Actions facilitating interdisciplinary in higher education

Building bridges – colloquium on interdisciplinary research

9 September 2019

Linda de Greef
Institute for Interdisciplinary Studies - University of Amsterdam
About the Institute for Interdisciplinary Studies

Initiate, promote and carry out interdisciplinary education within the University of Amsterdam and share the knowledge about interdisciplinary learning and teaching actively.
Defining interdisciplinary studies

<table>
<thead>
<tr>
<th>Content</th>
<th>Academic Curriculum</th>
<th>Aim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-disciplinarity</td>
<td>Discipline A</td>
<td>Students have the ability to draw upon perspectives from more than one discipline</td>
</tr>
<tr>
<td></td>
<td>Discipline B</td>
<td></td>
</tr>
<tr>
<td>Inter-disciplinarity</td>
<td>Discipline A</td>
<td>Students have the ability to integrate disciplinary knowledge</td>
</tr>
<tr>
<td></td>
<td>Discipline B</td>
<td></td>
</tr>
<tr>
<td>Trans-disciplinarity</td>
<td>Discipline A</td>
<td>Students have the ability to integrate disciplinary knowledge as well as non-academic knowledge</td>
</tr>
<tr>
<td></td>
<td>Discipline B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-academic knowledge</td>
<td></td>
</tr>
</tbody>
</table>
Defining interdisciplinary studies

‘a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession and draws on disciplinary perspectives and integrates their insights through construction of a more comprehensive perspective.

Klein & Newell, 1996

‘The capacity to integrate knowledge and modes of thinking in two or more disciplines or established areas of expertise to produce a cognitive advancement—such as explaining a phenomenon, solving a problem, or creating a product—in ways that would have been impossible or unlikely through single disciplinary means.

Boix Mansilla, Miller & Gardner, 2000
Interdisciplinary studies are pluriform: variable dimensions

- Problem versus theory focused
- Number of disciplines involved
- ‘Narrow’ or ‘broad’ ID
- Low versus high level of integration
- Start and form(s) of integration
- Fixed and individual programme

‘If the world around us were not complex, there would be no need for interdisciplinary studies’ (Newell 2002)
Interdisciplinary studies; it draws on insights from disciplines and it integrates their insights

- Educating students in different disciplines is not enough

- Repeated training of skills that foster interdisciplinary understanding

- The procedures for integration are not, as a rule, described and transferable, outside of their particular context.

- Students can not just take a hand- or reference book to find out which integration method fits their specific research question or team constellation.

- There is no single didactic method. What might help is; coaching for teaching and learning, collaborative or problem-based learning, teaching reflective thinking, and team teaching.
Unravelling interdisciplinary understanding

What should a student know or be able to do?
What should a student know or be able to do?

- Students are able to work in complex, dynamic settings in which the information required is not always available or complete.
- Students are able to reflect on and evaluate their own thinking and the thinking of others in relation to an issue or problem.
- Students are able to assess critically the relationships among the relevant disciplinary perspectives.
- Students are able to consider alternative perspectives.
- Students are able to synthesize various points of view.
- Be able to evaluate which disciplines are involved in the solution of complex issues.
- Be able to defend a well-considered viewpoint covering the relevant disciplines.
- Be able to assess which research methods are most suitable in a particular situation.
- Capacity to interact and collaborate with others effectively, including in teams, in the workplace, and in culturally or linguistically diverse contexts.
Unravelling interdisciplinary understanding

Guiding questions when designing a course

- How can the teaching take into account the heterogeneity of the student body?

- How can the teaching be organised in such a way that it will not simply provide students with facts and knowledge but confront them with higher order thinking skills?

- How does the teaching provide a rich research and interdisciplinary environment for students?

- Are the targeted understandings framed by questions that spark meaningful connections, provoke genuine enquiry and deep thought, and encourage the transfer of knowledge?

- What materials – e.g. textbooks, articles, lectures – do students need access to in order to achieve the learning outcomes?

- Does team teaching provide the course with added value?
IIS-publications
Developing a teaching philosophy for interdisciplinary education

7 groups, 7 questions
1. The essence of interdisciplinarity is ………………………
2. An interdisciplinary course cannot do without …………
3. Interdisciplinary students are able to……………………
4. What does a student need from the teacher, to be successful?................................................................
5. What is essential for an effective interdisciplinary education environment? .................................
6. What are quality markers for interdisciplinary student work? .....................
7. What challenges do you face with regards to interdisciplinary teaching..........