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Incorporating Students as Partners in Educational Innovation: Development of an Elective Course

ABSTRACT

Despite the growing involvement of pharmacy students as co-creators or Students as Partners (SaP), some faculty members remain hesitant to form these partnerships due to students' limited pedagogical knowledge. To address this, we co-created a course that equips and entuses students to engage meaningfully in educational innovation, using the principles of scholarship of teaching and learning (SoTL). In the course, student groups were paired with faculty members (assigners) seeking to enhance their teaching. Following the first five steps of the Utrecht Roadmap for SoTL (UR-SoTL) as a framework, students developed a theoretical understanding of educational innovation and its impact on learning. Supplementary workshops and lectures provided additional pedagogical knowledge and skills. This case study outlines the course design, the resulting project proposals, and the perception of participating students and faculty members. Qualitative feedback shows that students and faculty members found the course inspiring. Although many students had not previously considered contributing to educational projects, they reported feeling capable of making meaningful contributions after taking this course. Their proposals were evidence-informed and demonstrated alignment between proposed learning activities, underlying learning processes, and desired learning outcomes. Faculty participants expressed enthusiasm for the projects and planned to implement the proposed interventions. The course motivated both students and faculty members to participate in future collaborations. However, time constraints limited further student engagement in their projects after the course had ended. This case study highlights the benefits of using an elective course to facilitate student involvement in educational innovation and the challenges that may arise.

KEYWORDS

Students as Partners (SaP), course design, CIMO-logic

INTRODUCTION

Students as Partners (SaP) positions students as collaborators in teaching and learning (T&L) in higher education. In these partnerships, all participants (students and staff) are actively engaged and gain from the process of learning and working together (Healey, Flint, and Harrington 2014). The potential for more authentic engagement resulting from partnership results not only in learning benefits for students (Cook-Sather, Bovill, and Felten 2014; Mercer-Mapstone et al. 2017) but also in genuinely transformative learning experiences of both students (Lubicz-Nawrocka and Bovill 2021; Maas, Nasralla, van Riessen, Meijerman, and Muliaditan 2026) and staff (Gravett, Kinchin, and Winstone 2019; Healey et al. 2014). Moreover, partnership may contribute to developing institutional

cultures that value egalitarian learning communities (Matthews, Cook-Sather, and Healey 2018). Partnership could reduce power imbalances to create more equal relationships at universities and offer an alternative to the consumer model where education is viewed as a product, and students as passive consumers. By becoming partners, students and staff together share responsibility for teaching and learning practices (Matthews et al. 2018).

Despite the evident advantages of SaP, researchers frequently report resistance to this concept by academic faculty members (Bovill, Cook-Sather, Felten, Millard, and Moore-Cherry 2016; Cook-Sather et al. 2014; Matthews 2019). As Matthews discusses, this “resistance” should not be seen simply as an “obstacle” to be overcome, but rather as an opportunity to work together. For example, if a faculty member—who has expertise in teaching and learning—questions whether students have sufficient expertise in matters of teaching and learning, this provides an opportunity to enact the principles of partnership and engage in dialogue to understand resistance (Matthews 2019). Such a dialogue occurred in our department (Department of Pharmaceutical Sciences, Utrecht University). While pharmacy students are increasingly involved as co-creators or student partners, staff noted that their contributions were of novice-level, typically limited to content-related aspects rather than pedagogy, and reflected student perspectives only. In addition, many faculty members themselves have limited knowledge and experience in evidence-informed optimization of education (MacMillan 2018) and may not be well-equipped to guide this process when they partner with students. This prompted the design of an elective course that aimed to equip students as partners in educational innovation using the principles of SoTL.

Partnership with students can happen in multiple areas: (1) learning, teaching, and assessment, (2) curriculum design and pedagogic consultancy, (3) subject-based research and inquiry, and (4) SoTL (Healey et al. 2014). Because the aim of our elective course is to equip students to contribute based not only on student perspectives but also on pedagogical evidence, this case study will focus on partnership within SoTL. By engaging in SoTL, students are stimulated to take a scholarly, evidence-informed approach to education, in addition to adding their student perspective.

Here we define SoTL as a systematic, evidence-informed approach that enables academic teachers to examine their disciplinary teaching practices with the specific goal of optimizing student learning. The five principles of good SoTL practice are: it is grounded in the context of existing educational knowledge; focused on student learning through inquiry; methodologically sound; appropriately public; conducted in partnership with students (Felten 2013). In our course design, we used the Utrecht Roadmap for SoTL (UR-SoTL) as a hands-on tool (Meijerman, Wijsman, and Kirschner 2024a, 2024b). This roadmap acts as a supporting tool for those new to SoTL and provides a step-by-step plan that helps lecturers to systematically investigate and optimize their own teaching practices. The first five steps guide the development of a detailed plan of approach for a SoTL project. These steps emphasize the scholarly analysis of teaching and learning (T&L) early in the project (Meijerman et al. 2024b). The final steps (steps 6–8) include implementation and evaluation of the novel or adapted teaching activity, as well as reflection and dissemination. Through the use of the UR-SoTL, SoTL practitioners are encouraged to think critically and develop a theoretical perspective on the various processes that affect student learning and the interventions that can be used to improve student learning. However, the UR-SoTL merely provides a roadmap or a structured process. It offers limited theoretical background or guidance. Therefore, we designed an elective course which provides students with a variety of learning activities to support them throughout the individual steps of the UR-SoTL.

This case study describes the course design and examines its potential to prepare students to engage as partners in evidence-informed educational innovation. This examination is based on an

analysis of the quality of student output and the perceptions of both students and faculty regarding the elective course. To our knowledge, this is the first study to engage bachelor-level students as partners in SoTL while simultaneously providing them with structured, ongoing guidance and support throughout the process.

APPROACH

Context

The elective course is part of the bachelor pharmacy curriculum at Utrecht University, and it is developed and hosted by the Department of Pharmaceutical Sciences. The pharmacy curriculum at Utrecht University consists of a three-year bachelor and a three-year master's program. An academic year is divided into two semesters, which each consist of two consecutive time periods of 10 weeks (i.e., four periods of 10 weeks in total). During each 10-week time period, two courses are scheduled in parallel. Each course has a study load of 7.5 credits, according to the European Credit Transfer System (ECTS). Bachelor courses are categorized into three levels: introductory level, advanced level, and expert level. The target group for this course are second- and third-year pharmacy bachelor students without experience in SoTL.

Development process

A team of three bachelor pharmacy students (referred to as students development team; StuDT), four faculty members, and an educational consultant from “Educational Development and Training,” part of the Centre for Academic Teaching and Learning of Utrecht University, co-created this course. The students from the StuDT were second year students from the bachelor pharmacy at the start of the project. They all participated in the Honours Programme of Pharmaceutical Sciences (HPPS) and used this co-creation experience as a HPPS project. The faculty members approached two of the students about joining the team. The third student asked to join after the brainstorming phase. The team added this student due to her previous experience in designing and executing a SoTL project in partnership with a faculty member. The start of developing the elective course consisted of a brainstorming and developing phase. During the brainstorming phase, we familiarized ourselves with relevant literature on SaP and SoTL and defined the aims and learning goals of the elective course. The StuDT conducted interviews with peers to identify their interests and needs. They then provided recommendations from a student perspective. In addition, the team approached stakeholders—such as the coordinators of the educational minor and of the Science Education and Communication Master's program—to ensure alignment with their programs. During the developing phase, learning activities and teaching materials were developed. First, the entire development team discussed the aim and main ideas of each learning activity. Then, students from the StuDT created materials under the guidance of one of the faculty members of the development team. The entire development team then discussed developed materials in subsequent meetings, after which the team made any necessary improvements. The entire process, from the brainstorming phase to the start of the pilot, took approximately 20 months.

COURSE DESCRIPTION

Course description and its activities

The elective course paired groups of three to five students with pharmacy teachers (faculty members referred to as the assigners) who aim to change or innovate (part of) an existing course. In order to distinguish the elective course from the courses that the assigners wished to innovate, we referred to the courses of the assigners as “project-courses.” These project-courses could include various pharmacy-related disciplines, levels, and teaching styles. We assigned students to project-

courses based on their interests, thereby fostering intrinsic motivation (Ryan and Deci 2020). Throughout the elective course, students systematically followed the first five steps of the UR-SoTL (Figure 1):

1. Reflect on the reasons behind the innovation;
2. Analyze the teaching activity;
3. Formulate a research question;
4. Determine the research method;
5. Draft a detailed plan of approach for a SoTL project.

As the UR-SoTL provides a structured process but offers limited detailed theoretical background, students were provided with supplementary workshops and guidance throughout the elective course, as indicated in Figure 1. To support students, the course employed a variety of interactive learning activities (see Table 1). We scheduled these learning activities at the same time for all students, regardless of their project. This allowed students from different project groups to learn from each other. The students also maintained regular contact with their assigner in order to gather information about the project-course and align ideas. Moreover, students regularly received feedback from peers and the elective course instructors. Towards the conclusion of the elective course, each group wrote a project proposal and an institutional SoTL grant application. Students also submitted individual reflection essays in which they reflected on their prior assumptions, their engagement with educational theory, and their changed perspectives on pharmacy education.

We designed the elective course to be offered during a single semester each academic year. At the start of the year, we invited faculty members responsible for coordinating courses to participate as assigners. As a result, the specific projects included in the course vary annually.

Figure 1. Schematic representation of elective course structure

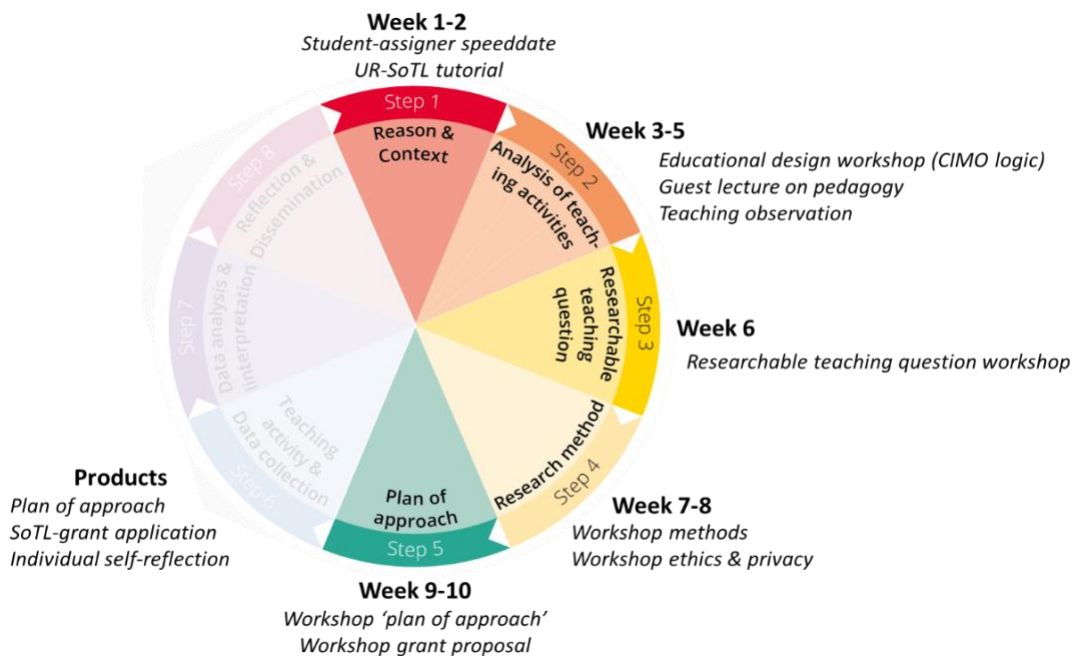


Figure 1 Notes: CIMO = context, intervention, mechanism, outcome (Denyer, Tranfield, and van Aken 2008); Figure adapted from Meijerman et al. 2024a. We paired groups of students with the assigners, pharmacy teachers looking to change or innovate a course. Throughout the elective course, students follow the first five steps of the Utrecht Roadmap for SoTL(UR-SoTL) (Meijerman et al. 2024b), resulting in a project proposal (plan of approach) and a SoTL-grant application. They participate in workshops and lectures relevant to the steps of the UR-SoTL, as indicated in italics. Additionally, they submit individual reflections.

Table 1. Overview of elective course content

Week	Learning goal	Content	Learning activities
1	To be able to link prior experience with pharmacy education to evidence-informed principles of teaching and learning.	Learning concept of evidence-informed principles of teaching and learning and practicing with examples from their own experience with pharmacy education.	<ul style="list-style-type: none"> • Think-pair share activity (Lyman 1981) • Self-study assignment • Student-assigner speed-date
2	To be able to describe the context and reason of a SoTL project.	Learning the concept of scholarly teaching and SoTL, as well as the steps of the UR-SoTL. Identifying context and reason of own SoTL project.	<ul style="list-style-type: none"> • Think-pair share activity • Creating a schematic overview of T&L context of SoTL project • Presentations • Peer-feedback • Meeting with assigner
3-5	To be able to analyse the Teaching & Learning involved in a SoTL project using CIMO-logic.	Learning the concept of CIMO-logic and applying it to example problems under guidance of the teacher.	<ul style="list-style-type: none"> • Interactive workshop
		Learning how cognitive, motivation, and regulation processes affect learning.	<ul style="list-style-type: none"> • Interactive lecture • Self-study assignment • Presentations about learning mechanisms
		Learning the concept of constructive alignment (Biggs 1996).	<ul style="list-style-type: none"> • Self-study assignment • Practice assignments during tutorial
		Learning how learning activities (interventions) can be used to improve learning, and learning to reflect critically on teaching and learning.	<ul style="list-style-type: none"> • Think-pair-share activity • Practice assignments • Self-study assignments • Teaching observation • Reflection
		Applying CIMO-logic to a project.	<ul style="list-style-type: none"> • Interactive workshop • Peer-feedback using gossip method (Abbott and Taylor 2013) • Presentations • Peer-feedback • Meeting with assigner

6	To be able to write and critically evaluate an RTQ.	Defining a S.M.A.R.T. RTQ.	<ul style="list-style-type: none"> • RTQ workshop including practice assignments • Application to project • Peer-feedback
7-8	To be able to design, describe, and critically evaluate the method of a SoTL project.	Learning what research paradigms are, and how they affect research methods.	<ul style="list-style-type: none"> • Self-study assignment • Tutorial • Jigsaw-activity
		Practicing reading educational research articles with a focus on research methods.	<ul style="list-style-type: none"> • Self-study assignments • Instructor's feedback
		Learning how to consider ethics and privacy when designing research methods.	<ul style="list-style-type: none"> • Workshop provided by privacy officer and secretary of ethical review board
		Obtaining knowledge on methods used in educational research.	<ul style="list-style-type: none"> • Self-study assignment • Workshop
		Choosing suitable method(s) to answer RTQ.	<ul style="list-style-type: none"> • Workshop • Meeting with assigner
9	To be able to write, discuss, and critically evaluate a SoTL proposal.	Discussing feedback on the "plan of approach."	<ul style="list-style-type: none"> • Feedback meeting with educational consultant
10	To be able to present and discuss a SoTL proposal.	Learning how to communicate the main ideas from the plan of approach in a convincing manner.	<ul style="list-style-type: none"> • Five-minute pitches followed by discussions with peers and teachers interested in SoTL

Notes: RTQ = Researchable Teaching Question; S.M.A.R.T. = Specific, Measurable, Achievable, Relevant and Time-bound; CIMO = Context, Intervention, Mechanism, Outcome (Denyer et al. 2008).

Week 1: Introduction

The first week of the elective course introduced the pedagogy of teaching and learning and activated prior knowledge (see Table 1, week 1). This week concluded with a student-assigner speed-date session. Teacher-assigners introduced themselves and the project-course or course module that they wanted to improve, after which speed-dating took place between teacher-assigners and small groups of students to further discuss the project-course and partnership (seven minutes per group). At the end, we assigned groups of three to four students to a project and an assigner of their choice.

Week 2: UR-SoTL step 1–Reason and context

In week 2, students were introduced to scholarly teaching, SoTL, and the UR-SoTL through an interactive workshop. They participated in learning activities to help them define the reason and context of their project (UR-SoTL step 1, see Table 1, week 2).

Week 3-5: UR-SoTL step 2–Analysis of teaching activities

Weeks 3 to 5 focused on the relation(s) between teaching activities and student learning: UR-SoTL step 2. The instructional design of the teaching activity is crucial to solving a T&L problem. The risk of paying insufficient attention to the instructional design is that familiar teaching activities are chosen, rather than those that have a high chance of solving the problem according to evidence (Meijerman et al. 2024b). The UR-SoTL uses CIMO-logic (Denyer et al. 2008) to guide this analysis. In a

specific course and T&L context (C: Context), we used a teaching activity (I: Intervention) to invoke learning processes (M: Mechanism) in order to deliver effective student learning (O: Outcome). Students were introduced to CIMO-logic in an interactive workshop. To equip students to apply CIMO-logic to their project, additional learning activities were provided which helped students identify underlying mechanisms and suitable interventions as summarized in Table 1, weeks 3–5, and Figure 2.

Figure 2. Schematic representation of learning activities in week 3–5

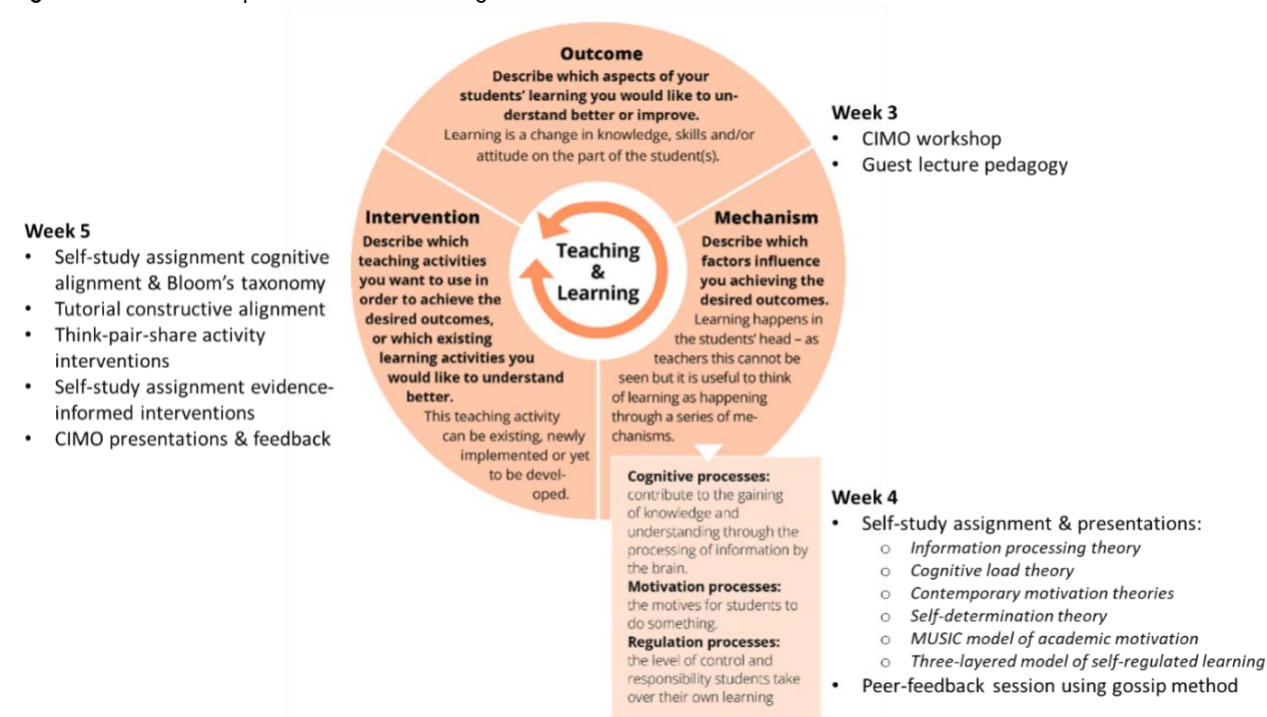


Figure 2 Notes: We used the CIMO logic model (Denyer et al. 2008) to support students with the analysis of teaching and learning (UR-SoTL step 2). Week 4 included learning activities related to Learning Mechanism (M), and week 5 included learning activities related to Interventions (I). Figure adapted from Meijerman et al. 2024a.

Week 6: UR-SoTL step 3–Researchable teaching question

Based on the analysis of the teaching activities, students defined a researchable teaching question (RTQ) that incorporated their intervention(s), mechanism(s), and intended learning outcome(s). In a workshop, they practice formulating Specific, Measurable, Achievable, Relevant and Time-bound (S.M.A.R.T.) questions using example questions. They practiced identifying and formulating different types of questions (descriptive, comparative, defining, evaluating, explanatory, or designing), and chose the type of question that was most relevant to their project. Finally, they formulated an RTQ and gave and received peer feedback (see Table 1, week 6).

Week 7-8: UR-SoTL step 4–Research method

To prepare students to develop a plan for systemic data collection to address their RTQ, we provided targeted learning activities, as summarized in Table 1, week 7–8. While pharmacy students do have some experience with biological or pharmaceutical research, educational research is a completely new field to them. Their background may affect their research design (Haigh and Withell 2020). Therefore, the learning activities included a workshop designed to familiarize students with research paradigms and their potential impact on SoTL.

Week 9-10: UR-SoTL step 5–Plan of approach

The goal of the plan of approach was to put all decisions and considerations together to ensure that everything was aligned and to consider the feasibility of the SoTL project (Meijerman et al. 2024b). Throughout the elective course, students received feedback on the individual steps of the UR-SoTL. In the final two weeks, they compiled everything, discussed their plan with their assigner, and critically reflected on the alignment. Finally, students pitched their proposals to an audience of teachers interested in SoTL and wrote individual reflections. An overview of the learning activities in these final weeks is provided in Table 1, week 9–10.

FIRST RESULTS

We aimed to design an elective course that enthuses and equips pharmacy students to contribute as partners in SoTL. By using the UR-SoTL as a hands-on tool, we invited students to take a scholarly approach to education, considering pedagogical evidence in addition to their student perspective. To evaluate whether students reached this goal, we analyzed the students' plans of approach and interviewed participating students and assigners.

Course setting and participants

We scheduled the pilot of this elective course as an advanced course during the second period of the first semester of the academic year 2023–2024. In this piloting phase we limited enrolment to 20 students in order to allow for direct adjustments. Second- and third-year pharmacy students (16 in total) participated. The students from the StuDT did not participate in the course. Students (13 out of 16) agreed with informed consent and voluntarily participated in this study, and five of these students agreed to participate in interviews. In addition, three out of five assigners (faculty members) agreed with informed consent to participate in interviews.

Measures

The faculty's ethical committee of Utrecht University approved the evaluation of this course. As part of this evaluation, student-assistants interviewed students and assigners after the end of the elective course. One student from the StuDT was involved as a student-assistant responsible for taking and analyzing interviews from both students and faculty members. We recruited two additional third year students from the bachelor of pharmacy as student-assistants to help with the student and faculty member interviews respectively. Thus, two student-assistants conducted all interviews and independently analyzed answers. These interviews focused on course perception, willingness to execute the project, and enthusiasm for participation in future projects. We used Amberscript to transcribe and anonymize all interviews before analysis. Two examiners (who are also authors of this case study) assessed the final products that students handed in as part of the elective course using a highly structured rubric based on the first four steps of the UR-SoTL focusing on rationale, literature use, research design, and academic writing. Scores presented in this case study were part of the students' assessment.

Plans of approach–content

Students were coupled to five pharmacy faculty members (assigners) aiming to improve their course. During the elective course, they developed a “plan of approach” for a SoTL project to systematically improve (part of) their assigned project-course. The context of the projects differed from first-year bachelor introductory level courses to advanced bachelor courses, and even a master's course. The issues in these project-courses could be roughly divided into motivation problems and

cognitive problems. The interventions proposed by students varied from a quartets game to help students understand connections between various aspects of the course to electronic learning platforms that aimed to reduce cognitive load (see Table 2).

Table 2. Summary of the students' projects

	Context	Intended outcome	Mechanism	Intervention
A	Final theme of the first-year bachelor course "Introduction into Pharmacy."	Students understand the study material of the final theme better.	Cognitive overload. Students experienced the material presented in the final theme as completely novel and could not process that amount of information in the time available.	Make students develop and play a Quartets game throughout the course, in which the various themes are connected with each other, to help them connect new information to familiar concepts.
B	Mind map assignment in first year bachelor course "Introduction into Pharmacy," which is intended to help students study large amounts of information.	Students learn how to organize large amounts of information.	Lack of motivation. Students don't find the assignment useful and also do not feel competent to make a mind map from large amounts of information.	Multiple, coupled interventions which together make students experience the usefulness of making mind maps and help them to make mind maps successfully.
C	Practical sessions in first-year bachelor course "Epidemiology and Clinical Development of New Drugs."	Students learn effectively during the practical sessions.	Cognitive overload. Students lack relevant prior knowledge in practical skills and do not know where to find relevant information. They feel overwhelmed.	Online learning platform in which all relevant information can be found, including preparation modules with knowledge clips for each practical session.
D	Second year bachelor course "Pharmaceutical Product Care" in which students learn how to make drug preparation instructions and analysis plans.	Students have a clear understanding of how to make preparation instructions and analysis plans and have good practical skills.	Cognitive overload. Students lack relevant prior knowledge and do not know where to find relevant information.	Question-embedded video-based learning tool consisting of three modules: preparation instructions, analysis plan, and practical skills.
E	Second year master course "Therapeutical Proteins."	Reduce stress, allowing students to learn more effectively.	Cognitive overload, though the cause is uncertain.	Analysis of learning activities resulted in three hypotheses regarding the cause of the problem, which should first be evaluated before proposing a solution.

Plans of approach–quality

We used a rubric to assess the quality of the plans of approach. All plans scored at least “sufficient” for each step of the UR-SoTL, except for one project which scored “insufficient” for UR-SoTL step 5: Plan of approach (see details below and scores in Table 3).

Table 3. Scores of the students' projects

	A	B	C	D	E
Context and reason	9	10	8	9	8.5
Analysis of teaching activities	7.5	9	7	8.5	7
Researchable teaching question	8.5	10	7	7.5	7.5
Research method	8	10	8	10	8.5
Plan of approach	7.5	9	9	8	5

Scores are given as numbers out of 10. The letters A-E correspond to the projects described in Table 2.

UR-SoTL step 1: Context and reason

All projects clearly described the reason for the project, as well as the relevant details of the teaching context. Scores ranged from eight (good) to 10 (excellent) out of 10.

UR-SoTL step 2: Analysis of teaching activities

As expected, the analysis of teaching activities was one of the most difficult steps (Meijerman et al. 2024b). Despite this, all projects demonstrated good alignment between proposed learning activities (interventions), underlying learning processes (mechanisms), and desired learning outcomes. Two projects scored very well (8.5 and 9 out of 10) on this step of the UR-SoTL. These projects stood out because of the convincing argumentation of the intervention, the relevant underlying learning mechanism, and their intended outcomes. Moreover, the projects described the interventions in detail and supported key aspects with relevant literature. The only point of feedback was that more literature could have been used to support specific aspects of the interventions. The other projects scored sufficient-well (7–7.5 out of 10) because their intervention, intended outcomes, and relevant learning mechanisms aligned but were not as convincingly supported by evidence.

UR-SoTL step 3: Researchable teaching question

All projects contained an RTQ that followed logically from the analysis of teaching activities. Scores ranged from seven (sufficient-good) to 10 (excellent) out of 10. The RTQ that scored a 10 clearly included the learning mechanism (motivation) and intervention (guided practice): “What is the effect of guided practice on student motivation during the mind mapping assignment in the course ‘Introduction into pharmacy?’” Moreover, the question is specific (only one outcome is studied within a specific course) and is measurable. The RTQ that scored a seven mentioned the intervention and intended outcome, but it did not mention the learning mechanism, and could be more specific: “How does the ULearning module influence the experience of students during the practical sessions of CPS-102, with specific emphasis on situations in which they feel overwhelmed?”

UR-SoTL step 4: Research method

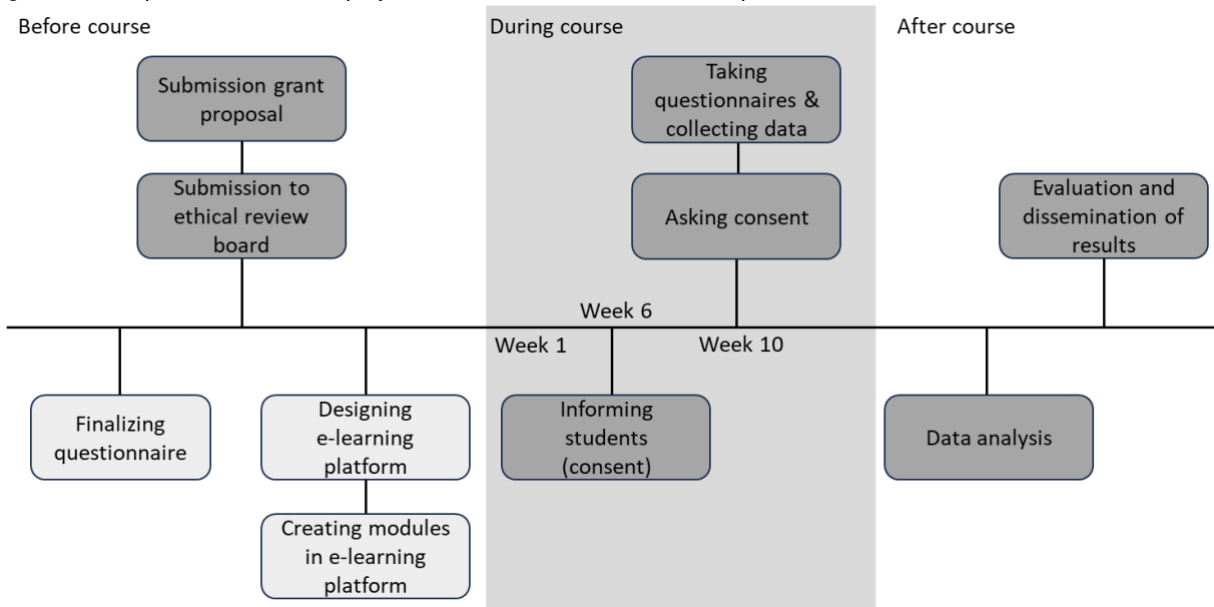
All projects had a well-designed research method, with scores ranging from eight (good) to 10 (excellent) out of 10. The described methods all aligned well with the RTQ, and the projects clearly described the research instruments as well as the design. Moreover, they included a good combination of qualitative and quantitative research methods. Qualitative methods included student

interviews (with well-defined interview questions), open-ended questionnaires, and analysis of the quality of products handed in by students. Quantitative methods included analysis of student test scores, log data (from e-learning platforms), and relevant validated questionnaires. The projects also thoroughly described intended data analysis. The methods that scored a 10 were also supported by relevant literature.

UR-SoTL step 5: Plan of approach

The quality of the last step of the UR-SoTL varied widely between projects. Two plans scored a nine (very good), while one plan scored a five (insufficient) out of 10. The plans that scored a nine both described a feasible plan outlining a thorough task division and included a clear, complete timeline (see Figure 3). They also described the added value of the different team members, including teachers and student-assistants. These plans discussed potential risks, as well as efforts to mitigate them. The plan that scored a five contained a timeline of the project, but the information on the who, what, when and how was too limited. For example, the exact role of student-assistants, teachers, and the course-coordinator was unclear. While the timeline highlighted the different steps of the project (i.e., development of research instruments, data collection, analysis, application), the plan provided no details regarding the timing of these steps. For example, it was unclear when students would be informed about the project and when they would receive questionnaires (before, during, or after the course).

Figure 3. Example timeline from a project scored with a 9 out of 10 for step 5 of the UR-SoTL



To conclude, an analysis of the students’ “plans of approach” suggests that the elective course successfully equipped students to contribute to evidence-informed course innovation. Strikingly, all projects scored sufficient, and two out of the five projects even scored very good on the analysis of teaching activities, a step which even senior faculty find difficult (Meijerman et al. 2024b). The “plans of approach” were evidence-informed and methodologically sound and demonstrated alignment between proposed learning activities, underlying learning processes, and desired learning outcomes. The variety of the quality of UR-SoTL step 5 highlighted the need for more guidance with this step. To this extent, an additional workshop will be implemented in week nine of the elective course.

Preliminary course experience

Students' course perception

Five out of 16 students agreed to participate in interviews. All interviewed students enjoyed the elective course. They appreciated that the course differed from other classes and that it encouraged them to reflect on their own education.

All five students mentioned that they found the elective course very interesting and that it changed their perspective on education. Two out of five students stated that they were more willing to participate in education-related projects in the future, as they felt more knowledgeable and capable of contributing. "Before this, I don't think I would have volunteered to help with an education-related project, but now I might, because I have the feeling that I have more knowledge," one student said. However, all students noted that they did not have much spare time to contribute to future projects (outside of class requirements) or to continue working on their own project after the elective course had ended.

Assigners' course perception

All three interviewed assigners had a positive experience. The workload was low, they learned from the experience, and they were enthusiastic about the students' work on their project. "I learned a lot from it (. . .) I think it is a nice stepping stone for teachers who have interest in SoTL and who want to learn more," one of the assigners said.

All interviewed assigners considered executing the project, and one of them had already started the next phase. Moreover, all assigners reported that they would like to collaborate more with students in the future and mentioned that the elective course had a positive impact on this.

These preliminary findings suggest that the elective course had a positive impact on the enthusiasm of students and teachers, increasing motivation to participate in educational projects together. While most students had not previously considered contributing to educational projects, they now felt that they could make meaningful contributions. Despite this, the students did not plan to contribute to the execution of the project or to other education-related projects in the near future due to time constraints. While this is unfortunate, it does highlight that the elective course offers students the opportunity to contribute to improving education, something they might not otherwise be able to do.

Course instructor's reflection

As expected, students need support when designing their first SoTL project. In this elective course, a variety of learning activities provided that support. We noticed that students especially required support in applying the CIMO-logic to their project, and that timely feedback on individual steps of the UR-SoTL was essential. During the piloting phase, experts offered feedback to students on a draft of their plan of approach in week nine of the elective course. While these feedback meetings were very useful, they occurred too late in the course, and students had to make major changes to their projects in the final week. Therefore, we propose future iterations provide timely feedback on individual steps of the UR-SoTL, for example after week two (UR-SoTL step 1), six (UR-SoTL step 2-3) and eight (UR-SoTL step 4).

Like faculty, students also require support in finding and interpreting relevant literature. Initially, they were unable to find literature relevant to their project. They needed help in finding relevant literature databases for educational research and in developing appropriate search strategies (e.g., selecting and combining search words). During the elective course, students searched and interpreted literature during assignments. These assignments highlighted these challenges,

which allowed faculty members to provide timely support. Students also applied some of the articles that they found during these assignments to their project.

While the elective course provides a lot of guidance on instructional design and research methodology (UR-SoTL step 2–4), it offers less guidance on how to put all information together to create a plan of approach (UR-SoTL step 5). This is reflected in the variety of the quality of UR-SoTL step 5 in student plans of approach. We therefore propose to include an additional workshop in week nine of the elective course in which students are encouraged to think critically about the who, what, and when of their project, resulting in a detailed timeline.

While all assigners were enthusiastic, their projects, expertise, and expectations varied widely. Some assigners had not yet identified underlying reasons behind the problems in their course. This made it difficult for the students to find suitable interventions, especially if they had not enrolled in the project-course themselves, and if limited data was available on the perspectives of students in the project-course. On the other hand, some assigners already had some interventions in mind, which resulted in them steering the students too much. For example, one student mentioned in the interview, “So in that regard, it felt a bit like I didn’t really have my own say in it, but rather that the assigner was very specific in steering me.” To circumvent these problems, we propose to meet with each potential assigner before the start of the elective course in the future. In this meeting, we can discuss the project as a whole and define one clear reason for the project. If needed, further research can be suggested. We will also explicitly instruct assigners to give the students freedom and autonomy to come up with their own ideas, as this is more motivating for students and results in more creative suggestions.

DISCUSSION

We hoped to design an elective course that inspires and equips pharmacy students to contribute as partners in evidence-informed educational innovation, using the principles of SoTL. We grounded this elective course in theory. The elective course uses the first five steps of the UR-SoTL (Meijerman et al. 2024b) as a framework to help students develop a theoretical understanding of educational innovation and its impact on learning. The UR-SoTL is based on the five fundamental principles of SoTL, as identified by Felten (2013), and includes instructional CIMO-logic early in the process (Meijerman et al. 2024b).

This case study aimed to describe the development and design of this elective course, with the intention of inspiring the creation and implementation of similar initiatives. Preliminary findings from interviews provide valuable insights into the perceptions of both assigners and students. However, given the small numbers of interviewed students, these findings should be interpreted with caution. Participating assigners were enthusiastic about the students’ work on their project. While we designed the elective course to equip students, assigners mentioned that the course is also a nice steppingstone for teachers who want to learn more about SoTL. Importantly, participating assigners mentioned that the workload for them was low. Since faculty workload is already high (Muscanell 2024), which may prevent teachers from getting involved in scholarly (evidence-informed) teaching and SoTL (Stuart, Cassidy-Neumiller, and Harvey 2023), the elective course might lower the threshold for teachers to get involved. All participating assigners also mentioned that they are planning to implement the proposed interventions and to evaluate the effect on student learning. While the participating students who agreed to participate in interviews mentioned that they were keen to contribute to the execution of their project, time constraints hindered them.

To foster intrinsic motivation, we gave students the autonomy to get involved in a project of their interest (Ryan et al. 2020). However, this resulted in some students having to collaborate with

students that they did not know, which may have had a negative impact on their motivation. Other students indicated that they wanted to work together and selected a project based on relatedness and not their interest in the project. As a result of this choice, not all students worked on a project of primary interest. Analyzing the impact of this on student motivation could be an area of further research.

In the elective, students collaboratively developed plans to systematically improve education. While this undoubtedly benefits the quality of teaching and learning, it is important to recognize that students attend university to learn—not as employees tasked with improving education. Although this is an elective course, a significant proportion of the students enrolled simply because there were limited places available on other elective courses. As such, one could argue that this course misuses students and makes them do a job that faculty members should do. However, studies suggest that being involved as a student partner results in learning benefits for students (Cook-Sather, et al. 2014; Mercer-Mapstone et al. 2017) and can be a transformative experience (Lubicz-Nawrocka et al. 2021). Faculty should therefore highlight the advantages of partnership between teachers and students. The students from our StuDT have also reflected on the benefits of such a partnership (Maas et al. 2026). Moreover, the thematic analysis of the reflection essays written by the students as part of the elective indicates that this course produced a variety of insights that students could apply throughout the rest of their academic studies. This evaluation of student impact is ongoing and will be presented in a follow-up publication.

We designed the elective course to be offered once each academic year, with different faculty members participating as assigners each time. This set-up encourages involvement of multiple faculty members in SoTL and in partnerships with students. This stimulates scholarly teaching and has the potential to contribute to a more egalitarian culture. However, in order to achieve this, new assigners need to be recruited each academic year, which may cause problems in terms of sustainability. Implementation of this elective course, therefore, requires efforts to inspire and support faculty to get involved in SoTL and in partnerships with students. These may include inviting faculty to pitches from participating students and assigners, organizing accessible workshops on scholarly teaching, SoTL, and partnering with students, and building communities of practice who share a passion for scholarly teaching and SoTL. Although we developed the elective course for pharmacy students, the same course design could be used in other disciplines. Equipping and enthusing both students and faculty to engage in SoTL together could have a transformative impact on both groups (Cook-Sather et al. 2014; Gravett et al. 2019; Healey et al. 2014; Mercer-Mapstone et al. 2017), foster more equal relationships within universities (Matthews et al. 2018), and lead to improved education (Fanghanel, Potter, Pritchard, and Wisker 2016). As such, we envision a future where students and staff across all disciplines are equipped to engage in SoTL together. To achieve this, the elective could be adapted for use in different disciplines or a multi- or interdisciplinary elective could be created. An interdisciplinary elective has the benefit that students are exposed to other research paradigms, which may result in more awareness of the impact of research paradigms on SoTL (Haigh et al. 2020). Moreover, they would be exposed to learning activities from other disciplines, which may help them to design more creative interventions. However, an interdisciplinary approach would also bring challenges. Not all interventions are appropriate for all teaching contexts and disciplines. For example, while case-based learning is relevant to pharmacy students, it might be less relevant to chemistry students. In addition, finding and connecting faculty members and students interested in SoTL across different programs and disciplines might result in organizational challenges.

While this case study highlights the potential of an elective course to encourage partnerships between students and staff in SoTL, further research may evaluate the impact of this elective course

on participating students and faculty as well as on the quality of education. For example, the long-term impact on participating faculty could be evaluated by investigating whether they remain involved in scholarly teaching, SoTL, and partnerships with students after the elective course has ended. In addition, we could evaluate how many projects are implemented and what the effect of these projects is on student learning. Finally, student impact could be evaluated by analyzing reflection essays and data from student interviews and questionnaires. To obtain reliable results, these evaluations should include students, faculty members, and SoTL projects from multiple cohorts.

CONCLUSION

The first five steps of the UR-SoTL can be used as a framework for an elective course to inspire and equip students to participate in evidence-informed educational innovation projects. In the course, student groups are paired with faculty members seeking to enhance their teaching. When engaging in SoTL, students are stimulated to take a scholarly approach to education, considering pedagogical evidence in addition to their student perspective. Supplementary workshops and lectures provide students with the required knowledge and skills. This elective course can be implemented by any institution wanting to encourage partnerships between students and staff. It can contribute to a more egalitarian academic culture, one where students and staff approach T&L together in a systemic manner using the principles of SoTL. While this case study illustrates how an elective course can serve as a platform for fostering student-staff collaborations in SoTL, additional research is needed to assess its impact.

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ETHICS

The Science-Geosciences Ethics Review Board Committee of Utrecht University approved this study (Bèta S-23137).

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