Assessing the Effectiveness of a Summer Success Academy for At-Risk First Year Students: A Mixed-Method Approach

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Presentation Overview

- Summer Success Academy Goals and Curriculum
- Context and Background
- Assessment Methods
- Results
- Implications
- Next Steps
SSA Program Goals

• Prepare students to be successful in their first-semester mathematics course.

• Prepare students to be successful in their first-semester writing course.

• Introduce students to the IUPUI culture through the Principles of Undergraduate Learning and the RISE Challenge.
## The Evolution of the Program

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Recruitment Intensity</th>
<th># Requ</th>
<th># Part/Comp</th>
<th>Math</th>
<th>Writ</th>
<th>UCOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Math Program</td>
<td>2007</td>
<td>Low</td>
<td>256</td>
<td>63/ 59</td>
<td>R</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Summer Preparatory Program in</td>
<td>2008</td>
<td>Moderate</td>
<td>587</td>
<td>161/ 155</td>
<td>R</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Preparatory Program</td>
<td>2009</td>
<td>High</td>
<td>688</td>
<td>191/ 184</td>
<td>R</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer Success Academy</td>
<td>2010</td>
<td>High</td>
<td>734</td>
<td>196/ 189</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>
Program Overview

• History
  – Began as a pilot developmental math program in Fall 2007
  – Entering our 5<sup>th</sup> year of the program
  – 5-6 week program beginning in early July
  – Now integrates writing and college success programming

• Costs
  – No tuition to students and books are either free or low-cost
  – Students have to pay for housing, if required

• Phased in over time to replace conditional admits
  – Students required to attend must successfully complete the program to enter fall class
    (unsuccessful candidates are referred to a CC)
  – Student who decline the SSA are referred to a CC

• Recruitment
  – Targeted freshmen
  – Promoted as a “get started on the right foot program” and not as a “remediation
    program”
  – Other students are invited to participate, but their admission to the university is not
    contingent upon success in the program (adds an additional 5-25 students per year)
## SSA Student Schedule

### Mondays/Wednesdays

<table>
<thead>
<tr>
<th>Time</th>
<th>Track One</th>
<th>Track Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 10:10</td>
<td>Math</td>
<td>8:00 – 10:10</td>
</tr>
<tr>
<td>10:20 – 12:30</td>
<td>Writing</td>
<td>10:20 – 12:30</td>
</tr>
</tbody>
</table>

### Tuesdays/Thursdays

<table>
<thead>
<tr>
<th>Time</th>
<th>Track One</th>
<th>Track Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 10:10</td>
<td>Math</td>
<td>8:00 – 10:10</td>
</tr>
<tr>
<td>10:20 – 12:30</td>
<td>UC</td>
<td>10:20 – 12:30</td>
</tr>
</tbody>
</table>

## SSA Curriculum Comparison

<table>
<thead>
<tr>
<th>Course</th>
<th>Frequency Per Week</th>
<th>Grading Status</th>
<th>Session Facilitation</th>
<th>Levels</th>
<th>Course Content</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>4</td>
<td>Letter Grade</td>
<td>Faculty and Mentors</td>
<td>3</td>
<td>Review of concepts</td>
<td>Nightly</td>
</tr>
<tr>
<td>Writing</td>
<td>2</td>
<td>Pass/Fail</td>
<td>Faculty</td>
<td>1</td>
<td>Preview and practice for W131</td>
<td>Nightly</td>
</tr>
<tr>
<td>UCOL</td>
<td>2</td>
<td>Pass/Fail</td>
<td>Mentors</td>
<td>1</td>
<td>Culture of University PULs &amp; RISE</td>
<td>None</td>
</tr>
</tbody>
</table>
Application of Assessment Data

2009 Findings

• Mentors
  • A different type
  • Training
• Redevelopment of the entire UC curriculum
• Order of modules
• Communication of the final project
Application of Assessment Data 2010

Based on data presented thus far:

• Share final project rubric with faculty, mentors, and students.
• Make changes in mentor training.
• Component coordinators review data and strategize changes.
Assessment Methods
Mixed-Method Design

- Employed qualitative and quantitative methods.
- Attempted to understand how Summer Success Academy influences students’ success levels (e.g., persistence rates, academic performance, and learning outcomes).
- Employed to triangulate or determine if findings converge.
- Used complimentary techniques.
- Qualitative methods were used to enhance understanding regarding what program components made most meaningful contributions to learning and academic success outcomes.
Qualitative Research

“Qualitative assessments are underused and underappreciated, but they help discover problems - and solutions - that can’t be found through quantitative assessments alone” (Linda Suskie, 2009).
Multiple Measures

- A mixed-method design allowed for the measurement of direct student learning outcomes as well as students’ attitudes, perceptions, and intended behaviors.
- Methods included:

1. Post Program Academic Success
2. Students’ Sense of Belongingness, Self-Efficacy, and Organizational Commitment Questionnaire (Pre and Post)
3. Sample of Special Projects (direct measure of student learning)
4. Writing Reflection Task (Pre and Post)
5. Student Satisfaction Questionnaire
6. Student Peer Mentor Perspectives Questionnaire (added in 2010)
2009 Summer Success Academy - Special Projects

Designed to help Students:

- Develop critical thinking skills.
- Learn to interact effectively in group settings.
- Gain an understanding for the Principles of Undergraduate Learning (PULs).
- Feel welcome to (IUPUI).
- Provide students with the resources and support necessary for collegiate success.
- Enhance Students’ Sense of Belongingness and Organizational Commitment.
Theory Based Assessment

- **Basic principles of curriculum and instruction** (Tyler 1949)
  - Evaluation based on theory is necessary to ascertain not just whether learning took place, but how.
  - The aim of evaluation should be to discover the mechanisms by which a curriculum succeeded or failed.
Underlying Theories

❖ Academic integration:
• The development of a strong affiliation with the college academic environment both in the classroom and outside of class. Includes interactions with faculty, academic staff, and peers but of an academic nature (e.g., peer tutoring, study groups) (Nora, 1993).

❖ Social integration:
• The development of a strong affiliation with the college social environment both in the classroom and outside of class. Includes interactions with faculty, academic staff, and peers but of a social nature (e.g., peer group interactions, informal contact with faculty, involvement in organizations) (Nora, 1993).
Underlying Theories

- **Sense of Belongingness**
  - “We suggest that belongingness can be almost as compelling a need as food and that human culture is significantly conditioned by the pressure to provide belongingness” (Baumeister & Leary, 1995, p. 498).
  - “Individuals with a high sense of belongingness may assign more importance to the collective and its goals, increasing their willingness to comply with its rules and help other members of the group”. (Hartog et al, 2007, p. 1132).

- **Institutional Commitment**
  - Institutional commitment is a “strong positive predictor of intent to re-enroll” (Milem and Berger, 1997, p.397).
Underlying Theories

 Social Learning Theory

• “Human behavior can be learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." (Bandura, 1977, p. 22).

• Peer mentoring aspects of the program.
Theories Underlying Our Assessment

❖ Self Efficacy

• Students’ evaluation of their competence to successfully execute academic tasks necessary to reach desired outcomes (Zajacova, Lynch, Espenshade, 2005; Bandura, 1993).

• Unlike self-esteem, self-efficacy is not tied to individuals’ global perceptions of themselves. Instead, one’s perceived self-efficacy is a belief about one’s ability in a certain domain (i.e. Group Work).
Questionnaire (Pre & Post)

• The questionnaire was designed to measure students’ thoughts and opinions in five domains:
  • 1) Sense of Belongingness; 2) Institutional Commitment to IUPUI;
  3) Individual Academic Self-Efficacy; 4) Group Work Self-Efficacy; and
  5) Intention to Graduate from IUPUI.
• In 2010 added Mathematics and Writing Self-Efficacy items.

• A factor analysis served to confirm dimensional groupings created based on theory:
  • The resulting questionnaire items were grouped by domain and an average score was created for the purpose of conducting paired samples t-tests in order to measure growth.
Sample of Special Projects 2009
(Actual Student Work Products)

• Student participants worked together in small groups to plan and develop a Special Project.
  – Allowed students to demonstrate their understanding of a specific general education outcome (PULs).
  – Three days each week all students were allotted specific time (1 hour) to work individually with their team members in an effort to develop a Special Project.
  – Many of the Special Projects were in the form of Power Points and poster presentations.

• A sample of (13) projects were randomly selected for evaluation.
  – Evaluated by two separate assessment team members using a rubric to enhance inter-rater reliability.
Assessment of Student Work: A Direct Measure of Learning

• “No assessment of knowledge, conceptual understanding, or thinking or performance skills should consist of indirect evidence alone” (Linda Suskie, 2009).
Sample of Special Projects (Examples)

• One group conveyed their understanding of *Critical Thinking* by creating a crossword puzzle challenging viewers to match core concepts of the principle to a related definition.

• Another group conveyed their knowledge of *Understanding Society and Culture* by creating a poster depicting a “cake recipe” where all ingredients of the cake mixture represented a different demographic group.
Writing Reflection Tasks (Pre and Post)

- Student participants voluntarily completed an open-ended Writing Reflection Task at the beginning and at the end of the Summer Success Academy (SSA).
  - Students were informed that their responses would remain confidential and not count toward a course grade.
  - A total of 149 individual student Writing Reflection Tasks were able to be paired with their pre/post counterpart.
- The goal of the task was to directly measure participants’ understanding of the general education outcomes (PULS).
- One research team member scored all pre and post task writing assignments separately using a rubric.
  - Another research member scored a sample of 20 pre and post task writing assignments as a check for inter-rater reliability.
Summer Program Participants
Selection for 2007 & 2008

- Must have completed Core 40 Diploma
- Selected based on the number of D or F grades in high school prep classes
  - Fall 2007 was limited regionally because we could not cover living expenses
Selection for 2009 & 2010

- Selected based on a student’s HS GPA and SAT/ACT
  - Intended to reproduce success of previous standards
  - Make admissions process less cumbersome (less counting of individual grades)
  - Make admissions standards more easily communicated to out constituents
- Included in a larger re-design of our admission standards to move away from counting D and F grades
- Success was defined as students whose average college GPA was a 2.00 or higher
- Adjusted new standards based upon potential impact on class size and diversity composition
- SSA students were those “on the cusp”
The Grid to be used for students with Core 40, fewer than 5 D/F grades

<table>
<thead>
<tr>
<th>Test score (SAT/ACT)/ GPA</th>
<th>&lt;2.3</th>
<th>2.3-2.49</th>
<th>2.50-2.69</th>
<th>2.70-2.79</th>
<th>2.80-2.99</th>
<th>3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;900/&lt;19</td>
<td>CC</td>
<td>CC</td>
<td>SSA</td>
<td>SSA</td>
<td>Delay</td>
<td>Admit</td>
</tr>
<tr>
<td>900-999/19-21</td>
<td>CC</td>
<td>CC</td>
<td>SSA</td>
<td>Delay</td>
<td>Admit</td>
<td>Admit</td>
</tr>
<tr>
<td>1000-1180/22-26</td>
<td>CC</td>
<td>Delay</td>
<td>Delay</td>
<td>Admit</td>
<td>Admit</td>
<td>Admit</td>
</tr>
<tr>
<td>&gt;1180/&gt;26</td>
<td>CC</td>
<td>Delay</td>
<td>Admit</td>
<td>Admit</td>
<td>Admit</td>
<td>Admit</td>
</tr>
</tbody>
</table>

CC – Defer to Community College.
SSA– Require the Summer Success Academy.
Delay – Await 7th semester grades and enrollment projection data; students will either be admitted fully qualified or required to attend the Summer Success Academy.
Redefining the Conditional Admit

Analysis based on HS GPA/SAT Matrix and chance of success

Pre-SSA Conditional Admits (based on # of D/F grades OR SAT < 900)

Full Qualified Admits

Deferred to Community College

SSA Required for Admission
Assessment Results
2009 Summer Preparatory Fall Course Enrollment

• 146/179 (80%) students who completed the program enrolled in a Math course in the Fall (M -100, 110, 111,118, 153, 165, 221). Math Course GPA = 2.07.

• 46/62 (74%) students who completed the writing component enrolled in an English Course in the Fall (English 105, W130 or W131). English course GPA = 3.04.
2010 Program

• 210 Participated
  – 188 Required
  – 22 Optional

• All participated in math and writing components.

• Revised program based on 2009 assessment results.
Math and Special Projects Participants
(N=179 Conditionally Admitted Students)

- M=13.16, SD=1.75 - Average Course Load
- M=18.83, SD=.48 - Average Age (range 18 – 21)
- M=899.00, SD=118.99 - SAT Total
- M=444.84, SD=72.51 - SAT Math
- M=2.69, SD=.19 - High School GPA
- 48% - First-Generation
- 60% - Female

Ethnicity
- 73% - Caucasian
- 18% - African American
- 4% - Latino
- 5% - Other
Writing Participants (N=62 Conditionally Admitted Students)

- M=13.35, SD=1.38 - Average Course Load
- M=18.81, SD=.44 - Average Age (range 18 – 20)
- M=933.44, SD=128.764 - SAT Total
- M=400.50, SD=72.54 - SAT Verbal
- M=2.66, SD=.19 - High School GPA
- 45% - First-Generation
- 65% - Female

Ethnicity
- 66% - Caucasian
- 26% - African American
- 5% - Latino
- 3% - Other
Post Program Fall Semester GPA
Math and Special Projects

Based on Regression Equation

Predicted GPA = -1.244 + .001 * SAT + .944 * H.S. GPA

Means are significantly different based on a one sample t-test, p < .05
Post Program Fall Semester Math Course GPA
Math and Special Projects

Based on Regression Equation
Predicted GPA = -1.197 + .0001*SAT + 1.09*H.S. GPA

Means are significantly different based on a one sample t-test  p < .01
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Post Program Fall Semester English Course GPA

Based on Regression Equation

Predicted GPA = -0.163 + 0.0001*SAT + 0.900*H.S. GPA

Means are significantly different based on a one sample t-test  \( p < .001 \)
# 2009 SSA Required Participants and Optional Non-Participants

<table>
<thead>
<tr>
<th>SSA Program Required and Completed</th>
<th>SSA Program Recommended - Did Not Attend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolled at Census</td>
<td>179</td>
</tr>
<tr>
<td>Average SAT</td>
<td>899</td>
</tr>
<tr>
<td>Average H.S. GPA</td>
<td>2.69</td>
</tr>
<tr>
<td>Cum. GPA</td>
<td>2.16</td>
</tr>
<tr>
<td>% Above 2.0.</td>
<td>60%</td>
</tr>
<tr>
<td>Fall-to-Fall Retention</td>
<td>70%</td>
</tr>
</tbody>
</table>
Results: Pre and Post Writing Reflection Task (2009 and 2010 Data)
### 2009 Summer Preparatory Program: Pre- and Post- Task Writing Reflection Assessment

<table>
<thead>
<tr>
<th>Scored Component</th>
<th>Pre Test Frequencies</th>
<th>Post Test Frequencies</th>
<th>Aggregate Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent (%)</td>
<td>Total Individual Student Scores / Rounded to Nearest Whole</td>
<td>Percent (%) Total Individual Student Scores / Rounded to Nearest Whole</td>
</tr>
<tr>
<td>N = 149</td>
<td>Mean</td>
<td>St. Dev</td>
<td>Mean</td>
</tr>
<tr>
<td>Understands the roles and purposes associated with the PULs.</td>
<td>1% 30% 40% 24% 5% 0.883 2.04</td>
<td>0% 20% 36% 37% 7% 0.867</td>
<td>2.302</td>
</tr>
<tr>
<td>Displays an understanding of how PULs can be applied to real-life scenarios.</td>
<td>22% 18% 39% 16% 4% 1.128 1.604</td>
<td>13% 13% 40% 305 4% 1.052</td>
<td>1.986</td>
</tr>
<tr>
<td>Communicates the importance of the PULs to the educational experience.</td>
<td>9% 26% 41% 20% 3% 0.962 1.832</td>
<td>9% 16% 34% 34% 7% 1.0648</td>
<td>2.12</td>
</tr>
<tr>
<td>Communicate the importance of PULs in greater life, outside of formal education contexts.</td>
<td>28% 12% 34% 24% 2% 1.186 1.617</td>
<td>19% 15% 33% 28% 4% 1.1627</td>
<td>1.818</td>
</tr>
</tbody>
</table>

**IUPUI Summer Success Academy**

Assessment Institute – Indianapolis, IN – October 26, 2010
## 2010 Summer Success Academy: Pre- and Post-Task Writing Reflection Assessment

<table>
<thead>
<tr>
<th>Scored Component</th>
<th>Pre Test Frequencies</th>
<th>Post Test Frequencies</th>
<th>Aggregate Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 1 2 3 4 St. Dev</td>
<td>0 1 2 3 4 St. Dev</td>
<td>Mean Differential</td>
</tr>
<tr>
<td>Understands the meaning and content associated with the PUL’s.</td>
<td>1% 22% 56% 17% 4%</td>
<td>0% 11% 45% 36% 8%</td>
<td>2.022</td>
</tr>
<tr>
<td>Critical Thinking, Uses example to apply the PULs to academic and/or real life scenarios.</td>
<td>1% 21% 56% 21% 2%</td>
<td>0% 12% 50% 29% 10%</td>
<td>2.034</td>
</tr>
<tr>
<td>Writing Quality, Provides a response that is organized and presents well developed and supported ideas. Response uses accurate grammar and is of appropriate length.</td>
<td>1% 25% 50% 24% 1%</td>
<td>0% 18% 44% 32% 6%</td>
<td>2.006</td>
</tr>
</tbody>
</table>
# 2010 Summer Success Academy: Pre- and Post-Task Writing Reflection Assessment Inter-rater Reliability Analysis

<table>
<thead>
<tr>
<th></th>
<th>Understanding the PULs</th>
<th>Critical Thinking</th>
<th>Writing Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Interrater Reliability(^1)</td>
<td>0.770</td>
<td>0.779</td>
<td>0.829</td>
</tr>
<tr>
<td>Interrater Absolute Agreement(^2)</td>
<td>0.626</td>
<td>0.638</td>
<td>0.709</td>
</tr>
</tbody>
</table>

\(^1\) Cronbach's Alpha  
\(^2\) Two Way Random Interclass Correlation
Highlights

• Results from both years suggest that the program had significant positive effects on students’ understanding in all scored components at the 99% confidence level.
  • 2009 effect sizes were in the low to moderate range.
  • 2010 effect sizes were larger, falling in the moderate to high range.

• For 2010, the rubric was simplified from four to three scored components, resulting in very favorable inter-rater reliability and agreement
## Special Projects Results

<table>
<thead>
<tr>
<th>Scored Component</th>
<th>N</th>
<th>0'</th>
<th>1's</th>
<th>2's</th>
<th>3's</th>
<th>4's</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understands the meaning and content associated with the PULs.</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3.00</td>
<td>0.82</td>
</tr>
<tr>
<td>Critical Thinking, Uses examples to apply the PUL to academic and/or real life scenarios</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>3.23</td>
<td>0.73</td>
</tr>
<tr>
<td>Creativity, Subjective Judgment</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>3.23</td>
<td>0.73</td>
</tr>
</tbody>
</table>
Results: Pre and Post Students’ Opinions About College Questionnaire (2009 Data Only)
### 2009 Students Opinions About College Questionnaire (Pre and Post)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean Pre-Course*</th>
<th>SD Pre</th>
<th>Mean Post-Course*</th>
<th>SD Post</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I can share personal concerns with other students</td>
<td>3.78</td>
<td>1.15</td>
<td>4.28</td>
<td>1.26</td>
<td>0.50</td>
</tr>
<tr>
<td>2. I am able to develop close friendships with other students</td>
<td>4.73</td>
<td>1.05</td>
<td>4.87</td>
<td>1.12</td>
<td>0.14</td>
</tr>
<tr>
<td>3. I am able to make connections with a diverse group of people</td>
<td>4.89</td>
<td>0.96</td>
<td>5.02</td>
<td>0.94</td>
<td>0.13</td>
</tr>
<tr>
<td>4. I feel so distant from the other students *</td>
<td>2.05</td>
<td>1.06</td>
<td>2.02</td>
<td>1.21</td>
<td>-0.03</td>
</tr>
<tr>
<td>5. I have no sense of togetherness with my peers *</td>
<td>1.99</td>
<td>1.12</td>
<td>2.08</td>
<td>1.22</td>
<td>0.09</td>
</tr>
<tr>
<td>6. I can relate to my fellow classmates</td>
<td>4.56</td>
<td>1.01</td>
<td>4.69</td>
<td>1.04</td>
<td>0.13</td>
</tr>
<tr>
<td>7. I have some close friendships with IUPUI students</td>
<td>3.78</td>
<td>1.62</td>
<td>4.67</td>
<td>1.31</td>
<td>0.89</td>
</tr>
<tr>
<td>8. I am comfortable working in groups</td>
<td>4.72</td>
<td>1.18</td>
<td>4.90</td>
<td>1.05</td>
<td>0.18</td>
</tr>
<tr>
<td>9. I don't feel I can successfully participate with anyone or any group *</td>
<td>1.70</td>
<td>1.06</td>
<td>1.81</td>
<td>1.20</td>
<td>0.11</td>
</tr>
<tr>
<td>10. I am confident that I can work effectively in groups</td>
<td>5.14</td>
<td>0.94</td>
<td>5.09</td>
<td>0.93</td>
<td>-0.05</td>
</tr>
<tr>
<td>11. I am certain that I can accomplish group projects</td>
<td>5.20</td>
<td>0.96</td>
<td>5.11</td>
<td>0.96</td>
<td>-0.09</td>
</tr>
<tr>
<td>12. I am not sure if I can get along with other students when working on group projects *</td>
<td>1.90</td>
<td>1.09</td>
<td>2.03</td>
<td>1.28</td>
<td>0.13</td>
</tr>
</tbody>
</table>

* These questions were reverse coded for all analysis but are presented here in raw form for descriptive purposes. Please note that lower scores on these questions indicate a more positive response.
<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean Pre-Course*</th>
<th>SD Pre</th>
<th>Mean Post-Course*</th>
<th>SD Post</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. I am confident that I will excel in college</td>
<td>5.29</td>
<td>0.80</td>
<td>5.41</td>
<td>0.71</td>
<td>0.12</td>
</tr>
<tr>
<td>14. I can meet the demands of college</td>
<td>5.21</td>
<td>0.76</td>
<td>5.30</td>
<td>0.75</td>
<td>0.09</td>
</tr>
<tr>
<td>15. I feel that I fit right in at IUPUI</td>
<td>4.88</td>
<td>0.92</td>
<td>4.99</td>
<td>0.97</td>
<td>0.11</td>
</tr>
<tr>
<td>16. It is important for me to graduate from IUPUI (e.g., rather than from another college)</td>
<td>4.52</td>
<td>1.21</td>
<td>4.57</td>
<td>1.32</td>
<td>0.05</td>
</tr>
<tr>
<td>17. I am certain I made the right choice in my attempt to attend IUPUI</td>
<td>5.07</td>
<td>0.93</td>
<td>5.01</td>
<td>0.93</td>
<td>-0.06</td>
</tr>
<tr>
<td>18. I intend to transfer to another institution at some point</td>
<td>2.65</td>
<td>1.48</td>
<td>2.97</td>
<td>1.47</td>
<td>0.32</td>
</tr>
<tr>
<td>19. I talk up this college to my friends as a great place to go to school</td>
<td>4.50</td>
<td>1.08</td>
<td>4.52</td>
<td>1.18</td>
<td>0.02</td>
</tr>
<tr>
<td>20. I am proud to tell others I will be going to school here</td>
<td>4.94</td>
<td>0.98</td>
<td>4.95</td>
<td>0.92</td>
<td>0.01</td>
</tr>
<tr>
<td>21. I could just as well be attending a different college as long as the courses were similar</td>
<td>3.50</td>
<td>1.30</td>
<td>3.63</td>
<td>1.38</td>
<td>0.13</td>
</tr>
<tr>
<td>22. I am extremely glad that I chose IUPUI over other colleges</td>
<td>4.77</td>
<td>1.03</td>
<td>4.70</td>
<td>1.10</td>
<td>-0.07</td>
</tr>
<tr>
<td>23. I intend to complete my degree at IUPUI</td>
<td>4.88</td>
<td>1.15</td>
<td>4.89</td>
<td>1.13</td>
<td>0.01</td>
</tr>
</tbody>
</table>

* These questions were reverse coded for all analysis but are presented here in raw form for descriptive purposes. Please note that lower scores on these questions indicate a more positive response.
### 2009 Primary Components, Factor Analysis for Students Opinions About College Questionnaire

<table>
<thead>
<tr>
<th>Sense of Belongingness</th>
<th>$\alpha = .76$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I can share personal concerns with other students</td>
<td>.71</td>
</tr>
<tr>
<td>2. I am able to develop close friendships with other students</td>
<td>.72</td>
</tr>
<tr>
<td>3. I am able to make connections with a diverse group of people</td>
<td>.59</td>
</tr>
<tr>
<td>4. I feel so distant from the other students *</td>
<td>.43</td>
</tr>
<tr>
<td>6. I can relate to my fellow classmates</td>
<td>.63</td>
</tr>
<tr>
<td>7. I have some close friendships with IUPUI students</td>
<td>.55</td>
</tr>
<tr>
<td>8. I am comfortable working in groups</td>
<td>.51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group Work Self-Efficacy</th>
<th>$\alpha = .78$</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. I have no sense of togetherness with my peers *</td>
<td>.66</td>
</tr>
<tr>
<td>9. I don't feel I can successfully participate with anyone or any group *</td>
<td>.81</td>
</tr>
<tr>
<td>10. I am confident that I can work effectively in groups</td>
<td>.47</td>
</tr>
<tr>
<td>11. I am certain that I can accomplish group projects</td>
<td>.44</td>
</tr>
<tr>
<td>12. I am not sure if I can get along with other students when working on group projects *</td>
<td>.72</td>
</tr>
</tbody>
</table>
## 2009 Paired T-Test Results for Students Opinions About College Questionnaire

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Pre</th>
<th>SD Pre</th>
<th>Mean Post</th>
<th>SD Post</th>
<th>Significance</th>
<th>Effect Size</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Belongingness</td>
<td>4.46</td>
<td>0.738</td>
<td>4.77</td>
<td>0.833</td>
<td>&lt;.001</td>
<td>0.379</td>
<td>0.457</td>
</tr>
<tr>
<td>Group Work Self-Efficacy</td>
<td>5.16</td>
<td>0.738</td>
<td>5.03</td>
<td>0.817</td>
<td>0.094</td>
<td>0.152</td>
<td>0.398</td>
</tr>
<tr>
<td>Individual Academic Self-Efficacy</td>
<td>5.14</td>
<td>0.713</td>
<td>5.24</td>
<td>0.649</td>
<td>0.075</td>
<td>0.147</td>
<td>0.504</td>
</tr>
<tr>
<td>Institutional Commitment (to IUPUI)</td>
<td>4.55</td>
<td>0.760</td>
<td>4.51</td>
<td>0.737</td>
<td>0.494</td>
<td>0.059</td>
<td>0.587</td>
</tr>
<tr>
<td>Intention to Complete Degree at IUPUI (Intent not to transfer)</td>
<td>4.57</td>
<td>1.063</td>
<td>4.48</td>
<td>1.074</td>
<td>0.145</td>
<td>0.118</td>
<td>0.744</td>
</tr>
</tbody>
</table>
Highlights

- Significant positive gains were made in two of the five domains.
  - Suggests that changes in the students’ perceptions in these areas were not due to chance alone.
- Sense of Belongingness showed the highest growth with a moderate effect size of (.38) as estimated by a Cohen’s D.
- Individual Academic Self-Efficacy showed the second highest growth with an effect size of (.15).
Quantitative and Qualitative Results

Questionnaire Designed to Assess Students’ Perceptions of the Program
Please indicate how satisfied you were with the Summer Special Projects sessions in the following areas:

<table>
<thead>
<tr>
<th>Area</th>
<th>Very Dissatisfied</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very Satisfied</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Classroom activities that helped me learn</td>
<td>1</td>
<td>0.6%</td>
<td>14</td>
<td>7.8%</td>
<td>52</td>
<td>29.1%</td>
<td>89</td>
<td>49.7%</td>
</tr>
<tr>
<td>2. Meaningful class discussions</td>
<td>2</td>
<td>1.1%</td>
<td>12</td>
<td>6.7%</td>
<td>66</td>
<td>36.9%</td>
<td>71</td>
<td>39.7%</td>
</tr>
<tr>
<td>3. Meaningful in-class exercises</td>
<td>3</td>
<td>1.7%</td>
<td>15</td>
<td>8.4%</td>
<td>56</td>
<td>31.3%</td>
<td>76</td>
<td>42.5%</td>
</tr>
<tr>
<td>4. Projects that contributed to my learning</td>
<td>4</td>
<td>2.3%</td>
<td>15</td>
<td>8.5%</td>
<td>57</td>
<td>32.2%</td>
<td>68</td>
<td>38.4%</td>
</tr>
<tr>
<td>5. Group activities that contributed to my learning</td>
<td>5</td>
<td>2.8%</td>
<td>17</td>
<td>9.6%</td>
<td>40</td>
<td>22.5%</td>
<td>83</td>
<td>46.6%</td>
</tr>
<tr>
<td>6. Effectiveness of project group work</td>
<td>4</td>
<td>2.2%</td>
<td>11</td>
<td>6.2%</td>
<td>42</td>
<td>23.6%</td>
<td>87</td>
<td>48.9%</td>
</tr>
<tr>
<td>7. Instruction on the meaning of the Principles of Undergraduate Learning (PULs)</td>
<td>6</td>
<td>3.4%</td>
<td>10</td>
<td>5.6%</td>
<td>40</td>
<td>22.6%</td>
<td>86</td>
<td>48.6%</td>
</tr>
<tr>
<td>8. Instruction on how to integrate the PULs into my future role as an IUPUI student</td>
<td>5</td>
<td>2.8%</td>
<td>12</td>
<td>6.7%</td>
<td>38</td>
<td>21.3%</td>
<td>87</td>
<td>48.9%</td>
</tr>
<tr>
<td>9. Opportunities to learn from other students</td>
<td>4</td>
<td>2.2%</td>
<td>6</td>
<td>3.4%</td>
<td>42</td>
<td>23.5%</td>
<td>89</td>
<td>49.7%</td>
</tr>
<tr>
<td>10. Opportunities to form friendships with other students</td>
<td>0</td>
<td>0.0%</td>
<td>2</td>
<td>1.1%</td>
<td>17</td>
<td>9.5%</td>
<td>76</td>
<td>42.5%</td>
</tr>
<tr>
<td>11. Interactions with other students</td>
<td>3</td>
<td>1.7%</td>
<td>2</td>
<td>1.1%</td>
<td>11</td>
<td>6.1%</td>
<td>95</td>
<td>53.1%</td>
</tr>
<tr>
<td>12. Interactions with student mentors</td>
<td>1</td>
<td>0.6%</td>
<td>6</td>
<td>3.4%</td>
<td>32</td>
<td>18.1%</td>
<td>90</td>
<td>50.8%</td>
</tr>
<tr>
<td>13. Development of supportive relationships with IUPUI student mentors</td>
<td>3</td>
<td>1.7%</td>
<td>9</td>
<td>5.0%</td>
<td>48</td>
<td>26.8%</td>
<td>82</td>
<td>45.8%</td>
</tr>
<tr>
<td>14. Overall feelings of a sense of community at IUPUI</td>
<td>0</td>
<td>0.0%</td>
<td>5</td>
<td>2.8%</td>
<td>27</td>
<td>15.2%</td>
<td>96</td>
<td>53.9%</td>
</tr>
<tr>
<td>15. Overall, how satisfied were you with the Special Projects sessions?</td>
<td>7</td>
<td>3.9%</td>
<td>26</td>
<td>14.6%</td>
<td>40</td>
<td>22.5%</td>
<td>74</td>
<td>41.6%</td>
</tr>
<tr>
<td>16. Would you recommend the Special Projects sessions to other students?</td>
<td>Yes (n)</td>
<td>Yes</td>
<td>No (n)</td>
<td>Total N</td>
<td>Mean</td>
<td>Std. Dev.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>101</td>
<td>56.4%</td>
<td>78</td>
<td>43.6%</td>
<td>179</td>
<td>1.44</td>
<td>0.50</td>
<td></td>
</tr>
</tbody>
</table>
Qualitative Approaches

• Qualitative strategies should not be considered merely ancillary components to an assessment process.

• We believe that some of the best assessment strategies are mixed method in design; employing a variety of both qualitative and quantitative strategies that....

  work in and with one another.
Coding Types

• **Open Coding** – data is broken down, conceptualized, and the initial stages of categorization begin.

• **Axial Coding** – allows for similarities and relationships among codes to become apparent.

• **Selective Coding** – this process allows for the development of core categories, ‘the central phenomenon around which all other categories are integrated’. (Strauss & Corbin, 1990)
Students’ Open Ended Responses

• **2009 & 2010**

• 2009 – Focused on perceptions of the “Special Project Sessions”.

• 2010 – Focused on perceptions of the entire SSA program.

• Faculty and staff gain an understanding of participants’ perceptions and opinions of the program – *In students’ own words.*

• Atlas.ti aided in the coding process (atlasti.com)
Most Valued Aspects of SSA, 2009 (n = 179)

• Meeting New People and Forming Friendships
  – “The friendships I formed with other students.”
  – “Connecting well with classmates.”

• Gaining a Greater Understanding for the PULs
  – “Going over the PUL's and discussing them.”
  – “Learning the specifics about the PUL's.”

• Participation in Group Activities
  – “I liked all of the games/activities that exemplified the PUL’s.”
  – “The group-work because we applied what we learned.”
Least Valued Aspects of SSA, 2009 (n =166)

• Completing Special Projects
  – “Sometimes the project felt pointless.”
  – “I felt like making projects was not valuable.”

• Participation in Group Activities
  – “Some of the early group activities such as the ice breakers.”
  – “Playing pointless games in the morning.”

• Time Commitment / Concern
  – “Just the time length. It never took us an hour.”
  – “I just didn't like having the class so early in the morning.”
Suggestions for Improvement, 2009 (n = 166)

• Less Time Commitment / Restraints
  – “Make breaks and classes shorter.”
  – “To start class at a slightly later time.”

• More Project Support / Time for Completion
  – “Have more time for planning on projects.”
  – “Describe the special project expectations more in-depth.”

• More Group Activities
  – “Maybe having more activities to do.”
  – “More PUL activities.”
Open Ended Responses
Continued
2010
Most Valued Aspects of SSA, 2010 (n=194)

• Mathematics Components
  – “I valued the math class the most.”
  – “The pre Alg. helped me remember A LOT of stuff.”

• English Writing Components
  – “The writing portion because that is where I struggle.”
  – “I learned new ways to write an essay.”

• Meeting New People and Developing Friendships
  – “Meeting new people.”
  – “I found that meeting new friends was the most valuable thing.”
  – “Meeting other students in the same situation academically as ourselves.”
Least Valued Aspects of SSA, 2010 (n=190)

• UCOL Course
  – “I found the UCOL was least valuable.”
  – “I didn’t think the UCOL class was all that helpful.”

• N/A, None, Nothing
  – “Everything was valuable.”
  – “I honestly have no complaints.”

• Mathematics Component
  – “The math class was too easy.”
  – “Math mostly review just extremely easy.”
  – “The math class because most of it was all review.”
Suggestions for Improvement, 2010 (n=184)

• Less Time Commitments & Restraints:
  – “Not so early.”
  – “Just start the class 1 or 2 hours later.”

• N/A, None, Nothing
  – “N/A.”
  – “None.”

• More Mentor Interaction & Support
  – “Get the mentors more involved.”
  – “More motivated UCOL mentor!”
Highlights – Open Ended Responses

2009

• Most Valuable: Meeting New People & Forming Friendships / Gaining a Greater Understanding for PULs.
• Least Valuable: Group Activities / Special Projects.
• Suggestions: Time Commitments & Restraints, Greater Project Support & Directions.

2010

• Most Valuable: Mathematics & English Components / Meeting New People & Forming Friendships.
• Least Valuable: UCOL Course / Nothing / Mathematics.
• Suggestions: More Mentor Interaction & Support / Time Commitment & Restraints.
### Highlights, SSA 2010 (N=196)

<table>
<thead>
<tr>
<th>Item</th>
<th>% Satisfied or Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom activities that helped me learn</td>
<td>81%</td>
</tr>
<tr>
<td>Opportunities to learn from other students</td>
<td>78%</td>
</tr>
<tr>
<td>Interactions with student mentors</td>
<td>69%</td>
</tr>
<tr>
<td>Overall feelings of sense of community</td>
<td>88%</td>
</tr>
<tr>
<td>Overall Satisfaction</td>
<td>78%</td>
</tr>
</tbody>
</table>

84% would recommend the program to other students
Implications

• Students seem to react positively to early interventions that facilitate positive connections, interactions, and equip them with skills necessary to effectively adjust to college.

• Early interventions may help students feel a sense of belongingness and enhance academic self-efficacy beliefs.

• Early interventions may help students understand the purpose and importance of general education outcomes.

• Early interventions may help students adjust to college and perform better academically during their first-semester, especially in math and writing courses.

• Programs that are tailored to meet the diverse needs of students are optimal.

• Examining students’ work products helps enhance understanding of learning outcomes.
Implications

• An effective practice in future implementations may be for instructional teams to share rubrics with students in advance and provide clearer Special Projects instructions. With this in mind, students will have clearer expectations and may show greater improvements in intended student learning outcomes.

• Students may benefit from more instruction and guidelines regarding how to work effectively in groups.
Next Steps: Section Variation Analyses

• Notable variation between sections.
• Conducted an analyses to identify the most effective or “high performing” sections.
• Began process to identify evidence-based best practices.
• Ideal process for faculty and professional development as well as program improvement.
Next Steps

• Employ longitudinal research designs to enhance understanding of long-term effects.

• Use focus groups and interviews to enhance understanding of students’ in-depth perceptions.

• Continue to examine student work to increase understanding of direct student learning outcomes.

• Currently evaluating SSA 2010.
  – Examined differences between sections in an effort to identify evidence-based best practices.
  – Incorporated mentors’ perspective to understand effects of program from multiple sources.
References


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