Using the BEVI to Assess Individual Experience to Enhance International Programming

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Global Agriculture

- Changes in U.S. and international agriculture

1Roser and Ortiz-Ospina, 2018 2Dimitri et al., 2005; National Research Council (U.S.), 2009 3Amundson et. al., 2015 4Goecker et al., 2015; Leer, 2012; Bobeck et al., 2014
Global Agriculture

Changes in U.S. and international agriculture

- Demographic changes\(^1\)
  - Growing population and increased diversity

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- Changes in U.S. and international agriculture
  - Demographic changes\(^1\)
    - Growing population and increased diversity
  - Shifts to urbanization\(^2\)
    - Less direct involvement in production\(^2\)

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Global Agriculture

• Changes in U.S. and international agriculture
  o Demographic changes¹
    ▪ Growing population and increased diversity
  o Shifts to urbanization²
    ▪ Less direct involvement in production²
  o Challenges³
    ▪ Food security
    ▪ Environment

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Global Agriculture

- Changes in U.S. and international agriculture
  - Demographic changes\(^1\)
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  - Shifts to urbanization\(^2\)
    - Less direct involvement in production\(^2\)
  - Challenges\(^3\)
    - Food security
    - Environment
  - Employment Variation
    - Off the farm agricultural jobs\(^4\)

\(^1\)Roser and Ortiz-Ospina, 2018
\(^2\)Dimitri et al., 2005; National Research Council (U.S.), 2009
\(^3\)Amundson et. al., 2015
\(^4\)Goecker et al., 2015; Leer, 2012; Bobeck et al., 2014
What is culture?

Culture encompasses the set of attitudes, beliefs, and practices that a group of people identify with.

Merriam-Webster, 2019
Why is understanding culture important?

- Agriculture is global

1FAO, 2009  2Ramos and Taylor, 2017
Why is understanding culture important?

- Agriculture is global
- Challenges requiring multicultural collaboration
  - “Feed the world by 2050”\(^1\)

\(^1\)FAO, 2009  \(^2\)Ramos and Taylor, 2017
Why is understanding culture important?

• Agriculture is global
• Challenges requiring multicultural collaboration
  o “Feed the world by 2050”\(^1\)
• Increased diversity in our communities & classrooms\(^2\)

\(^1\)FAO, 2009 \(^2\)Ramos and Taylor, 2017
Connecting Global Agriculture and Culture

Intercultural Competence (IC) Skills
- Ability to communicate with audiences of all backgrounds
- Ability to collaborate cross-culturally

Intercultural learning activities:
- Study abroad: A popular activity chosen as an avenue for connecting disciplines globally.
Connecting Global Agriculture and Culture

- **Intercultural Competence (IC) Skills**
  - Ability to communicate with audiences of all backgrounds
  - Ability to collaborate cross-culturally

- **How can we develop IC?**
  - Intercultural learning activities
    - Study abroad
      - A popular activity chosen as an avenue for connecting disciplines globally
Study Abroad

• ~40% of Purdue Agricultural Undergrads studied abroad in 2017-2018\(^1\)
  - Increase in participation
    - 63% of SA is short-term\(^2\)
    - 80% increase at Purdue in last 5 years\(^3\)
    - 45% overall increase in last 10 years\(^2\)

\(^1\)Purdue Agriculture Study Abroad  \(^2\)IIE, 2017  \(^3\)Ygnve, 2019  \(^4\)Vande Berg et al., 2012
~40% of Purdue Agricultural Undergrads studied abroad in 2017-2018\(^1\)

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- Participation Outcomes:\(^4\)
  - Increase IC
  - Globalize Citizens
  - Increase international exposure and experience

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\(^1\)Purdue Agriculture Study Abroad  \(^2\)IIE, 2017  \(^3\)Ygnve, 2019  \(^4\)Vande Berg et al., 2012
Programming and Assessment

- Curriculum changes to meet SA claims\(^1\)
  - Intercultural learning activities

- Assessment\(^1\)
  - Group IC development

- Aggregate vs. Individual\(^2\)
  - Understanding participant makeup
  - Facilitating meaningful discussion

\(^1\)Vande Berg et al., 2012 \(^2\)Wandschneider et al., 2015
Gap in Literature

- What are important factors in developing students through study abroad programming?¹
- Do we understand our participants?²
- Beliefs and values (personal identity) influences our experience and development of IC

¹Vande Berg et al., 2012 ²Wandschneider et al., 2015
What we know?

- Common Assessment Tools\(^1\)
  - Intercultural Development Inventory (IDI)
  - Beliefs Events and Values Inventory (BEVI)

\(^1\) Roy et al., 2014  \(^2\) Wandschneider et al., 2015  \(^3\) Shealy, 2016
What we know?

- **Common Assessment Tools**
  - Intercultural Development Inventory (IDI)
  - Beliefs Events and Values Inventory (BEVI)
- **BEVI**
  - Provides information on the values and beliefs held by students:
    - Who are attracted to STEM vs. Liberal Educational Institutions
    - PWI vs. Minority Serving
    - Within different academic disciplines
  - Spread within a course

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1 Roy et al., 2014 2 Wandschneider et al., 2015 3 Shealy, 2016
EMBEDDED SA PROGRAM:
Food Security and Environmental Challenges in Vietnam
Purpose and Objectives

• To explore and describe student changes on the Beliefs Events and Values Inventory (BEVI).
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  - What were students’ BEVI scale scores before and after participation in a short-term study abroad program to Vietnam?
Purpose and Objectives

- To explore and describe student changes on the Beliefs Events and Values Inventory (BEVI).
  - What were students’ BEVI scale scores before and after participation in a short-term study abroad program to Vietnam?
    - Scale scores related to course learning outcomes will increase.
Materials and Methods

- IRB Approved
- 11 Undergraduate Student participants
- 5 Extension Educators
- 1x/week, 50-min lectures

- Embedded short-term study abroad
- Single group pre-test/post-test design
- BEVI administered wk 1 (T1) and wk 15 (T2)

Intercultural Learning Activities
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<table>
<thead>
<tr>
<th>Activity</th>
<th>Activity Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name Game</td>
<td>Self-Awareness</td>
</tr>
<tr>
<td>Who am I?</td>
<td>Self-Awareness</td>
</tr>
<tr>
<td>IDI Debrief</td>
<td>Self-Awareness</td>
</tr>
<tr>
<td>Alpha/Beta Simulation</td>
<td>Awareness of Others</td>
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<tr>
<td>Reflections</td>
<td>Self-Awareness/Awareness of Others</td>
</tr>
<tr>
<td>Collaborative Video Blogging</td>
<td>Self-Awareness/Awareness of Others</td>
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</tbody>
</table>
# Student Demographics

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>5</td>
<td>45.45</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>54.55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Degrees Sought</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Sciences</td>
<td>8</td>
<td>72.73</td>
</tr>
<tr>
<td>Agronomy</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>Agricultural and Biological Engineering</td>
<td>1</td>
<td>9.09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year in School</th>
<th>n</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>5</td>
<td>45.45</td>
</tr>
<tr>
<td>Sophomore</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>Junior</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td>Senior</td>
<td>1</td>
<td>9.09</td>
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Equilintegration (EI) Theory

- Beliefs and Values are built over time
  - Starting at birth
  - Develops and strengthens over time
  - Formulated by how needs are met/not met
    - “take stimulus from the external environment and make meaning from it”
  - Developed strongly by age 16
    - Transformative learning experience
      - Study Abroad

Shealy, 2016
Theoretical Framework & Instrumentation

- Equilintegration (EI) Theory
- BEVI
  - Mixed methods instrument (demographics, 185 quantitative items, and 3 open-ended questions)

Shealy, 2016
Theoretical Framework & Instrumentation

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  - Mixed methods instrument (demographics, 185 quantitative items, and 3 open-ended questions)
  - Administered online

Shealy, 2016
Theoretical Framework & Instrumentation

- Equilintegration (EI) Theory
- BEVI
  - Mixed methods instrument (demographics, 185 quantitative items, and 3 open-ended questions)
  - Administered online
  - Narrative report
    - Understanding their own and others’ beliefs and values
    - Encourage reflection on the implications of their value and belief systems for learning, relationships, and life experiences

Shealy, 2016
Theoretical Framework & Instrumentation

- BEVI Output
- Valid and Reliable\(^1,^2\)
  - 17 scales
  - 7 Domains

\(^1\)Wandschneider et al., 2015  \(^2\)Shealy, 2016
Theoretical Framework & Instrumentation

- **BEVI Output**
- **Valid and Reliable**

<table>
<thead>
<tr>
<th>Formative Variables</th>
<th>Fulfillment of Core Needs</th>
<th>Tolerance of Disequilibrium</th>
<th>Critical Thinking</th>
<th>Self Access</th>
<th>Other Access</th>
<th>Global Access</th>
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<tr>
<td>Background Information</td>
<td>Needs Closure</td>
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<td>Basic Determinism</td>
<td>Physical Resonance</td>
<td>Religious Traditionalism</td>
<td>Ecological Resonance</td>
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<td>Negative Life Events</td>
<td>Needs Fulfillment</td>
<td>Self Certitude</td>
<td>Socioemotional Convergence</td>
<td>Emotional Attunement</td>
<td>Gender Traditionalism</td>
<td>Global Resonance</td>
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**3 selected as they relate to course learning outcomes (LO)**
Analysis

• Group Results (n=10)

• Subgroups
  o Gender
    ▪ Female (n=6)
    ▪ Male (n=4)
  o Ethnicity
    ▪ Caucasian (n=8)
    ▪ Noncaucasian (n=2)

• Meaningful differences at 5 points or higher (which range from 1-100)\textsuperscript{1}

\textsuperscript{1}Shealy, 2016
Results: Decile Report

### Sociocultural Openness

- **Y axis:** % of student per decile
- **X axis:** deciles by 10%

![Sociocultural Openness Graph](image)

### Socioemotional Convergence

- **Y axis:** % of student per decile
- **X axis:** deciles by 10%

![Socioemotional Convergence Graph](image)

### Ecological Resonance

- **Y axis:** % of student per decile
- **X axis:** deciles by 10%

![Ecological Resonance Graph](image)
Results: Decile Report

**Sociocultural Openness**

- X axis: deciles by 10%
- Y axis: % of student per decile

**Socioemotional Convergence**

- X axis: deciles by 10%
- Y axis: % of student per decile

**Ecological Resonance**

- X axis: deciles by 10%
- Y axis: % of student per decile

Students furthest from learning outcomes progressed.
Discussion

- Overall – no increase on scales related to LO
  - Decreased on Socioemotional Convergence
  - Individual changes portray a shift towards middle of scale
- Overwhelming experience\(^1\) (not negative)
- Coping responses to stress expressed as regressions\(^2\)
- Other SA Results
  - Changes in scales at aggregate and individual levels in response to SA\(^3\)

\(^1\) Stuart, 2012 \(^2\) Lambert Snodgrass et al., 2018 \(^3\) Wandschneider et al., 2015
Discussion

- Developing country provides contrasting perspective
  - Increased cognitive dissonance

- Replace existing portion of value/belief structure – requires breaking barrier
  - Reforming takes time
  - T3 (delayed post test)
    - Score recovery or surpassing

1. Lee and Negrelli, 2018  
2. Shealy, 2016  
3. Wandschneider et al., 2015
Conclusions and Limitations

- Different values and beliefs systems
  - Student identities vary
    - Interpret experiences differently
  - Students do change
    - Over the course of the semester, we saw student beliefs and values change

- Limited by a small sample/no control
  - Can’t assume or generalize that this SA experience caused these changes
Future Directions

- Continue to collect data from future programs

- Use data to analyze preparedness and inform curriculum design
  - What are the consequences of taking students abroad who are unwilling to interact with differences?
  - What are the group dynamics of the course?
  - When we look at aggregate means, stories don’t align with individual data.
Thank you!