Classroom Composition: The Importance of Classroom Engagement and Feelings of Supportiveness in ELL students

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Purpose

Rise of ELL students & Science reformations
Introduction

• Academic Engagement in Science
  • Social engagement.
  • Behavioral engagement.

• Classroom supportiveness
  • Degree to which students feel their classmates are supportive, helpful, and mutually concerned.

• English Language Learners
  • Students from non-English speaking backgrounds.
Research Questions & Hypothesis

1. To what extent do student’s feelings of classroom supportiveness relate to their engagement in science for learning?
   
   **H1**: Higher classroom supportiveness will predict higher student engagement in science for learning.

2. Is the relationship between feelings of classroom supportiveness and engagement in science differentiate depending on percentage of ELL?
   
   **H2**: With more ELL students, feeling of supportiveness will be strongly related to engagement in science.
Methodology

• Sample
  • N= 39, 4th Grade Classrooms in a Southeastern state

• Design
  • Surveys, Secondary data from an evaluation of a new Science curriculum
  • Correlation, SPSS
  • Regression analysis, SPSS

• Measures
  • Classroom Supportiveness subscale (Developmental Studies Center, 2005)
    • “Students in my class help each other, even if they are not friends”; 1=disagree a lot-5=agree a lot
  • Science social engagement, Classroom Life Measure subscale (Ryan et al., 2007)
    • “I share my ideas and materials with other kids in science.” 1=no, not at all true-5=very true
  • Behavioral Engagement subscale (Skinner et al., 2009)
    • “In science, I work as hard as I can.” 1= no, not true at all-4=yes, very true
  • Classroom demographics
## Results H1: Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>1. % of ELL students</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Classroom supportiveness</td>
<td></td>
<td>.37*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Behavioral engagement</td>
<td>.13</td>
<td></td>
<td>.64**</td>
<td></td>
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<tr>
<td>4. Science social engagement</td>
<td></td>
<td>.29</td>
<td>.64**</td>
<td>.73**</td>
</tr>
</tbody>
</table>

*p < .05.

**p < .01.

*Note.* Data combined control and intervention conditions.
H2: Social & Behavioral Engagement in Science

A significant regression was found (F (4,34)= 8.86, p < .000), with an R$^2$ of .51. Interaction between ELL and classroom supportiveness was significant Beta= .008 p = .016.

A significant regression was found (F (4,34)= 9.07, p < .000), with an R$^2$ of .52. Interaction between ELL and classroom supportiveness was significant Beta= .003 p = .022
Classroom Composition

**ELL < 25%**
- N = 24

**ELL 25-50%**
- N = 9

**ELL > 50%**
- N = 6
Discussion

• Classroom supportiveness conducive to higher social and behavioral engagement in Science.
  • Supportive learning environments key to improving education methods and policies reducing academic gaps (Hamre & Pianta, 2005; LeClair et al 2009).
• Higher ELL composition and support predictor for higher science engagement.
  • Majority of teachers working with ELLs do not adequately prepared to meet needs of their students. (Johnson et al 2014).

Conclusion

• Insight into classroom climate from student perspective.
  • Majority of literature of classroom climate conducted from perspective of a teacher or outside researcher (Kearney, Smith,& Maika,2016).
• Adds to the efforts to improve the quality of education through reformations to accommodate the growing cultural and academic transformation.
• Inquiry-based science instruction shown to develop English and science proficiency (Lee and Buxton 2011).
Thank you.

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