

Influence of Achievement Goals on Multicultural Teaching Competence: Mastery-Approach Goal Advantage Effect

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Abstract

Although abundant research established a link between achievement goals and academic performance, research on the role of achievement goals in multicultural education is scarce. This study examined the relationship between the achievement goals and multicultural teaching competence (MTC) of 149 teachers at a comprehensive southeastern American university. Descriptive statistics revealed that the predominant goal types were mastery-approach and performance-avoidance goals. Results from a hierarchical regression analysis showed that achievement goals significantly predicted MTC. Based on these significant findings, a canonical correlation analysis was conducted to further analyze this relationship. The results indicated that mastery-approach goals positively predicted emotional cultural competence, a component of MTC. The findings demonstrated the advantage effect of mastery-approach goals in facilitating multicultural teaching competence.

Key Words: Achievement goals, multicultural teaching competence, emotional cultural competence, mastery-approach goal, advantage effect.

Introduction

To help bridge the gap between a relatively homogenous teaching force and increasing student diversity, (Adams et al., 2019; Aguado-Odina et al. 2017), many countries such as Malaysia, Andorra, UK, China, and the US have committed to multicultural education rooted in equity and equality (Banks, 2006; Phoon et al., 2013; Sleeter, 2018; UNESCO, 2014). Due to its sensitive nature, which may promote adverse emotional reactions such as anger, avoidance, passivity, and silence (Doepker, 2015; Jackson, 1999) and cognitive dissonance toward ethno-relativism (Bennett, 1993), multicultural education often encounters difficulties and challenges such as student resistance and less than satisfactory educational outcomes (Author et al., 2018; Brown & Rodriguez, 2017; Milner et al., 2003; Nelson & Guerra, 2014; Sleeter, 2001). It remains of prime importance in an ever-changing, diverse world. To help improve the effectiveness of multicultural education in addressing equity issues in education, particularly posing as a unique challenge during the pandemic, educators must approach it from a motivational perspective (Gay, 2020; Wlodkowski & Ginsberg, 1995). However, there is a scarcity of research examining the role of motivation in multicultural teacher education (Author et al., 2011, 2018).

The role of motivation in content areas, including math and English, has been well researched in recent decades (e.g., Burak, 2014; Lykegaard & Ulriksen, 2016; Shernoff et al., 2003). Achievement goals theory, one of the most influential frameworks used to investigate student motivation (Elliot & McGregor, 2001), has consistently proven the benefits of mastery-approach goals but mixed results for performance-based goals (Author et al., 2013, 2016; Elliot & McGregor, 2001; Senko et al., 2011, 2017). Most recently, Darnon et al. (2018) found that while mastery-approach goals positively predicted final grades for lower socioeconomic

status (SES) students, performance-approach goals only did so for upper SES students. The findings of another recent study in Peru favored mastery-approach goals over other goals (Matos et al., 2017). However, it is unknown whether achievement goals have similar effects on multicultural teaching competence. The purpose of the study was twofold: 1) to explore the relationship between achievement goals of teachers and their multicultural teaching competence, and 2) to uncover the impact of specific achievement goal types on aspects of multicultural teaching competence.

Theoretical Framework

Achievement Goals Theory

Achievement goals are outlined in aspirations that individuals set for engaging in a task and how they judge their achievement (Pintrich, 2000). Individuals can set goals for either achieving success (approach) or avoiding failure (avoidance). They may judge the outcomes based on absolute criteria and comparison with their own previous performance (mastery) or through comparison with others (performance), hence the 2×2 model (Elliot & McGregor, 2001). Achievement goals in the 2×2 model are based on the definition of goals (i.e., mastery-versus performance-based) and valence of goals (i.e., approach- versus avoidance-based). Based on the 2×2 achievement goal model (Table 1), students may endorse one or more of the four types of goals: mastery-approach (aiming at learning new knowledge, mastering new skills, and making progress), mastery-avoidance (goals driven by the fear of not understanding or progressing), performance-approach (striving for outperforming others or looking competent), or performance-avoidance (aiming at avoiding looking incompetent or failure) goals (Elliot & McGregor, 2001). For example, students in multicultural education with mastery-approach goals

actively strive to improve their cultural competence by mastering diversity knowledge and/or taking actions to combat prejudices and discriminations for their personal growth. In contrast, students oriented to mastery-avoidance goals may be motivated by a fear of making no progress in their cultural competence or not learning as much as before. Students with performance-approach goals may seek to outperform or outsmart others in multicultural education courses. Students driven by performance-avoidance goals tend to avoid failing or receiving bad grades that make them look incompetent or inferior in front of others.

As a motivational approach to education, achievement goals were consistently shown to predict goal attainment and achievement emotions (Pekrun et al., 2006, 2009), task engagement (McGregor & Elliot, 2002), as well as conflict regulation (Darnon et al., 2006). Previous studies showed that students with mastery-approach goals tend to be more resilient in the face of adversity and succeed at more challenging tasks (e.g., Pekrun et al. 2006, 2009). Similarly, Matos et al. (2017) confirmed that the students in their study consistently pursued mastery-approach goals in comparison to other goals. However, research results are mixed regarding the role of performance-based goals. Darnon et al. (2018) revealed that students' SES level moderated the relationship between mastery-approach goals and performance-approach goals and their final grade. Mastery-approach goals predicted the final grade for lower SES students while performance-approach goals predicted the final grade for higher SES students.

In one study on the role of goal orientation in online help-seeking, performance-avoidance goals unexpectedly predicted online help-seeking (Author et al., 2013). However, it is unclear what type of help was sought. Few studies have investigated a motivational approach to multicultural teacher education. As a result, it is unknown whether achievement goals predict

cultural competence for pre-service and in-service teachers.

Multicultural Teaching Competence

In comparison with the relatively homogenous teaching force in the U.S., the increasing student diversity calls for multicultural teacher education in preparing educators for student diversity (Banks, 2006). As multicultural education enters its fifth decade (Baker, 1977), instrumentation studies capturing multicultural teaching competence are mushrooming (e.g., Author et al., 2011, 2017; Prieto, 2012; Spanierman et al., 2011). Although the critical role of multicultural education is well documented in the literature (e.g., De Meuse & Hostager, 2001; Gay, 2000; Zhu, 2011), the relative neglect of an affect dimension is missing in most psychometric studies. Encompassing affect as well as cognition and behavior dimensions, a recent inclusive model of multicultural teaching competence (Author et al., 2019) proposed and verified three major components: emotional cultural competence (ECC), cognitive cultural competence (CCC), and behavioral cultural competence (BCC). These components encompass a teacher's ability to respond positively to student diversity, emotionally, cognitively, and behaviorally (Author et al., 2019). It captures a teacher's feelings of, knowledge about, and behaviors toward student diversity. Instead of previous models limited to knowledge and skills essential to working with student diversity, the new inclusive model encompasses feelings, thoughts, and actions associated with student diversity that a teacher needs to develop to be culturally competent.

Despite its critical role in meeting the needs of student diversity and achieving educational equity (Aguado-Odina et al., 2017), multicultural teacher education has not been very effective (e.g., Brown & Rodriguez, 2017; Nelson & Guerra, 2014; Sleeter, 2001). Previous

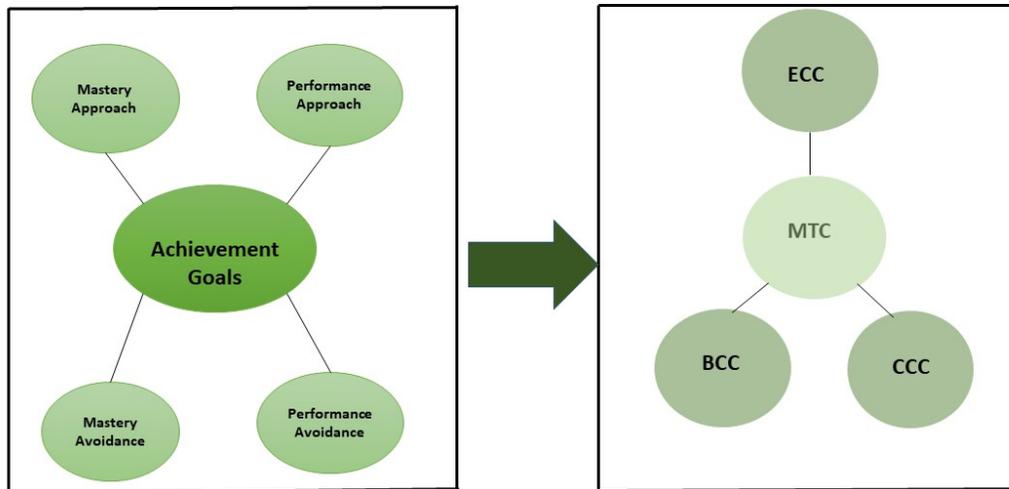
studies disclosed various negative emotional reactions toward diversity issues among students, such as anger, avoidance, passivity, and silence. (Jackson, 1999). Since many American students grow up in a White-dominated western society pervasive with monocultural values and opinions, overcoming their personal biases and beliefs is often challenging (Doepker, 2015), which leads to student resistance in the learning process (Jackson, 1999). Adopting a motivational approach is pivotal to addressing the emotional reactions and reducing student resistance in multicultural teacher education. To this end, some scholars have taken a general motivational perspective in multicultural education (e.g., Wlodkowski & Ginsberg, 1995; Biberman-Shalev, 2021). However, few have studied specific motivation dynamics (Author et al., 2011, 2018), and no known studies have examined achievement goals' role in teachers' cultural competence.

The Present Study

Given the critical role of multicultural teacher education in preparing teachers to support student diversity and the lack of motivational approaches (Banks, 1981; Phoon et al., 2013; Sleeter, 2018; UNESCO, 2014), we conducted this study to examine the role of motivation in multicultural teaching competence. Given the research that demonstrates the influence of achievement goals on academic achievement in content areas including English and math (e.g., Burak, 2014; Lykegaard & Ulriksen, 2016; Shernoff et al., 2003), we hypothesized that achievement goals teachers adopted in the study would have an impact on their multicultural teaching competence. Figure 1 represents the theoretical model.

Figure 1.

Theoretical model for Achievement Goals and Predicting Multicultural Teaching Competence



Note. This model shows the theoretical predictive relationship between achievement goals and multicultural teaching competence (MTC), comprised of three components: emotional cultural competence (ECC), cognitive cultural competence (CCC), and behavioral cultural competence (BCC).

However, given the mixed research results on the types of achievement goals related to academic performance, it remains unknown whether and how achievement goal types predict specific multicultural teaching competence and which types of learning goals may predict which specific aspects of multicultural teaching competence. Therefore, two research questions guided the inquiry of this study: 1) Is there a significant relationship between achievement goals and multicultural teaching competence controlling for the potential professional status difference?

And 2) if so, what is the impact of achievement goals on multicultural teaching competence?

Method

This study utilized inferential statistics to examine the teachers' achievement goals on their multicultural teaching competence. Regression analysis was an appropriate approach because it helped identify how achievement goals predicted participants' multicultural teaching competence. Furthermore, performing canonical correlation analyses allowed for a thorough analysis of specific effects of different types of achievement goals on multicultural teaching competence (Brook & Arnold, 2019).

Data Sources

A total of 149 education majors at a comprehensive southeastern university voluntarily participated in the study to receive course credit, including 57 in-service teachers and 92 pre-service teachers. The sample was predominantly White (69.1%), female (81.2%), undergraduate students (55%), and had English as their native language (96.6%), very typical of the relatively homogenous teaching force in the U.S (Boser, 2011; Farinde et al., 2015). Most of them were from small-to-medium-sized hometowns with a population of 50,000 residents or less (72.5%) and received at least three credit hours of instruction on diversity issues in education at the time of their participation. Their age ranged from 17 to 72 years old ($M = 27.55$, $SD = 10.68$).

Procedure and Measures

Participants completed two surveys measuring their achievement goals and multicultural teaching competence on a 7-point Likert scale ranging from not true of me (1) to extremely true of me (7) (Table 2 in Appendix A for α values). Participants were also surveyed about

demographic information, including age, gender, hours of instruction received on diversity issues, hometown size, etc.

2 × 2 Achievement Goal Questionnaire.

The 2 x 2 Achievement Goal Questionnaire (Elliot & McGregor, 2001) uses three items to measure each of the four types of achievement goals. Sample items for each of the subscales include: " I want to learn as much as possible from this class" (mastery-approach goals); " I worry that I may not learn all that I possibly could in this class" (mastery-avoidance goals); "It is important for me to do better than other students", (performance-approach goals) and My goal in this class is to avoid performing poorly" (performance-avoidance goals).

The Cultural Competence Inventory.

The Cultural Competence Inventory (Author et al., 2019) measures participants' multicultural teaching competence (MTC). Composed of three subscales- emotional cultural competence (ECC), cognitive cultural competence (CCC), and behavioral cultural competence (BCC), with six items for each subscale. The inventory assesses affective, cognitive, and behavioral responses to student diversity. An example item which measures ECC is "Student diversity is stressful for me." A sample item measuring CCC is "Knowing students from different ethnic groups improves my understanding of myself." An item measuring BCC is "I help students work through problem situations caused by stereotypical attitudes toward cultural differences."

Data Analyses

To examine the potential relationship between achievement goals and multicultural teaching competence, regression analysis was conducted to investigate whether achievement goals predicted multicultural teaching competence while controlling for the possible influences

of participants' professional status of in-service versus pre-service teachers using Statistical Package for Social Sciences (SPSS) Version 27.

Based on the significant findings of regression analysis, canonical correlation analysis (CCA) was used to assess the strength and nature of the relationships between achievement goals and multicultural teaching competence. The researchers selected the CCA because of its simultaneous analysis of multiple predictors and dependent variables, which minimizes the chance of Type I error (Sherry & Henson, 2005). Though CCA is one of the least frequently used multivariate techniques, it is the appropriate strategy for evaluating the strength and nature of the relationship between multiple dependent and continuous independent variables, and there is no covariate (Tabachnick & Fidell, 2007). Two linear combinations using CCA were created from the study variables, known as canonical variates. The first variate consisted of the predictor variables (i.e., the four achievement goal types), and the second variate contained the criterion variables (i.e., the three types of multicultural teaching competence) (Sherry & Henson, 2005).

The CCA generated a series of canonical functions, quantifying the relationships among the observed predictor or criterion variables and their corresponding canonical variate. Using Wilks's lambda, the full canonical model was evaluated for statistical significance at the $p < .05$ level. The squared canonical correlation (R^2) was calculated to determine the effect size of the full model. Based on the significance and effect size of the full model, each canonical function was evaluated. For each function, the CCA produced an estimate of the correlation between the two variates and a redundancy index as well which explained the amount of variance in one canonical variate accounted for by the other. Only statistically significant functions and high canonical correlations and redundancy were interpreted (Note: there are no established guidelines in the literature; Hair et al., 1998). Correlations greater than or equal to .70 were

considered as evidence that a given variable had a very strong relationship with its respective variate (Cohen, 1988).

Results

Table 2 provides the descriptive statistics, internal consistencies, and bivariate correlations of the multicultural teaching competence and achievement goal variables for the sample. To explore which goal types and aspects of multicultural teaching competence were most and least evident for the participants, mean scale scores were examined (see Table 2 in Appendix A). As is shown in the table, the most pronounced achievement goal types that participants endorsed were mastery-approach goals ($M = 5.55, SD = 1.35$) and performance-avoidance goals ($M = 5.09, SD = 1.45$). Although all means of multicultural teaching competence were above the midpoint (4.00), the most highly positively rated indicators were ECC ($M = 5.80, SD = 1.21$) and CCC ($M = 5.83, SD = 1.19$) were the most highly positively rated.

From Table 2, it appears that mastery-approach goal is positively related to ECC ($r = .28, p < .01$), BCC ($r = .18, p < .05$), and CCC ($r = .27, p < .01$). On the other hand, mastery-avoidance goal is positively related to BCC ($r = .17, p < .05$) and CCC ($r = .20, p < .05$); performance-approach goal negatively related to ECC ($r = -.21, p < .05$), and performance-avoidance goal positively related to CCC ($r = .20, p < .05$). While the results showed differential relationships of achievement goals and multicultural teaching competence types, the mastery-approach goal consistently positively related to all three types of multicultural teaching competence. The more mastery-approach goals students endorsed, the higher emotional, behavioral, and cognitive cultural competencies they reported.

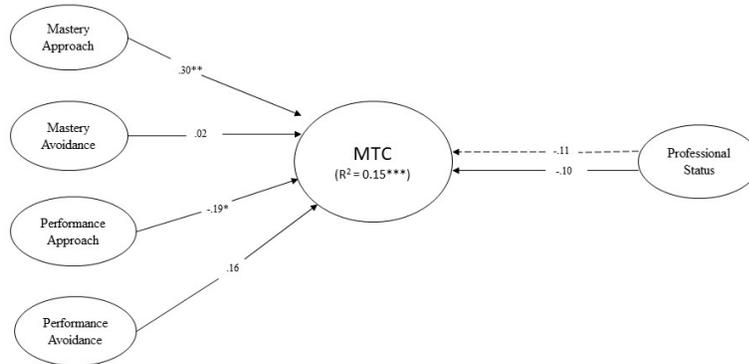
Effects of achievement goals on multicultural teaching competence

Based on the significant preliminary correlations in Table 2, hierarchical regression analysis was conducted to investigate whether achievement goals have predictive power over multicultural teaching competence (MTC) while controlling for professional status differences (in-service versus pre-service teachers) using SPSS Version 25. Professional status was entered as a covariate in the first step (Model 1), and the four types of achievement goals from the 2×2 model (Eliot & McGregor, 2001) were added in the second step to find out their unique predictive power (Model 2).

Table 3 (See Appendix A) indicates that 15% of multicultural teaching competence was accounted for by the predictor variables listed. As can be seen Professional status only accounted for 1% of the variance, with the achievement goals (AGO) adding a bulk of 14%. Of the AGO variables, the *mastery-approach* subscale made the most significant contribution to MTC ($\beta = .30, p < .01$), followed by *performance-approach* ($\beta = -.19, p < .05$). These results suggest that mastery-approach goals have the greatest positive impact on MTC, whereas performance-avoidance goals have the greatest negative impact on MTC. However, since MTC is a three-dimensional construct, it remains unknown which achievement goal type primarily influenced an aspect of MTC. Figure 2 is a visual representation of the AGO types predicting MTC based on the regression analysis results.

Figure 2.

Hierarchical Regression Results of AGO Types Predicting MTC



Note. The hierarchical regression model predicts teachers' achievement goal orientation (AGO) on their multicultural teaching competence (MTC). Model 1 is represented by a dotted left arrow, while Model 2 is represented by a solid arrow. *** $p < .0001$. ** $p < .01$. * $p < .05$.

Effects of mastery-approach goals on emotional cultural competence

Based on the significant findings of regression analysis, canonical correlation analysis (CCA) was used to assess the strength and nature of the relationships between achievement goals and multicultural teaching competence. Before conducting CCA, the data were screened to ensure that the assumptions of the analysis were met. The normality of the variables was assessed using QQ plots for the individual variables and found to conform closely to the normal distribution. Outliers were assessed using leverage, with values greater than $2 \times (\text{number of variables/sample size})$ or 0.09 indicative of outlying observations (Tabachnick & Fidell, 2007).

This method uncovered three individuals who were outliers. To assess the impact of these outliers on the canonical correlation, they were excluded from subsequent analysis. None of the results were different to five decimal points, suggesting that the outliers did not have any undo biasing effect on the canonical correlation. Therefore, the results presented below include all subjects. Finally, scatterplots were used to assess the linearity and homoscedasticity of the relationships among the variables. The evaluation verified linear relationships for all pairs of variables and confirmed the absence of variation in the width of the scatters across the variable values.

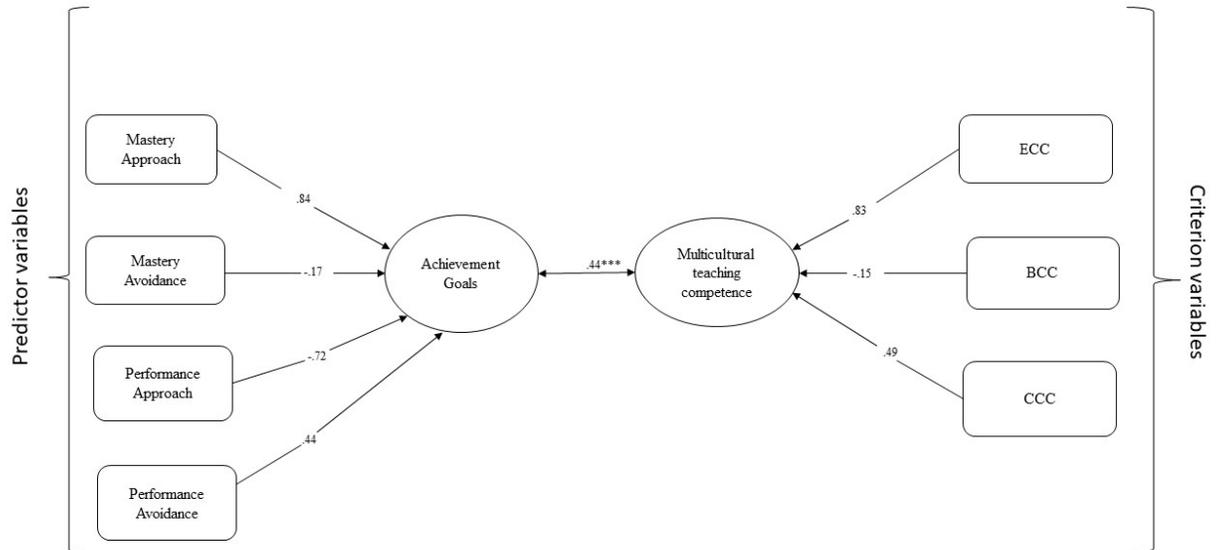
Three functions emerged with squared canonical correlations of .194, .050, and .003, respectively (see Table 4, Appendix A). The full model was statistically significant [Wilk's $\lambda = 0.76$, $f = 3.36$, $p < .001$]. The set of three canonical functions explained 32% of the variance shared across the two variable sets. Only the first canonical correlation between the two sets of variables was found to be statistically significant, with a value of 0.44 and a canonical R^2 of 0.17, indicating that the other set accounts for approximately 17% of the variation in one set of measures. The canonical correlation was statistically significant ($p < .001$) and falls into the "medium" range as defined by Cohen (1988).

Table 4 (See Appendix A) displays the standardized coefficients, correlations (r_s), and squared correlations (r_s^2) between the dependent and independent variables and their respective variates for the first canonical function. An examination of Table 5 (see Appendix A) reveals that only one of the multicultural teaching competence variables (ECC) was strongly associated with the canonical variate ($r_s = .93$). Comparatively, the predictor variables that had the lowest correlations were mastery-avoidance ($r_s = .24$) and performance-avoidance goal ($r_s = .33$). The criterion variable with the strongest and largest correlation with the outcome variate was

mastery-approach goals ($r_s = .75$), suggesting the significant positive effect of mastery-approach goals on emotional cultural competence for the participants in the study. Figure 3 is a graphical representation of the canonical correlations between the covariate groups.

Figure 3.

Canonical Correlation Analysis Results Between Achievement Goals and Multicultural Teaching Competence



Note. The canonical correlation model shows the structure coefficient of canonical factors. ECC: emotional cultural competence; BCC: behavioral cultural competence; CCC: cognitive cultural competence. *** $p < .001$

Discussion

This study examined teachers' achievement goals and their multicultural teaching competence and the relationship between their specific achievement goals and aspects of multicultural teaching competence (MTC). Overall, the participants in the study reported relatively high emotional cultural competence (ECC), behavioral cultural competence (BCC), and cognitive cultural competence (CCC), suggesting the effectiveness of multicultural teacher education programs at the participating institution. Meanwhile, mastery-approach and performance-avoidance goals were the two primary goal types reported by the participants, indicating that most teachers in the study endorsed goals focusing on learning and growing while avoiding incompetence or failure. While it was encouraging to see mastery-approach goals dominating the participants' goal orientations, it was alarming to see performance-avoidance as the second dominant goal endorsed by the participants. Given the detrimental effects of performance-avoidance goals documented in the literature (e.g., Elliot & Church, 1997), it is compelling to find the root cause in multicultural education. A plausible explanation is that in the current US climate filled with fear and divisiveness (Paniagua, 2019), many teachers are trying to avoid looking ignorant or insensitive when interacting with others from diverse backgrounds.

Hierarchical regression analysis was performed to answer the first research question while controlling for potential professional status differences (in-service versus pre-service). While the regression results did not show differences in professional status, they disclosed the significant predictive power of achievement goals relating to MTC, resonating with the critical role of achievement goals in other disciplines such as math and English (Burak, 2014; Lykegaard & Ulriksen, 2016; Shernoff et al., 2003). As is consistently shown in previous studies,

achievement goals predict not only task engagement (McGregor & Elliot, 2002) and conflict regulation (Darnon et al., 2006), but also goal attainment (Pekrun, et al., 2006, 2009).

To answer the second research question, canonical correlation analysis (CCA) was performed to investigate which specific goals significantly influenced each aspect of MTC. The study results showed that mastery-approach goals had the most substantial influence on the relationship between achievement goals and MTC. The findings reinforce the positive roles of mastery-approach goals of focusing on learning new knowledge and skills and making progress of self-improvement in the process of learning (e.g., Darnon et al., 2006). The CCA results also showed that ECC alone had the strongest impact on the relationships between achievement goals and multicultural teaching competence. In essence, the CAA results showed that, interestingly, mastery-approach goals strongly and positively predicted ECC. Students who endorsed goals characterized by learning, making progress, and mastering new knowledge and skills reported more positive emotions and less adverse emotional reactions to student diversity, indicating higher ECC. Although unexpected, the finding in the study coincide with previous results that mastery-approach goals positively predicted positive emotions such as enjoyment, hope, and pride and negatively predict adverse effects such as boredom and anger (Pekrun et al., 2006, 2009). In a recent experimental study on the effects of achievement goals on competence and happiness, Kamorova and colleagues (2017) found an adaptive function of mastery-approach goals in conditions of unfavorable social comparisons over performance-approach goals, suggesting the advantage effect of mastery-approach goals. The mastery-approach goal advantage is congruent with a finding from a review of programs on diversity by Sleeter (2011). Teachers with mastery-approach goals focused on the knowledge and perspectives of various ethnic and racial groups and their lived experiences had significant positive impacts on students'

perceptions toward diversity. Likewise, in addressing the challenges of multicultural education, Parrish and Linder-Van Berschot (2010) proposed a cultural dimension of learning framework that focused on culturally sensitive communication and modified instructional design processes, etc., which is characteristic of mastery-approach goals.

Further, the CCA results indicate that although ECC is a relatively neglected construct in multicultural teacher education instrumentation literature (Author et al., 2011, 2017), teacher educators must promote mastery-approach goals among students to help motivate diversity education by addressing their emotional needs beyond learning knowledge and skills. By cultivating and highlighting goals on learning, mastering, and making progress, teacher educators can help students overcome potential negative emotions of discomfort, frustration, stress, impatience, annoyance, and irritation in the process of learning about student diversity (Author et al., 2011; Stanley, 1996; Wang, 2008). Cognitive load (Feldon et al., 2019) and negative emotions (Jackson, 1999) in diversity education serve as common barriers. Consequently, teacher educators may need to provide more cognitive and emotional scaffolding to help improve students' ECC.

Limitations and Future Directions

Although the present study added to the knowledge base about the roles of achievement goals in multicultural teacher education, it is not without limitations. First, the data represented self-perceptions instead of objective evaluations of the participants regarding their MTC. Even though the *Cultural Competence Inventory* (Author et al., 2019) reported low social desirability bias, the sensitive nature of diversity may have resulted in somewhat socially desirable responses. Moreover, the study consisted of cross-sectional data. Although it is theory and

literature-driven, a more rigorous design such as longitudinal data in the future would allow for a more accurate causal effect to be determined.

The regression analysis results demonstrated a relationship between achievement goals and MTC as learning outcomes of multicultural teacher education, reinforcing the importance of examining and addressing achievement goals in learning about student diversity. Specifically, the successive CCA study results confirmed the advantage of mastery-approach goals not only in academic performance (e.g., Pekrun et al., 2006, 2009), but also in ECC as students' learning outcomes of multicultural teacher education. These outcomes highlight a need for teacher educators to foster mastery-approach goals among students in the process of multicultural teacher education. The advantage of mastery-approach goals in the study indicates the importance of helping students overcome negative emotional reactions toward student diversity by promoting goals that focus on learning, growing, and making progress in multicultural teacher education. Future research is warranted to examine strategies in fostering mastery-approach goals. In particular, engaging qualitative methods would provide insight into the specific strategies of fostering these goals. And experimental and longitudinal studies would shed light on the mechanism of such goals in catering to the emotional needs of pre-service and in-service teachers during multicultural teacher education.

As the educational climate shifts due to the global pandemic, it is essential to highlight ways educators can address diversity concerns to mitigate the widening achievement gap. This study affirmed the advantage of mastery-approach goals on in-service and pre-service teachers' MTC in working with student diversity. As the world becomes more diverse (UNESCO, 2009, 2014; United States Census Bureau, 2017), it is imperative to unravel the dynamics of students' achievement goals in multicultural education that informs instruction. By taking a motivational

approach to multicultural teacher education, teacher educators can better examine and address the various challenges students face to help improve the effectiveness of diversity education.

In particular, low SES students from multicultural households have encountered major challenges such as lack of access to instructional technology and loss of learning time during the pandemic (Bayrakdar & Gueveli, 2020; Cottingham et al., 2020; Engzell et al., 2020). This calls for increasing awareness of equity issues and the adoption of mastery-approach goals among educators to increase their ECC and multicultural competence in general. Based on the results of our study, in place of despair and frustration, it is pivotal that we cultivate mastery-approach goals in our instructions focusing on growth over avoidance so that we can equip students with positive emotions such as compassion, hope, and creativity in meeting these challenges.

References

- Adams, S. M., Nenonene, R. L., Cross Young, P., & McIntosh, N. A. (2019). Expanding World Views and Supporting Intercultural Competence: A Model for Understanding, Assessment and Growth for Teacher Educators. *Journal of Interdisciplinary Education, 15*(1).
- Aguado-Odina, T., Mata-Benito, P., & Gil-Jaurena, I. (2017). Mobilizing intercultural education for equity and social justice. Time to react against the intolerable: A proposal from Spain. *Intercultural Education 28*(4), 408-423.
- Baker, G. (1977). Multicultural education: Two pre-service approaches. *Journal of Teacher Education, 28*, 31-33.
- Banks, J. A. (1981). *Multicultural education: Theory and practice*. Boston: Allyn & Bacon.
- Banks, J. A. (2006). *Cultural diversity and education: Foundations, curriculum, and teaching* (5th ed.). Boston: Pearson.
- Bayrakdar, S., & Guveli, A. (2020). *Inequalities in home learning and schools' provision of distance teaching during school closure of COVID-19 lockdown in the UK* (No. 2020-09). ISER Working Paper Series.
- Bennett, M. J. (1993). Towards ethno-relativism: A developmental model of intercultural sensitivity. In R. M. Paige (Ed.), *Education for the intercultural experience* (pp. 21–71).
- Bennett, M. J. (1993). Intercultural sensitivity. *Principles of training and development. Portland, OR: Portland State University, 25*(21), 185-206.
- Biberman-Shalev, L. (2021). Motivational factors for learning and teaching global education. *Teaching and Teacher Education, 106*, 103460.

- Boser, U. (2011, November 09). Teacher diversity matters A state-by-state analysis of teachers of color. Retrieved from:
<http://www.americanprogress.org/issues/education/report/2011/11/09/10657/teacher-diversity-matters/>
- Brook, R. J., & Arnold, G. C. (2018). *Applied regression analysis and experimental design*. CRC Press.
- Brown, T. M., & Rodriguez, L. F. (2017). Collaborating with urban youth to address gaps in teacher education. *Teacher Education Quarterly*, 44(3), 75-92.
- Burak, S. (2014). Motivation for instrument education: A Study with the perspective of expectancy-value and flow theories, *Eurasian Journal of Educational Research*, 55, 123-136. <http://dx.doi.org/10.14689/ejer.2014.55.8>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cottingham, B., Alix, G., Gee, K., Myung, J., Gong, A., Kimner, H., ... & Hough, H. (2020). Supporting Learning in the COVID-19 Context: A Summary Brief. *Policy Analysis for California Education, PACE*.
- Darnon, C., Jury, M. & Aelenei, C. (2018). Who benefits from mastery-approach and performance-approach goals in college? Students' social class as a moderator of the link between goals and grade. *European Journal of Psychology of Education*, 33 (4), 713-726. <https://doi.org/10.1007/s10212-017-0351-z>
- Darnon, C., Muller, D., Schragar, S. M., Pannuzzo, N., & Butera, F. (2006). Mastery and performance goals predict epistemic and relational conflict regulation. *Journal of Educational Psychology*, 98(4), 766-776. doi:10.1037/0022-0663.98.4.766

- De Meuse, K. P., & Hostager, T. J. (2001). Developing an instrument for measuring attitudes toward and perceptions of workplace diversity: An initial report. *Human Resource Development Quarterly*, *12*(1), 33-51.
- Doepker, G. M. (2015). A personal journey to merge literacy education and multicultural teacher education. *Multicultural Learning and Teaching*, *10*(2), 197-210.
- Elliott A., & Church M. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *72*: 218–32.
- Elliot, A. J., & McGregor, H. (2001). A 2 x 2 achievement goal framework. *Journal of Personality and Social Psychology*, *80*, 501–509.
- Engzell, P., Frey, A., & Verhagen, M. D. (2021). Learning loss due to school closures during the COVID-19 pandemic. *Proceedings of the National Academy of Sciences*, *118*(17).
- Farinde, A. A., LeBlanc, J. K., & Otten, A. S. (2015). Pathways to teaching: An examination of Black females' pursuits of careers as K–12 teachers. *Educational Research Quarterly*, *38*(3), 32–51.
- Feldon, D., Callan, G., Juth, S., & Jeong, S. (2019). Cognitive load as motivational cost. *Educational Psychology Review*, *31*. <https://doi.org/10.1007/s10648-019-09464-6>.
- Gay, G. (2020). The Reaffirmation of Multicultural Education. In *Visioning Multicultural Education* (pp. 9-24). Routledge.
- Gay, G. (2000). *Culturally responsive teaching: Theory research and practice*. New York: Teachers College Press.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis with readings*. Englewood, NJ: Prentice Hall.

- Irvine, J. (2018). A Framework for Comparing Theories Related to Motivation in Education. *Research in Higher Education Journal*, 35.
- Jackson, L. C. (1999). Ethnocultural resistance to multicultural training: Students and faculty. *Cultural Diversity & Ethnic Minority Psychology*, 5(1), 27–36.
<https://doi.org/10.1037/1099-9809.5.1.27>
- Kamarova, S., Chatzisarantis, N. L., Hagger, M. S., Lintunen, T., Hassandra, M., & Papaioannou, A. (2017). Effects of achievement goals on perceptions of competence in conditions of unfavourable social comparisons: The mastery goal advantage effect. *British Journal of Educational Psychology*, 20, 721–745. doi:10.1111/bjep.12168
- Lykkegaard, E., & Ulriksen, L. (2016). Choices and changes: Eccles' Expectancy-Value model and upper-secondary school students' longitudinal reflections about their choice of a STEM education. *International Journal of Science Education*, 38(5), 701-724.
doi:10.1080/09500693.2016.1156782
- Matos, L., Lens, W., Vansteenkiste, M., & Mouratidis, A. (2017). Optimal motivation in Peruvian high schools: Should learners pursue and teachers promote mastery goals, performance-approach goals or both? *Learning and Individual Differences*, 55, 87–96.
<http://dx.doi.org/10.1016/j.lindif.2017.02.003>.
- McGregor, H. A., & Elliott, A. J. (2002). Achievement goals as predictors of achievement-relevant processes prior to task engagement. *Journal of Educational Psychology*, 94(2), 381-95.
- Milner, H. R., Flowers, L. A., Moore, E., Jr., Moore, J. L., III, & Flowers, T. A. (2003). Pre-service teacher's awareness of multiculturalism and diversity. *High School Journal*, 87, 63-70.

- Nelson, S. W., & Guerra, P. L. (2014). Educator beliefs and cultural knowledge: Implications for school improvement efforts, *Educational Administration Quarterly*, 50(1). doi: 10.1177/0013161X13488595
- Paniagua, F. A. (2019). "Fear" is a book of fiction mixed with real events. *Open Journal of Political science*, 9, 107-121. <http://www.scirp.org/journal/ojps>
- Parrish, P., & Linder-Van Berschot, J. (2010). Cultural dimensions of learning: Addressing the challenges of multicultural instruction. *The International Review of Research in Open and Distance Learning*, 11(2). Retrieved from: <http://www.irrodl.org/index.php/irrodl/article/view/809/1497>
- Pekrun, R., Elliot, A. J., & Maier, M. A. (2006). Achievement goals and discrete achievement emotions: A theoretical model and prospective test. *Journal of Educational Psychology*, 98(3), 583-597.
- Pekrun, R., Elliot, A. J., & Maier, M. A. (2009). Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. *Journal of Educational Psychology*, 101(1), 115-135.
- Phoon, H.S., Abdullah, M. N. L. Y, & Abdullah, A.C. (2013). Multicultural early childhood education: Practices and challenges in Malaysia. *The Australian Educational Researcher*, 40, 615-632. doi: 10.1007/s13384-013-0120-1
- Pintrich, P. R. (2000). An achievement goal theory perspective on issues in motivation terminology, theory and research. *Contemporary Educational Psychology*, 25,92–104
- Prieto, L. R. (2012). Initial factor analysis and cross-validation of the multicultural teaching competencies inventory. *Journal of Diversity in Higher Education*, 5(1), 50-62.

- Senko, C., Hulleman, C. S., & Harackiewicz, J. M. (2011). Achievement goal theory at the crossroads: Old controversies, current challenges, and new directions. *Educational Psychologist, 46*(1), 26–47.
- Senko, C., & Dawson, B. (2017). Performance-approach goal effects depend on how they are defined: Meta-analytic evidence from multiple educational outcomes. *Journal of Educational Psychology, 109*, 574–598. doi:10.1037/edu0000160
- Sherhoff, D. J., Csikszentmihalyi, M., Shneider, B., & Sherhoff, E. S. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18*(2), 158-176. <http://dx.doi.org/10.1521/scpq.18.2.158.21860>
- Sherry, A., & Henson, R. K. (2005). Conducting and interpreting canonical correlation analysis in personality research: A user-friendly primer. *Journal of Personality Assessment, 84*(1), 37–48.
- Sleeter, C. E. (2001). Preparing teachers from culturally diverse schools: Research and the overwhelming presence of whiteness. *Journal of Teacher Education, 52*(2), 94-106.
- Sleeter, C. E. (2011). *The academic and social value of ethnic studies*. Washington, D.C.: National Education Association.
- Sleeter, C. E. (2018). Multicultural education past, present, and future: Dialogue and power-sharing. *International Journal of Multicultural Education 20*(1), 5- 20.
- Spanierman, L.B., Oh, E., Heppner, P.P., Neville, H.A., Mobley, M., Wright, C.V., Dillon, F.R., & Navarro, R. (2011). The Multicultural Teaching Competency Scale: Development and initial validation. *Urban Education, 46*(3) 440–464. doi: 10.1177/0042085910377442
- Stanley, L. S. (1996). The development and validation of an instrument to assess attitudes toward cultural diversity and pluralism among pre-service physical educators. *Educational and*

Psychological Measurement, 56, 891-897.

Sun, Z., & Xie, K. (2020). How do students prepare in the pre-class setting of a flipped undergraduate math course? A latent profile analysis of learning behavior and the impact of achievement goals. *The Internet and Higher Education*, 46, 100731.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston, MA: Pearson.

UNESCO. (2009). *Investing in cultural diversity and intercultural dialogue: UNESCO world report*. Paris: UNESCO

UNESCO. (2014). *Multicultural education for global citizenship at the heart of Government of Andorra's priorities*. Paris: UNESCO. Retrieved from http://www.unesco.org/new/en/media-services/single-view/news/multicultural_education_for_global_citizenship_at_the_heart/

United States Census Bureau. (2017). *Current Population Survey, 1995-2016*. Retrieved from <https://www.census.gov/data/tables/time-series/demo/school-enrollment/cps-historical-time-series.html>

Wang, H. (2008). "Red Eyes": Engaging emotions in multicultural education. *Multicultural Perspectives*, 10(1), 10-16. doi: 10.1080/15210960701869330

Wlodkowski, R. J., & Ginsberg, M. B. (1995). *Diversity & motivation: Culturally responsive teaching*. San Francisco, CA: Jossey-Bass.

Zhu, H. (2011). From intercultural awareness to intercultural empathy. *English Language Teaching*, 4(1), 116 - 119.

Author et al. 2011, 2013, 2018, 2019 [details removed for peer review]

APPENDIX A

Table 1

2 X 2 Achievement Goal Model

		Definition	
Valence	Mastery-approach goals	Performance-approach goals	
	Mastery-avoidance goals	Performance-avoidance goals	

Table 2

Descriptive and reliability statistics and Pearson's correlation coefficients of the main variables (N = 149)

Variables	Mean	SD	<i>a</i>	1	2	3	4	5	6	7
1. Mastery-Approach	5.55	1.35	.89	-						
2. Mastery-Avoidance	4.33	1.57	.84	.39**	-					
3. Performance-Approach	3.75	1.63	.87	.23**	.10	-				
4. Performance-Avoidance	5.09	1.45	.79	.31**	.35**	.43**	-			
5. MTC-ECC ^R	5.80	1.21	.88	.28**	.04	-.21*	.08	-		
6. MTC-BCC	5.17	1.15	.84	.18*	.17*	.04	.13	-.12	-	
7. MTC-CCC	5.83	1.19	.93	.27**	.20*	.04	.20*	.26**	.80**	-

Note. ** $p < .01$. * $p < .05$ (2-tailed). MTC = multicultural teaching competence. ECC=emotional cultural competence. BCC=behavioral cultural competence. CCC=cognitive cultural competence. ^R= reverse coded.

Table 3

Hierarchical regression analysis examining predictors of multicultural teaching competence

Variable Sets	Beta (<i>B</i>) Weights	
	Multicultural Teaching Competence	
	Model 1	Model 2
Professional Status	-.11 (-.20)	-.10 (-.18)
<i>Achievement goals</i>		
Mastery Approach		.30**(.20)
Mastery Avoidance		.02(.01)
performance approach		-.19*(-.10)
performance avoidance		.16(.10)
R^2	.01	.15***
R^2 change		.14***

Note. The variable for professional status takes the value of '1' for in-service teachers and '2' for pre-service teachers. The figures in the table refer to standardized regression weights (Beta or β) whereas the figures in the parenthesis refer to the unstandardized regression weights (*B*).

*** $p < .001$. ** $p < .01$. * $p < .05$.

Table 4

Eigenvalues and canonical correlations

Root Number	Eigenvalue	%	Cumulative %	Canonical Correlation	Squared Correlation
1	.241	81.30	81.30	.44	.194
2	.052	17.70	99.00	.22	.050
3	.003	1.00	100.00	.05	.003

Table 5

Canonical solution for achievement goals predicting multicultural teaching competence for

Function 1

Variable	Canonical Variate		
	Coef.	r_s	$r_s^2(\%)$
<i>MTC Variables</i>			
ECC ^R	.83	.93	86.49
BCC	-.15	.34	11.56
CCC	.49	.58	33.64
<i>Achievement Goal Variables</i>			
Mastery-Approach	.84	.75	56.25
Mastery-Avoidance	-.17	.24	5.76
Performance-Approach	-.72	-.36	12.96
Performance-Avoidance	.44	.33	10.89

Note. ECC=emotional cultural competence; BCC=behavioral cultural competence;

CCC=cognitive cultural competence; Coef. = standardized canonical function coefficient; r_s =

correlation; r_s^2 = squared correlation; MTC = multicultural teaching competence;