Increasing Equity through Self-Relevant ePortfolio Writing

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Theory of change

• Why ePortfolios?
• Why Self-Relevant Writing?
• Why Brief Psychological Interventions?
• Methods
• Results
Context

• 4-year comprehensive college
• Provides access
• 4000 undergraduates
  • 39% Underrepresented Ethnic Minority (URM)
  • 76% Receive federal loans
  • 40% Eligible for Pell grants
## Settings

<table>
<thead>
<tr>
<th></th>
<th>Summer Research Program</th>
<th>General Education Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>6 Weeks</td>
<td>15 Weeks</td>
</tr>
<tr>
<td>Topic</td>
<td>STEM Research</td>
<td>Child Development</td>
</tr>
<tr>
<td>Students</td>
<td>18-60 Community College Students</td>
<td>50-100 BA Degree Seeking Students</td>
</tr>
</tbody>
</table>
Potential barriers to equity

• Large classes can
  • Rely on means of assessment that do not support equity
  • Highlight sense of membership in an underserved group

• Summer research programs can
  • Lack means of assessment
  • Highlight sense that members of an underserved group are underrepresented in science
Culturally responsive assignments

• Inclusive Environment
  • Avoid activation of stereotype threat and maximize social pedagogy

• Inclusive Content
  • Equally familiar
  • Clear instructions and explicit grading criteria
  • Aligned with teaching
  • Scaffolded

• High Utility Value (Eccles, 2010)
  • Worth beyond the academic context: Academic, Professional, or Personal
The promise of ePortfolios

- Increase utility value
- Enhance social pedagogy
- Support personal change
The promise of self-relevant writing

• Measures deep learning

• Can be culturally responsive
  • Invites material from student heritage groups
  • Describes students’ lived experiences
  • Increases students’ investment

• Promotes recursive cycle of knowledge between students and faculty

• Documents learning (for the student and the program)
In their own words

• Integrating learning with lived experiences
  • My mother stopped speaking to me in Spanish to force me to speak English because she was concerned about me falling behind in school. I eventually regained fluency in English but lost it almost entirely in Spanish... Ideally, I would love to create a balanced bilingual environment for my children. Not just for the cognitive or social benefits of being bilingual, but also to embrace our cultural background.

• Sharing personal struggle
  • Since I was very little I struggled with mathematics. I found that no matter how hard I worked I would end up reading the problem wrong... I remember my parents trying to make me instill a growth mindset... After I found out that I had dyscalculia I really began to have a fixed mindset. My math struggles are a diagnosable condition so how can I change?
The promise of brief psychological interventions

Brief activities that change world view

• Sense of Belonging
  • Increased persistence and improved grades

• Values Affirmation
  • Improved grades

• Growth Mindset
  • Increased persistence and improved grades
  • Associated with grit
Redesigns

**Summer Research Program**
- Added ePortfolios
- Added brief psychological interventions
- Added workshops to enhance social capital

**Course**
- Replaced tests with ePortfolios
- Added brief psychological interventions
- Added peer-led discussions
- Added self-relevant chapter reflections
Responsive assessment

- Rubrics have similar learning outcomes
  - Conceptual mastery
  - Integration
  - Application

- Similar rubrics across assignments
  - Encourage performance-approach behaviors

- Individual feedback
  - Confidence in student’s ability to show future mastery

<table>
<thead>
<tr>
<th>Mindset Rubric</th>
<th>Absent</th>
<th>Missing Element</th>
<th>Fully Present</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concepts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describes 3 ways individuals with fixed and growth mindsets approach learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Concepts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explains how praise influences responses to challenges</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Integration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describes reaction to academic struggle, assesses “fixed mindset voice,” and proposes alternate responses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describes plans to foster growth mindset in college students and children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describes 3 applications</td>
<td></td>
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</tbody>
</table>
Enhanced social pedagogy

- Students describe lives, include images, and write letters to selves
  - Future self and family are authentic audiences
- Professor provides supportive comments and shares themes
  - Creates a sense of community
- ePortfolios or curation
  - Encourage sharing and saving
Evaluating the promise

• Similar assignments
• Similar students
• Different delivery
Hypotheses

• Interventions will have positive effects on all students
• Self-relevant writing will increase equity
• ePortfolios practice in a “high impact class” will improve persistence
## Comparison groups

<table>
<thead>
<tr>
<th></th>
<th>Summer Program Ungraded</th>
<th>Course Graded</th>
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</thead>
<tbody>
<tr>
<td><strong>ePortfolio</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample</td>
<td>21</td>
<td>54</td>
</tr>
<tr>
<td>Age</td>
<td>20.5</td>
<td>18.8</td>
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<tr>
<td>Females</td>
<td>67%</td>
<td>70%</td>
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<tr>
<td>URM</td>
<td>90%</td>
<td>52%</td>
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<tr>
<td>GPA</td>
<td>3.35</td>
<td>3.11</td>
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</table>
## Results – Word counts

- ePortfolios evoke lots of writing
- More reflection in all formats
- More conceptual content in papers
- Equivalent complete answers (91% Papers and 95% ePortfolios)

<table>
<thead>
<tr>
<th>Words</th>
<th>Concepts</th>
<th>Reflection</th>
<th>Planning</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Ungraded ePortfolio</td>
<td>Graded ePortfolio</td>
<td>Graded Paper</td>
</tr>
<tr>
<td></td>
<td>91</td>
<td>143</td>
<td>81</td>
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<tr>
<td></td>
<td>94</td>
<td>162</td>
<td>103</td>
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<tr>
<td></td>
<td>129</td>
<td>172</td>
<td>93</td>
</tr>
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Added value of ePortfolio practice

- ePortfolios evoked more articulation of impact than papers

% of Students Expressing Aspects of Identity in Mindset Assignment

- Growth Mindset
  - Ungraded ePortfolio: 62%
  - Graded ePortfolio: 65%
  - Graded Paper: 43%

- Grit
  - Ungraded ePortfolio: 57%
  - Graded ePortfolio: 44%
  - Graded Paper: 20%
Intervention effects – Graded assignments

- 68 did not write about grit - No change in grit scores
- 33 wrote about grit - Grit scores increased
Added value of self-reflective writing

- No Equity Gap
  - Reflective writing
  - Online quizzes
- Equity gap
  - In class quizzes

<table>
<thead>
<tr>
<th></th>
<th>URM</th>
<th>Non-URM</th>
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<tbody>
<tr>
<td>ePortfolio</td>
<td>90</td>
<td>94</td>
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<tr>
<td>Papers</td>
<td>90</td>
<td>93</td>
</tr>
<tr>
<td>Quizzes*</td>
<td>77</td>
<td>85</td>
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<tr>
<td>Online Quizzes</td>
<td>85</td>
<td>87</td>
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</tbody>
</table>

Grades
Added value of ePortfolio work

% of Students in Good Academic Standing Sophomore Year

- All First-Year Students: 81%
- First-Year Students - Papers: 82%
- First-Year Students - ePortfolios: 93%
Responses to self-relevant writing

• Over 75% of students in class reported that assignments
  • Encouraged reflection
  • Enhanced learning
  • Provided an accurate assessment of learning
  • Should be used in future classes

• Mentioned personal change as a result of the interventions

• Adopted language indicative of effect
  • I’m gritty
  • I can’t do this…YET
Conclusions

• ePortfolios are better than or equal to other formats
  • Reflection and application of concepts to the self
  • Papers evoked more words but not more complete answers

• Self-reflective writing increases equity

• Brief psychological interventions can be used effectively in classes and research programs
  • Intervention efficacy was present in all formats

• Next Steps - Determine whether ePortfolio delivery leads to sustained intervention effects
Learn More


Singer-Freeman & Bastone (2017). Changing their mindsets: ePortfolios encourage application of concepts to the self. Int. J. of ePortfolio, 7(2) link


Singer-Freeman, Bastone, & Skrivanek (2016). Using ePortfolios to assess applied & collaborative learning, academic identity & future orientation in a summer research program for community college students. Int. J. of ePortfolio, 6(1) link


Singer-Freeman, Bastone, & Skrivanek (2014). Using e-portfolios to support transfer student success. Diversity & Democracy, 17(1) link