457	2	44.228	2.330	.105
Within Groups	1252.790	66	18.982		
Total	1341.246	68			
Variable: Background of School	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	98.739	4	24.685	1.271	.290
Within Groups	1242.507	64	19.414		
Total	1341.246	68			
Variable: Work Experience	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	186.777	5	37.355	2.038	.085
Within Groups	1154.470	63	18.325		
Total	1341.246	68			

Note. Work Experience refers to number of years of work experience outside of teaching.

Results of Research Question #2

A total of 74 teachers were included in the data analysis for the second research question. Results of the Welch's one-way between groups ANOVA indicated that there were differences in perceived levels of preparedness of each career and technical content area teacher in mean scores including Agriculture and Environmental Systems ($M = 16.5, SD = 7.23$), Business, Finance, Marketing, and Information Technology ($M = 16.37, SD = 4.30$), Health Occupations and Human Services ($M = 15.35, SD = 3.87$), and Trade and Industry ($M = 16.26, SD = 3.25$), but the differences between the groups were not statistically significant, $F(3, 66) = .313, p = .811$. Results of an ANOVA indicated that there were differences in perceived levels of preparedness on task two among degree level: High School Diploma/GED ($M = 15.57, SD = 3.71$), Associate's degree ($M = 16.44, SD = 4.348$), Bachelor's degree ($M = 16.41, SD = 4.76$), and Advanced degree ($M = 15.80, SD = 4.84$) but the results were not statistically significant $F(3, 65) = .195, p = .899$. Results of an ANOVA also indicated mean differences in type of school: Middle school/High school ($M = 16.36, SD = 4.37$), Career center/Compact school ($M = 16.10, SD = 3.97$), and Corrections facility ($M = 13.8, SD = 4.32$) but no significant results were found in levels of perceived preparedness $F(2, 66) = .812, p = .449$. Results of an ANOVA indicated mean differences in background of school: urban ($M = 16.32, SD = 4.00$), suburban ($M = 15.50, SD = 4.32$), and

rural ($M = 15.88, SD = 4.43$) but no significant results were found in levels of perceived preparedness $F(2, 66) = .232, p = .794$. Results of an ANOVA indicated mean differences in years of work experience outside of education: 0-5 years ($M = 16.00, SD = 3.32$), 6-10 years ($M = 16.00, SD = 4.05$), 11-15 years ($M = 17.50, SD = 4.88$), 16-20 years ($M = 13.76, SD = 3.01$), 21-25 years ($M = 17.14, SD = 4.22$), and 26 or more years ($M = 16.27, SD = 4.34$) but no significant results were found in levels of preparedness $F(5, 63) = 1.67, p = .155$. A small effect size for variables of a CTE teacher's career and technical content area, school type, background of the school, and work experience outside of education was derived using Cohen's d and eta squared (η^2) (Cohen, 1988). Tables 5 and 6 indicate the results of calculations using parametric testing including a one-way fixed effects ANOVA tests and task two variables or Welch's ANOVA for the task two variable of a career and technical teacher's content area. An independent samples t test was performed to describe levels of preparedness between the levels of gender on task two. Results of the independent samples t test indicated that mean differences did exist between each level of gender, but non-significant results ($\alpha > .0083$) were derived.

Table 5

Welch's ANOVA Calculation for CTE Teacher Content Area on Task Two

	<i>Statistic*</i>	<i>df 1</i>	<i>df 2</i>	<i>p</i>
Welch	.320	3	19.157	.811

Note. Asymptotically F distributed

Table 6

ANOVA Calculations for Task Two Variables That met Assumptions of ANOVA

Variable: Degree Level	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	10.344	3	3.448	.195	.899
Within Groups	1147.598	65	17.655		
Total	1157.942	68			
Variable: School Type	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	27.792	2	13.896	.812	.449
Within Groups	1130.150	66			
Total	1157.942	68	17.123		
Variable: Background of School	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	8.084	2	4.042	.232	.794
Within Groups	1149.858	66	17.422		
Total	1157.942	68			

Variable: Work Experience	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	135.487	5	27.097	1.670	.155
Within Groups	1022.455	63	16.229		
Total	1157.942	68			

Note. Work Experience refers to number of years of work experience outside of teaching

Results of Research Question #3

A total of 74 teachers were included in the data analysis for the third research question. A Kruskal-Wallis H test was performed for the variables of a teacher's career and technical content area, background of school, school type, and years of work experience outside of education. Results indicated mean differences among the levels of the independent variables, but non-significant results ($p > .0083$) were derived from task three among teacher's levels of perceived preparedness. Results of the Mann-Whitney *U* test indicated mean differences between males and females and perceived levels of preparedness on task three, but the results were non-significant ($p > .0083$). Results of an ANOVA indicated mean differences in degree level: High school diploma/GED ($M = 17.05$, $SD = 3.04$), Associate's degree ($M = 16.88$, $SD = 3.01$), Bachelor's degree ($M = 16.53$, $SD = 4.60$), and Advanced degree ($M = 17.07$, $SD = 5.42$) but no significant results were found in levels of preparedness $F(3, 65) = .065$, $p = .978$. A small effect size was also calculated. Table 7 displays the result of the ANOVA tests and task three variables.

Table 7

ANOVA Calculations for Degree Level and Task Three

Variable: Degree Level	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Between Groups	3.201	3	1.067	.065	.978
Within Groups	1069.871	65	16.460		
Total	1073.072	68			

Results of Research Question #4

A total of 72 participants were included in the data analysis for research question four. Results of a Kruskal-Wallis H test indicated mean differences among the variables but non-significant results ($p > .0083$) were derived. Results of a Mann-Whitney *U* test indicated mean differences among levels of the gender variable, but non-significant results ($p > .0083$) were derived. Results of an ANOVA indicated mean differences in degree level: High school diploma/GED ($M = 16.52$, $SD = 4.93$), Associate's degree ($M = 17.38$, $SD = 3.07$), Bachelor's degree ($M = 17.23$, $SD = 4.64$), and Advanced degree ($M = 16.83$, $SD = 4.92$) but no significant results were found in levels of preparedness $F(3, 65) = .256$, $p = .857$. Results of an ANOVA indicated mean differences in background of the school: rural ($M = 16.86$, $SD = 4.50$), suburban ($M = 16.63$, $SD = 4.60$), and urban ($M = 16.94$, $SD = 4.30$) but no significant results were found in levels of preparedness $F(4, 68) = .370$, $p = .829$. Results of an ANOVA indicated mean differences in years of work experience outside of education: 0-5 years ($M = 17.57$, $SD = 3.87$), 6-10 years ($M = 14.50$, $SD = 6.50$), 11-15 years ($M = 17.21$, $SD = 5.06$), 16-20 years ($M = 15.76$, $SD = 3.25$), 21-25 years ($M = 18.50$, $SD = 4.09$), and 26 years or more ($M = 16.64$, $SD = 4.57$) but no significant results were found in

levels of preparedness $F(5, 63) = .997, p = .427$. A small effect size for variables of degree type, background of the school, and work experience outside of education was derived using Cohen's d and eta squared (η^2) (Cohen, 1988). Table 8 displays the result of the ANOVA tests and task four variables.

Table 8

ANOVA Calculations for Task Four

Variables That met Assumptions of ANOVA

Variable:	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Degree Level					
Between Groups	15.466	3	5.155	.256	.857
Within Groups	1310.447	65	20.161		
Total	1325.913	68			
Variable:	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Background of School					
Between Groups	29.964	4	7.491	.370	.829
Within Groups	1295.949	64	20.249		
Total	1325.913	68			
Variable:	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Work Experience					
Between Groups	97.237	5	19.447	.997	.427
Within Groups	1228.676	63	19.503		
Total	1325.913	68			

Note. Work Experience refers to number of years of work experience outside of teaching

Anecdotal Evidence

Even though it was outside the scope of the study, some of the teachers also emailed the researchers regarding their further levels perceived preparedness. Anecdotal evidence provided from participants in the form of written e-mails to the researcher were analyzed for themes. Providing anecdotal evidence was not a requirement of the study, but the evidence was included in the data analysis to further provide data regarding levels of preparedness while completing each task of RESA. Some of the themes that were derived included perceptions of being less prepared due to a limited amount of time to get all tasks completed, perceptions of being less prepared because of how time-consuming they perceived the RESA process to be in its entirety, preparing to interpret all the requirements for each task, and perceptions related to lower levels of preparedness since the RESA was perceived to be created for traditionally-licensed teachers and less for alternatively-licensed teachers, especially those with a career and technical background.

Conclusions, Recommendations, and Implications

Conclusion #1: Mean differences among a teacher's career and technical content area

Results of the study indicated differences in levels of preparedness among a teacher's career and technical content area but did not produce a significant result statistically ($p > .05$). A teacher's career and technical content area did not impact levels of perceived preparedness across tasks one through four.

Since there were mean differences among the variable of a teacher's career and technical content area, a recommendation related to this conclusion is to have alternatively licensed career and technical education teachers complete tasks that mimic RESA earlier in the Resident Educator program. Participants may have increased levels of preparedness for each task before attempting all four tasks of the RESA if they have time to practice tasks before attempting a performance-based assessment for advancing licensure. It is recommended that tasks be collaborative in-nature with mentors and completed during year one and year two of the Resident Educator program to increase feelings of perceived preparedness before completing RESA. This coincides with the usage of using mentors as part of an induction program, and perhaps even a performance-based assessment espoused by Briggs, 2009. According to Briggs (2008), mentoring has been shown to have a positive impact for new alternatively-licensed career and technical education teachers. An increase during the first two years of the Resident Educator program may assist teachers with completing the RESA. That would allow them to have trained mentors from each career and technical content area assist them through their formative years of teaching and prepare for an assessment that gauges their ability to make such important instructional and pedagogical decisions.

Conclusion #2: Mean Differences in Self-Reported Levels of Preparedness Among Other Demographic Variables Including Gender, Degree Level Attainment, Background of the School, Type of School, and Years of Work Experience Outside of Education

Further results of the study indicated mean differences in perceived levels of preparedness among demographic variables including gender, degree level, school type, background of the school, and years of work experience outside of education) among all four tasks of RESA but they were not statistically significant ($p > .05$). A teacher's gender, degree level attainment, type of school, background of the school, and years of work experience outside of education did not impact levels of perceived preparedness across tasks one through four. A study by Walter & Gray (2002) highlighted the wealth of knowledge that alternatively licensed CTE teachers have when it comes to content knowledge. This study indicated that with the variability in how teachers are trained through formal education programs, CTE content knowledge needs to be coupled with training in making teacher-related decisions. Variables, such as degree level attainment and years of work experience were shown to be assets for those teachers with a CTE background completing alternative licensure requirements (Ruhland & Bremer, 2002a; Ruhland & Bremer, 2002b; Walter & Gray, 2002).

Recommendations Based on Conclusion #2

One recommendation is to allow participants more time to complete a performance-based assessment to advance their licensure. Instead of completing a performance-based assessment in its entirety during year three, participants could complete it during years three and four. Giving participants more time to complete a performance-based assessment may increase their levels of perceived preparedness. Participants may have an increase in self-efficacy when completing each task of the performance-based assessment, which could also increase their perceived levels of preparedness according to SCCT (Lent, Brown, & Hackett, 1994).

Conclusion #3: Percentages and Frequencies of Percentages

Conclusions regarding the percentages and frequencies of percentages across all categorical variables resulted from varying levels of preparedness among the participants. For task one, the first instructional cycle, approximately 23% of the participants indicated perceptions of feeling unprepared whereas approximately 26% of participants indicated perceptions of feeling prepared. The other

approximately 51% of participants indicated a combination of perceptions of preparedness on some parts of task one.

For task two, i.e., formative and summative assessment, approximately 23% of the participants indicated perceptions of feeling unprepared; approximately 19% of respondents indicated perceptions of feeling prepared. The other approximately 58% of participants indicated a combination of perceptions of preparedness on some parts of task two.

For task three, i.e., the second instructional cycle, approximately 15% of the participants indicated perceptions of feeling unprepared; 26% of the participants indicated perceptions of feeling prepared. The other approximately 28% of participants indicated a combination of perceptions of preparedness on some parts of task three. For task four, i.e., communication and professional growth, approximately 22% of the participants indicated perceptions of feeling unprepared; approximately 28% of participants indicated perceptions of feeling prepared. The other approximately 50% of participants indicated a combination of perceptions of preparedness on some parts of task four.

Recommendations based on Conclusion #3

Creating a succinct version of task two *Formative and Summative Assessment* is a recommendation regarding a performance-based assessment for alternatively licensed career and technical education teachers. Results of the study indicated that task two had the lowest reported perceptions of feeling prepared (19%). Narrowing the scope of a task related to formative and summative assessment may increase levels of perceived preparedness.

Another recommendation is to have participants complete only one instructional cycle. Results of the study indicated levels of perceived preparedness decreased by 8% between the first and second instructional cycles. Requiring only one instructional cycle, and more time to complete the instructional cycle, may increase feelings of perceived preparedness.

Conclusion #4: Frustrations with RESA and Overall Preparedness

Qualitative data in the form of anecdotal evidence suggested that participants were frustrated with the entire RESA process such as how time consuming it was perceived to be. These decreased levels of preparedness such as trying to interpret the directions and requirements for each task.

Recommendations Based Up Conclusion #4

One recommendation is related to the theoretical framework on which this study was based as it pertains to SCCT and the influence of outcome expectations and goals, as well as ways in which to increase a positive perception of preparedness. Some participants approached the perceived barriers associated with RESA including certain frustrations and perceived inadequacies but that did not impact their levels of preparedness among demographic variables. This influences outcome expectations and the preparedness levels of participants completing each task of RESA according to the tenets of SCCT (Lent et al., 1994). Also, accomplishing a goal of overcoming a major hindrance (such as the four tasks of RESA) can lead to a better chance at perceived success in a new career field (Lent et al., 1994). A recommendation of ways to alleviate these frustrations that impacted perceived levels of preparedness is to allow more choices when it comes to demonstrating competence related to making instructional and pedagogical decisions. Instead of having just four tasks that were required to be completed, instead the Ohio Department of Education could provide a list of options of tasks that alternatively-licensed career and technical education teachers could complete over the course of a school year that are shorter in duration. Alternatively licensed career and technical education teachers would still need to provide and submit evidence of learning and also reflections that demonstrate teacher growth regarding selected tasks.

Conclusion #5: Participation in RESA

Participation in RESA increased over the years when it was first implemented during the school year of 2013 – 2014 ($N = 14$) to the school year of 2015 – 2016 ($N = 51$). The majority of participants sampled in the research study completed the RESA after enhancements were made to the assessment.

Recommendations Based Upon Conclusion #5

Teachers' perceived preparedness related to perceived preparedness may have increased as changes and enhancements were developed each year for both the Resident Educator program and also the Resident Educator Summative Assessment instrument and corresponding procedures handbook (Educopia, 2016). One recommendation is to include only the population of alternatively licensed career and technical education teachers in the creation of a performance-based assessment for advancing licensure. A performance-based assessment should be designed specifically for these teachers; this assessment should be completed before it is fully implemented in a residency program.

Also, recommendations for enhancements of a performance-based assessment should be considered by and communicated from alternatively licensed teachers whom have completed the performance-based assessment. This recommendation specifies that the teachers provide input and recommendations for modifications or enhancements to the performance-based assessment because they are the teachers who completed it and would have feedback for such improvements and modifications.

Limitations

Several limitations should be noted including the sample size and time between completing the RESA and remembering self-perceived levels of preparedness of each task. Career and technical content areas were purposefully grouped into major areas (i.e. Agricultural and Environmental Systems) to allow for statistical analysis; this in turn affected sample size for each major grouping. Also, participants who completed RESA when it first became a requirement (school year of 2013 – 2014) may have had a more difficult time remembering self-perceived levels of preparedness than those participants who took it closer to when the survey was distributed (school year of 2016 – 2017). However, even when accounting for the limitations, there is generalizability to other states that require a performance-based assessment within the field of alternative CTE licensure.

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