

# Interdisciplinarity in Teaching and Learning

## Background

It is argued that interdisciplinarity in teaching and learning is vital as it helps students see the big picture, tackle complex problems, and gain versatile skills (Christoph et al. 2015). This aligns with the 21st-century competencies crucial for the knowledge-based demands of the modern workforce (Voogt & Roblin, 2012). UCPH's strategy 2023 states as a goal to "strengthen students' opportunities to obtain an interdisciplinary skills profile by removing structural barriers and increasing interdisciplinary collaboration on education". Nonetheless, there is limited guidance available for faculty members on practical methods to promote interdisciplinarity in teaching and learning (Lindvig & Ulriksen 2016). In this project, my emphasis is on questioning the assumption that the simple act of bringing students from diverse disciplines together will automatically lead to interdisciplinary thinking and collaboration. This inquiry leads to a crucial question: Which teaching components and pedagogical strategies can cultivate interdisciplinary comprehension and thinking?



Visualization of the interdisciplinary approach within the elective course. The colored lines symbolize 1) various disciplines contributing to the research field of mental health promotion, 2) students with diverse backgrounds. The different academic disciplines meld into a cohesive whole while retaining their distinct visibility.

## Purpose

To develop and evaluate teaching components and pedagogical approaches that can promote interdisciplinary thinking within the elective course 'Mental Health Promotion in Theory and Practice' offered to BA-students across SAMF. The course is inspired by the interdisciplinary course 'Understanding Wellbeing Theory and Practice' offered at University of Warwick in England.

## Interdisciplinarity in the elective course

The elective course embodies a "two-headed" form of interdisciplinarity:

1. Interdisciplinarity of the research field: The core subject matter is mental health promotion, a complex and multifaceted field that draws from various academic disciplines. This resembles the study program in public health science also drawing on multiple disciplines.
2. Interdisciplinarity of the student body: The students who enroll in this course originate from diverse educational programs within SAMF.

## Theory

Interdisciplinary understanding can be defined as: "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). Christoph et al. (2015) have introduced a practical definition of 'interdisciplinary thinking' that consists of four key competencies: reflection, collaboration, critical thinking, and handling uncertainty. In the model several learning activities are suggested to enhance these competencies.



## Method

In the elective course, various teaching elements and pedagogical and didactic techniques aimed at enhancing interdisciplinarity were incorporated, as illustrated in Table 1.

**Table 1.** Teaching elements and pedagogical techniques applied in the elective course 'Mental health promotion in theory and practice' and targeted skills fostering interdisciplinarity according to the model by Christoph et al. 2015

TEACHING ELEMENTS	TARGETED COMPETENCIES
Explicitly addressing interdisciplinarity (the interdisciplinarity of the research field mental health promotion as well as the interdisciplinarity of the students) in the course description, the first lecture, and repeatedly throughout the course	Dealing with uncertainty
Placing students in predefined interdisciplinary project groups that work together on a specific case throughout the course and provided guidance on interdisciplinary collaborative work (through exercises and a module on project work in Absalon).	Reflection Collaboration Critical thinking
Inspiring and instructing students to work on so-called 'interdisciplinary reflection journals' during the course.	Reflection Critical thinking
Organizing an interdisciplinary panel debate with VIP representatives from each department as part of the second lecture.	Reflection Collaboration Critical thinking
Establishing partnerships with external case sites (KU Student Sports, DAB, Frederiksberg Health Center, and Democracy Garage) for students to conduct action research inspired project work.	Reflection Collaboration Dealing with uncertainty

## Empirical data

### Logbook

Throughout the development and implementation of the elective course, I maintained a logbook recording the challenges encountered during the course's progression.

### Motivation letters

Prior to the start of the course, students submitted motivation letters explaining their reasons for selecting the course and outlining their expectations regarding how the course would contribute to their education. The motivation letters were utilized as a source to collect information regarding students' interest in interdisciplinarity and were subjected to thematic analysis.

### Interdisciplinarity questionnaire

Students completed a short questionnaire set up in SurveyXact on interdisciplinarity in the elective course with a special focus on 1) teaching activities and 2) perceived skills (see figures for questions and response options). Further, there were opportunities to elaborate on answers in free-text fields. The questionnaire was administered during a lecture at the midpoint of the course and the 15 students attending the lecture answered the survey. The data underwent analysis in SurveyXact to present frequencies, and a thematic analysis was carried out for responses provided in free-text format.

### Mid-term evaluation

Additionally, the team discussion at the mid-term evaluation provided qualitative insights from students concerning their perspectives on interdisciplinarity. The qualitative statements from students were used as an additional source complementing the questionnaire.

## Results

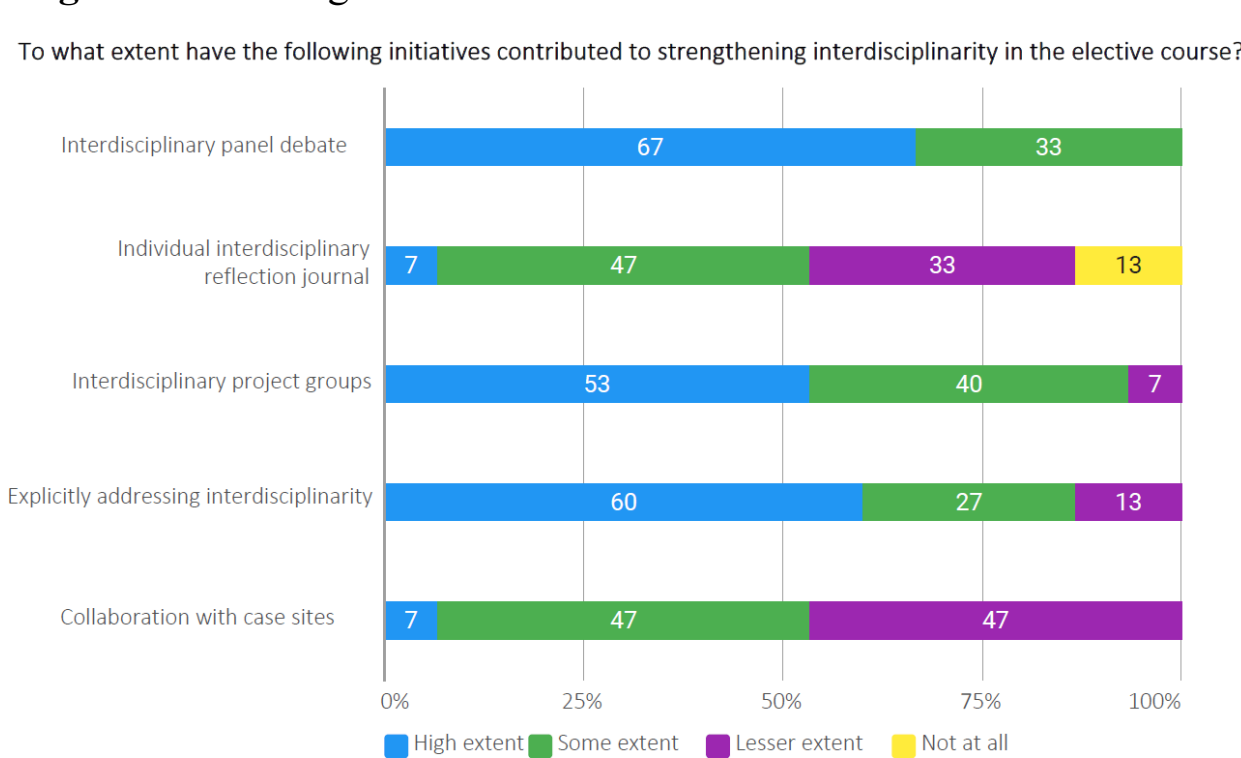
### Students' interest in interdisciplinary teaching and learning

As an initial finding, it seems that students are keen to participate in interdisciplinary courses. Several students emphasized interdisciplinarity as a motivating factor for selecting the elective course in their motivation letters: "I look forward to working interdisciplinarily, as I anticipate it will complement my own education by providing me with a broader understanding of various perspectives on the subject and enhancing my ability to collaborate with others from diverse academic backgrounds" (BA-student, Anthropology). The midterm evaluation validated the students' interest, as they emphasized the interdisciplinary nature of the course as one of its core strengths.

### Teaching activities

The results of the survey showed that students considered most teaching activities to adding to the interdisciplinarity of the course.

**Figure 1** Teaching activities



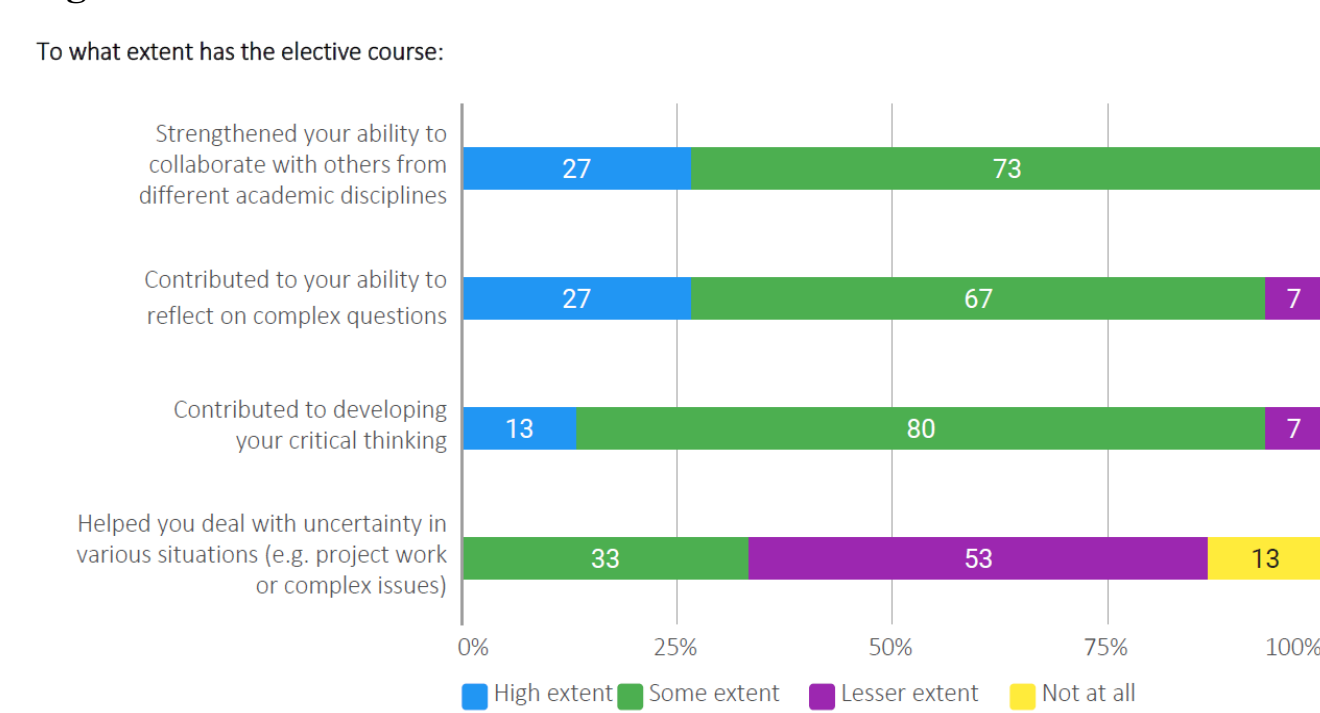
Especially, the panel debate, interdisciplinary project groups and explicitly addressing the interdisciplinarity was considered to be contributing teaching activities. The reflection journals and collaboration with case sites contributed to a lesser extent and 13% of the students reported that the reflection journals did not contribute at all.



### Perceived skills for interdisciplinary thinking

Generally, most students reported that the course had increased their competencies to collaborate, reflect, and think critically, to a high extent or to some extent (see fig. 2). In terms of handling uncertainty, 33% reported that the course had helped them in this regard, while the majority reported 'to a lesser extent' or 'not at all'.

**Figure 2.** Perceived skills



## Challenges in grasping interdisciplinarity

The survey and midterm evaluation showed that some students perceived challenges in understanding interdisciplinarity. Some students asked for scaffolding of the concept of interdisciplinary thinking by pointing to the perspectives of mono disciplines e.g. psychology or economics. A few students also expressed confusion about their role and asked for a clearer understanding of the expectations to their unique contributions, e.g. as sociology students.

## Strengths and limitations

The findings should be interpreted with caution because the empirical data was collected at the midpoint of the course. This limitation is a result of practical time constraints within the TLHEP. Furthermore, I consider the 'dealing with uncertainty' aspect of the model of interdisciplinary thinking inadequately described and elaborated. According to the survey results, this competency was also the least strengthened among the students. Finally, I consider it a strength that the students, who are the main intended beneficiaries of interdisciplinarity, provide the empirical data. Nevertheless, including other forms of empirical data, such as classroom observations or interviews with educators, could have been valuable.

## Implications for...

### The elective course

- **Provide disciplinary references and clarify students' roles:** Consider whether students require additional support to grasp interdisciplinary thinking by referencing individual disciplines, following Juul Nielsen & Vallgård's (2014) argument that it presupposes prior knowledge of the different disciplines being transcended.
- **Fine-tune explicitness:** Consider whether the high degree of explicitness in discussing interdisciplinarity might be causing confusion and should be reduced. This aligns with Lindvig's (2022) distinction between 'loud' and 'soft' voices of interdisciplinarity, where 'loud' voices involve overt displays like public performances, while 'soft' voices encompass subtle, unmarked interdisciplinarity in everyday practices.
- **Rethink interdisciplinary journals:** Improve the description and utilization of interdisciplinary reflection journals to ensure better clarity and effectiveness in promoting interdisciplinary thinking for the students.

### Students

- **Commit to active learning:** Acknowledge that active learning in interdisciplinary contexts may require extra effort and dedication.
- **Embrace interdisciplinary engagement:** Actively engage with the interdisciplinary nature of teaching and recognize the value of diverse perspectives and knowledge from different academic disciplines.
- **Cultivate collaborative skills:** Make a conscious effort to develop effective teamwork and communication skills as essential components for success in interdisciplinary projects. In the elective course, students received guidance on this during lectures and through the Absalon platform to assist them in their group work.

### Teachers

- **Address interdisciplinarity:** Teachers should emphasize and communicate the interdisciplinary aspects of their courses, both in course descriptions and during lectures. This seems to help students recognize the interdisciplinarity of the subject matter.
- **Incorporate different perspectives:** Bringing in guest lecturers from relevant fields and establishing partnerships with external organizations or institutions can offer diverse viewpoints and real-world applications of interdisciplinarity.
- **Adapt and implement teaching elements:** Adapt teaching strategies to enhance interdisciplinary thinking tried out in this elective course, such as forming interdisciplinary project groups or hosting interdisciplinary panel debates.

## Departments and Faculty

- **Address administrative challenges:** Tackle administrative challenges within the current system for offering interdisciplinary courses, such as addressing issues related to priority access, which may hinder the goal of ensuring diverse enrollment of students from various disciplines.
- **Promote interdisciplinarity:** Promote explicit interdisciplinarity as a learning objective within educational programs and relevant courses, rather than solely remaining a political aspiration or implicit practice. This may involve initiatives like organizing seminars to explore the concept of interdisciplinary thinking and its associated opportunities and limitations.

## References

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