

## CASE STUDY

## Fostering student-faculty collaboration through a structured and well-defined work routine

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## ABSTRACT

This case study showcases the development of a work routine that facilitated collaboration between students and faculty. The work routine consisted of three phases. In the preparation phase, participants worked independently or in pairs, followed by the second phase, a meeting with presentations and discussions. After the meeting, participants wrote their reflections in a shared document that served as a central tool throughout the entire process and was accessible to all participants; this comprised the third phase of the work routine. This article also presents faculty members' reflections and revelations encountered during the integration of the students-as-partners framework in this student-faculty collaboration. The developed work routine gives new perspectives on how one can foster educational development using the students-as-partners framework.

## KEYWORDS

students as partners, collaboration, work routine, course development, educational development

A student-faculty collaboration was established with the aim of developing recommendations for an introductory physics course. This initiative was informed by the students-as-partners framework (Cook-Sather et al., 2014), which sees “student-faculty partnership as a collaborative, reciprocal process through which all participants have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualization, decision making, implementation, investigation, or analysis” (p. 6–7). The acknowledgement of students' expertise led the faculty members of this collaboration to apply for financial resources to enable students to participate. The students-as-partners framework was applied in a collaboration among six students, one teacher, and an educational developer. They endeavoured to fulfil the five propositions to which good students-as-partners practices should aspire: 1. Fostering inclusive partnerships, 2. Nurturing power-sharing relationships through dialogue and reflection, 3. Accepting partnership as a process with uncertain outcomes, 4. Engaging in ethical partnerships, and 5. Enacting partnership for transformation (Matthews, 2017).

In this article, two faculty members focus not on the outcome of the collaboration, but on contributing to a discussion of the process and the approach of utilizing the students-as-partners framework from a faculty perspective. This approach recognises that “partnership is essentially a process of engagement, not a product. It is a way of doing things, rather than an outcome in itself” (Healey et al., 2014, p. 12). The aim of the case study is to envision how the students-as-partners framework was implemented in the student-faculty collaboration and clarify how the established work routine facilitated this collaboration.

## AN INTRODUCTORY COURSE IN PHYSICS

This student-faculty collaboration aimed to develop recommendations for improved learning in a physics course. The collaboration, initiated by the two faculty members, received funding for the autumn semester of 2021. The course has a complex structure as it runs in several parallels for approximately 1,000 students enrolled at 11 different engineering programs located at three separate campuses at the Norwegian University of Science and Technology (NTNU). In total, 10 teachers and a larger number of teaching assistants are involved in the course.

The quality assurance system for education at NTNU follows the standards and guidelines for quality assurance in the European higher education area (European Association for Quality Assurance in Higher Education [ENQA] et al., 2015). As a part of this system at NTNU, each teacher responsible for a course works with a reference group consisting of at least three students who are taking the course and participating voluntarily. This reference group is responsible for collecting feedback from the students following the course during the semester (NTNU, 2023). Based on the authors’ experiences, the teachers often adjust the teaching activities according to feedback from the reference group during the course, but further development rarely takes place. The student-faculty collaboration that is the focus of this article did not replace the reference groups. Instead, the aim was to deepen the discussion around the course and develop recommendations for improving it.

The developed recommendations were shared and discussed with all teachers involved in the course, who implemented several of these afterwards. These recommendations included replacing some lectures with short thematic videos, using more active learning methods during lectures, and involving students in the design of teaching and learning activities that are diverse and adapted to the students’ needs. Further, the teachers were recommended to teach physics in the context of the study program. These recommendations are not groundbreaking in themselves; however, the grounding in a common understanding using the students-as-partners framework is novel at NTNU. As discussed by Bovill (2014), in some contexts, students may contribute solely to the process of how to teach the course, while in others, they can make decisions regarding the course content. This student-faculty collaboration focused on the teaching and learning activities involved in delivering the course, rather than the course content itself. The latter is regulated by the national guidelines for engineering education and overseen by the university administration.

## EMBRACING THE STUDENTS-AS-PARTNERS FRAMEWORK AND DEVELOPING A WORK ROUTINE

Since the two faculty members had no prior experience with the students-as-partners framework, they informed themselves through literature and discussions with educational developers at the university. It became clear that reflection should have an essential role and that all resources had to be shared. The online platform chosen for this purpose was password-protected and supported by the university, and it was used for most of the 2-hour digital meetings, ensuring equal access for participants from all campuses, in contrast to a hybrid format.

Diversity was a key consideration when selecting the students. They were chosen by the faculty members based on their applications and represented both the spring semesters of year 2020 (before the pandemic) and 2021 (when most teaching activities were online). Furthermore, representation from all three campuses was ensured as well as gender equality. This representation included students with positive experiences from group work activities and those who disliked them. Additionally, the selection encompassed students who found the course easy and those who found it challenging. It's noteworthy that only a few of these students had previous experiences with reference group work, confirming Matthews et al.'s (2018) findings that paying students makes participation more accessible to a diverse range of students. Hence, this approach supports students who lack the self-confidence and cultural capital required to work comfortably with academics in the reference group

The meeting schedule as it evolved during the autumn semester of 2021 is presented in Table 1. In total, we completed 10 cycles of our work routine consisting of three phases: preparation, the actual meeting, and individual post-meeting reflections. A shared file was used for all written material from each meeting. This included what was written before and during the meeting, as well as the individual reflections.

**Table 1. Meeting schedule**

MEETING #	PREPARATION	MEETING AGENDA	AFTERTHOUGHT
1	The two faculty members sent out a link to a podcast on students as partners along with a meeting invitation.	Get to know each other. Share experiences from the course. Planning the project and discussing how we want to work.	Questions for reflection: How should we work? What to work on? How should we document our results? Practicalities and impressions.
2	Everyone writes their experiences from the course in a shared document.	Sharing experience and discussing the course as it was in the 2 previous years.	Reflection on the course elements: lectures, exercises, and the shared resources from all parallels.

MEETING #	PREPARATION	MEETING AGENDA	AFTERTHOUGHT
3	Working in pairs: Conducting an initial analysis of the responses from the course surveys from the 2 previous years and sharing the results with everyone in the allocated document.	Discussion of format of lectures and exercises.	Individual summary and reflection.
4	Continuation from meeting number three.	Discussion of the learning resources, the learning management system, and the communication with the teachers.	Individual summary and reflection.
5	Reviewing a government white paper on active learning. Everyone writes themes for discussion in the shared document.	Discussion based on selected themes: student learning, expectations, adapted and varied learning activities, forming a learning environment, use of student response systems.	Individual summary and reflection.
6	Same as meeting 5	Continued discussion from the last meeting.	Individual summary and reflection.
7	Everyone takes an overview and writes recommendations to the teachers.	Reviewing our recommendations and sorting these in preparation for presentation.	Two of the student coworkers prepare a first draft of a presentation.
8	Two of the student coworkers finalize the presentation.	Reviewing the presentation and planning the actual meeting with the teachers. Dividing the tasks between us.	N/A
9	Preparing individually before the meeting with all teachers.	Meeting and discussion with all teachers involved in the course.	N/A
10	N/A	Summarising impressions and input from the teacher meeting. Planning how to write a summary report.	Individuals write their part of the report.

In the initial meeting, we worked on establishing a collective understanding of the students-as-partners framework and sharing experiences from the course. Before the second meeting, everyone reflected upon how to collaborate and document the progression, findings, discussions, and results, as well as what to focus on.

To acknowledge the voices of all students enrolled in the course, it was decided to evaluate course surveys from the 2 previous years. Before conducting this analysis, the two faculty members initiated a discussion on ethics to ensure a respectful treatment of data. The answers to quantitative questions (on a Likert scale of 1–5), typically in the form of “How satisfied were you with...?” about various elements of the course, were analysed by calculating the average and standard deviation. The qualitative answers were analysed inductively to understand what students were expressing. No comprehensive qualitative or quantitative analysis was undertaken, instead, the intention was to use the results as a basis for further discussions. This work was done in preparation for meeting number three (see Table 1), where we prepared in pairs to reduce the workload and enhance reflection and deeper understanding of the qualitative responses. The results of the analysis formed the agenda for meetings three and four. Discussing these results in the context of the group members’ own experiences provided valuable insights into the effectiveness of variations in teachers’ approaches to lectures and exercises, as well as the utilization of shared resources in the learning management system.

To inform and broaden the discussion, the two faculty members suggested reading a government white paper on the benefits of active learning methods Meld. St.16. (2016–2017). This was chosen to inspire and create opportunities for thinking beyond the current situation and address the challenge of thinking beyond “what is today,” as mentioned by Matthews (2017). For example, students reported high perceptions of learning from passive teaching methods, in contrast to active teaching method, even though research shows the opposite (Deslauriers et al., 2019). Given that the quantitative part of the course survey used a format such as “How satisfied were you with...?”, there was a concern that the developed recommendations would emphasise actions for improving students’ satisfaction with the course rather than improving their actual learning. Consequently, in preparation for the fifth meeting, everyone read the white paper and wrote themes for discussion in the shared file. The themes included: How and when do students learn? Which activities engage students? What expectations do students meet while following the course? How can traditional lectures integrate digital learning methods? How can we form a conducive learning environment among students? And why were student response systems only used to a limited extent, to activate students during lectures? After dedicating two meetings to these themes, we began formulating recommendations for the course.

These recommendations were presented in a subsequent meeting involving all teachers participating in the course. Furthermore, a summarised version of these recommendations was included in a report and presented at an engineering education conference (Korpås et al., 2022).

## THE ESTABLISHED WORK ROUTINE




The meeting schedule in Table 1 contains information about the preparations for all meetings, the meeting agendas, and the elements for reflections. This work routine, consisting of these three phases for each meeting, was consistently applied throughout the collaboration. A

generalised version of the established work routine is presented in Table 2, with pictograms illustrating the conducted activities.

A key aspect of this work routine is the utilisation of a shared file where all preparations are documented. This same file serves as both the agenda for the meeting, a report from the meeting, and a space for each collaborator to write their reflections afterwards.

To facilitate effective preparation for the actual meeting, a deadline was set for uploading materials 2 days before the meeting. This made it possible for everyone to have equal access to the material and to be prepared for the meetings. This informed discussions that led to a deeper understanding shared by the group members.

**Table 2. Illustration of the established work routine**

PREPARATION	MEETING	AFTERTHOUGHT
<p>Working individually or in pairs to prepare material for discussion. All group members reviewed the material shared online.</p> 	<p>Group members presented the prepared material. Discussion within the group.</p> 	<p>After each meeting, each group member wrote their reflections in a shared document.</p> 

**AUTHORS’ REFLECTIONS AND DISCUSSION**

In this section, the thoughts and reflections [of](#) the two faculty members are presented. The emerging themes are discussed with relevant literature.

**The consequences of the students-as-partners framework for faculty participation**

Our first experience, after familiarising ourselves with the students-as-partners framework, was that we as faculty could not plan and prepare everything before meeting the students. Such an approach would have contradicted several of the principles, as it would have introduced power dynamics into the partnership and undermined the collaboration as a process with uncertain outcomes (see Proposition 2 and 3 in Matthews, 2017) and conflicted with the value of empowerment underpinning partnerships, as presented by Healey et al. (2014) and the Higher Education Academy (HEA, 2015). In other words, it took time to gain insight into the students-as-partners framework and understand its consequences. The only defined goal we had set in advance for this collaboration was to formulate recommendations for the course, with no specific details on what aspects to be improved or how.

**Students’ roles and responsibilities**

Bovill et al. (2016) have identified various student roles in the co-creation of teaching and learning. These roles include co-researcher, consultant, and pedagogical co-designer, all of which depend on staff to create opportunities for collaboration. Additionally, there is a fourth role, representative, which is often more student-controlled. In our collaboration, we observed the

students taking on all these roles to some extent. They acted as consultants, sharing and discussing valuable perspectives on learning and teaching. During the analysis of course surveys, they had the role of researchers. Furthermore, the students tended to explore the role of pedagogical co-designers when considering which teaching methodologies to recommend. The role of representatives for future students was inevitable, although they did not represent their current co-students but rather future students.

### **Diversity and different perspectives**

The diversity among both the students and the faculty members stimulated nuanced discussions, with each participant contributing unique perspectives and valuable insights. The students utilised their first-hand experience with the physics course to reflect upon and see the physics course in relation to the whole study program. They also brought a broader contextual understanding to the discussions.

### **Good communication through the shared file**

Good communication has been recognised as essential in student-faculty collaborations (Bovill et al., 2016). Establishing this work routine utilising one shared file per cycle ensured that all information, including reading material, meeting agenda, and shared written reflections, was accessible to all collaborators. This shared file enhanced communication within the group of collaborators.

### **The individual reflection**

The significance of integrating shared written reflections into the practice as a natural component of the work routine should not be underestimated. The authors firmly believe that this practice provided access to even deeper afterthoughts, as participants could read through the reflections of others and compare them with their own recollections of the meeting. Often, there were details that one person either did not recall or remembered differently, which could then lead to new insights, deeper reflections, and a more shared understanding.

### **Trustworthiness of the outcomes**

The importance of having the students co-creating the presentation and final report together with the faculty is a way to share responsibility for the aim of the collaboration, which aligns with the value of responsibility underpinning partnerships, as presented by Healey et al. (2014) and the HEA (2015). This became evident, as the teachers who were not engaged in the collaboration found the suggested recommendations valuable and trustworthy. They conveyed that student involvement in the process and presentation enhanced the credibility of the suggestions. A clear takeaway is that a more continuous involvement of all teachers associated with the course might have made the process even more fruitful, as opposed to a single meeting with discussion at the end of the collaboration. Nonetheless, the involvement of one of the teachers was crucial for providing information to the collaboration. On the other hand, the involvement of all 10 teachers would have altered the balance of the collaboration, as students would no longer be in the majority.

### **Creating synergy in the encounter between two distinct worlds**

As discussed by Matthews and Dollinger (2023), the university system offers students various voices in higher education, and it is necessary to distinguish between students as representatives and students as partners—they differ and the difference matters. Following this discussion, we perceive the traditional reference group system at NTNU as a context where students represent the entire student body. In this setting they speak on behalf of other students, not just on behalf of themselves, to inform the teacher. This is in contrast to the students in this student-faculty collaboration, who represented themselves as individuals who had completed the course; here, their individual experience mattered. Likewise, the faculty members shared information pertinent to their role at the university, such as previous course surveys and knowledge about logistical aspects of the course. Insight and discussion reached new heights when these two worlds came together. We believe that this encounter of the students' and faculties' worlds creates a space for more open discussions, innovative thinking, and collective development.

### **Limitations**

The established work routine gave all participants equal access to the process. However, we believe one can argue that some of the power hierarchy remained in place during this collaboration, given that the aim was to develop recommendations for the course rather than to determine the specific implementations. The authority to make these decisions was still allocated to the teachers.

### **CONCLUSION**

Our intention in sharing this work routine is not to provide a step-by-step guide to managing student-faculty collaborations. Instead, we aim to inform future partnerships about the importance of implementing the students-as-partners framework in a power-reducing way, as well as the value of preparation before and reflection after each meeting in order to make the most of the shared time for collaboration, discussions, and clarifications.

### **NOTE ON CONTRIBUTORS**

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