A framework for online support of undergraduate interdisciplinary research

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This research aims at investigating preferences for online and offline interdisciplinary research supervision.

A survey is done amongst second year students (22) and third year students (15) of LAS. In addition, findings are presented from interviews with 2 students and their supervisors after completing their interdisciplinary capstone.

Quotes on online/offline interaction:

Making use of existing digital tools: “We had some bad luck that we could not spend so much time with the three of us (…). That was what nice about google drive, which our supervisor also could access.” (student A, Liberal Arts and Sciences)

Learning a new tool: “I think such a feedback-tool does not provide additional value as you have to learn the new tool at a teacher, which is possible, but also students have to deal with the new environment.” (Supervisor A, Liberal Arts and Sciences)

Value of meeting with each other: “Especially with the integration it is impossible to do that without talking to each other. To share specific disciplinary insights with each other (…) it is very useful to sit with each other and write down all the insights.” (student B, Liberal Arts and Sciences)

Less experienced students (interdisciplinary research I) are more prone to use an online environment as compared to LAS Capstone students.

Especially in the group discussion/brainstorm in phase C (integration), face-to-face interaction is found to be important to discuss ideas and encourage the creative process.

Both students and supervisors work with existing tools for collaboration and communication during the interdisciplinary research process (google docs, email, whatsapp). For a blended environment to work it can be beneficial to use tools that students and teachers already know.

Important touchpoints for interaction can be defined as: finding an interdisciplinary team, planning the process, writing the document, supervision feedback, supervision discussion and group discussion. Next, a blended and an online framework are shown that integrate these touchpoints.

Blended Framework and Touchpoints for online/offline interaction

Towards an online framework for teaching global interdisciplinary research

Different interdisciplinary touchpoints should be considered when developing the interdisciplinary research process online

Activity | Examples | Opportunities | Challenges
---|---|---|---
Finding an interdisciplinary team | Online learning environment (e.g. Blackboard), Social media (i.e. Facebook) | Students have time to generate a pitch of their research topic. Students have time to think about how their disciplines can contribute to a certain problem. | Someone should monitor the process of making groups. It is important that enough students start at the same time to allow for multiple groups
Structure process and planning | Wiki, online learning environment | The structure allows students to supervise collaboration at each step of the interdisciplinary research process. | The online environment should be easy to learn. If multiple tools are used at the same time, students can get lost.
Supervisor Feedback | Shared documents (i.e. google docs), group chat | Timely feedback and easy processing of feedback by students | Workload of supervisor. Still have to make agreements on when to provide feedback.
Supervisor Discussion | Video conference, shared documents | Supervisors have access to different versions and insight in progress of students | Challenge to guide creativity and problem solving. Visualizations should be made digital.
Group discussions (i.e. sharing insights, integration) | Wiki, shared documents, video conference, knowledge mapping | Asynchronous activity and all group members have easy access to all documents. | Depending on the tool whether creativity and problem-solving can be encouraged. Value of meeting for discussion/brainstorm should be emphasized.
Writing the document together | Online chat, forum, shared documents | Easy access for both the supervisor and the students | Documents and structure should be easy to understand for both students and supervisors.

Conclusions and Future Directions

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