

**CHANGE IN CULTURAL COMPETENCY AMONG  
UNDERGRADUATE PRE-SERVICE TEACHERS**

**Faculty Research Grant 2011 – 2013**

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**FINAL REPORT**

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**INTRODUCTION**

The purpose of this study was to assess changes in cultural competency among Minnesota State University, Mankato (MSU) undergraduate students who participated in an intentional, multicultural relations experience in the course, Human Relations in a Multicultural Society (EEC222w), redesigned for the academic year 2011 – 2013. The study responded to these questions:

What are the cultural orientations of students who register for an undergraduate general education course in human relations in multi-cultural environments? Are the cultural orientations (perceived and developmental) statistically the same for students at the beginning of each semester?

What were the differences in changes occurring in undergraduate students' cultural competency after participating in intentional, multicultural human relations experiences?

**SIGNIFICANCE/NEED**

The United States' population is increasingly diverse racially, ethnically and culturally. By 2020, one out of every three Americans will be a person of color (American Psychological Association, 2003). Diversity also means diversity in behaviors, gender identity, and sexual orientation. "To promote multicultural competence, experts have suggested using a multifaceted

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training approach that includes cognitive, affective, and consciousness-raising activities” (Dickson & Jepsen, 2007).

This study related to the COE mission statement: “The mission of the Minnesota State University, Mankato College of Education is to prepare principled professional practitioners who thrive and succeed in diverse environments, promote collaborative and generative communities, and engage in life-long learning” (College of Education, 2009, np). The research will provide students and faculty members at MSU with collaborative, critical reflection about culture and education in diverse environments.

Outcomes of the study were used for curriculum re-design for the Human Relations courses, as well as for program assessment by COE. The results of this study will contribute to information regarding the impact of the teacher preparation programs being used in the College of Education (COE). MSU will use this information in considering the effectiveness of its cultural diversity goal: experience diversity with supervised reflection and recognize and respond to conditions of marginalized populations. In addition, these results will provide data to support future external funding applications, as well as state and national presentations and manuscript development.

### **CONTEXT**

Brown (2010) suggested four steps to becoming culturally competent: (1) knowledge of other cultures, (2) understanding different components of a culture and how others may view a situation differently, (3) acceptance, respect and tolerance for all cultures, and (4) appropriate behavior with people of a variety of cultures and traditions.

EEC222w is offered through MSU’s COE, which is committed to prepare its teacher candidates to be highly effective in increasingly culturally diverse classrooms. EEC222w is

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designed with intensive and intentional cross-cultural experiences in southern Minnesota.

EEC222w includes intentional and intensive cross-cultural experiences in order to meet three objectives (Minnesota State University, Mankato, 2009, np):

1. Interact with individuals from diverse populations outside the classroom and to have the opportunity to reflect on such interactions.
2. Demonstrate an acquisition of the basic knowledge and understanding of diversity related concepts so that the student's experience will have meaning and context.
3. Integrate classroom knowledge with experiential learning in analyzing and responding to conditions of marginalized populations.

In Spring, 2010, the Principal Investigator (PI) taught one section of the course, EEC222w, for the first time. The PI used the course syllabus and plan that was then in use by the COE faculty members. Beyond the regular course assignments, no data was collected during the Spring, 2010 semester.

In Fall, 2010, the PI taught two sections of EEC222w. The PI and two undergraduate student research assistants used the Intercultural Development Inventory (IDI) to collect baseline data on the students' cultural competency at the beginning and at the conclusion of the semester. These sections were also taught with the course syllabus and plan that was then in use by the COE faculty members. The undergraduate student research assistants reported the results of this semester's study at the 2011 National Conference on Undergraduate Research in Ithaca, NY (Tupy & McNabb, 2011) and at the 2011 Undergraduate Research Conference in Mankato, MN (McNabb, Tupy, & Sandell, 2011). No statistically significant differences were found between the pre-instruction IDI scores and the post-instruction IDI scores. However, the PI did collect and analyze the baseline IDI scores for the first- and second-year undergraduate students who

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completed the assessment. Students were generally in the denial, polarization, or minimization orientations, and most of them remained in the same orientation at the end of the semester.

During the Fall, 2010, the PI participated in IDI Qualified Administrator (QA) training. This training provided information and skills for administering the IDI instrument and interpreting the IDI results. The IDI QA seminar also presented materials and strategies for customizing interventions that have been shown to facilitate change in cultural orientation.

Based on the results of the study in Fall, 2010, the PI made several important changes in the teaching of EEC222w for Spring, 2011 (Tupy, McNabb, & Sandell, 2011). These changes were intended to provide materials, information, and reflection the students could use in their initial orientations of cultural competence, while providing experiences and reflection to facilitate their moving to more complex orientations of cultural competence.

1. Changed the course schedule from 3-hour meeting once each week to 1-1/2-hour meetings twice each week.
2. Changed text to *Understanding Human Differences* (Koppelman & Goodhart, 2009).
3. Assigned completion of the Learning Styles Inventory (Gardner, 1999).
4. Assigned completion of the Keirsey Temperament Sorter (Keirsey, 2011).
5. Assigned completion of the SpeakStrong.com communications style inventory (Runion, 2011).
6. Assigned completion of the Professional Dispositions inventory (Danielson, 2011).
7. Separated the Autobiography assignment into *two* assignments: a Self-Assessment Reflection Paper and a Cultural Autobiography

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8. Recruited international students to participate in class meetings
9. Added Cultural Partnership assignment (9 hours with partner of another culture, with interview and reflection paper)

Data was collected again during the Spring, 2011 semester. Based on this additional data, the PI made additional changes in the course for Fall, 2011 and Spring, 2012.

### **METHODOLOGY**

Sample: Students self-selected for participation in this study by registering for EEC222w, a general education course. Students were between 18 and 30 years old, from a variety of academic majors, primarily in elementary education, but also in subjects such as social work, law enforcement, psychology, business, etc. The subjects included students who registered for Human Relations in a Multicultural Society at the beginning of each of four semesters during the academic years 2010 – 2011 and 2011 – 2012. This course was required for students who majored in elementary education. The course could be substituted for required courses for students who majored in secondary education or special education. However, students from other academic specializations could also find this course useful, because the course met several general education requirements.

Subjects were coded according to students' academic classifications (freshman, sophomore, junior, senior, and graduate). Subjects were also coded according to students' academic major subjects (education, other than education, and undeclared). Non-education majors included, for example, sports management, social work, mass communications, journalism, and pre-professional studies (e.g., mortuary science, veterinary medicine, therapy).

Recruitment: During one meeting, the undergraduate student research assistant and the PI explained the project to the students in each section of the class. Students had an opportunity to

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ask questions and receive answers. At each step, the undergraduate student research assistant explained to the students that their participation was voluntary.

For Fall 2010, data was collected from 77 respondents during week 3 and from 56 respondents during week 15; 50 respondents completed both the pre-instruction and the post-instruction assessments in Fall 2010. For Fall 2011, data was collected from 86 respondents during week 3 and from 71 during week 15; 70 respondents completed both the pre-instruction and the post-instruction assessments in Fall 2011.

Table 1: Subjects

Semester	Pre-instruction (week 3)	Post-instruction (week 15)	Pre-instruction and Post-instruction
Fall 2010	77	56	50
Fall 2011	86	71	70
Total	163	127	120

Respondents completed the IDI on-line during the third week and during the fifteenth week of each semester (Fall 2010 and Fall 2011). During Fall 2010, individual students could initiate a meeting to receive and to discuss their own results in a face-to-face meeting with the IDI administrator. However, during Fall 2011, this information was routinely shared in a personal meeting for each student who completed the IDI as a pre-instruction assessment. The individual information was not available otherwise.

Instruments: This study used the Intercultural Development Inventory (IDI) (Hammer & Bennett, 1998, 2001). The IDI consists of fifty, Likert-type items that can be answered in 20 to 30 minutes. The scale measures group intercultural sensitivity and is based on Bennett's Developmental Model of Intercultural Sensitivity (Bennett, 1986). This model observed and defined five cultural orientations: Denial, Polarization, Minimization, Acceptance, and Adaptation. Based on the psychometric properties associated with this instrument, the IDI was

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useful for assessing training needs and identifying impact of interventions aimed at increasing intercultural competence.

Based on the psychometric properties associated with this instrument, the IDI was useful for assessing training needs and identifying impact of interventions aimed at increasing intercultural competence. Confirmatory factor analyses conducted by Hammer and Bennett (1998, 2001) supported five dimensions with reliability coefficients ranging from .80 to .85. Correlations with the Worldmindedness Scale and Intercultural Anxiety Scale supported the IDI's construct validity.

**Protection of Privacy:** The project has been approved by MSU's Institutional Review Board [IRB Log # 5691 approved, September, 2010]. The identity of the respondents was held confidential, and names were changed to pseudonyms for reporting purposes. The only record of the original name of a respondent was the informed consent form. Each reflection was identified by number. The only way to link a name to a subject was to look at the informed consent form where the interview number is written. The informed consent forms were kept separately from the data and will be kept under lock and key by the primary investigator for three years. Individual students could initiate a meeting to discuss their own results in a face-to-face meeting with the PI. However, this information as only shared in a personal meeting. The information was be available otherwise.

**Data Collection:** All this information was collected routinely as part of the learning process in the course, EEC222w. Demographic data was collected, including gender, academic major, ethnicity/culture, along with information about communication style and personality type. This additional information will be used in future analysis to see if change relates to demographic data and/or to instructional interventions.

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At the beginning and at the conclusion of each semester, the subjects completed the IDI on-line during class. The investigators used only the group mean scores to evaluate whether any significant indicators of change were observed in intercultural development. Students also provided self-reports in reflective analysis assignments.

### **DATA ANALYSIS**

The quantitative data collected with the IDI were analyzed by the investigator using the established IDI protocols and IBM ® SPSS ® Statistics Version 12.0 statistical analysis software (SPSS, 2005). This study examined the IDI individual and group profiles to determine whether group characteristics were statistically significant. The alpha level for the analysis was set at  $\alpha = .05$ . Differences were determined to be significant if they were at the  $p < 0.05$  level.

This study also involved content analysis of student self-reports in reflective analysis papers required during the semester in EEC222w. The reflections were coded by the student investigators. The coded data was analyzed and compared to the quantitative data collected by the IDI.

Qualitative data was collected by examining course syllabi for revisions to policies and procedures, field experience / service learning assignments. In addition, the instructor wrote reflection papers about the teaching and learning strategies selected for the course.

Roles and Time of Project Staff: The PI directed all project activities, research design, training, data analysis, publication and presentation development, and external grant development. Undergraduate student research assistants participated in all stages of the study. Students in the courses analyzed the grouped data as part of their learning opportunities.

### **RESULTS**

#### **Beginning Orientation of Undergraduate Students toward Cultural Differences**



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The first research question was: What are the cultural orientations of students who register for an undergraduate general education course in human relations in multi-cultural environments? Are the cultural orientations (perceived and developmental) statistically the same for students at the beginning of each semester?

According to the baseline IDI assessments taken at week 3 of both semesters, the perceived orientation score indicated that the groups rated their own capability in understanding and appropriately adapting to cultural differences within Acceptance, reflecting an orientation that recognized and appreciated patterns of cultural difference in one's own and other cultures in values, perceptions and behaviors. In contrast to the students' perceptions, the developmental orientation score indicated that both groups were characterized by a primary orientation toward cultural differences that was actually within a low Minimization category, reflecting a tendency to highlight commonalities across cultures that can mask important cultural differences in values, perceptions and behaviors.

In examining the developmental orientation scores more closely (see Table 2), it was evident that more than xx% of the students were actually in ethno-centric orientations toward cultural differences and similarities. More than half (xx%) of the respondents were in minimization orientation. Another xx% of the respondents were in either denial or polarization orientation.

*Table 2: Developmental Orientations among Undergraduate Students at the Beginning of the Semesters*

Cultural Orientation	Fall 2010		Fall 2011	
	Number	Percent	Number	Percent
Total	77	100.0%	86	100.0%
Denial	0	12.3%	0	14.0%
Polarization	0	27.7%	0	31.4%
Minimization	0	56.9%	0	51.3%
Acceptance	0	3.1%	0	3.5%
Adaptation	0	0.0%	0	0.0%

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Table 3 presents the descriptive statistics for each of the groups that were being compared (students' perceived and developmental cultural orientation scores at the beginning of the Fall 2010 and Fall 2011 semesters).

	Semester	N	Mean	Std. Deviation	Std. Error Mean
Perceived Orientation	Fall '10	65	119.0157	5.11262	.63414
	Fall '11	86	118.6934	5.40547	.58289
Developmental Orientation	Fall '10	65	88.1885	14.33583	1.77814
	Fall '11	86	87.3430	15.01521	1.61913

Students at the beginning of the Fall '10 semester had a mean PO score of 119.0157 and a mean DO score of 88.1885, with standard deviations of 5.11262 and 14.33583, respectively.

Students at the beginning of the Fall '11 semester had a mean PO score of 118.6934 and a mean DO score of 87.3430, with standard deviations of 5.40547 and 15.01521, respectively.

To compare the cultural orientation means for students at the beginning of Fall semester 2010 and Fall semester 2011, an independent samples t test was run (See Table 4). First, to determine which t test should be used; Levene's Test for Equality of Variances was run. Both PO and DO scores had *p*-values greater than 0.05 for Levene's Test for Equality of Variances. Thus, equal variances assumed models were used. According to the data in Table 6, mean PO and DO scores were **not** significantly different for either semester, Fall 2010 or Fall 2011. The hypothesis of equal means was accepted: there were no statistically significant differences in perceived or developmental orientations at the beginning of the semesters.

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*Table 4: Independent Samples Test*

		Levene's Test		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Perceived Orientation	Equal variances assumed	.420	.518	.371	149	.711	.32232	.86807	-1.39299	2.03763
	Equal variances not assumed			.374	141.68	.709	.32232	.86133	-1.38040	2.02504
Developmental Orientation	Equal variances assumed	.405	.526	.349	149	.727	.84544	2.42049	-3.93749	5.62836
	Equal variances not assumed			.352	141.09	.726	.84544	2.40486	-3.90879	5.59966

### Changes in Undergraduate Students' Orientations toward Cultural Differences

The second research question was: What were the differences in changes occurring in undergraduate students' cultural competency after participating in intentional, multicultural human relations experiences?

Table 5 presents the descriptive statistics for students in the Fall 2010: students' pre- and post-instruction mean scores for perceived and developmental cultural orientation.

*Table 5: Pre-instruction and Post-instruction Orientation Scores for Undergraduate Students, Fall 2010*

		N	Mean	Std. Deviation	Std. Error Mean
Perceived Orientation	Pre-Instruction	50	118.5842	5.13201	.72578
	Post-Instruction	50	118.5460	5.54177	.78372
Developmental Orientation	Pre-Instruction	50	86.9034	14.47431	2.04698
	Post-Instruction	50	86.4334	14.45374	2.04407

Students in Fall 2010 had a mean pre-instruction PO score of 118.5842 and a mean post-instruction PO score of 118.5460, with standard deviations of 5.13201 and 14.47431, respectively. Students had a mean pre-instruction DO score of 86.9034 and a mean post-

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instruction DO score of 86.4334, with standard deviations of 14.47431 and 14.45374, respectively.

To compare students' cultural orientation pre-instruction and post-instruction mean scores for the Fall '10 semester, a paired samples t test was run. The hypothesis of equal means was accepted because the *p*-value was greater than 0.05. According to the Fall 2010 data in Table 6, mean pre- and post-instruction scores were not significantly different for both PO and DO.

*Table 6: Paired Samples Test*

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Perceived Orientation	Pre-Instruction vs Post-Instruction	.03820	5.4332	.7688	-1.5059	1.5823	.05	49	.961
Developmental Orientation	Pre-Instruction vs Post-Instruction	.47000	13.8211	1.9546	-3.4579	4.3979	.24	49	.811

Table 7 presents the descriptive statistics for students in the Fall 2011: students' pre- and post-instruction mean scores for perceived and developmental cultural orientation.

*Table 7: Pre-instruction and Post-instruction Orientation Scores for Undergraduate Students, Fall 2011*

		N	Mean	Std. Deviation	Std. Error Mean
Perceived Orientation	Pre-Instruction	68	118.6724	5.11742	.62058
	Post-Instruction	68	122.9726	6.59092	.79927
Developmental Orientation	Pre-Instruction	68	87.8247	14.92086	1.80942
	Post-Instruction	68	98.4950	17.56002	2.12946

Students in Fall 2011 had a mean pre-instruction PO score of 118.6724 and a mean post-instruction PO score of 122.9726, with standard deviations of 5.11742 and 6.59092, respectively. Students had a mean pre-instruction DO score of 87.8247 and a mean post-instruction DO score of 98.4950, with standard deviations of 14.92086 and 17.56002, respectively.

To compare students' cultural orientation pre-instruction and post-instruction mean scores for the Fall '11 semester, a paired samples t test was run. The hypothesis of equal means

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was rejected because the  $p$ -value is less than 0.05. According to the data in Table 8, mean pre- and post-instruction scores were significantly different for both PO and DO. In particular, students had statistically significantly higher mean post-instruction scores than they did pre-instruction for both PO and DO.

*Table 8: Paired Samples Test*

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Perceived Orientation	Pre-Instruction vs Post-Instruction	-4.3003	6.8493	.8306	-5.9582	-2.6424	-5.18	67	.000
Developmental Orientation	Pre-Instruction vs Post-Instruction	-10.6703	17.8502	2.1647	-14.9909	-6.3496	-4.93	67	.000

## DISSEMINATION

Project results were disseminated in a variety of ways, including academic and professional conferences, academic and scholarly journals as well as within the MSU, Mankato academic community.

1. Presented at international and national conferences, including the Association for Childhood Education International, American Evaluation Association, IDI Conference, European Early Childhood Education Research Association, and others.
2. Submitted to teacher education journals, including the Journal of Teacher Education, Journal of College Teaching and Learning, and the American Journal of Education.
3. Shared with the College of Education faculty at college-wide faculty information and training sessions.
4. Reported to our internal and external partners using COE communication strategies.

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5. Shared with the College of Education Bush Educational Initiative Director and Bush Foundation as part of program evaluation procedures.

**EXPENDITURES**

Category	FRG Request	Other Support
<p><b>Personnel (Graduate Assistant, etc.)</b></p> <p>Funds for 5 hours/week for one undergraduate student research assistant (Student Para-Professional Level 3) to assist with data collection, analysis and coordination.</p> <p>Principal Investigator will contribute .05 FTE to the project.</p>	<p><b>\$3,040.</b></p>	<p><b>.05 FTE time</b></p>
<p><b>On-line Subscriptions</b></p> <p>COE funds purchased the IDI for pre-instruction assessment.</p> <p>FRG funds purchased the IDI for post-instruction assessment.</p>	<p><b>\$1,485.</b></p>	<p><b>\$1,485.</b></p>
<p><b>Supplies and materials</b></p> <p>Funds for other materials.</p>	<p><b>\$500.</b></p>	
<b>TOTAL REQUESTED</b>	<b>\$5,025</b>	

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