

RESEARCH-BASED ARTICLES

Cultural Competence and Diversity Endorsement Among Online HEI Faculty

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The absence of a measure of cultural competence among faculty in online higher education institutions (HEIs) is concerning because it could result in suboptimal endorsement of diversity initiatives. Two instruments were used in this study to determine whether associations existed, the strength and direction of the associations between cultural competence and diversity endorsement among faculty, and whether cultural competence predicted faculty's endorsement of diversity in HEIs. The conceptual framework consisted of tenets from the following theories: Bandura's (teacher) self-efficacy, Woo et al.'s openness to experience, Crowne and Marlowe's social desirability, and Nosek et al.'s implicit association. The study site was an online university with over 2,563 faculty. Data from a sample size of 111 faculty were analyzed using ordinal logistic regression analysis. The results indicated significant associations between the predictor variables (cultural competence components) and the outcome variable (diversity endorsement), but not all. Notably, 15% of participants had levels of emotional cultural competence (ECC), which predicted an 87% positive change in the diversity endorsement; 22% of participants had levels of behavioral cultural competence (BCC), which predicted a positive change in diversity endorsement; and 43% of participants, over a broad range of levels of cognitive cultural competence (CCC) showed a positive but incremental change in levels of diversity endorsement. This study contributes to higher education leadership practice by demonstrating the need for investment in cultural competence and diversity training and development for faculty to support a healthy and diverse environment.

Keywords: cultural competence, diversity, faculty, HEI, online education

Scholars and practitioners agree on the practical difficulties associated with diversity, equity, and inclusion (DEI) work in higher education institutions (HEIs), according to Gonzales et al. (2021). One of the challenges for leaders is determining the actions and initiatives needed to expand DEI; guidelines must be more precise and consistent across the industry (Hilton et al., 2021). Additionally, Yi et al. (2022) observed the social demand for actions to create equity for historically marginalized students is a crucial driver of DEI initiatives in HEIs.

Kruse et al. (2018) raised concerns about the assumption that faculty (and staff) possess sufficient cultural competence to engage in meaningful discussions with students and to respond appropriately when navigating related issues. Based on these same assumptions, leaders tend to select targeted groups of students and set goals like (a) reducing achievement gaps, (b) promoting academic success, and (c) increasing persistence to graduation in response to the social demand for equity (Moreu et al., 2021). A shift toward creating an inclusive academic environment is necessary for leaders to achieve goals that address achievement gaps or increase persistence. Creating an inclusive academic environment relies on faculty engagement and intentional activities (O’Leary et al., 2020). Another consideration for leaders is how the racial, ethnic, and identity compositions change continuously within student populations (Hutchins & Goldstein Hode, 2021); however, data from the National Center for Education Statistics (NCES, 2023) for 2020 confirmed the demographic measures of faculty remain unchanged in HEIs. Hutchins and Goldstein Hode (2021) underscored the expected changes in the demographic makeup of the United States by 2050. These scholars identified the levels of cultural competence among faculty as key to preparing well-rounded learning experiences for students in preparation for integrating into a diverse workforce. Serving this ever-changing population of college and university students requires knowledge of cultural differences and similarities; specifically, Hutchins and Goldstein Hode (2021) and Prieto (2012) agreed that faculty should have adequate cultural competence to serve these diverse learners effectively.

The problem addressed in this study was the absence of a measure of cultural competence among faculty in online HEIs, which could result in suboptimal endorsement of diversity initiatives (Marchiondo et al., 2023). The importance of garnering faculty’s support for DEI continues to increase in HEIs (Marchiondo et al., 2023). Data from the NCES (2023) for the year 2020 demonstrated the potential for a cultural competence gap between faculty and the students they instruct. In 2020, 45.2% of students enrolled in postsecondary online institutions identified as non-White, whereas more than 74% of faculty identified as White. Leaders of HEIs remain accountable for and must be consistent with the DOE’s and accrediting agencies’ requirements; HEIs are subject to compliance examinations and investigations (Brottman et al., 2020). Cultural competence among faculty is requisite for educating students and teaching the skills needed to function in the world of work beyond learning environments (Prieto, 2012).

Two research questions guided this study. First, what is the association between the components of cultural competence (as measured by the CCI) and diversity endorsement (as measured by the DEM) among faculty in an HEI? Second, to what extent, if any, do any of the components of cultural competence predict faculty’s endorsement of diversity in an HEI?

Relevant Literature

Higher education leaders' awareness of and attention to the cultural competence of faculty within the institutional setting is driven by the law, governing or oversight bodies, and events in the social environment (Kruse et al., 2018). Leaders sustain institutions by remaining accountable and consistent with the DOE's and accrediting agencies' requirements; leaders routinely examine the outcomes of DEI efforts on organizational culture and climate (Brottman et al., 2020), but typically, these assessments do not include measures of cultural competence among faculty. Cultural competence among faculty is requisite for engaging students meaningfully to ensure learning and for modeling the soft skills needed to function in the world of work beyond education environments (Brottman et al., 2020; Prieto, 2012). However, leaders' awareness of levels of cultural competence among faculty is unclear, as is their confidence faculty will support DEI efforts and initiatives within institutions (Hilton et al., 2021). Therefore, HEI leaders should take deliberate actions to understand cultural competence among faculty and its relationship to diversity endorsement within education organizations.

Definitions of Cultural Competence

Interest in cultural competence emerged in the 1970s (Frawley et al., 2020). The origins of the cultural competence concept appear to be in the healthcare field. Driven in part by inequities and disparities in mental healthcare outcomes for children and the need to address the East Asian refugee crisis in the United States at the time, researchers and practitioners sought ways to navigate barriers of race, language, and culture (Frawley et al., 2020; Pecci et al., 2020). The most often cited definition of cultural competence reads as "... a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enables that system, agency, or those professionals to work effectively in cross-cultural situations," (Cross et al., 1989, p. iv). This definition reveals cultural competence's inherent complexity and nuance.

Another definition of cultural competence is the knowledge and acceptance of a complex system of beliefs, values, behaviors, and norms that coexist in populations and may manifest as group differences (Botelho & Lima, 2020). Conducting a comprehensive analysis of six cultural competence models, Botelho and Lima (2020) identified similarities and differences between the extant theoretical underpinnings of each. Cultural competence can be misconstrued as cultural intelligence. However, experts in the multidimensionality of cultural intelligence, Ang et al. (2007) theorized the dimensions as metacognitive, cognitive, motivational, and behavioral intellectual acuity (mental capabilities) to lead, manage, and function in environments that differ from the culture in which the person was raised. [Table 1](#) was developed using Botelho and Lima's extrapolations of similarities and differences of cultural competence models.

Table 1. Comparison of Cultural Competence Models

Similarities among models		
Campinha-Bacote's (1998, 2002, 2011) Kim-Godwin et al. (2001)	Definition of culture	Lieninger's (1991) definition of culture - learned, shared, and transmitted values, beliefs, norms, and lifeways of a particular group that guides their thinking, decisions, and actions in patterned ways" (p. 47)
Betancourt et al. (2003) Schim et al.'s (2007) Kim-Godwin et al.'s (2001)	Definition of cultural competence	Lavizzo-Mourey and Mackenzie's (1996) definition of culture competence as "an awareness of the integration and interaction of health beliefs and behaviors, disease prevalence and incidence, and treatment outcomes for different patient populations"
Campinha-Bacote (1998, 2002, 2011, p. 2018) Kim-Godwin et al. (2001) Schim et al. (2007)	Dimensions of cultural awareness	Campinha-Bacote, (2018) cultural knowledge, cultural desire, and cultural skills for providers.
Differences between models		
Schim et al. (2007)	Being culturally sensitive	Tervalon and Murray-García (1998) cultural humility. Assume the role of learner rather than assume there is sufficient knowledge and understanding of a culture.
Campinha-Bacote's (2002, 2011)	A state of becoming	Multiple cultural encounters help "validate, refine, or modify [nursing students' and practitioners'] existing beliefs about this member of this cultural group" (Campinha-Bacote, 2011, p. 44)
Kim-Godwin et al. (2001)	Multiple contexts exist simultaneously.	(a) Metaparadigms, which invites providers to examine their practices within multiple contexts by recognizing dominant cultural practices. (b) Cultural group is the same as ethnic group.
Leininger (1978, 1991, 2002)	Ethnographic perspective	Identifying patterns through listening and observation.

Source: Botelho, M. J., & Lima, C. A. (2020). From cultural competence to cultural respect: A critical review of six models. *Journal of nursing education*, 59(6), 311–318. <https://doi.org/10.3928/01484834-20200520-03>

Corsino and Fuller (2021) commented on how DEI education (training) was infused into HEIs. Among these approaches were efforts related to cultural humility, training on bias and implicit bias, and initiatives for improving mentoring to adjust the make-up of the workforce. Kirste and Holtbrügge (2019) suggested these initiatives and efforts toward cultural understanding (cultural intelligence) continue to improve and develop in the long term because of increased intercultural interaction. Kirste and Holtbrügge connected intercultural interactions with conscious learning and enhancing certain skill sets in the work environment. Education or training programs aim to intentionally increase the understanding of culture in cognitive, affective, and behavioral ways. By bringing awareness to cultural differences and similarities, and how the learner thinks, feels, and acts, there is an opportunity to increase the potential to change the institutional climate.

Conceptual Framework

The theories and concepts for this study created a multifaceted conceptual framework for the test instruments used in this study. Underlying Yang et al.'s (2020) development of the CCI were (a) self-efficacy (Bandura, 1977), (b) openness to experience (Woo et al., 2014), (c) social desirability (Crowne

& Marlowe, 1960), and (d) implicit association (Nosek et al., 2005). Multiculturalism (Plaut et al., 2011) and the need to belong (Allen et al., 2022) supported the DEM instrument.

Self-efficacy is one component of Bandura's (1977) social learning theory; it is a person's belief in themselves, their capabilities, and abilities to accomplish tasks, to be persistent, and to perform optimally under challenging circumstances (Bandura, 1977). The strength of a person's self-efficacy evolves from four dimensions of information: (a) performance accomplishments, (b) vicarious experience, (c) verbal persuasion, and (d) physiological states. Although all four are important toward the development of one's self-efficacy, mastery experiences are most influential (Bandura, 1977).

Openness to experience is the behavioral component tested in the CCI that indicate the faculty's preparedness to engage with a diverse student population (Y. Yang et al., 2020). Woo et al. (2014) described openness to experience as how a person manages themselves when confronted with *novel stimuli* (p. 29). Novel stimuli can include ideas, sensations, experiences, and exposure to new cultures. Woo et al. suggested a person could be open to one aspect of a stimulus but not to another; using the example of culture, a person might enjoy traveling to engage in a new cultural experience but not enjoy reading about the same new culture (intellectual experiences). Rather than considering cultural and intellectual experiences dichotomously, Woo et al. demonstrated the correlation of these constructs to outward behaviors.

The third concept is social desirability, which originated from Edwards' (1957) scale and the writings of Crowne and Marlow (1960); social desirability is the cognitive component tested in the CCI (Y. Yang et al., 2020). Social desirability bias occurs in psychological testing situations when a person consciously chooses to answer questions in ways that align with the researchers' expectations (Larson, 2019). Ventimiglia and MacDonald (2012) proposed including a social desirability scale in a survey instrument was a demonstrative effort to control this type of bias. Implicit association was the fourth concept and is a useful technique for measuring the strengths of associations between concepts indirectly (Nosek et al., 2007). The implicit association test (IAT), in its original form, measured the capacity of a person to sort familiar items (stimuli) based on past cognitive experiences rather than making selections between concepts that could be interpreted vaguely. Yang et al. (2020) used implicit association when crafting the survey questions to simplify cognitive choices for participants.

Two concepts supported the DEM instrument: multiculturalism and the need to belong. Gökten and Emil (2019) defined multiculturalism as groupings of ethnographic, demographic, and status variables like race, ethnicity, religion, sexual orientation, language, place of abode, age, gender, education level, and socio-economic background. Multiculturalism was the reaction against Eurocentrism, resulting in the inclusion of cultures, contributions, and activities of non-White people (Plaut et al., 2011).

Multiculturalism can be perceived as excluding the dominant culture. Allen et al. (2022) defined the need to belong as the human motivation for interpersonal attachments. Additionally, Plaut et al. (2020) took the position that the need to belong was part of Maslow's hierarchy of needs. In this study, the DEM instrument measured the degree to which an individual endorses diversity relative to the individual's sense of connectedness or belongingness with the institution.

Method

The purpose of this quantitative predictive study was to use the CCI by Yang et al. (2021) and the DEM by Plaut et al. (2011) to determine whether associations between tested variables existed and, if so, determine the strength and direction of the associations between cultural competence components and diversity endorsement among faculty as well as determine if cultural competence predicted faculty's endorsement of diversity in HEIs.

Data from the U.S. DOE's (2023) college scorecard showed a student-to-faculty ratio of 16:1, and data from the university's website showed the number of students being served at the time of this study was 41,000. The target population for this study was approximately 2,563 full-time and part-time faculty in a doctoral and professional university. Publicly available data from the DOE (2023) showed the demographics of the faculty was 63% White and 37% non-White; these demographics were necessarily different from the student population which was 33% White and 67% non-White (DOE, 2023). The sampling frame was faculty who taught more than two courses in a single academic year. A nonprobability convenience sampling method was used since each member of the faculty population self-selected to participate in the study, as Sedgwick (2013) suggested. The G*Power 3.1 sample size calculator was used to determine the minimum number of participants needed was 74.

The predictor variables tested in this study were the components of cultural competence: emotional cultural competence (ECC), cognitive cultural competence (CCC), and behavioral cultural competence (BCC). Each component was treated as a continuous variable operationalized as three separate constructs: (a) awareness of cultural differences, knowledge about diversity and multicultural issues; (b) effective communication, acts of appreciation, valuation, and implementation related to diversity and multiculturalism; and (c) empathy and effective communication when confronted with issues or situations (positive emotions), or negative emotions such as apathy, or the reinforcement of prejudices and stereotypes.

Diversity endorsement was treated as a continuous criterion (outcome) variable. This variable was operationalized as the perceived loss of social dominance emerging as exclusion (of Whites) and faculty's rejection or as lack of support for DEI and social justice initiatives, which might shift society toward fairness. We sought answers to the two research questions using quantitative ordinal logistic regression. The research questions examined the relationships between individual components of the CCI and the DEM.

The rationale for selecting the predictive design was to produce data-driven evidence leaders could use to determine faculty training or professional development needs to promote the endorsement of DEI initiatives and bolster student support structures within an HEI.

Ordinal regression is well-suited for outcomes that consist of ordered categories, where the distances between those categories cannot be assumed to be equal and where the distribution is bounded or non-normal. Because the Diversity Endorsement Measure (DEM) is constructed from Likert-type items, its scores represent ordered levels of endorsement rather than true continuous measurements. Treating these responses as ordinal allows the analysis to respect the rank-based meaning of the scale—higher scores indicate stronger endorsement, but the step from one category to the next is not guaranteed to reflect a uniform change in attitude. Ordinal regression avoids imposing interval-level assumptions and is especially appropriate when DEM scores show non-normality, ceiling or floor effects, or when sample sizes are modest. By modeling the DEM as an ordinal outcome, the analysis aligns more closely with the measurement properties of the scale and produces inferences that do not depend on assumptions the data cannot support.

The DEM is scored by taking the average score of all Likert items after any response coding. Each DEM item reflects an ordered level of agreement, but the intervals between response options are not guaranteed to be equal. When these ordinal items are averaged, the resulting score behaves like a *quasi-continuous* variable, but its underlying measurement level remains ordinal, because it is built entirely from ordered categories rather than true interval data. The averaged DEM score, therefore, represents a ranked continuum of diversity endorsement, but without the strict interval properties required for linear regression. This makes ordinal regression an appropriate modeling choice because it respects the ordered nature of the DEM while avoiding assumptions about equal spacing or normality that the data cannot guarantee.

External validity and generalizability were built into the design of the original study by Yang et al. (2020). Factorial analyses with accompanying feedback from experts in the field of cultural competence were conducted during the creation of the CCI instrument (Y. Yang et al., 2020). We limited the distribution of the surveys to the participants in this study and presented the instruments as a single survey; therefore, the validity and reliability of the instruments remained intact since we made no changes to the wording or to the constructs. Furthermore, the CCI was a valid and reliable instrument for examining how faculty perceive their ability to engage, interact with, and problem-solve on behalf of students from diverse backgrounds (Y. Yang et al., 2020). Similarly, the DEM had been repeatedly tested by Plaut et al. (2011) to measure levels of diversity endorsement among faculty in HEIs.

Assumptions, Limitations, and Delimitations

One assumption in this study was faculty demographics would mirror national trends as documented by NCES (2023); the demographic trends in HEIs show nearly 75% of faculty are White. Faculty demographics in this study were 63% White and 37% non-White; this demography aligned with the design and use of the DEM to examine diversity endorsement in HEIs where faculty were majority White. The second assumption was faculty would honestly answer all survey questions; the creators of both instruments tested social desirability and found the scores to be low (Plaut et al., 2011; Y. Yang et al., 2020). The third assumption was the experience of teaching in a multicultural HEI environment was a sufficient substitute for explicit education in cultural competence pre-service teachers receive. Lastly, there was the assumption that the demographic composition of the selected pool of participants was the same or similar as reported in the DOE's (2023) college scorecard.

This study was delimited to a large, online university. Leaders, managers, or staff did not contribute data. Lastly, the precise geographical dispersion of the faculty who participated in this study was unknown since we did not collect demographic data or Internet protocol addresses.

Data Collection and Analysis

Upon receiving IRB approval, we executed the study. The invitation to participate in the study was emailed to all faculty within the HEI; the email included a link to the Qualtrics XM™ platform. The survey remained open for 45 days until we received 138 total responses. Cleaning of the data involved removing four test responses, four entries from participants who did not respond to any questions, and 20 participants' responses containing missing values. The final data set consisted of 111 completed surveys. We used the SPSS software to analyze the collected data.

Reverse coding of questions 1, 2, 3, 4, 5, and 6 of the CCI was necessary to complete data analysis; Yang et al. (2020) used reverse coding in the CCI to minimize participants' social desirability when responding to sensitive questions. These six items were relabeled in SPSS to identify the reverse coding. Additionally, items 1 and 7 of the CCI were relabeled with an *a* as a reminder these items had the highest factor loading when Yang et al. created the instrument. The next step in preparing the data was to create combined variables for (a) the three variables within the CCI-PT, (b) the CCI-PT as a single measure, and (c) the DEM as a single measure. The pattern of responses to the DEM questions required the creation of dummy variables and the transforming of the outcome variable into three groupings: *somewhat agree* (26.3%), *agree* (30.5%), and *strongly agree* (43.2%).

Predictor variables in this study were continuous variables; each was evaluated on a 7-point Likert scale containing a neutral measure (Chyung et al., 2018). The outcome variable was considered ordinal by treating participants' responses as whole numbers during statistical testing. In

addition to the outcome variable being conceptually ordinal, it also violated normality due to skewness. This statistical model was selected because of the absence of linearity between the predictor and outcome variables. Field (2018) explained the Kolmogorov-Smirnov and Shapiro-Wilk tests are useful in determining if scores differed significantly from a normal distribution. Both the Kolmogorov-Smirnov and Shapiro-Wilk statistics for these data showed the p -value for all variables was not significant ($p < .01$).

Preparing the data for ordinal logistic regression analysis required additional steps. First, we transformed the outcome variable into an ordinal variable in SPSS, to meet the first assumption, but we did not change the predictor variables (these remained continuous), so the second assumption was met. Second, we ranked the variables by transforming the raw scores into numbers representing the position in the ordered list of the scores from lowest to highest. Field (2018) explained the lowest score was ranked as 1, the next highest as 2, and so on. When variables are ranked, statistical computations are easier to complete.

The absence of multicollinearity was the third assumption of ordinal logistic regression analysis (Field, 2018). We determined the absence of multicollinearity by reviewing the collinearity diagnostics output in SPSS. For each of the ranked predictor variables, the VIF was between 1.053 and 1.125, considerably less than the threshold of 10. There was fair confidence multicollinearity was not present among the predictor variables. Across the four dimensions of the ranked outcome variable, none of the conditional indices were above 10; for dimensions 1 through 4, the indices were 1.000, 4.028, 4.515, and 6.043, respectively, which were all below the acceptable threshold. There was fair confidence multicollinearity was not present for the outcome variable.

The Pearson goodness-of-fit test is a summary measure of residuals that shows how well the data fits the model (Field, 2018). When run in SPSS, this test produced a p -value that was greater than .05. The deviance in the goodness-of-fit test also produced a p -value of 1.000. The deviance statistic indicated a good fit to the observed data, given $\chi^2(267) = 134.394$, ($p = 1.000$). There was fair reliability of these tests given the aggregate data had no missing (zero) values.

The Cox and Snell and the Nagelkerke *pseudo R-square* were used to examine the model fit as it is a comparison of the full model and the intercept-only model. The Cox and Snell and the Nagelkerke *pseudo R-square* calculations were large yet similar (within .275 of one another). In this dataset, the *pseudo R-square* measures were .709 for the Cox and Snell, .775 for the Nagelkerke, and .500 for the McFadden which indicated good model fit.

The final model did not statistically significantly predict the outcome variable over and above the intercept-only model, $\chi^2(54) = 137.145$, $p < .001$. The predictor variables added significantly to the model; at least one predictor variable was statistically significant. There was potential for the CCI variables

to add to the prediction of the outcome variable with some certainty. The p -value was $< .001$ and showed the predictors added to the outcome variable in the tested sample of faculty in the HEI.

We examined the results of the ordinal regression outputs from SPSS, which produced a warning there were 323 observed cells (or 74.8%) in the dataset with covariate patterns. After aggregating the covariate patterns there were 1105 unique variations of the values of the predictors across the 111 participants. The number of unique variations was sufficiently high to allow us to ignore the warning outputted by the software because these variations were unrelated to the outcome variable. Therefore, we relied on the model-fit information to determine the acceptability of the model.

Results and Findings

Research question 1 was: What are the associations between the components of cultural competence (as measured by the CCI) and diversity endorsement (as measured by the DEM) among faculty in an HEI? The related hypotheses were: $H1_0$ - There are no associations between the components of cultural competence and diversity endorsement among faculty in an HEI, and $H1_a$ - There are associations between the components of cultural competence and diversity endorsement among faculty in an HEI. Extrapolating the percentage of change in the outcome variable, we extracted the probability from the logit function using the appropriate formula. The ECC component of cultural competence had significant ($p < .05$) values at 12.5% (2 of 16) of the ranked levels. Ranked levels were 1, 2, 3, 4, 5, 6, 8, 12, 16.6, 20.5, 25.5, 31.5, 40.5, 53.5, 67.5, and 93. At level 12, the log odds of one unit change in diversity endorsement were a 99.78%. At level 40.5, the log odds of one unit change in diversity endorsement was 87%. In other words, faculty in levels 12 and 40.5 of ECC were highly likely to endorse diversity in their institution. There were no other ranked levels of emotional cultural competence with measurements of statistical significance ($p < .05$). When p -values are greater than .05, there is a weaker association between the predictor and outcome variables (Field, 2018; Lærd, 2023).

The BCC component of cultural competence had statistically significant values at 9% (2 of 22) of the ranked levels. Ranked levels were 1, 2, 4, 6.5, 8, 9, 11, 13, 14.5, 17.5, 22.5, 26.5, 29.5, 38, 49, 57.5, 65, 74, 84, 94, 99.5, and 106.5. Ranked levels for BCC values showing statistical significance ($p < 0.05$) were 9 ($p = 0.006$), 22.5 ($p = 0.002$), 49 ($p < 0.012$), and 57.5 ($p < 0.001$). For the BCC predictor variable, faculty in levels 9, 22.5, 49, and 57.5 were likely to endorse diversity in their institution. Except at ranked level 49, where the log odds of one unit change in diversity endorsement was 4.12%, all other values had a log odds of one unit change of less than 1%.

The CCC component of cultural competence had statistically significant values at 33% (8 of 22) of the ranked levels. Ranked levels were 1, 2, 3, 4.5, 6, 7, 8, 10.5, 14, 19, 24, 30, 37.5, 44, 51, 60.5, 71, 80, 89, 95, 99, 103.5, 106, and 109. Ranked levels of CCC showing statistical significance ($p < 0.05$) were 14

($p = 0.013$), 19 ($p = 0.01$), 30 ($p < 0.001$), 37.5 ($p = 0.013$), 44 ($p = 0.005$), 80 ($p = 0.048$), 95 ($p = 0.021$), and 103.5 ($p = 0.018$). At cognitive cultural competence levels 14, 19, 30, 37.5, 44, 80, 95, and 103.5, faculty were likely to endorse diversity in their institution. Except at ranked level 80 where the log odds of one unit change in diversity endorsement was 2.15%, all other values had log odds of one unit change of less than 1%.

Based on the results of our analysis, we found evidence ECC was associated with diversity endorsement at two ranked levels (12, 40.5); however, there was no coherent pattern of association within the data for ECC. Consistent with the literature on ECC, researchers found an association between multicultural maturity (cultural competence) and positive emotions (K. Yang et al., 2019); the data from this research appeared to confirm the findings of Yang et al. (2019), albeit in a small group of faculty, 15%. The ECC data from the remaining 94 participants could indicate how the association between ECC and diversity endorsement aligns with the reality that higher education environments are culturally fluid (Hutchins & Goldstein Hode, 2021; Kirste & Holtbrügge, 2019). A key assumption in this study was the demographics of faculty and student bodies within the institution followed national trends. Ely (2021) cited the NCES statistics, showing 44% of the student population in the United States was non-White. The national demographic trends could explain how levels of ECC among faculty in this online HEI might connect to the racial and cultural diversity of the student body. Faculty in this HEI might have experiences with diversity that were not accounted for in this study.

The association between ECC and diversity endorsement and the probability of this predictor variable affecting diversity endorsement was approximately 93.5% for 17 faculty participating. Two extant models of cultural competence could explain this finding: (a) Campinha-Bacote's (2002) process model and (b) Bennett's (2004) developmental model. Central to the process model is the continuous evolution of empathy and the capacity to nurture relationships with people. The developmental model was a view that intercultural sensitivity promoted the shift from ethnocentrism to ethnorelativism, a shift from denial and minimization of other cultures towards adaptation and acceptance.

Behavioral cultural competence among the sample tested showed no definitive relationship to diversity endorsement. Although there were small groups of participants whose levels of BCC had positive associations with diversity endorsement, these findings were not significant due to the span of per unit increase in probability of change (0.30% and 4.12%). Twenty-two percent of faculty in this project presented with BCC levels that could link to diversity endorsement incrementally. This finding is consistent with Campinha-Bacote's (2011) assertion cultural competence was "a state of becoming," (p. 44). Botelho and Lima's (2020) discussions included many behaviors that might exist in a given environment. The association between BCC and diversity endorsement in this study is consistent with Gökten

and Emil's (2019) assertion a person with high cultural intelligence can interact with someone from another culture in appropriate, acceptable, and conforming ways. In an HEI with a diverse student population, high cultural intelligence would be a desirable feature within the faculty culture.

Cognitive cultural competence showed the strongest association to diversity endorsement among this sample of online HEI faculty, 48 of 111 who completed all survey questions. However, the predictive value of these findings was small (<1% to 2.15%) because the span of per unit increase in probability of change was between 0.30% and 2.15%. Additionally, the levels of CCC spread through the range of values of this ranked predictor variable. Yang et al. (2019) used various characteristics to define CCC when developing the instrument used in this study, including (a) awareness of difference, (b) knowledge of diversity, (c) multicultural understanding, and (d) beliefs about teacher-student interactions. The association between diversity endorsement and CCC was present in the dataset, but it was weak, nonetheless. This result indicates the presence of potential gaps in faculty training and development that would normalize the existence of differences.

Research question 2 was: To what extent, if any, do any of the components of cultural competence predict faculty's endorsement of diversity in an HEI? The related hypotheses were $H2_c$: Cultural competence components do not predict faculty's endorsement of diversity in an HEI; and $H2_d$: Cultural competence components predict faculty's endorsement of diversity in an HEI. Based on the low instances of significant p -values across all ranks within each predictor variable and the number of participants where these values were in evidence, there was insufficient evidence in these data to discern with confidence that any of the components of cultural competence significantly predicted diversity endorsement among faculty.

There was little evidence of a predictable effect on the outcome variable. The analysis showed only 15% of participants (17) had ECC levels which predicted diversity endorsement. The log odds of one unit change were between 87% and 100%; although the prediction was high, it occurred within a small group of participants and at disassociated levels of the ECC variable (12 and 40.5). In the context of research question 2, there was only a small group of faculty (15%) whose level of ECC demonstrated a predictable effect on the outcome variable.

Data from 22% of participants in this study showed evidence of BCC's predicted effect on the outcome variable. Among the faculty tested, only 24 had BCC levels showing small positive effects on diversity endorsement (0.1% to 4.12%). Like the ECC variable, the dispersion of values within the range of ranked values did not demonstrate a reliable pattern. Therefore, for research question 2, only 22% of faculty had levels of BCC predicting diversity endorsement.

Evidence from 48 participants, 43% of faculty who completed the survey provided evidence of CCC as a predictor of diversity endorsement. The log odds of unit change were between 0.3% and 2.15%, or within 1.85%. There was insufficient evidence that CCC predicted diversity endorsement among the faculty tested.

We could not determine with any certainty the extent to which any of these predicted diversity endorsement. The ECC predictor variable showed the greatest predictive effects (87.03% to 99.78%); however, this was only true for 15% of the participants. The predictive value of the BCC predictor variable was not determinable in this study because the values were spread throughout the range and did not exhibit a consistent pattern. The CCC had the most values predicting diversity endorsement but the unit change across these values was between 0.3% and 2.15%. This result showed that among faculty in this institution, there were small groups who had confidence in their abilities to care for diverse students.

Examining the results from this application of the CCI instrument alone, we found them consistent with those of Yang et al. (2019). Among the predictor variables, CCC had the strongest potential to predict diversity endorsement. On balance, the results of this study align with the findings of Plaut et al. (2011), who indicated that as cognition, self-awareness, and feeling of belongingness increased, there is an identifiable change in action (diversity endorsement). The evidence supporting this finding was 43% of faculty had levels of CCC, which showed incremental change in diversity endorsement.

Discussion and Conclusions

A key implication of this study is for future researchers to be cautious using the CCI survey. This implication relates to using the instrument in a population dissimilar to the one the instrument's creators targeted. Yang et al. (2019) selected groups of pre-service teachers who had had training in cultural competence as part of their education curriculum. Unlike the pre-service teachers in the Yang et al. study, the challenge with faculty in HEIs is knowing if or when prior training in cultural competence occurred. Comparing the standard deviations of the ranked predictor variables in this study, we determined the interconnectedness between the variables in this sample was statistically significant between ECC and CCC ($p = .002$), and BCC and CCC ($p = .011$), with $p < .05$. The strength of the connection between ECC and BCC ($p = .116$) was not significant in this study. The results of the Yang et al. study demonstrated the strongest connection between the three components tested by the CCI instrument were between CCC and BCC. In contrast, the connection between ECC and BCC, and ECC and CCC were similar but smaller. Therefore, a recommendation is for HEI institutional leaders to use caution when using the CCI to conduct research because the outcomes of the relationships or associations between these predictor variables may differ. A point to reconcile is the differences in cultural competence training that may exist between preservice teachers and HEI faculty. A recommendation for practice is piloting the instrument

to establish baseline measures of cultural competence and diversity endorsement. Developing sound strategies for supporting training and the development of cultural competence among faculty requires good data. Leaders who want to deepen their understanding of culture, as recommended by Russell et al. (2021), should determine a baseline measure as the starting point. The implications for practice extrapolated from the findings in this study are in concert with Williams et al.'s (2005) proposal to use organizational resources (including people) in ways to develop an environment conducive to reducing challenges to promote academic achievement.

For research question 1, there was insufficient evidence to significantly predict the outcome variable and diversity endorsement. None of the three tested components produced acceptable or consistent p -values of $< .05$ in more than 50% of the population surveyed to reject the null hypothesis for research question 1. Therefore, promoting cultural competence education among faculty could support the growth of cultural humility, reduce bias and implicit bias, and improve the effects of mentoring, as Corsino and Fuller (2021) recommended. With leaders' support, it is possible to shift the posture of faculty from the denialism, defensiveness, and minimalization of other cultures (ethnocentrism) towards an orientation of acceptance, adaptation, and integration (ethnorelativism), as discussed by Bennett (2004).

The connections between the components of cultural competence and diversity endorsement implicated a potential need for training and development to increase the level of cultural competence. However, Plaut et al. (2011) warned against speedy cultural shifts, which could alienate faculty whose sense of belongingness could be challenged by sudden changes toward diversity. For the outcome variable (diversity endorsement), most participants reported high levels; few respondents disagreed with the last six questions of the survey.

There is evidence in the literature for using caution when making attempts to shift culture within an organization; Frawley et al. (2020) claimed a euphoric state of cultural acceptance could not be achieved in an institution because of the constant shifts in geographic dispersion and the differences in knowledge, experiences, customs, cultural norms, history of peoples. Subscribing to Frawley et al.'s view alone would negate the plethora of research on the benefits of improving the cultural competence of people working and leading in HEIs. As leaders invest in training and develop initiatives to improve both cultural competence and diversity endorsement among faculty, the effectiveness of these efforts can only be determined through continued evaluation (repeated surveys).

For research question 2, the data showed some levels of significance between the components of cultural competence and diversity endorsement. The predictive evidence included a large portion of the sample ($< 50\%$), but the predicted change was small ($< 4\%$). Despite the limited statistical significance of the results of this project, it remains important for leaders

in HEIs to continue investing in faculty training and development on DEI and cultural competence. Evidence shows when people are trained in these areas, they are more likely to be empathetic towards others and their levels of CCC, or awareness of discriminations within the institution, are keener (Marchiondo et al., 2023). Faculty must be able to tap into students' intelligence and personal and intellectual capabilities; this ability requires training in culture, cultural competence, and cultural intelligence (Chen & Yang, 2021). Hutchins and Goldstein Hode (2021) believed there was an opportunity for leaders to embrace computer-mediated training in ways to engage faculty in self-paced learning, reflection, and discussion on cultural competence and diversity topics that aligned with the institution's mission, vision, and goals. Li et al. (2019) identified a direct relationship between leaders' efforts to share and exchange information and the potential for shifts in cultural learning and diversity within organizations. Leaders can leverage the rapidly changing technologies that create opportunities for delivering training to larger numbers of people at lower costs.

In this study, the predictor variable ECC had a statistically significant association (with BCC ($p = .002$) and CCC ($p = .011$); these values were less than .05. These associations align with Chen and Yang's (2021) acknowledgment that the burden on professionals in HEIs to be knowledgeable in DEI, given their responsibilities to nurture and prepare students for life beyond the institution, is omnipresent. As HEIs become more inclusive, faculty must be prepared to deliver materials and stimulate students in ways that prepare them for contributing to society after graduation.

Faculty trained in cultural competence and inclusive teaching practices are more likely to effectively open students' perspectives to multiculturalism because of the variety of views exposed in the classroom and through course materials (Marchiondo et al., 2023). Promoting institutional health through intentional efforts to serve the needs of non-White students was a proposition of Grier-Reed et al. (2021). These researchers focused keenly on the emotional and mental health of students and charged institutional leaders with safeguarding the collective health of students so each one could be cared for meaningfully to support academic success, resilience, and pride. Moreover, Chen and Yang (2021) called for leaders to support active research in multiculturalism to establish expertise, contribute to scholarship, and become recognized for this valuable work.

The problem addressed in this applied research was the absence of a measure of cultural competence among faculty in online HEIs, which could result in suboptimal endorsement of diversity initiatives. There was evidence in the data of associations and predictability between the variables, but only in small numbers of participants and at disassociated levels of cultural competence. We could not confirm the associations between the components

of cultural competence and diversity endorsement (as measured by the DEM), nor could we determine the predictability between the variables with any certainty.

Supported by the findings herein and the body of literature, three recommendations are drawn from this project. First, further research is necessary in this area. Research in cultural competence and diversity endorsement should continue as part of leaders' efforts to build and sustain equity for all stakeholders in HEIs (Russell et al., 2021). Second, data disaggregation in future investigations and explorations will be necessary to identify institutional members who are willing to and capable of supporting leaders' strategic direction. Third, continued investment in training and development in DEI topics is necessary to support a diverse student body (Marchiondo et al., 2023). Ongoing professional development and training will strengthen tacit institutional knowledge and mitigate the effects of faculty turnover. Lastly, as recommended by Chen and Yang (2021), leaders should promote initiatives that will build and maintain an inclusive, healthy, diverse, and multicultural environment.

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Declarations

This research was not funded by any organization or entity.

Human Ethics and Consent to Participate declarations

All participants consented to the use of their data in this study.

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References

- Allen, K.-A., Gray, D. L., Baumeister, R. F., & Leary, M. R. (2022). The need to belong: A deep dive into the origins, implications, and future of a foundational construct. *Educational Psychology Review*, 34(2), 1133–1156. <https://doi.org/10.1007/s10648-021-09633-6>
- Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance. *Management and Organization Review*, 3(3), 335–371. <https://doi.org/10.1111/j.1740-8784.2007.00082.x>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215. <https://doi.org/10.1037/0033-295X.84.2.191>
- Bennett, M. J. (2004). Becoming interculturally competent. In J. S. Wurzel (Ed.), *Toward multiculturalism: A reader in multicultural education*. Intercultural Resource Corporation.
- Botelho, M. J., & Lima, C. A. (2020). From cultural competence to cultural respect: A critical review of six models. *Journal of Nursing Education*, 59(6), 311–318. <https://doi.org/10.3928/01484834-20200520-03>
- Brottman, M. R., Char, D. M., Hattori, R. A., Heeb, R., & Taff, S. D. (2020). Toward cultural competency in health care: A scoping review of the diversity and inclusion education literature. *Academic Medicine*, 95(5), 803–813. <https://doi.org/10.1097/ACM.0000000000002995>
- Campinha-Bacote, J. (1998). *The process of cultural competence in the delivery of healthcare services: A culturally competent model of care* (3rd ed.). Transcultural C.A.R.E. Associates.
- Campinha-Bacote, J. (2002). The process of cultural competence in the delivery of healthcare services: A model of care. *Journal of Transcultural Nursing*, 13(3), 181–184. <https://doi.org/10.1177/10459602013003003>
- Campinha-Bacote, J. (2011). Coming to know cultural competence: An evolutionary process. *International Journal of Human Caring*, 15(3), 42–48. <https://doi.org/10.20467/1091-5710.15.3.42>
- Chen, D., & Yang, X. (2021). “Talk the walk and walk the talk”: Gearing toward a culturally responsive leadership approach. *Asia-Pacific Education Researcher*, 31(3), 285–295. <https://doi.org/10.1007/s40299-021-00560-2>
- Chyung, S. Y. Y., Swanson, I., Roberts, K., & Hankinson, A. (2018). Evidence-based survey design: The use of continuous rating scales in surveys. *Performance Improvement*, 57(5), 38–48. <https://doi.org/10.1002/pfi.21763>
- Corsino, L., & Fuller, A. T. (2021). Educating for diversity, equity, and inclusion: A review of commonly used educational approaches. *Journal of Clinical and Translational Science*, 5(1), Article e169. <https://doi.org/10.1017/cts.2021.834>
- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24(4), 349–354. <https://doi.org/10.1037/h0047358>
- Ely, E. (2021). Diversity, equity & inclusion statements on academic library websites. *Information Technology & Libraries*, 40(4), 1–22. <https://doi.org/10.6017/ital.v40i4.13353>
- Field, A. P. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage Publications Inc.
- Frawley, J., Russell, G., & Sherwood, J. (2020). Cultural competence and the higher education sector: A journey in the academy. In J. Frawley, G. Russell, & J. Sherwood (Eds.), *Cultural Competence and the Higher Education Sector* (pp. 3–11). Springer Singapore. https://doi.org/10.1007/978-981-15-5362-2_1

- Gökten, Ö., & Emil, S. (2019). Exploring the effect of ERASMUS program on cultural intelligence of university students. *Hacettepe University Journal of Education*, 34(3), 769–785. <http://www.efdergi.hacettepe.edu.tr>
- Gonzales, L. D., Hall, K., Benton, A., Kanhai, D., & Núñez, A. M. (2021). Comfort over change: A case study of diversity and inclusivity efforts in U.S. higher education. *Innovative Higher Education*, 46(4), 445–460. <https://doi.org/10.1007/s10755-020-09541-7>
- Grier-Reed, T., Said, R., & Quiñones, M. (2021). From antiblackness to cultural health in higher education. *Education Science*, 11(2), 57. <https://doi.org/10.3390/educsci11020057>
- Hilton, J., Syed, N., Weiss, M. J., Tereshko, L., Marya, V., Marshall, K., Gatzunis, K., Russell, C., & Driscoll, N. (2021). Initiatives to address diversity, equity, and inclusion within a higher education ABA department. *Behavior and Social Issues*, 30, 58–81. <https://doi.org/10.1007/s42822-021-00082-y>
- Hutchins, D., & Goldstein Hode, M. (2021). Exploring faculty and staff development of cultural competence through communicative learning in an online diversity course. *Journal of Diversity in Higher Education*, 14(4), 468–479. <https://doi.org/10.1037/dhe0000162>
- Kirste, L., & Holtbrügge, D. (2019). Experiential learning in the digital context: An experimental study of online cultural intelligence training. *Journal of Teaching in International Business*, 30(2), 147–174. <https://doi.org/10.1080/08975930.2019.1663775>
- Kruse, S. D., Rakha, S., & Calderone, S. (2018). Developing cultural competency in higher education: An agenda for practice. *Teaching in Higher Education*, 23(6), 733–750. <https://doi.org/10.1080/13562517.2017.1414790>
- Larson, R. B. (2019). Controlling social desirability bias. *International Journal of Market Research*, 61(5), 534–547. <https://doi.org/10.1177/1470785318805305>
- Marchiondo, L. A., Verney, S. P., & Venner, K. L. (2023). Academic leaders' diversity attitudes: Their role in predicting faculty support for institutional diversity. *Journal of Diversity in Higher Education*, 16(3), 323–332. <https://doi.org/10.1037/dhe0000333>
- Moreu, G., Isenberg, N., & Brauer, M. (2021). How to promote diversity and inclusion in educational settings: Behavior change, climate surveys, and effective pro-diversity initiatives. *Frontiers in Education*, 6, 668250. <https://doi.org/10.3389/feduc.2021.668250>
- National Center for Education Statistics. (2023). Characteristics of Postsecondary Faculty. In *Condition of Education*. U.S. Department of Education, Institute of Education Sciences. <https://nces.ed.gov/>
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the Implicit Association Test: II. Method variables and construct validity. *Personality and Social Psychology Bulletin*, 31(2), 166–180. <https://doi.org/10.1177/0146167204271418>
- O'Leary, E. S., Shapiro, C., Toma, S., Sayson, H. W., Levis-Fitzgerald, M., Johnson, T., & Sork, V. L. (2020). Creating inclusive classrooms by engaging STEM faculty in culturally responsive teaching workshops. *International Journal of STEM Education*, 7(1), 32. <https://doi.org/10.1186/s40594-020-00230-7>
- Pecci, A., Frawley, J., & Nguyen, T. (2020). On the critical, morally driven, self-reflective agents of change and transformation: A literature review on culturally competent leadership in higher education. In J. Frawley, G. Russell, & J. Sherwood (Eds.), *Cultural Competence and the Higher Education Sector* (pp. 59–81). Springer Singapore. https://doi.org/10.1007/978-981-15-5362-2_5
- Plaut, V. C., Garnett, F. G., Buffardi, L. E., & Sanchez-Burks, J. (2011). “What about me?” Perceptions of exclusion and Whites' reactions to multiculturalism. *Journal of Personality and Social Psychology*, 101(2), 337–353. <https://doi.org/10.1037/a0022832>

- 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. <https://doi.org/10.1037/a0026199>
- Russell, J. A., Gonzales, L. D., & Barkhoff, H. (2021). Demonstrating equitable and inclusive crisis leadership in higher education. *Kinesiology Review*, 10(4), 383–389. <https://doi.org/10.1123/kr.2021-0051>
- Sedgwick, P. (2013). Convenience sampling. *BMJ*, 347, 6304–6304. <https://doi.org/10.1136/bmj.f6304>
- U.S. Department of Education. (2023). *College Scorecard* [Website]. <https://collegescorecard.ed.gov/>
- Ventimiglia, M., & MacDonald, D. A. (2012). An examination of the factorial dimensionality of the Marlowe Crowne Social Desirability Scale. *Personality and Individual Differences*, 52(4), 487–491. <https://doi.org/10.1016/j.paid.2011.11.016>
- Williams, D. A., Berger, J. B., & McClendon, S. A. (2005). Toward a model of inclusive excellence and change in postsecondary institutions. *Association American Colleges and Universities*. <https://www.westga.edu/assets/institute-faculty-excellence/docs/aacu-model-of-inclusive-excellence-current.pdf>
- Woo, S. E., Chernyshenko, O. S., Longley, A., Zhang, Z.-X., Chiu, C.-Y., & Stark, S. E. (2014). Openness to experience: Its lower level structure, measurement, and cross-cultural equivalence. *Journal of Personality Assessment*, 96(1), 29–45. <https://doi.org/10.1080/00223891.2013.806328>
- Yang, K., Tu, J., & Chen, T. (2019). Homoscedasticity: An overlooked critical assumption for linear regression. *General Psychiatry*, 32(5), e100148. <https://doi.org/10.1136/gpsych-2019-100148>
- Yang, Y., Cox, C., & Cho, Y. (2020). Development and initial validation of Cultural Competence Inventory—Preservice Teachers. *Journal of Psychoeducational Assessment*, 38(3), 305–320. <https://doi.org/10.1177/0734282919848890>
- Yang, Y., Cox, C., & Cho, Y. (2021). *Cultural Competence Inventory—Preservice Teachers* [Dataset]. American Psychological Association. <https://doi.org/10.1037/t78641-000>
- Yi, V., LePeau, L., Chang, T.-H., Museus, S. D., Mathew, S., Saelua, N., & Haywood, J. (2022). Symbols contested: An analysis of how symbols advance and hinder diversity, equity, and inclusion. *Journal of Diversity in Higher Education*. <https://doi.org/10.1037/dhe0000435>