Welcome CAEP Spring 2016 Conference Participants

The Use of Simulation Based Learning to Enhance Preservice Teachers Understanding of the Educational Needs of Diverse Learners

Presenters:
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Dr. Melanie Bishop
Presentation Outline

• Problem, Purpose and Background
• Research Questions, Design, and Procedure
• simSchool Design
  * Students
  * Classroom
• Data Analysis, Findings, and Limitations
• Audience Participation
• Implications & Future Studies
• Volunteers Wanted for Joint Research
• Q & A
Why were we interested in the study?

- Alternative for students who may not have access to diverse learning environments
- Provide opportunity for students to experience wide variety of diversities
- Determine validity and reliability of the implementation of simSchool at MBU
Problem / Purpose

• The problem studied in this research was the ineffectiveness of preservice teachers’ training for preparing new teachers to understand the educational needs of diverse learners.

• The purpose of this mixed methods research was to evaluate the use of Simulation Based Learning (SBL) as a tool to increase preservice teachers’ understanding of the educational needs of diverse learners.
Quantitative Primary Research Question

What impact did Simulation Based Learning (SBL) have on the preservice teachers’ understanding of the educational needs of diverse learners?
simSchool Design
<table>
<thead>
<tr>
<th>Module #’s</th>
<th>Name</th>
<th>Simulated Diversity</th>
<th># of simStudents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Language Learning Lab</td>
<td>English as Second Language</td>
<td>5</td>
</tr>
<tr>
<td>4-6</td>
<td>Gifted Learning Lab</td>
<td>Students with Exceptionalities</td>
<td>5</td>
</tr>
<tr>
<td>7-8</td>
<td>Study Skills Lab</td>
<td>Students with Exceptionalities</td>
<td>5</td>
</tr>
<tr>
<td>9-12</td>
<td>Anywhere Elementary Class 1</td>
<td>Socioeconomic Status and Ethnicity</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>High SES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-15</td>
<td>Anywhere Elementary Class 2</td>
<td>Socioeconomic Status and Ethnicity</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Low SES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-20</td>
<td>Anywhere High School</td>
<td>All Simulated Diversities in One Class</td>
<td>18</td>
</tr>
</tbody>
</table>
Paired t-Test Results for Item Clusters for MAQ Pre and Post survey for All Participants

Cluster Descriptions:
(1) preservice teachers’ awareness of multicultural issues in education
(2) preservice teachers’ belief that their professional courses are preparing them to deal with multicultural approaches to education
(3) preservice teachers’ expression of interest in receiving additional training in multicultural approaches to education
(4) preservice teachers’ views of appropriate classroom practices for multicultural education are consistent with current research and practice
(5) preservice teachers’ anticipation of addressing multicultural issues in their own classrooms
(6) preservice teachers’ personal attitudes that may prevent them from making effective use of multicultural approaches.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Control Traditional Field Experience</th>
<th>Intervention SimSchool</th>
<th>EDCL 200 SimSchool</th>
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<tr>
<td></td>
<td>n</td>
<td>t</td>
<td>cv</td>
</tr>
<tr>
<td>1</td>
<td>21</td>
<td>-0.244</td>
<td>-1.725</td>
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<tr>
<td>2</td>
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<td>-5.836</td>
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<td>3</td>
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</tr>
<tr>
<td>4</td>
<td>21</td>
<td>0.344</td>
<td>-1.725</td>
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<tr>
<td>5</td>
<td>21</td>
<td>-2.788</td>
<td>-1.725</td>
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<tr>
<td>6</td>
<td>21</td>
<td>-0.449</td>
<td>-1.725</td>
</tr>
<tr>
<td>Overall</td>
<td>21</td>
<td>-4.243</td>
<td>-1.725</td>
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</tbody>
</table>

Note: Data analysis designed so that an increase in knowledge will result in a decrease in mean value from pre to post data.
Comparison of Simulation Based Learning Field Experience with and without Course

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Cluster 2</th>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Between Groups</td>
<td>395.022</td>
<td>3.000</td>
<td>131.674</td>
<td>2.787</td>
<td>0.043</td>
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<td></td>
<td>Within Groups</td>
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<td>47.253</td>
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<td>Total</td>
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<td>135.000</td>
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</table>

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Overall</th>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F crit</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Between Groups</td>
<td>562.493</td>
<td>3.000</td>
<td>187.498</td>
<td>1.829</td>
<td>0.145</td>
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<tr>
<td></td>
<td></td>
<td>Within Groups</td>
<td>13,531.441</td>
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<td>102.511</td>
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<td>Total</td>
<td>14,093.934</td>
<td>135.000</td>
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</table>

(2) preservice teachers’ belief that their professional courses are preparing them to deal with multicultural approaches to education.
Comparison of Simulated Field Experience with and without Course

<table>
<thead>
<tr>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
<th>M6</th>
<th>M7</th>
<th>M8</th>
<th>M9</th>
<th>M10</th>
<th>M11</th>
<th>M12</th>
<th>M13</th>
<th>M14</th>
<th>M15</th>
<th>M16</th>
<th>M17</th>
<th>M18</th>
<th>M19</th>
<th>M20</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANGUAGE LEARNING LAB (LLL)</td>
<td>GIFTED LEARNING LAB (GLL)</td>
<td>STUDY SKILLS LAB (SKL)</td>
<td>ANYWHERE ELEMENTARY HIGH SES (AEHSES)</td>
<td>ANYWHERE ELEMENTARY LOW SES (AELESSES)</td>
<td>ANYWHERE HIGH SCHOOL (AHS)</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>W/O C LLL</td>
<td>WC LLL</td>
<td>W/O C GLL</td>
<td>WC GLL</td>
<td>W/O C SKL</td>
<td>WC SKL</td>
<td>W/O C AEHSES</td>
<td>WC AEHSES</td>
<td>W/O C AELESSES</td>
<td>WC AELESSES</td>
<td>W/O C AHS</td>
<td>WC AHS</td>
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</tr>
</tbody>
</table>

**Legend:**
- W/O C LLL: Without Course - Language Learning Lab
- WC LLL: With Course - Language Learning Lab
- W/O C GLL: Without Course - Gifted Learning Lab
- WC GLL: With Course - Gifted Learning Lab
- W/O C SKL: Without Course - Study Skills Lab
- WC SKL: With Course - Study Skills Lab
- W/O C AEHSES: Without Course - Anywhere Elementary High SES
- WC AEHSES: With Course - Anywhere Elementary High SES
- W/O C AELESSES: Without Course - Anywhere Elementary Low SES
- WC AELESSES: With Course - Anywhere Elementary Low SES
- W/O C AHS: Without Course - Anywhere High School
- WC AHS: With Course - Anywhere High School
Qualitative Primary Research Question

What were the perceptions of preservice teachers’ use of SBL as an intervention for increasing the understanding of the educational needs of diverse learners?
<table>
<thead>
<tr>
<th></th>
<th>ESL % of Participants</th>
<th>Ethnicities % of Participants</th>
<th>Exceptionalities % of Participants</th>
<th>Socioeconomic % of Participants</th>
<th>Diverse Learners Overall % of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SBL Field Experience</strong></td>
<td>44.0</td>
<td>29.4</td>
<td>41.2</td>
<td>20.6</td>
<td>50.0</td>
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<tr>
<td><strong>Traditional Field Experience</strong></td>
<td>10.0</td>
<td>57.1</td>
<td>42.9</td>
<td>85.7</td>
<td>52.4</td>
</tr>
<tr>
<td><strong>Did Help</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Did Not Help</strong></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Review of Student Comments

Groups review categorized comments and share.
Qualitative Analysis for Primary Research Question

The researcher concludes based on the qualitative analysis that the perception of the participants supports the primary qualitative research question: “What were the perceptions of preservice teachers’ use of SBL as an intervention for increasing the understanding of the educational needs of diverse learners?”

P8 responded: ...SimSchool did a fantastic job in helping me understand the needs of diverse learners. I think I learned more in this topic than any other that SimSchool presented. Comparing the online experience to real life experience, I believe that SimSchool hit it dead on. I was given different tasks and options to give students when trying to teach them. This is exactly like a real classroom: I would provide multiple different tasks to meet the needs of my diverse learners. SimSchool also gave me this option just like a real-life classroom setting. I think my understanding of the needs of diverse learners has increased dramatically; which surprised me since it isn’t even a real classroom.

P29 responded: As a para-professional, I am lucky enough to be in the school setting every day. I have seen first-hand the interactions between teachers and their students. SimSchool included many of the characteristics and behaviors of both the teacher and students. So I believe this was a good example for preservice teachers to learn about diverse learners.

P27 responded: ...my overall SimSchool experience helped in training me to understand the needs of diverse learners. Even though I feel I did not learn too much about the socioeconomic issues, I do feel that I learned about exceptional students, students from different ethnicities, and ESL students. Through the exercises, activities, responses, and feedback I was able to learn that diversity is so widespread in a classroom and the best thing that we can do as educators is to recognize and embrace these differences. SimSchool helped me notice the differences in my learners and how to accommodate them accordingly.

P33 responded: ...SimSchool is good because student teachers can have experience and be acquainted with diversity without being in a real classroom and “damaging” real students because of a lack of knowledge or bad choices/decisions. The SimSchool is a good precursor to being in a real classroom because after some practice with the simulation, preservice teachers will have an understanding of what diversity means or how it could manifest in a real class setting. Then when observation occurs in a real class, diversity will be more apparent to someone who has worked with the simulation.
Qualitative Analysis for the Four Sub-Research Questions

The researcher concludes after the analysis of the qualitative data that the perception of the participants supports the four qualitative research sub-questions: “What were the perceptions of preservice teachers’ use of SBL as an intervention for increasing the understanding of the educational needs of English as a Second Language students, students from different ethnicities, and students with exceptionalities, and students with socioeconomic challenges?”

P34 responded: ....helped me understand the types of tasks that I might assign to ELL (English Language Learner) student and the types of questions and statements that I might use. I discovered it was more effective to ask more simple questions and to stay away from higher level questions. It was also beneficial to check for understanding often and provide examples.

P22 responded: ...this simulation was representative of students with exceptionalities as it pertained to their actions in the classroom. In real life students who are not challenged in the classroom can manifest the same traits that I noticed in this sim. When not fully engaged students will show boredom, behavior issues, and poor classroom interaction. So if students take this simulation seriously, one can notice these traits in a real classroom and be able to adjust accordingly.

P8 responded: ...simSchool did a great job in training me to understand the needs of students with different ethnicities. There was always a wide variety of ethnicity in the classrooms. Every student needed different types of teaching strategies to understand the material, and this could be because of their ethnicity and where they came from. In this case I think simSchool did very well in establishing a culturally diverse classroom with each student having different needs depending on their ethnicity.

P31 responded: ... students in these simulations were really noticeable when it came to how they were raised or what their life was like outside of the home. They would lay their heads on the desk or talk out in class. This shows that they are not getting enough attention at home.
Common Themes

Did Help

- Amount of Diversity in a Classroom
- Type of Diversities in the Classroom
- Use of Differentiation
- Spending Equal Time with All Students
- Realize I Am Not Trained in Diversity
- Convenience of simSchool
- Protection of Students
- Diversity Training of simSchool

Did Not Help

- Not a Real Classroom
- Not Enough Interaction
- Not Realistic Enough
Implications of Study

1. Use of simSchool to meet requirements of accredited organizations for the training of preservice teachers in the understanding of diverse students.

2. Use of simSchool as a means to help universities with teacher certification programs in the preparation of preservice teachers’ understanding of diverse learners when placement of preservice teachers at schools with diverse students is limited or unavailable.

3. Use of simSchool as a supplement to field experiences and course work in training preservice teachers in understanding the needs of diverse learners.

4. Use of simSchool by in-service teachers as a means of simulating a real classroom or simulating a particular student in order to try out different strategies to increase teacher effectiveness thus leading to a possible increase in student achievement.

5. Use of simSchool by school districts as a way of providing training to in-service teachers on the understanding of the educational needs of diverse learners.
Conclusions

The purpose of this study was to evaluate the use of Simulation Based Learning as a tool to increase preservice teachers’ understanding of the educational needs of diverse learners.

Researcher’s conclusions based on analysis of all quantitative and qualitative analyses:

• The researcher determined that the results of this study supported the use of the SBL tool, simSchool, as an aid in increasing preservice teachers’ understanding of the educational needs of diverse learners.

• This study also indicated support that simSchool has the potential to be used to train preservice teachers in the understanding of various types of diverse students.

• The researcher acknowledges that additional studies are needed to confirm these conclusions.

• The researcher also recognizes the potential for using mixed method designs consisting of both quantitative and qualitative analysis.
Volunteers Wanted for Joint Research

- All training resources will be provided
- Access to all classroom simulations will be provided
- Would prefer at least a one year commitment
It is now Q and A time!
Contact Information

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