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Teaching Preschool: An Evaluation of Laboratory School Courses

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Laboratory schools have been part of colleges and universities for decades.

Child Development Center Laboratory schools have survived budget cuts and criticism.

The CHFD faculty believe that lab classrooms enhance undergraduate education by providing hands–on experiences with children in a supervised setting with educated and experienced instructors.
Laboratory Classes in the Child Development Center

- Two Lab classes working with preschool children required for BS in Child and Family Development (CHFD)

- CHFD 2135 – Intro to Teaching Preschool Children

- CHFD 4131 – Learning to Be the Lead Teacher

- Both require students to spend 2.5 hours per week observing and interacting with children ages 3–5.
The purpose of this study was to assess student learning in CHFD 2135 – Child Development and CHFD 4131- Teaching Preschool.

Specifically, the study assessed knowledge and skill attainment.

In addition, we wanted to provide evidence that laboratory teaching courses enhance undergraduate education by providing students with hands-on experiences working with children in a supervised setting.
Research Questions:

1. Do students experience significant gains in knowledge and teaching skills within each preschool laboratory course?

2. Do knowledge and teaching skills vary between students enrolled in CHFD 2135 and CHFD 4131?
Methods

- A pre-post test design was used to assess changes in knowledge and teaching skills among students enrolled in CHFD 2135 and CHFD 4131 during the Fall 2009 semester (N=108) and Spring 2010 semester (N=109).

- A 17 item questionnaire was designed for the purposes of this assessment. Questions addressed knowledge and skills identified in the course syllabi, outlines, and course curriculums of CHFD 2135 and CHFD 4131.

- Responses were measured on a four point scale ranging from 1 (Strongly Agree) to 4 (Strongly Disagree).

- Informed consent was provided by each student prior to participation and anonymity was ensured by using students’ Eagle ID numbers to match pre and post-test data.
Factor Analysis

Principle components factor analysis with a varimax rotation yielded a two factor solution that explained 58% of the variance.

- Factor 1 – Knowledge (α = .91)
- Factor 2 – Skills (α = .89)

The solution was characterized by acceptable loading coefficients, high inter-item reliability, and interpretable structures.

Three items were dropped due to cross-loading.
Knowledge (.91)                      Skills (.89)

Q1 – Developmentally Appropriate Practices
Q2 – Six Developmental Domains
Q3 – Positive Guidance
Q4 – Communicating with Lab Teachers
Q6 – Self-Selected Activities
Q9 – Research DAP Activities
Q11 – Purpose of SS Activities
Q15 – Children’s Literature

Q 8 – Researching Themes
Q 10 – Leading Group Time
Q 13 – Talking to Parents
Q 14 – Writing a Newsletter
Q 16 – Explaining Teaching Philosophy
Q 17 – Confidence Teaching Preschool
Data Analysis

- Computed factor scores for pre/post knowledge and skill

- Paired Sample T–Tests to assess pre and post differences within classes (Research Question #1)

- ANOVA with Tukey’s B post hoc to assess differences between classes (Research Question #2)
Hypothesis Tests

- H1a: Pre-test knowledge will be lower than post-test knowledge in CHFD 2135
- H1b: There will be no difference in pre-test and post-test skills in CHFD 2135
- H1c: There will be no difference in pre-test and post-test knowledge in CHFD 4131
- H1d: Pre-test skills will be lower than post-test skills in CHFD 4131
# Paired Sample T-Test Results

<table>
<thead>
<tr>
<th>Class</th>
<th>Factor</th>
<th>Mean&lt;sup&gt;a&lt;/sup&gt;</th>
<th>SD</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>2135</td>
<td>Pre Knowledge</td>
<td>17.47</td>
<td>5.27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post Knowledge</td>
<td>11.57</td>
<td>3.16</td>
<td>.000**</td>
</tr>
<tr>
<td></td>
<td>Pre Skill</td>
<td>14.95</td>
<td>3.18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post Skill</td>
<td>13.56</td>
<td>3.10</td>
<td>.000</td>
</tr>
<tr>
<td>4131</td>
<td>Pre Knowledge</td>
<td>11.90</td>
<td>3.17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post Knowledge</td>
<td>10.37</td>
<td>4.40</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td>Pre Skill</td>
<td>12.62</td>
<td>3.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post Skill</td>
<td>9.05</td>
<td>3.33</td>
<td>.000**</td>
</tr>
</tbody>
</table>

<sup>a</sup> Measured on a four point scale from 1 (Strongly Agree) to 4 (Strongly Disagree); means and standard deviations reflect factor scores

** Consistent with hypothesized differences
Hypothesis Tests

- **H2a**: Pre-test *knowledge* will be lower in CHFD 2135 than CHFD 4131

- **H2b**: There will be no difference in pre-test *skills* between CHFD 2135 and CHFD 4131

- **H2c**: There will be no difference in post-test *knowledge* between CHFD 2135 and CHFD 4131

- **H2d**: Post-test *skills* will be lower in CHFD 2135 than CHFD 4131
### ANOVA with Tukey’s B

<table>
<thead>
<tr>
<th>Factor</th>
<th>2135 F09</th>
<th>2135 S10</th>
<th>4131 F09</th>
<th>4131 S10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Knowledge</td>
<td>13.70\textsuperscript{b}</td>
<td>20.26\textsuperscript{c}</td>
<td>10.71\textsuperscript{a}</td>
<td>12.83\textsuperscript{b}</td>
</tr>
<tr>
<td>Pre Skill</td>
<td>15.31\textsuperscript{c}</td>
<td>14.73\textsuperscript{bc}</td>
<td>11.39\textsuperscript{a}</td>
<td>13.51\textsuperscript{b}</td>
</tr>
<tr>
<td>Post Knowledge</td>
<td>10.67</td>
<td>12.19</td>
<td>10.70</td>
<td>10.47</td>
</tr>
<tr>
<td>Post Skill</td>
<td>12.22\textsuperscript{b}</td>
<td>13.92\textsuperscript{b}</td>
<td>8.86\textsuperscript{a}</td>
<td>9.37\textsuperscript{a}</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Measured on a four point scale from 1 (Strongly Agree) to 4 (Strongly Disagree); means and standard deviations reflect factor scores.

Subscripts indicate significant differences at $\alpha \leq .01$.
Conclusions

- As hypothesized, pre-test *knowledge* was lower than post-test *knowledge* in CHFD 2135

- Contrary to H1b, pre-test *skills* were lower than post-test *skills* in CHFD 2135

- Contrary to H1c, pre-test *knowledge* was lower than post-test *knowledge* in CHFD 4131

- As hypothesized, pre-test *skills* were lower than post-test *skills* in CHFD 4131
Conclusions

- Pre-test knowledge was lower in the Spring 2135 class than both 4135 classes. However, there was no difference between the Fall 2135 class and the Spring 4131 class.

- Pre-test skills did not differ between the Spring 2135 and 4131 classes. However, the Fall 4131 class scored higher on pre-test skills than the Fall 2135 class.

- As hypothesized, there was no difference in post-test knowledge when 2135 was compared to 4131, irrespective of semester.

- As hypothesized, pre-test skills were lower in 2135 than 4131, irrespective of semester.
Results indicate that CHFD lab students are learning what is expected in each course.

Faculty are effectively teaching the knowledge and skills outlined in the CHFD 2135 and 4131 course syllabi.

Fall 2010 brought changes to the CHFD course curriculum. We are now administering the questionnaire in 3 classes.

While the laboratory experience appears to be a valuable teaching strategy, ongoing data collection should provide additional support for the effectiveness of preschool laboratory classrooms. Having a control group with no lab experience will indicate how valuable hands-on experiences are in knowledge and skills.

Measurement scale appears to have strong psychometric properties and provides a valid and reliable means of assessment for future research.