Starting a network for junior teachers at the Department of Physics

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***Abstract*—Teaching at university can be challenging, especially for new teachers who often lack prior pedagogical experience and familiarity with institutional practices. To address this, a group of junior teachers at the Department of Physics, Lund University, founded a pedagogical discussion network in 2024. The network provides a safe and supportive space to share experiences, exchange institutional knowledge, and find inspiration for tackling pedagogical challenges. Meetings are held a few times per term, alternating between informal discussions and themed sessions on specific topics. Two experienced mentors facilitate the connection between practices within the Department of Physics and broader pedagogical visions. In this contribution, we describe how the network was formed, the challenges and lessons from its first year, and our plans for future development. We invite participants to reflect with us on the value and impact of teaching networks [1], or communities of practice [2].**

***Index Terms*—Collaborative learning, Professional development, Teaching methods, Learning communities**

I. Introduction

At Lund University (LU) and LTH, teaching is important for education quality and students' future prospects. Despite this, for many teachers, teaching can feel like a solitary activity, with either one teacher, or a small team of teachers, responsible for the preparation of course content and teaching activities. Especially for junior teachers, new to both teaching practice and often to their organization, this is a challenging and overwhelming experience.

In 2024, a group of junior teachers (associate senior lecturers [BULs] and newly-appointed senior lecturers [ULs]) at the Department of Physics decided to start a network for junior teachers. Our intention was to create a space where new teachers – teaching across different physics courses, student levels, and even faculties – could support each other, exchange experiences, reflect on challenges, and learn together. The initiative led to the formation of an active Junior Teachers' Pedagogical Discussion Group at the Department of Physics. In this article, we describe how the network was developed from the original idea to an active network meeting several times each term. We will present the structure of the network, what we have learned during this year, and how the network has benefited us as teachers. Our goal is to inspire others to consider forming similar networks in their own departments customized to their local teaching experience and needs. We also want to highlight some of the practical and pedagogical challenges we have encountered during the first year.

Fig. 1. Word cloud (Mentimeter survey) from the active members about the benefits of a pedagogic discussion network.

Our main message is that building a teaching network is possible and deeply rewarding: a foundation grounded in trust, openness, and shared purpose makes for discussions and support that are well-worth the time and effort.

II. Forming a Teacher Network

A. Starting the network

The foundation of the network came from a shared feeling among several junior teachers in the Department of Physics who desired a forum to talk about teaching in an honest and constructive way. We wanted a place to explore the *how*[1] and *why*[2] of our teaching. Many of us did not have a forum where these discussions came up naturally. The inspiration came from a mentorship program, *Learning for Change*, for BULs at the Science Faculty, centered around open, supportive discussions [3]. That program's hallmark is its bifocal mentorship structure, mixing seminars with small mentor groups each facilitated by a senior faculty member. Discussing pedagogical scenarios was a consistent theme during this program. While some conversations benefited from perspectives across disciplines and institutional environments, a clear demand emerged for a similar group focused specifically on teaching at the Department of Physics.

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[1] How we engage students, how we assess learning, how we handle challenges in the classroom

[2] Alignment of course activities and intended learning outcomes; developing individual pedagogical philosophies

To move from the initial idea to actual action, a small group of junior teachers decided to try to form a formal network. Our network's structure takes inspiration from the *Learning for Change* program, so we sought the help of a senior teacher as mentor. The initial discussions led to practical guidelines for the network. First, we wanted to focus on junior teachers as the challenges we faced would be similar. Therefore, we invited all relatively new teachers to a first meeting to gauge interest. At the initial meeting, we discussed together the practical ground rules of the network:

1. All discussions are open and confidential; we can explore – and commiserate – about teaching challenges without judgement, and we will support each other.
2. The network is open to all junior teachers (which here meant everyone who considered themselves junior) teaching at the Department of Physics at undergraduate, master, or doctoral levels. Sharing a teaching subject and institutional environment means we share a common background, enabling more targeted discussions.
3. We invite two senior mentors, experienced and engaged teachers from the Department of Physics, to offer experience, perspective, and resources.
4. Meetings should be organized two to three times per term, with members taking turns hosting.

The regular meetings are deliberately kept to informal discussions, with no formal presentations or agenda. Some meetings have a specific discussion topic suggested in advance. Others feature a roundtable in which members bring scenarios and recent experiences for the group's reflection.

B. *Examples of discussion topics and activities*

Over time, our discussions have covered a wide range of issues, both practical and pedagogical. Some examples include:

Practical classroom challenges: We discuss possible strategies and responses to real challenges faced by members of the network: activating students in exercise sessions, increasing student attendance, handling *tentavisning* (reviewing graded exams with students).

Pedagogical strategies and philosophies: The practical challenges naturally led to discussions about the underlying purpose of our teaching. These discussions have helped members to reflect on and develop their personal core teaching principles , though the network as a whole does not have a unified pedagogic philosophy. One of our common discussion themes is how to create an open and inclusive learning environment. Another is the balance of responsibility between teachers and students for the students' learning.

Administrative and procedural knowledge: We develop an understanding of LTH and Science Faculty customs, grading systems, and course administration. As new teachers, we often felt unsure of our approaches to tasks we were expected to perform with little introduction or instruction.

Cross-level perspectives: We have discussed the differences between bachelor-, master-, or doctoral-level courses and students, as well as differences between students with different backgrounds, e.g. engineering/science faculty students or Swedish/international students.

Several of the network members come from outside of Sweden and are less familiar with the Swedish education system. One discussion topic was how the students' backgrounds from high school (*gymnasiet*) influence their learning at university. The network invited high school teachers from the National Resource Center for Physics Education to learn about secondary-level education and student preparation.

C. *Overcoming challenges*

Finding time for meetings is a common issue for engagement in a network, as many teachers are already overbooked with both teaching and research tasks. To increase participation, we found it was important to involve all the potential members in forming the structure and rules of the network.

One of the first challenges was to agree on the purpose of the network: *should it mainly be a support for solving practical problems, or a venue for deeper pedagogical reflection?* Choosing the direction through common discussion and agreement makes the network valuable for all members. In our case, we have decided that both aspects are important. Having a dedicated space to discuss deeper pedagogical challenges and share new ideas is intrinsically valuable, as there is no other current forum for this. Yet, sharing and discussing immediate problems is also important, especially as support for new teachers. Having a natural forum to explore problems, and ask about administrative rules and tasks, helps alleviate some of our doubts and workload.

Outside of the network, some of the opportunities to reflect on teaching (docent/ETP/promotion applications) are also assessments. Yet, to develop as teachers, we must admit difficulties or uncertainty about our teaching, which takes courage and can seem out of place in an assessment-based environment. Therefore, establishing trust is fundamental to the network's success, and is the reason why we follow the ground rule that the meetings are a confidential and inclusive space.

D. *Benefits and impact*

Figure 1 shows our perceived benefits of the network as a word cloud. We asked the active members what they gain from being in the network, and why they continue to make time to participate. A main benefit is exposure to new ideas and different perspectives, which invites us to reflect on why we teach the way we do and why we consider new approaches. The network has also helped create a sense of collective responsibility for the teaching quality at the Department of Physics. We have discussed how to make handovers smoother when changing course-responsible teachers, share resources, and align assessment methods across courses during educational programs. As a network, we can ensure that the junior teacher perspective is included in the overall program design. These are small but important steps toward more teaching collaboration at the department.

Sharing experiences with each other helps to negate the isolating feeling many new teachers have expressed.

Members have gained confidence in their teaching, especially after hearing that others face similar challenges.

E. Outlook

The current members feel that even as we solve the initial problems facing us as teachers, new challenges emerge, and there will always be room for improvement. With changes in education directions and society, such as digitalization and AI tools [4,5], it is incredibly valuable to have a network to discuss new challenges.

Others are showing interest in establishing similar networks. In the future, we hope that these networks can serve as informal support, complementing formal pedagogical training.

III. Conclusion

Our experience shows that forming a teaching network does not require large resources. What it does require is initiative, trust, a shared commitment to improving teaching, and support from the organization. For us, the Junior Teachers' Pedagogical Discussion Group has become a valuable community, which has helped us support one another, exchange ideas, and build confidence as educators.

We encourage people at other departments and faculties to consider starting their own networks. The challenges of creating engagement, despite limited time and resources, can be overcome. Crucially, the teachers who will benefit should be involved in setting up the network. By building networks, we can help teachers improve, form communities, and ultimately, improve the learning experiences for our students.

Acknowledgment

We would like to thank Elizabeth Nilsson and Per-Erik Bengtsson as the first mentors/facilitators of the network. We look forward to working with Johan Rathsman and Dan Hessman in the coming year.

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