Informed Learning Practices in Biology Using Peer Leaders

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Why are we doing this?
The role of personal relevance in developing biological information literacy

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The entire class (N=50) meets twice a week, while small groups meet weekly in a workshop facilitated by a peer leader who had previously taken BIOL131. In 2012, students in two workshops were examined more closely. Research protocols were reviewed and deemed "exempt" by the Institutional Review Board.

Data Sources

Table 2: TIMELINE

Peer-leader reflections – Weekly reflections helped gauge student progress and identify areas where students needed additional instruction.

Peer leader reflections show how the six frames informed the 2012 sequence.

In the PTLT section, 62% of students who completed the course were White, 19% Asian, 10% Black or African American, and 7% were Hispanic, compared with 73% White, 16% Asian, 4% Black or African American, and 3% Hispanic in the traditional lecture section taught by the same instructor.

Table 1: Select Aspects of the Six Frames of Information Literacy Model

<table>
<thead>
<tr>
<th>Frame</th>
<th>Pedagogic Focus – enabling learners to...</th>
<th>Information Literacy is...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Learn about Information Library</td>
<td>Knowledge about Information Library</td>
</tr>
<tr>
<td>Competency</td>
<td>Acquire required competencies</td>
<td>Set of competency skills</td>
</tr>
<tr>
<td>Learning to Learn</td>
<td>Construct knowledge appropriately, and develop learning processes</td>
<td>Way of learning</td>
</tr>
<tr>
<td>Personal Relevance</td>
<td>Experience/Information literacy in ways that aid students to engage with the subject matter</td>
<td>Different for different people</td>
</tr>
<tr>
<td>Social Impact</td>
<td>Understand how information literacy can be leveraged to benefit society</td>
<td>Social critique and reform</td>
</tr>
<tr>
<td>Relational (emphasizes all other categories)</td>
<td>Discern more powerful ways of seeing the phenomena in question</td>
<td>Complex of different ways of interacting with information</td>
</tr>
</tbody>
</table>

Adapted from Bruce, Edwards, and Lupton, 2009

Method

Drawing on this framework that emphasizes the role of personal relevance, in 2012 we asked students to develop a personally relevant question that could be answered by engaging biological literature.

Peer Leader Reflection Questions

1. Did your workshop students do any of the following? Give names and examples:
   - Did anyone ask a question that was clear and specific?
   - Did anyone ask a question that was not clear and specific?
   - Did you ask a question that was clear and specific?
   - Did you ask a question that was not clear and specific?

For brevity, his references are not in this display of work from Student 1.

Table 3: Why notice?

Examples from peer-reviews of Group A and Group B posters

- Noreen has found Social impact.
- Brother has Crohn's Disease: Personal relevance.
- May lead to therapies: Social impact.

PLTLT workshops worked equally well with typical students and with high achieving students. Students from groups who had been identified as less able to work independently.

Peer Leader Suggestions

At the end of the semester, each peer leader proposed an original contribution to improve the workshops next year. Half of suggested expanding or introducing better support for students using science information practices. No questions were raised about the value of this learning experience.

For next year, a peer leader suggests an experimental design project.

Results and Discussion

Table 4: Personal accomplishment were most proud of...-

<table>
<thead>
<tr>
<th>Personal Accomplishment</th>
<th>Content</th>
<th>Competency</th>
<th>Learning to learn</th>
<th>Social impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low achieving and at-risk students</td>
<td>30% average on tests 1 and 2 &gt; 80% on tests 1 &amp; 2</td>
<td>Note: Two students on Team B provided two answers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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