

Purpose

A range of masters programs at AAU admit students with many different backgrounds, further many of these programmes are interdisciplinary in some way. This poses a challenge of integration and gaining a shared profile and community between students of the study. Additionally this can lead to poor wellbeing and high dropout rate.

This study explores how a strengthened PBL-effort can improve the community of students and decrease dropout rates. This exploration is done by an analysis and a range of activities focused on addressing the problems. Techno-Anthropology is a interdisciplinary education and therefore the initiatives are focused on developing the students interdisciplinary competencies.

The interdisciplinary challenge at Techno-Anthropology is due to the many differences. Two campuses: Aalborg, Copenhagen. Many nationalities: Danish, Foreign. Teachers from different departments: Planning, Learning and Philosophy, Bioscience and chemistry, Healthcare, Energy. Students from different bachelors: Techno-Anthropology, tech and engineering, from studies drawing on ethnographic methods, Profession bachelor e.g. nurse, bioinformatics etc., Interdisciplinary BSc. e.g. Art and technology, communication and Digital Media etc.

Project overview

1. Literature Review
2. Analysis of project reports
3. Workshops with students and faculty members
4. Catalogue of ideas
5. Implementation of selected ideas
6. Next steps

1. Literature review

Three blocks of keywords were used:

- 1) "university teaching", made up of "university", "teaching", and "academic"
- 2) "PBL", made up of "problem-based", "learning", and "PBL", and
- 3) "interdisciplinary and transdisciplinary", made up of both words and "interdisciplin*" and "transdisciplin*"

Ten central papers were identified. From the papers on was found especially interesting as a theoretical framework for working with interdisciplinarity in PBL. This was the paper "Impact of Transdisciplinary Threshold Concepts on Student Engagement in Problem-Based Learning" by Savin-Baden. She defines "Transdisciplinary threshold concepts [...] as: concepts which transcends disciplines and subject boundaries but which are challenging and complex to understand, but once understood, the student experiences a transformed way of understanding" (Savin-Baden, 2016: 10).



Characteristics of Transdisciplinary Threshold Concepts: *Transformative*; change the way students view the discipline, *Troublesome*; pose a challenge, *Irreversible*; cannot be unlearn, *Integrative*; bring together different elements, *Bounded or Located*; delineate a particular conceptual space.

Savin-Baden identifies Four Transdisciplinary Threshold Concepts, which are required for an enhanced student engagement in a PBL context:

1. Liminality – Crossing into a new way of being,
2. Scaffolding – The way students are supported in learning,
3. Pedagogical content knowledge – Dissemination of key conceptions of the domain,
4. Pedagogical stance – Ways of viewing one self as learner.

Threshold concepts are used in this study to considering and frame future initiatives and activities to enhance interdisciplinary competencies.

2. Analysis of Students' Reports

Number of reports: 26 project report from 2014 and 2016 were analysed.

Project groups: The project groups were in general mixed and populated with students with different backgrounds.

Theories and problems: In all of the reports one or more of the six central Techno-Anthropological Theories were applied to problems often taken from areas related to the backgrounds of the students with a non-Techno-Anthropological background.

Methods: The applied methods were those taught at the bachelor program of Techno-Anthropology: Interviews, observations, workshops and literature reviews. The reports did not draw parallels to other cases studies.

At the Aalborg campus most of the problem statements were two-part, one being an explorative question of what or how something is, and the latter part being about in what way this knowledge can be mobilized to create a solution: "Why do people miss their appointments at the AUH and can we, with this knowledge, contribute to a solution to the problem?"

The problem statements of the Copenhagen campus reports contain "how" questions that aims at portraying existing and imagined relationships between group(s) and technology: "How do different institutions conceptualize drones, and how do they imagine the potential for drone technology?"

3. Workshops with students and faculty members

The workshops with students and faculty member were focused on defining current challenges and positive activities, then generating new ideas and lastly rating the most important. The activities of the workshops were:

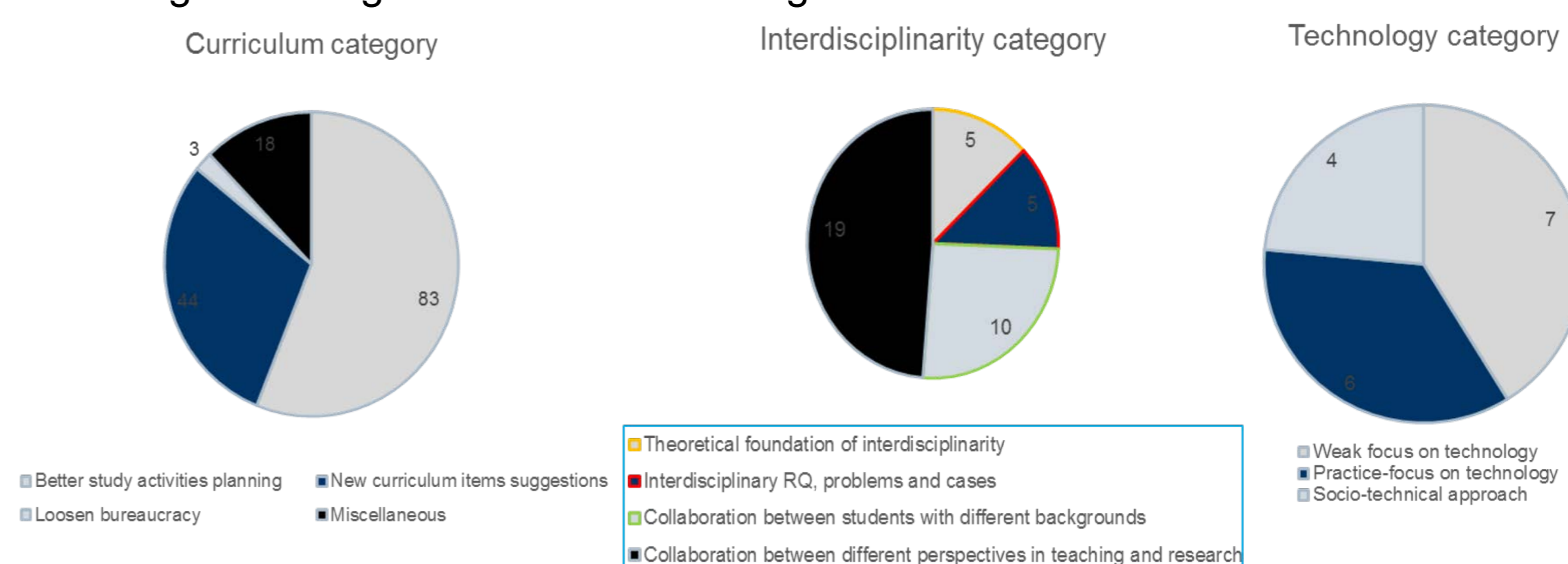
- Discussion of what interdisciplinarity is
- Evaluation of current activities: Positive (Green) and challenges(Orange)
- Generate new ideas (Purple)
- Rate ideas (mark for most important)



Doing workshops on evaluation can be an alternative to more traditional forms of evaluation meetings where students and faculty can discuss the challenges and opportunities for development of a study program.

4. Catalogue of ideas

A total of 226 ideas were generated in the workshops, and broadly divided into the following five categories and 11 sub-categories:



Additionally, a **Professional activities category (12 entries)** and a **Miscellaneous category (10 entries)** were identified without any subcategories.

During the workshops, some ideas were seen as having more practical weight than others and were labelled with a [challenges] and [positive ideas] tags. As these ideas go across categories, the tags assist in identifying what kind of planning attention is required from which category and sub-category.

5. Implementation of selected ideas

During the course of the 2017 autumn semester, the project owners implemented the following ideas:

poster presentation, film discussions, food events, academic reading seminar, case analysis, P0 literature search, updated language, company visit. Briefly elaborating on some of these, we present a short description for:

Poster presentation: 42 students divided into 10 groups, where 3 groups are presenting their individual Bachelor projects simultaneously. Meanwhile the other 7 groups are encouraged to walk around and listen to the presentation. Goal: encouraging social bonds around previous academic achievements. Highlighting the interdisciplinary character of the Master's program.

Academic reading seminar: students work simultaneously on a brief academic excerpt in a shared document, where they focus on "activating words" and illuminating role in academic and scientific texts. Additionally, students are asked to present, debate and evolve their understanding of what makes up an academic text.

Company visit: hands-on experience with product and software developers in a Danish software biometrics company as a way to both test and promote techno-anthropological competences. Additionally, the visit served as a showcase for potential internship host.



iMotions Lead Product Specialist giving a demo on eye tracking and galvanic skin response software to Techno-Anthropology Master students

6. Next steps

The students generally appreciated the implemented ideas. The project owners tried to involve the students in the planning of ideas. However some students called for more teacher controlled planning of the implementation of ideas. This points to a central concern: to which extend should students be involved to the planning of teaching activities?

The students asked for additional scaffolding item. The offered scaffolding items -- socio-technical concept of technology and the PBL pixi -- were not used very much in the project reports. Rather than developing new scaffolding items, the project owners suggest to develop and improve the existing scaffolding items.

Not all teachers took ownership over the ideas generated during this project, because it takes time to implement educational changes. Initiatives that can root the ideas in the core group of teachers must be organized. It is proposed that the ideas generated in this project are further addressed at a yearly meeting for all faculty members, teacher's meetings at each campus every semester, semester planning meetings.