Poster Presentation Workshop

Undergraduate Research Center
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Information to include

- Title, year
- Student researchers & departments
- Faculty mentor & departments
- MSU wordmark
- Research question/s
- Methodology
- Results & conclusions
- References
- Acknowledgements
Use the URC poster template

Poster Title Template, Times 72 font

Presenter(s), Times New Roman, 48 font
Minnesota State University, Mankato, Department of Department

Introduction


Method

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Results

Conclusions


References

For additional information regarding this study, please contact Student Presenter at student.presenter@mnsu.edu or Dr. Faculty Mentor at faculty.mentor@mnsu.edu.
Poster Set-up

- Maximum of 48" wide and 36" high.
- Attach posters to the free-standing display boards by push pins. (Push pins will be available, but you may bring your own.)
- Adhere to the size requirements in order to display the posters while keeping walkways open.
- Electrical power will not be available for your display.
Background

Various researchers and reporters have documented the array of experiences that Native students had in educational settings between 1879, when the Carlisle Indian Industrial School and others were established and youngsters were forced off the reservations, and the 1930s, when most boarding schools were closed.

This project was designed to collect and to share information in order to better prepare teachers of Native students. The project gave Native elders an opportunity to record their education experiences in their own words.

This study used grounded theory that allows researchers to review qualitative data and to use inductive reasoning to support conclusions from that data (Corbin and Strauss, 2008; Charmaz, 2000). Grounded theory allowed the investigators to describe why and how “some American Indian parents find it difficult to communicate with public school system administrators and teachers – and even more difficult to trust them.” (American Indian contributions to the world. Retrieved November 3, 2009 http://www.kporterfield.com/aicttw/articles/boardschool.html)

Methodology and Results

This study involved four in-depth, in-person interviews with Dakota and Lakota participants between 40 and 70 years old. Dakota participants provided reflections on experiences of past generations, on their own educational experiences, on the preferred learning methods of Native students, and on their visions for teachers’ practices and influences on Native children.

Data analysis was conducted to identify themes: racism, teaching values, incomplete histories, and language recovery. Stories and comments from elders were organized around those themes and produced in a video.

Resources


Acknowledgements

Dr. Gwen N. Westerman, Mr. David Larsen, and Mr. Glenn Wasicuna for their participation in the videotaped interviews.

Butch and Annie Felix for their participation in background interviews.

Dr. Gina Wenger for her photographs of the 2009 Mahkato Wacipi.

College of Graduate Studies and Research for financial support for our positions as research assistants.

Dr. Elizabeth Sandell and Dr. Gwen Westerman-Wasicunna for their advice and guidance.

Helpful staff members in the ERC.
Poster Visuals

- Header/title visible from a distance (at least 50-point font):

  Exploration of Undergraduate Scholarly and Creative Activity
  Jim Smith, Undergraduate Student Researcher
  Department of Undergraduate Research
  Pat Doe, Faculty Mentor, Ph.D.
  Department of Undergraduate Research
  Minnesota State University, Mankato
Comparison of Intercultural Competency Between American and Russian University Students

Elizabeth A. Lohrenz, Geography & International Relations
Elizabeth J. Sandell, Ph. D., Associate Professor, College of Education
Minnesota State University, Mankato

Background
Intercultural competency influences the quality of cross-cultural interactions. Research that addresses the descriptions and causes of varying levels of intercultural competency may provide insight that could potentially improve the quality of cross-cultural education and resulting cultural competencies. With this information, international education and global education opportunities may produce greater understanding and awareness of diverse cultures.

Method
Theoretical basis: The Developmental Model of Intercultural Sensitivity (Bennett, 1986) described six stages of cultural competence. (Fig. 1 & 2)

Subjects: 26 persons, 18 to 30 years old, enrolled in North-Eastern State University, Magadan, and 26 persons, 18 to 30 years old, enrolled in Minnesota State University, Mankato.

Analysis: The investigators used the group mean scores on developmental scales to evaluate whether any significant indicators of differences or similarities were observed in these areas of intercultural development. (Fig. 3)

Terminology
Culture: All knowledge and values shared by a group.

Intercultural Competency: The ability to easily maneuver in and out of diverse cultures and situations. A person is flexible and adaptable to a variety of cultural contexts which allows them to shift their perspectives and behaviors based on their cultural environment.

Perceived Orientation: Reflects where the individual or group places itself along the intercultural development continuum.

Developmental Orientation: Indicates the individual’s or group’s primary orientation toward cultural differences and commonalities along the continuum as assessed by the IDI. The perspective the individual or group is most likely to use in those situations where cultural differences and commonalities need to be bridged.

Purpose
To compare American university students’ level of cultural competency to that of Russian university students.

Results
Results indicated statistically significant differences in orientation to cultural diversity between Russian and American university students. American students were in the level Minimization, which was significantly higher than that of the Russian students, which were in the level of Polarization. (Fig. 4)

Research Questions
1. What is the orientation to cultural differences among university students?
2. What are the differences in cultural competency between American and Russian university students?
3. What contributes to the differences in cultural competency between American and Russian university students?

Discussion
The foundational components for intercultural competence development included: Attitudes, Knowledge, Skills, and Behaviors. Scholarly research suggests that intercultural competency is primarily developed through: Effective intercultural training and education in addition to repeated and intentional exposure to culturally diverse others where the core components of intercultural competency can be practiced and developed.

Contributing factors to the differences between American and Russian university students may be attributed to the implementation or absence of effective educational pedagogy that supports a curriculum of intercultural competence development; varying levels of continuous and intentional exposure to culturally diverse others; and differences in an overall willingness to develop one’s individual intercultural competence.

Acknowledgements

References

Figure 1
Figure 2
Figure 3
Figure 4
Poster Visuals (continued)

- Use graphics and figures.
- Keep text to a minimum.
- Individuals attending the poster session are unlikely to read a lengthy text.
- Blocks of text should be a minimum of 32-point font.
- EXCEPTION: the reference section may be as small as 18-point font.
- Consult your faculty mentor for design and construction information.
How Does A City Change Through Time?
Change Analysis of Single Family Houses in the City of Eagle Lake, MN

INTRODUCTION
Through the past couple of years the use of time in Geographic Information Systems (GIS) has rapidly grown to enable even more powerful analyses that massively increased the number of applications for GIS. This project was intended to use time information within GIS and develop a change analysis for the city of Eagle Lake, MN between 1856 (when the first house was built) and 2014. The GIS used for this project was ESRI ArcGIS 10.2.2.

STUDY AREA AND DATA
The city of Eagle Lake is located in Blue Earth County, in southern Minnesota. According to the US Census 2010 the total city area is about 1.61 square miles. The total population numbered 2422 people with a density of 1.5 inhabitants per square mile.
- Blue Earth County Parcel Data
- City of Eagle Lake Parcel Data
- U.S. Census Population Data

METHODS
- Join Parcel Data with Housing Data based on Parcel ID
- Extract Single Family houses
- Categorize houses in small (smaller than 1270 sqft), medium (between 1270 and 1870 sqft) and large houses (greater than 1870 sqft)
- Create field showing the decade when each house was built
- Use Time Slider to visualize houses built in each decade
- Calculate results based on house size and decade built

RESULTS
- Most houses were built since the 1960's
- Most houses occupy an area smaller than 1,870 sqft
- No large houses built between 1920's and 1950's
- Size of houses and number of rooms mostly rose until early 1960's, dropped in late 1950's and increased again since 1960's
- Most people live in the city center

CONCLUSIONS
- Rapid city growth since end of WWII
- City growth represents times of political and economic instabilities between late 1920's and the end of WWII

ACKNOWLEDGEMENTS AND IMPRESSUM
I would like to thank Prof. Rama Mohapatra and Matthew Lassonde for their outstanding help and efforts to realize this project.

Juliette Pretet
Advisor: Prof. Rama P. Mohapatra, Teaching Assistant: Matthew S. Lassonde
GIS Practicum Fall 2014, Minnesota State University, Mankato MN
11/19/2014
Your Role

- Presenters will be expected to be available to discuss their posters with passersby at the assigned times.
- Other information?
- Literature review
- Goals
- Methodology & procedures
- Results & conclusions
- Project significance
- Presenter articulation
- Presenter mastery of project
- Poster visually appealing
- Poster legible from 5 feet away

Person unfamiliar with specific topic could understand!
Determination of the potential areas for wind turbines
using the example of Minnesota

Waldemar Titov
Department of Geography, Minnesota State University, Mankato

INITIAL SITUATION
Clearly fossil fuel reserves are finite.
- It's only a matter of when they run out — not if.
The world's population and their aspirations is growing, which means our known oil deposits will be gone by 2052.

Yes, we'll still have gas left, and coal too. But if we increase gas production to fill the gap left by oil, then those reserves will only give us an additional eight years, taking us to 2060.

So if we step up production to fill the gap left through depleting our oil and gas reserves, the coal deposits we know about will only give us enough energy to take us as far as 2088.

And let's not even think of the carbon dioxide emissions from burning all that coal.

STUDY AREA / DATA
Area under investigation: Minnesota
Environmental Data (restricted areas):
- National Park / Forest
- Water protected area
- Conservation area
Wind speed data (10m above surface)
Digital Elevation Model (DEM)
Basemap (with electrical power lines)

WIND ENERGY
- Key technology of future energy sources
- Most economic technology among the renewable energies for producing electricity
- No pollutant emissions during operation
- MN: National leader in wind energy industry, and wind power
- More than 15% of Minnesota's electricity comes from wind
- Installed Wind Capacity: 3,035 MW (therein MN is 7th in USA)
- Wind Turbines: 2,156 turbines (therein MN is 9th in USA)
- 840,000 Minnesota homes powered by wind energy
- Minnesota's current wind potential at 60m height is greater than 34 times the state's current electricity needs

RESULTS
As we can see, Minnesota has a lot of potential areas for harvesting wind energy. Sure, the calculated areas are only theoretically and not all of them will be used. But it gives us an idea of the wind energy capability in Minnesota.

FUTURE
The next step will be to calculate the technical wind potential revenue, depending on the amount of used wind power plants. The modern wind power plants indicate a hub height of 140m (460 feet), which will distinctly increase the efficiency. Generally, wind harvesting effectiveness will grow about 15% with each meter higher hub altitude. The coefficient of view the wind energy is very promising, because more than 50% of the wind energy is converted to electrical energy.

CONCLUSION
The result of the created wind speed map coincident the already existing wind farms in Minnesota. Especially in the south Minnesota with the Buffalo Ridge. In my opinion Minnesota is heading the right direction with its wind energy strategy. To reach the ambitious goals and operate the wind mills with a high efficiency, analysis like this will be significant.

Minnesota is favored by fortune to have a big coastline on the Lake Superior, where the wind blows at a magnificent speed. Consequently, offshore wind power plants are imaginable and will rapidly increase the energy production.

SOURCES
All final data sources and visualization tools from US Wind Turbines
The above presented data and analysis are based on the work of the commercially available software and the respective sources from the US Department of Energy.

MINNESOTA STATE UNIVERSITY Mankato
Poster Design Tips

- Consult your faculty mentor prior to submitting your poster for printing. See the URC tips [http://www.mnsu.edu/urc/shareproject.html](http://www.mnsu.edu/urc/shareproject.html)

- Follow the graphic standards when using university logos and colors: [Graphic Standards](http://www.mnsu.edu/standards)

- Use logos in the EPS format for quality printing.
Cultivating Cultural Competence in Teacher Candidates

Michelle Burke & Gretchen Hinrichs
Dr. Lori Piowalski, Advisor
Minnesota State University, Mankato

Background

The responsibility rests with future and current educators to infuse their planning and instruction with culturally responsive teaching strategies that will meet the needs of all students in their classroom while embracing the cultural differences of the students" (Goldrick & Chinn, n.d.). Teacher preparation programs are being held to national standards which ensure future educators have been cultivated to be culturally competent.

Existing literature mainly describes the importance and urgency to prepare future teachers for the changing demographics with classrooms across the United States. "I in every 3 students enrolled in elementary and secondary school is of racial or ethnic minority, and 1 in every 7 children between ages 5 and 17 speak a language other than English at home" (Villegas & Lucas, 2012). Despite these statistics, there is not significant literature on how Culturally Responsive Teaching strategies are being implemented or measured in teacher preparation programs.

Objective

To evaluate if purposeful cultural instruction impacts candidate progression along the cultural proficient continuum from the beginning of their first semester in professional education to the end of that semester.

Hypothesis:

Cultural competence instruction can impact the growth of teacher candidates towards cultural competency.

Methods

The purpose of this quantitative study was to investigate teacher candidates' cultural proficient growth during their first semester in professional education courses. Our central question is, what progression can be made along the Intercultural Development Continuum for teacher candidates from the beginning of their first semester in professional education, to the end of that semester, when given culturally responsive instruction and experiences. Quantitative data was collected from twenty-eight teacher candidates in a Midwest undergraduate teacher education program through participation in the Intercultural Development Inventory (IDI) during the Fall 2013 semester.

The IDI, according to Hammer (2011), "measures how a person or group thinks and feels about cultural difference stemming from any aspect of diversity, human identity, and cultural difference". The validity and reliability results indicate a strong content and construct validity. The IDI places teacher candidates along the Intercultural Development Continuum, ranging from denial to adaptation. A faculty member embedded five identified variables into a literacy course and seminars to cultivate culturally proficient growth for teacher candidates, with the intention that teacher candidates can begin the journey towards an intercultural mindset. The following are the five identified variables:

- Pre-instruction IDI participation
- IDI focus group & personal goal setting
- Weekly culturally responsive videos with discussion and reflection
- AVID's "Culturally Relevant Teaching" workshop
- Post-instruction IDI participation

Results

Paired samples t-tests were used to compare students' Perceived Orientation and Developmental Orientation. Pre-instruction scores to post-instruction scores. The hypothesis of equal means is rejected if the p-value is less than 0.05.

According to the data, mean post-instruction scores were significantly larger than pre-instruction scores for Perceived Orientation. Mean scores are in red font. Significant p-values are highlighted in green. It is natural for a person's Perceived Orientation to be higher than their Developmental Orientation, as seen in our results.

According to the data, mean post-instruction scores were significantly larger than mean pre-instruction scores for Developmental Orientation. Mean scores are in red font. Significant p-values are highlighted in green.

Conclusion

A significant difference in the Developmental Orientation pre-instruction and post-instruction indicates that by embedding culturally proficient teaching practices in the teacher preparation program, teacher candidates can make significant advancement on the cultural proficient continuum in one semester.

Through the instructional methods, teacher candidates were challenged to reflect on their own cultures and how their values and beliefs influence their teaching practices which impacted their cultural competency growth.

This study creates a foundation for future research on culturally responsive teaching by focusing on how to cultivate culturally responsive teachers through a teacher preparation program.

Acknowledgements

Thank you to our faculty advisor, Dr. Lori Pioiwalski for all of your assistance and feedback throughout our research process. Also thankful to the Minnesota State University, Mankato Undergraduate Research Center for funding our research.
Sending, Printing & Paying

- E-mail complete poster and contact information to: printjobs@mnsu.edu.

- Questions about printing? Consult the Copy Shop website or call the Copy Shop at 507-389-2702 or 507-389-2999.

- Decisions that impact price: Black & white or color? Laminated or plain? High levels of ink coverage?

- Check with faculty mentor for 6-digit cost center number to use for printing charges.

- Copy Shop poster prices: $25 for color, $15 for black and white.