Introducing outside experts into the classroom:
The mediating impact of instructor beliefs on the learner experience

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What impact do instructor perspectives have on the implementation of a virtual work-based learning intervention in community college classrooms? Drawing upon three years of design-based research, we present case studies that illuminate two divergent educator perspectives. Findings suggest that the ways educators take up and incorporate the intervention into their classroom differentially affects the learners’ experience and realized impacts.

RESEARCH SETTINGS

Massachusetts Community College

Ari
Computer Science Professor
Community College
10,000+ Students

Hispanic 31%
Black 30%
White 24%
Asian 13%
Other 2%

North Carolina Community College

Jamie
Computer Science Professor
Community College
20,000+ Students

White 55%
Black 24%
Asian 5%
Other 1%
Hispanic 15%

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To conduct this analysis, we selected two classrooms from a total of 16 institutions implementing Virtual Internships in their undergraduate curriculum. All of these schools serve underrepresented minority, non-traditional and first-generation students. The researchers served as participant-observers, providing professional development and technical support to instructors both before and during the implementation of virtual internships in their classrooms.

### RESEARCH METHODS & DATA SOURCES

#### QUALITATIVE DATA

<table>
<thead>
<tr>
<th>Research Team / College Stakeholders</th>
<th>Email communication</th>
<th>Voice communication</th>
<th>Video communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Team/ Educators</td>
<td>Observations of coaching sessions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educator/Industry Partner</td>
<td>Observations of training</td>
<td>Video recordings of training</td>
<td></td>
</tr>
</tbody>
</table>

#### QUANTITATIVE DATA

<table>
<thead>
<tr>
<th>Student / Learning Content</th>
<th>Time accessing learning content</th>
<th>Type of learning content accessed</th>
<th>Volume of learning content accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student/Industry Partner</td>
<td>Feedback on project deliverables</td>
<td>If students looked at feedback</td>
<td>Time between industry partner feedback submission and student looking at feedback</td>
</tr>
<tr>
<td>Student Confidence</td>
<td>Confidence level before feedback</td>
<td>Confidence level after feedback</td>
<td></td>
</tr>
</tbody>
</table>
Knowledge is constructed while completing the Virtual Internship project.

To give the students a real-world experience that is developmental and a project that has 'no right answers'

To provide feedback and industry insight that will help the students complete the project and provide the 'no right answers' context.

The project is indirectly graded. Students submit a reflection on what they learned from the project.

The educator is a fellow explorer that does not know everything either. Educator support is reactive based on each student, team, and situation.

The industry partner is a fellow collaborator and is integrated into the learning environment.

Learning is emergent and unique for each learner

Knowledge is acquired in the course learning content then practiced and evaluated in the Virtual Internship project.

To give students an activity that gives them a taste of the real world in parallel to achieving the course learning outcomes (a “news flash”)

To provide feedback on the students' work that will result in them getting a better academic grade.

Project artifacts are assessment items that are graded on a rubric.

The educator sits outside the project experience. The educator is 'hands-off.'

The industry partner is a value add to the learning environment, not a fundamental element.

Students practice and are evaluated on skills they need for the next step in their education

<table>
<thead>
<tr>
<th>Education Beliefs</th>
<th>Category</th>
<th>Ari Beliefs</th>
<th>Jamie Beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge is constructed while completing the Virtual Internship project.</td>
<td>Role of the virtual Internship</td>
<td>Knowledge is acquired in the course learning content then practiced and evaluated in the Virtual Internship project.</td>
<td></td>
</tr>
<tr>
<td>To give the students a real-world experience that is developmental and a project that has 'no right answers'</td>
<td>Role of the industry partner</td>
<td>To give students an activity that gives them a taste of the real world in parallel to achieving the course learning outcomes (a “news flash”)</td>
<td></td>
</tr>
<tr>
<td>To provide feedback and industry insight that will help the students complete the project and provide the 'no right answers' context.</td>
<td>How the project fits into grading</td>
<td>To provide feedback on the students' work that will result in them getting a better academic grade.</td>
<td></td>
</tr>
<tr>
<td>The project is indirectly graded. Students submit a reflection on what they learned from the project.</td>
<td>Educator/Student Relationship</td>
<td>Project artifacts are assessment items that are graded on a rubric.</td>
<td></td>
</tr>
<tr>
<td>The educator is a fellow explorer that does not know everything either. Educator support is reactive based on each student, team, and situation.</td>
<td>Educator/Industry Partner Relationship</td>
<td>The educator sits outside the project experience. The educator is 'hands-off.'</td>
<td></td>
</tr>
<tr>
<td>The industry partner is a fellow collaborator and is integrated into the learning environment.</td>
<td>Where learning takes place</td>
<td>The industry partner is a value add to the learning environment, not a fundamental element.</td>
<td></td>
</tr>
<tr>
<td>Learning is emergent and unique for each learner</td>
<td>The student experience</td>
<td>Students practice and are evaluated on skills they need for the next step in their education</td>
<td></td>
</tr>
</tbody>
</table>
## IMPACT ON STUDENT BEHAVIORS

<table>
<thead>
<tr>
<th></th>
<th>Ari</th>
<th>Jamie</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood a student would read industry partner feedback</td>
<td>Yes</td>
<td>81.2%***</td>
<td>The likelihood of students reading feedback and how quickly they viewed it can be seen as a proxy for the value students placed on industry partner feedback. Jamie considered the industry partner feedback as an optional extra while Ari emphasized its importance to project success. These results show that educator perspective can and do strongly influence actual student behaviors as captured by learning analytics.</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>65%</td>
<td></td>
</tr>
<tr>
<td>Time between when the industry partner provide feedback and a student looked at the feedback</td>
<td>Mean</td>
<td>2.26 days***</td>
<td>Ari used the intervention as a learning tool, so his students explored much more available content. Jamie used it as an assessment tool, so students focused only on “need to know” content. How the project was positioned to students led to strong behavioral shifts as reflected in this data.</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>4.74 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Variance</td>
<td>22 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>128 days</td>
<td></td>
</tr>
<tr>
<td>Average % of scaffolded learning content the students viewed when participating in their virtual internship</td>
<td>Mean</td>
<td>77.93%***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.31</td>
<td></td>
</tr>
</tbody>
</table>

Note: Differences are statistically significant at p<0.001 (***)

## INTERPRETATION OF FINDINGS

Our findings suggest that the learner's degree of agency while participating in Virtual Internship (that is, the extent to which a learner has agency over the project and the learning they extract from it) is significantly impacted by their teachers' perspective and subsequent moves in taking up this innovation. Our preliminary findings suggest that the different ways that educators incorporate a third-party expert into the activity system of their classroom can dramatically impact the learners’ experience and serve to reinforce or undermine the intended benefits of the virtual internship model. These findings point to important conversations that should be included in teacher professional development that accompanies WBL and similar experiences that engage learners and educators with workplace experiences and experts that perturb the traditional classroom activity system.

MORE INFO AT: www.virtualinternships.info