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Experiences with Supporting Teachers with Scholarship of Teaching and Learning at a Research-Intensive University: Lessons Learned

ABSTRACT

Scholarship of Teaching and Learning (SoTL) is a fast-maturing field of study within many research-intensive universities. SoTL improves the quality of teaching, the professional development of teachers, and the recognition and appreciation of education. To encourage SoTL, it is important to know how to support teachers. This study describes two pilot initiatives with the goal to encourage and support teachers at a research-intensive university with their first SoTL project. In both pilots, a community of practice (CoP) approach was used. The experiences with the pilots were investigated with questionnaires and interviews. Based on the feedback of participants, albeit with some caution because of the relatively small sample size of this study, suggestions for future initiatives that support teachers new to SoTL at research-intensive institutes are: 1) the use of a combination of a CoP and individual guidance by experienced SoTL facilitators; 2) the creation of opportunities for formal and informal interaction to strengthen the CoP; 3) encouraging participants to work together on (shared) aligned projects; 4) the provision of structured course elements with guided discussions; 5) the provision of theoretical support regarding the principles of SoTL, for example, finding and interpreting literature, formulating a research question, and choosing the research methodology; 6) structure the inclusion of students' participations, perspectives, and roles in SoTL; 7) some form of obligation, such as an official status of the initiative; and 8) institutional support, such as providing recognition, time, and financial support. The lessons learned in this study have relevance for all universities seeking to embrace, encourage, and support SoTL, especially for those initiating their first SoTL-supporting activities.

KEYWORDS

higher education, professional development, research-intensive university, communities of practice

INTRODUCTION

At many universities, including Utrecht University (UU) in the Netherlands where this study took place, interest in teaching and learning is evolving. There is a growing awareness that the quality of teaching and learning is important, and that professional development in teaching and learning should be recognised and rewarded (Chalmers 2011; Fung and Gordon 2016; VSNU et al. 2019). Even at research-intensive universities, achievements in teaching and educational scholarship are becoming recognised as key factors for tenure and promotion (Chalmers 2011; Fung and Gordon 2016; Van Dijk et al. 2020). We acknowledge the developing

reflective-practice approach of scholarship of teaching and learning (SoTL) and its growing representation at international conferences, in journals, and in funding opportunities. SoTL is defined here as a deliberate, systematic, research-informed approach to develop, implement, investigate, and disseminate teaching practices that advance the learning experiences and outcomes of students and teachers alike (Williams 2015).

Utrecht University (UU), a research-intensive university, has traditionally been a front runner in educational change and academic development in the Netherlands. Recently, unique opportunities have been created for SoTL through the establishment of CAT, the Centre for Academic Teaching and Learning (CAT 2021). CAT is a network that incorporates all partners within UU that work on the continuous improvement of academic teaching. The three pillars of CAT are educational scholarship, teacher development, and educational innovation. The educational scholarship pillar is aimed at improving support, recognition, and appreciation of both SoTL and Discipline-Based Educational Research (DBER).[1] As part of this pillar, CAT organised the first UU SoTL conference in 2019. However, despite this positive culture change, relatively few teachers are currently engaged in SoTL. Of those who are, most started with SoTL on their own initiative and often within a rather isolated position in their department. In addition, at the time this study was conducted, no structural support for teachers engaging in SoTL was offered and most of the CAT initiatives had not yet begun. As a result, familiarity with SoTL, its general principles, and its benefits for students, teachers, and the institute, remained limited. Designing and providing increased structural support for teachers who want to engage in SoTL therefore represented a logical step at UU.

According to Mårtensson, Roxå, and Olsson (2011), SoTL is best stimulated when seen as a form of academic development that provides teachers with sufficient and adequate support. For research-intensive universities, such as UU, the primary concern would then be where to start with providing support for SoTL. What are the challenges that those new to SoTL face and how can the support provided overcome such challenges? Which SoTL-supportive activities work in a given context and culture? Finally, what proves most effective in the design of initiatives to optimally support and encourage teachers new to SoTL?

Challenges in starting with SoTL

Depending on the culture and context of individual universities, SoTL is often not valued as a legitimate form of scholarship (Medina et al. 2011). Despite the positive developments, especially at research-intensive universities, career opportunities and rewards are often based on achievements within traditional disciplinary research (Asmar 2002). Educational research—even the practice-based and classroom approach of SoTL—is seen as a task for educational scientists rather than teachers (Short, Keefer, and Stone 2009). For teachers, it remains uncommon to augment their teaching practice ("what works and why") with insights from educational research on teaching and learning (Davies 1999; Short, Keefer, and Stone 2009). Teachers who want to engage in SoTL thus often experience difficulties when transitioning from their own discipline into the research context of SoTL (Kelly, Nesbit, and Oliver, 2012). The challenge of the contrasts between SoTL on the one hand, and the epistemology and research methods common to those new to SoTL on the other, was also described by Miller-Young, Yeo, and Manarin (2018). In their study, STEM participants from a

SoTL development programme expressed discomfort because of the perceived subjectivity of SoTL, while participants from the humanities experienced greater difficulty with the objectivity of SoTL research. It is therefore clear that using social science research methods and dealing with new research paradigms can be complex and challenging for SoTL novices across a range of disciplines (Hubball and Clarke 2010; Marquis, Healey, and Vine 2014; Webb and Tierney 2019).

Additionally, those new to SoTL perceived problems related to their identities as teachers, researchers, and members of a wider disciplinary community (Miller-Young, Yeo, and Manarin, 2018; Webb 2016). SoTL novices may feel that they have been using pedagogical approaches that were less than ideal. Feeling a lack of expertise and confidence in the new research approaches of SoTL can also make novices feel uncomfortable (Miller-Young, Yeo, and Manarin, 2018; Webb 2016). Furthermore, teachers who wish to engage in SoTL often find themselves isolated within a particular group or department (Marquis, Healey, and Vine 2014; Mårtensson, Roxå, and Olsson 2011).

These challenges were apparent in the context of UU when this study was conducted. Teachers at this university, working in a research-intensive environment with discipline-based research paradigms and recognition mainly based on research-output, find it very hard to make the transition towards the educational practice of SoTL.

Established supportive strategies

Support should be offered to teachers to tackle challenges such as lack of knowledge about educational literature, barriers encountered when planning and executing a SoTL project, feelings of isolation, and effective crossing of research boundaries. However, any such support will be limited unless it is further enhanced through the creation of a culture that appreciates and values SoTL. The aim of this study is to discover how to effectively support teachers who want to engage in SoTL at research-intensive universities.

There are several supportive strategies that can be used to overcome the challenges outlined above. For example, making SoTL a less solitary activity by providing possibilities for exchange and networking, on-site conferences, symposia, and other events (Cohn 2010; Dunwoody et al. 2012; Mackenzie 2009). Although the benefits of these activities are clear, they are often directed solely at creating familiarity with SoTL and changing the university culture. As such, the experience at UU is that these activities do not always provide a solution for all the uncertainties faced by teachers when first engaged in the practice-based educational research of SoTL. Hubball, Clarke, and Poole (2010) and Weaver et al. (2013) showed that individual SoTL mentoring by faculty members with SoTL experience leads to more positive outcomes of SoTL projects. This is especially true for those unfamiliar with social sciences methodologies (Hubball, Clarke, and Poole 2010). Some higher education institutes have incorporated SoTL into professional development or graduate programmes or offer specific courses and workshops devoted to SoTL in order to provide teachers with the necessary knowledge and information (Charlier and Lambert 2019; Cohn 2010; Ginns, Kitay, and Prosser 2008; Hassan 2017; Hubball and Burt 2006; Hutchings, Huber, and Ciccone 2011; Mackenzie 2009; Mårtensson, Roxå, and Olsson 2011; McConell 2012; Reano, Masta, and Harbor 2019; Swart 2018; Waterman et al. 2010).

Another powerful way of supporting individual teachers in their development is to create opportunities to participate in communities of practice (CoPs). According to Wenger (1998), CoPs are groups of people who are interested in the same topics and who interact regularly. They only learn together but also from each other. Wenger's (1998) theory identifies three core elements that characterise CoPs: the mutual engagement of the participants; participation in a joint enterprise; and a shared repertoire. Mutual engagement encompasses the level of communication and interaction between participants. A common set of tasks that can be decided upon and negotiated jointly is a key feature of a joint enterprise. The knowledge, skills, terminology, and capabilities of the participants constitute their shared repertoire (Iverson and McPhee 2008; Wenger 1998).

Central to a meaningful CoP is a collaborative learning process (Pyrko, Dorfler, and Eden 2017). Wenger (1998) also mentions identity as a critical component of the formation of a CoP. Membership of a CoP engages the individual in the process of being an active participant in the practices of social communities, constructing identities in relation to those communities (Wenger 1998). It is through participation in such a group that the community's identity and practices develop (Wenger 1998). Mathany, Clow, and Aspenlieder (2017) state that "developing an identity as a SoTL-researcher is strongly associated with tensions of expanding on one's disciplinary identity and often traversing the liminal space between disciplines" (1). Negotiating the meaning of the experienced membership of the CoP can overcome such tensions and support the development of a shared SoTL identity, particularly amongst those new to SoTL (Mathany, Clow, and Aspenlieder 2017; Wenger 1998). In this context, a CoP offers an opportunity for reflective practice and creates a space in which to think about, and discuss, the concepts and difficulties presented by SoTL (Kreber 2007; Webb and Tierney 2019). Being part of a CoP challenges teachers to revise and transform their teaching practice based on reflection and shared experiences (Lieberman and Pointer Mace 2009; Pareja Roblin and Margalef 2013). Furthermore, such communities can solve the problem of isolation that many academic teachers experience when engaging in SoTL (Cornejo Happel and Song 2020; Hubball, Clarke, and Poole 2010; Michael 2012; Richlin and Cox 2004; Waterman et al. 2010).

Many studies of SoTL-supportive initiatives provide no research-based evidence or information about the (perceived) learning benefits of the SoTL support offered. Rather, these studies primarily provide examples and descriptions about how to create and sustain a SoTL culture at universities. They also commonly lack a more rigorous description of specific SoTL-supportive initiatives. Additionally, information regarding whether (or not) a given approach is effective in tackling the challenges teachers new to SoTL face is hard to find. The findings of Waterman et al. (2010) do suggest that a programme centered on action research and collaborative peer consulting works well to improve teachers' skills in SoTL at a regional, teaching-intensive university. Hubball, Clarke, and Poole (2010) mention the successful combination of individual mentoring and a CoP at a research-intensive university. The study described in this paper was therefore performed to increase the knowledge about effective strategies for supporting teachers engaged in SoTL at research-intensive universities.

SoTL pilot programmes at Utrecht University

To support SoTL at UU, two pilot programmes aimed at supporting teachers with their first SoTL projects were performed. The general research question was: What works well and what is less successful in designing and delivering SoTL-supporting activities? This question is approached in two ways: First, we examine the experiences of the participants of the two pilots. According to participants, which aspects of the design are effective, and which were less successful in facilitating support of, and engagement in, SoTL? Second, we ask participants to evaluate how their knowledge and skills improved whilst using a SoTL approach for teaching and learning. What problems did they encounter, and how might support be improved? The insights obtained from this study will be used to design future initiatives in support of SoTL, thus encouraging a more systematic scholarly approach to teaching and learning at UU.

METHODOLOGY

Pilot 1: Teacher-led

The first pilot was organised within the Teaching Academy Utrecht University (TAUU). TAUU is a network run by teachers for teachers that organises activities (e.g., meetings, workshops, lectures) and maintains an online environment for sharing experiences and knowledge (see Table 1). Every academic at UU is automatically a member of TAUU.

Two teachers, one from the faculty of science and one from University College Utrecht, initiated the formation of a community of teachers from UU who were interested in engaging with SoTL. Participation was voluntary and there was no financial or teaching-hour compensation for time invested. In total, 14 participants from six different faculties joined the initiative: four from the faculty of science; three from University College Utrecht; one from the faculty of veterinary medicine; two from the faculty of medicine; three from the faculty of social and behavioural science; and one from the faculty of law, economics, and governance. All participants were new to SoTL and educational research. In total, five participants completed the programme and nine dropped out. The main reason given for dropping out was a lack of (dedicated) time for the pilot.

To stimulate the formation of a CoP and to give sufficient opportunity to share experiences and learn from each other, a deliberate choice was made to dedicate most meeting time to reflective practice and discussion of the concepts and difficulties of SoTL (Kreber 2007; Webb and Tierney 2019). Over a period of one year (September 2016–August 2017), six two-hour meetings were organised, outside working hours, consisting mainly of guided peer discussions and three course elements: introduction into SoTL; an introduction to questionnaires and related statistics; and possibilities for qualitative methodology and study design. Every participant worked on a SoTL project of their own choice. The participants were encouraged to purchase Bishop-Clark and Dietz-Uhler's (2012) book *Engaging in the Scholarship of Teaching and Learning*. During the meetings, facilitators referred to various chapters from this work. At their own request, two participants received individual guidance from the facilitators and statistical experts. At the end of the pilot, three participants gave a presentation at a TAUU meeting.

Pilot 2: Faculty-led

The second pilot was organised by the faculty of science as part of the project "Community of Expertise: Student-Activating Teaching Methods in a Blended Environment" (see Table 1). Eleven teachers from five different departments within the faculty of science participated in the community programme: one from biomedical sciences; three from information and computer science; three from pharmaceutical sciences; one from physics; two from mathematics; and one from biology. Participation was voluntary, but all participants received 100 teaching hours for their participation in the project (which could be converted into €5000). All participants completed the programme. Just as in pilot 1, all participants were new to SoTL and educational research.

This project started with the aim to inspire and support teachers to integrate more blended learning into their teaching. A CoP stimulated the sharing of ideas and experiences with blended learning. As SoTL was the chosen method for working on their innovation projects (but not the original aim, as in pilot 1), the participants did not make a conscious choice to use SoTL before signing up for the project. Again, a deliberate choice was made to establish a community, with most meeting time spent sharing the progress of the different projects in the form of discussions and presentations.

From September 2016 to December 2017, one introductory meeting (three hours, with dinner), and 10 subsequent two-hour meetings were organised. All meetings consisted mainly of guided peer discussions, best practice examples in blended learning from teachers outside the project, workshops, assistance making knowledge clips (short videos for students), and presentations by participants about their individual SoTL projects. In two meetings, specific attention was paid to SoTL, explaining the main steps (obtaining an idea for a project, formulating a research question, choosing the right methods to collect and analyse data, and sharing results) in relation to the participants' own projects, and to introducing qualitative and quantitative research methods (Bishop-Clark and Dietz-Uhler 2012; Felten 2005). Every participant also had two or three individual mentor meetings with one of the five facilitators. In these meetings, participants were supported and encouraged in their use of a SoTL approach for their blended-learning project. Four of the facilitators were from the faculty of science and one from educational consultancy and professional development. All facilitators had experience with SoTL projects or other forms of educational research. As in pilot 1, participants were encouraged to purchase Bishop-Clark and Dietz-Uhler's (2012) book. Unlike in pilot 1, however, the book was not used to structure the meetings. Each participant presented their project with a poster at the yearly Education Symposium of the faculty of science.

Table 1. Overview of the two pilots

	Pilot 1	Pilot 2
Description pilot		
Aim	Supporting teachers with their first SoTL project	Inspire and support teachers to integrate more blended learning in teaching.
Motivation to participate	Participants deliberately chose a programme that offered guidance in SoTL	Participants signed up to join a learning community about blended learning, unaware of the SoTL approach. SoTL was deliberately chosen as the method for the teaching innovation projects of the participants.
Institutional support	No	Funded by an institutional faculty grant.
Participation	Voluntary	Voluntary, but every participant received 100 teaching hours (or € 5000).
Organisation	Teaching Academy Utrecht University (TAUU)	Faculty of Science
Recruitment	Announced via website and newsletter TAUU Solicitation by Email	Announced via faculty website, email to staff of the faculty, and approaching educational directors of the different departments for suitable candidates. Solicitation by Email
Number of participants at the start	14	11
Number of participants completing the pilot	5	11
Number of faculties involved	6	1
Meetings	1 year 6 meetings of two hours Planned outside working hours	1.5 years One introductory meeting with dinner (3 hours) 10 meetings of two hours Planned during working hours
Facilitators (One facilitator was involved in both pilots)	Two facilitators, one from the Faculty of Science, one from University College [name]. Both facilitators had a disciplinary background, and some	Five facilitators, four from the Faculty of Science, one from Educational Consultancy and Professional Development,

	experience in SoTL. Together the facilitators designed the programme and guided the participants.	experienced in faculty development. All five facilitators had some experience either in SoTL or in other forms of educational research. The five facilitators together designed and guided the programme.
Working format	Guided peer discussions Three course elements: -Introduction SoTL -Questionnaires -Qualitative methodology and study design	Guided peer discussions Best practice examples of blended learning Workshops and guidance developing knowledge clips Presentations of the projects by the participants Providing information about SoTL: -Introduction to SoTL -Introduction to qualitative and quantitative research methods
Individual mentoring	On request (two participants)	Two to three individual mentor meetings with one of the facilitators, mainly guidance in using a SoTL approach for their project
SoTL project	Individual, own choice	Individual, own choice
Book	Recommended book Bishop-Clark and Dietz-Uhler, *Engaging in the Scholarship of Teaching and Learning: A Guide to the Process, and How to Develop a Project from Start to Finish* (2021) Book was used to structure the meetings	Recommended book Bishop-Clark and Dietz-Uhler, *Engaging in the Scholarship of Teaching and Learning: A Guide to the Process, and How to Develop a Project from Start to Finish* (2021)
Other shared materials	Relevant publications and helpful internet links, PowerPoint hand-outs	Relevant publications and helpful internet links, PowerPoint hand-outs
Learning environment and tools	Google Docs	Feedback Fruits
Sharing results SoTL project	Public final presentation at dedicated TAUU meeting (n=3)	Posters at annual Education Symposium Faculty of Science (n=11)
Number of participants in the study		
Semi-structured interviews	3	5

Online questionnaire	n.a.	11
Short email questionnaire about reasons to stop	3	n.a.

All participants in the pilots were new to SoTL and educational research.

Interviews and questionnaires

A semi-structured interview of one hour was held with a total of eight participants. These included a random selection of three participants who finished pilot 1 and five participants from pilot 2 (see Table 1). Combining participant research from both pilots had the advantage of being able to compare the two different approaches and to find out what works best in our university's context. The interviews were recorded and analysed by the first author, Irma Meijerman.

The interviews were critically analysed (but not fully transcribed) as follows. For every participant, the relevant statements made in the interview were coded for themes and recorded in a table with six different columns: motivation for participation; achieved goals; learned content; guidance; appreciation; and tips for future SoTL courses. Based on the information in the rubric, statements were further sorted according to (1) experiences with what did, or did not, work, including personal dimensions, CoP, design, and recognition and appreciation; and (2) knowledge and skills, including those acquired whilst using a SoTL approach for teaching and learning and what did, or did not, contribute to that process. In addition, two interviews were made by the second author, Femke Kirschner, with randomly selected participants. These interviews checked the consistency of the results and to ensure no theme was overlooked. This audit ensured consistency between the findings of the two authors.

A short questionnaire with three open questions was sent via email to the participants of pilot 1 who did not complete the programme. The questions concerned their reasons for participating in the pilot, their primary reason for dropping out, and their recommendations for future SoTL initiatives. All participants of pilot 2 received an online questionnaire at the end of the project with 11 questions pertaining to their views, behaviour, and attitude towards SoTL.

The research was performed according to the research ethics guidelines of the Science-Geo Ethics Review Board of UU. All participants filled out an informed consent form, agreeing to the use of the anonymised information for research purposes.

FINDINGS

In this research, our aim is to identify (1) what, in the perception of the participants, is effective and what is less successful in supporting SoTL; and (2) what knowledge and skills the participants gained in the two pilots within the research-intensive context. Analysing the interviews and the questionnaires, several relevant themes concerning effective support for SoTL emerged. These themes were: (a) personal dimensions, including reasons to participate or stop; (b) conditions, meaning time and recognition; (c) the core elements for a well-functioning CoP (i.e., mutual engagement, joint enterprise, shared repertoire); (d) structure and guidance; and (e) obtained knowledge and skills. Although the two pilots differ in structure and in the

motivation of the teachers concerned, we found commonalities; thus, joint conclusions can be drawn. In addition, simply by comparing them, it becomes clear where the problems lie in supporting participants who are "new to SoTL," such as the participants of these pilots. The two pilots are therefore discussed simultaneously.

a. Personal dimension: Reasons to participate

Different reasons for joining either one of the pilots were given, namely: the value for obtaining a senior teaching qualification; obtaining a small grant to spend on professional development; a new teaching job; wanting to improve their (blended-learning) teaching; reflecting on teaching and learning; and being asked to participate by the educational director — the latter representing an external motivation. Two specific reasons were mentioned by half of the participants. The first was getting to know people outside their own department to exchange ideas and experiences and learn from each other. The second was an interest in SoTL itself. Pilot 1 participants (n=3) wanted to learn more about how to improve their teaching in a systematic, research-based manner and how to study the efficacy of their teaching. The reason for this can be explained by the fact that pilot 1 was purposefully set up as a SoTL course. In pilot 2, whilst SoTL was the chosen method for teachers to work on their blended-learning projects, the participants did not know this when they signed up (Table 1), and as such they did not make a conscious choice to use SoTL before signing up for the project.

b. Conditions: Time and recognition
Time

Almost all participants of both pilots mention the lack of time available to spend on their project. This was also the main reason given by the participants who dropped out of pilot 1. The participants of both pilots stated that the pilots were more time-intensive than expected. However, we did not anticipate insufficient time would be an issue for the participants of pilot 2, as they were given time for participation. The provision of extra financial support and hours was a suggestion made by several participants to improve the programme.

Recognition

Most participants experienced problems with their SoTL work not being recognised by those in their immediate working environment. Colleagues expressed little or no interest in their SoTL projects (75%, ≤ 6 on a ten-point scale (n=10) with 1 being no interest). Others experienced overtly negative reactions, such as "My manager just said: I have no interest in your teaching innovations" and "it [SoTL] will not support your career." Only a small number of interviewed participants indicated that they experienced positive reactions from colleagues, supervisors, and students (n=3).

c. Community of practice (CoP)
Mutual engagement

In both pilots, a deliberate choice was made to establish a CoP. To facilitate sharing the progress of the different projects, a significant amount of time was dedicated to the creation of a sense of mutual engagement. This was achieved by having discussions (mainly pilot 1) or giving presentations (mainly pilot 2) and stimulating interaction (see Table 1). The possibility of

meeting people from other departments or faculties was considered stimulating and inspiring by all participants. They appreciated getting to know people, learning from each other, experiencing others struggling with the same teaching problems, and being able to expand their network. As one of the participants stated: "This programme has provided me with an extensive network of teachers with whom I can share valuable experiences in teaching." Being part of a community as a support strategy for the SoTL project was attributed significant value (62.5%, ≥ 7 on a ten-point scale [n=10]) and had a positive effect on the development of new ideas for the teaching innovation as part of the SoTL project (75%, ≥ 7 on a ten-point scale [n=10]). Indeed, another participant stated: "My project improved because of the input from other participants." A further participant made the interesting suggestion that, to strengthen mutual engagement, more time could be reserved for informal interaction.

Joint enterprise

Participants did not experience a sense of community because each project was perceived as a "solo" enterprise. Indeed, participants of both pilots mentioned that not always being in the same phase of the project made discussions difficult. Participants who dropped out of pilot 1 mentioned this lack of a joint enterprise as a contributing factor. Those who did continue with pilot 1 were in different phases of their project and felt discussion topics were not always presented at useful times. Furthermore, the numbers dropping out of pilot 1 negatively impacted the motivation of the remaining participants, further discouraging participants and increasing feelings of a lack of joint enterprise or community.

Shared repertoire

Participants of both pilots expressed the opinion that there was too much variation, in both level and background, between the participants. These differences were cited as a reason that the community was not always helpful, and that the discussions were not always of sufficient depth. This was true, both for pilot 1, which included participants from different faculties, and for pilot 2, where the participants were all from the same faculty, albeit from different departments.

d. Structure and guidance

The presentation of projects, discussions, and the possibility for individual guidance were highly appreciated by all the participants interviewed. The participants of pilot 2 specifically appreciated the approachability of the facilitators and other participants, guidance with SoTL, and the presentation of best practice examples in blended learning. However, the participants of both pilots felt that the provision of greater structure and increased clarity regarding the aims of meetings was needed.

One reason given for the perceived lack of structure by the participants of pilot 1 was the fact that both facilitators were not always present. They also felt that because there was no obligation—participation was voluntary (Table 1)—putting effort into the project or other forms of participation was discouraged. The participants emphasised the importance of making this form of SoTL support less optional. They consider this important to maintain its multi-disciplinarity and share knowledge with people from different backgrounds.

Participants of pilot 2 suggested that they would appreciate longer meetings (>2 hours), placing SoTL at the core of the meetings, and allowing more time for structured and constructive feedback—not only presentations. They also felt too much emphasis was placed on publishing the project.

The participants of pilot 1 specifically mentioned the fact that the book provided structure to the course. However, in contrast to the participants of pilot 1, some participants of pilot 2 felt that the book offered no added value—it was too much of an educational tool, and they preferred more practical tools.

Finally, an important additional suggestion related to providing information about how to involve students in their SoTL project. Participants of both pilots indicated that they experienced problems with involving students, such as recruiting sufficient students willing to participate in a focus group or interview.

e. Obtained knowledge and skills

Participants found that the pilots had increased their knowledge, awareness, and attitudes on various levels. They did, however, also experience challenges and barriers when confronted with new knowledge and unfamiliar skills.

Principles of SoTL

When interviewed, participants (n=5) of both pilots indicated that they had become more aware of the principles of SoTL. They now see the benefits of approaching teaching in a more systematic, research-based manner, and better appreciate the importance of investigating the effects of teaching on the student learning experience. On this point, one participant stated: "By thinking in a more research-based way about your teaching you are forced to learn what your aims are, which structures the way you approach your teaching." The participants learned how to use a more systematic, stepwise approach in their teaching (n=4), and now use new research methods, especially qualitative methods (n=2). Two participants mentioned that they see opportunities to use the new research methods they acquired in their own discipline-related research, whilst another participant indicated that the knowledge and skills obtained in this pilot significantly contributed to writing a good application for an educational research grant. One participant of pilot 2, for whom SoTL was too "abstract" and "soft." stated: "I am not someone to do research on my teaching, it is difficult to measure if something is going well."

Half of the participants of pilot 2 (50%) found SoTL a valuable approach to improve teaching (≥ 7 on a ten-point scale (n=10)). Most of the participants (80%) did not experience any barriers to the use of SoTL in their own teaching innovations (≤ 6 on a ten-point scale (n=10) with 10 being a high threshold and 1 no threshold). Half of the participants (50%) indicated that they felt able to formulate a research question for their own teaching (≥ 7 on a ten-point scale (n=10), with 1 = "I cannot do that" and 10 = "I am certain that I can do that"). They expressed relative confidence that they could design and teach in such a way that would address their teaching problems (60%).

Participants did, however, also express problems related to using a systematic, research-based approach to their teaching. They did not feel confident they were able to find educational literature to support their research questions (90% did not feel confident) or to provide

inspiration for their SoTL project and teaching innovation (70% did not feel confident). Participants also expressed a lack of confidence when trying to find the right methods to measure the effects of their teaching on student learning (70% did not feel confident). Only half felt capable of collecting data about the effect of their teaching (50%). Even less confidence was expressed when attempting to analyse such data (20% felt confident) or formulating advice for their colleagues based on that data (40% felt confident). For these reasons, more than half of the participants of pilot 2 (60%) found it unlikely that they would use a SoTL approach for their next teaching innovation (<7 on a ten-point scale (n=10)).

The results detailed above are further reflected in the suggestions for future SoTL initiatives made by the participants of both pilots. The participants recommend the inclusion of more instruments, strategies to find literature, theory about methods (especially qualitative methods), and best practice examples. In addition, participants expressed a desire for greater discussion of SoTL itself: What is SoTL? What is its purpose? Furthermore, they indicated that providing literature related to their projects, and more structure and guidance throughout the different steps of SoTL, could be helpful. One participant suggested linking participants to educational scientists when seeking help with their projects.

Teaching and learning

Participants of pilot 2 mentioned the benefits the pilot offered for teaching and learning in the context of blended learning, such as discovering what possibilities UU offers for support, making knowledge clips, and the possibilities and limitations of digital tools. When interviewed, four participants mentioned an increased interest in, and awareness of, teaching and learning together, a decreased fear of trying something new, and a corresponding increased willingness to try new teaching methods: "This course has stimulated me to experiment with my teaching methods. I have lost the 'fear' of the unknown." Most (63%) of the participants of pilot 2 indicated that after starting the community programme, they gave greater priority to, and now spend more time on, teaching innovations (>3 on a five-point Likert scale (n=11)). Participating also made teachers more aware of how they could develop themselves professionally(n=2) and it made teaching more fun (n=1).

DISCUSSION

Engaging and supporting teachers in SoTL at research-intensive universities presents many challenges. Until now, there has been a lack of detailed information about which approaches work and which are less successful in designing SoTL support. We investigated two pilot programmes aimed at supporting teachers with their first SoTL project in a CoP. The most important findings of this study that are of relevant importance for successful SoTL support at UU, and possibly other research-intensive universities, consider the CoP, SoTL identity and culture, and the provision of theoretical information and good practice examples.

Community of Practice

Collaborative learning, through the establishment of a CoP, was a central factor in both pilot programmes. Of the three essential elements described in the theory of building a successful CoP, the mutual engagement in both pilots proved the most successful (Wenger

1998). Participants indicated a sense of shared experience; learned from and inspired each other; and benefitted from building an (interdisciplinary) network with other teachers. The way the community was formed in both pilots thus appears successful at stimulating collaborative learning (Pyrko, Dorfler, and Eden 2017). More time for social interactions and informal conversations could further encourage this sense of shared experience.

However, based on the feedback of the participants, the shared repertoire and joint enterprise requires further attention and improvement in future initiatives. Participants from both pilots mention differences in shared repertoire, such as background and work environment, as a reason that the discussions in the CoP at times lacked depth, and hence were not always helpful. Some participants also reported a sense of loneliness, working on a project of their own and not really being part of a joint enterprise. This could be solved if participants worked on a shared project or theme—a suggestion made by several participants. A more open dialogue and exchange of information could also encourage a greater sense of community and more negotiation amongst the participants. Furthermore, alignment of the individual projects appears important. Ensuring valuable information is provided in a timelier manner would better equip participants and their discussions.

According to Wenger's (1998) CoP theory, a CoP does not necessarily lead to an environment that supports learning. The design of the CoP can, however, facilitate emergent practices and identity (Henderson 2015). The results of this study confirm this, showing that the mutual engagement in the CoP indeed led to a sense of shared learning by the participants, but that the learning was insufficiently supported. Perhaps by doing so, we did not provide a learning environment for creating a CoP in the strictest sense. Nevertheless, for future SoTL-supportive initiatives, we would seek a combination of interactive, course-like activities, and a learning environment that fosters the creation of a CoP. In this study, the benefits of a CoP perspective are thus valuable and helpful, stimulating the collaborative process and functioning as a starting point from which to think about encouraging participant learning. This would lead to the formation of a SoTL identity and shared practices, and thus aid learning about SoTL principles and the broader benefits of SoTL for teaching and student learning.

SoTL identity and culture

Development of a SoTL identity was not explicitly addressed in the interviews and questionnaires. However, some of the remarks made by participants indicated a degree of tension between their identity as disciplinary researchers and the development of an identity as a SoTL researcher. Mathany, Clow, and Aspenlieder (2017) showed that tensions to develop a SoTL identity can be caused by one's perceived credibility as a researcher, and the lack of value attributed to SoTL within a given institute. Such results—a perceived lack of appreciation (Medina et al. 2011) and a sense of isolation (Marquis, Healey, and Vine 2014; Mårtensson, Roxå, and Olsson 2011)—are cited as presenting challenges to the creation of an effective SoTL culture at research-intensive universities. The creation of such a culture ensures people become—and stay—involved in SoTL and develop a SoTL-identity (Mårtensson, Roxå, and Olsson 2011; Myatt et al. 2017; Webb and Tierney 2019). To achieve an institutional culture that acknowledges and supports SoTL, some universities have established specific funding for SoTL projects, also introducing rewards and other forms of recognition for those who participate

(Mackenzie 2009; Mårtensson, Roxå, and Olsson 2011). The importance of some type of recognition and support was also shown in our study. Although personal motivation is an important factor of the success of SoTL-initiatives, there was still a high number of dropouts amongst the highly motivated participants of pilot 1. Participants of this voluntary pilot did not feel inspired to give their best efforts. Similar results were obtained by Dalgarno et al. (2020), who also organised a voluntary initiative that was not supported by the university administration. They reported issues with variable attendance and lack of connection and commitment to the initiative.

Especially in pilot 2, which was very STEM-heavy, the shared tensions regarding SoTL identity formation and the motivations for developing a SoTL identity were possibly discipline-related. STEM-related values, beliefs, and assumptions about SoTL are reflected in the participants' experiences in their working environment. Colleagues expressed no interest in their SoTL projects and some managers expressed concern for their professional future. As recommended by Mathany, Clow, and Aspenlieder (2017), reflecting on such barriers, as the result of research beliefs and paradigms, and focussing on opportunities, is recommended to support SoTL identity formation amongst those new to SoTL.

Information and good practices

A second part of the study asked participants to evaluate how their knowledge and skills improved whilst using a SoTL approach for teaching and learning. In both pilots, teachers indicated that they were more aware of SoTL and its benefits, not only for student learning, but also for their own development as teachers. The participants did, however, also experience challenges as described in the literature, especially related to (social science) research methods and the unfamiliar field of educational literature and research (Clarke and Hollingsworth 2002; Dalgarno et al. 2020; Hubball, Clarke, and Poole 2010; Marquis, Healey, and Vine 2014; Webb and Tierney 2019). These challenges are most likely related to the set-up of the programme which, in both cases, was mainly focused on exchange between participants and the forming of a CoP, and not necessarily on providing background information, other than the recommended book, or best practice examples of SoTL projects. The participants of both pilots asked for more best practices. This shows the importance of the context of this study. The reason for not having best practice examples in the pilots was related to the context of UU in the sense that during the lifetime of these two pilot projects, SoTL was virtually unknown, not only at our own institute, but even nationally. Good practice examples of local projects were therefore unavailable. Offering inspiration by providing good practice examples is important and should be recommended in supportive projects, either through literature resources or by inviting teachers to talk about their own projects.

Recommendations

Several claims and suggestions for successful support of SoTL at research-intensive institutes can be drawn from this study. Besides the recommendations that emerge from the discussion, there are also recommendations that can be made with respect to structure and guidance, and the involvement of students. The mentoring by facilitators provided help and was greatly appreciated by the participants. However, according to the findings, this help was

insufficient to overcome all the difficulties and challenges. A recommendation for future initiatives would therefore be to keep providing individual mentoring, which was also proven to be an effective strategy by Hubball, Clarke, and Poole (2010). However, this should be supplemented with workshops or meetings that provide more theoretical and structural guidance related to the principles of SoTL, such as research methods, research paradigms, ethics, and interpreting educational literature. This could give a programme greater structure and provide discussions, assignments, and deadlines—recommendations frequently made by participants.

In both pilots, encouraging the participation of students was cited as problematic by participants, although no specific reason for that was mentioned. The willingness of students to participate is important, and it is also mentioned as an important element in SoTL projects (Felten 2013). In new initiatives, teachers should therefore be supported with engaging and recruiting students in their SoTL projects.

The claims and suggestions made in this study are based on a relatively small number of participants spread over two different pilots. For future research, we recommend studying SoTL initiatives with a larger sample size. The impact on the other levels of educational development programmes should also be investigated, such as participant performance, student perceptions, student learning, and the culture of the institute (Kreber, Brook, and Policy 2010).

However, we formulated suggestions for future SoTL initiatives for teachers new to SoTL at research-intensive institutions.

- For educational developers:
  - Provide a combination of community forming and individual guidance by experienced SoTL facilitators.
  - Strengthen the CoP by creating opportunities for both formal and informal interaction.
  - Stimulate participants to work together on (shared) aligned projects.
  - Use structured course elements, such as workshops and presentations, along with guided discussions.
  - Provide theoretical support on the principles of SoTL, such as finding and interpreting literature, formulating a research question, and choosing the research methodology.
  - Structure the inclusion of students' participations, perspectives, and roles in SoTL.
- For administration:
  - Make sure that there is some form of obligation, for example, in the form of the official status of the initiative if full participant involvement is to be ensured.
  - Create institutional support by providing recognition, time, and finance. Participants could be supported with establishing institutional grants that will provide both time and finance, and by providing them with information and arguments via which to open the conversation about the value of SoTL with their colleagues and managers.

In addition, one should also be aware of the excellent information and advice provided by SoTL organisations, such as the International Society for Scholarship of Teaching and Learning (ISSOTL) and the Higher Education Research and Development Society of Australasia (HERDSA). These types of groups organise local and international conferences, providing theoretical support and possibilities to share SoTL work. Making those teachers new to SoTL aware of the existence of these organisations will not only afford them opportunities to learn more about SoTL, but also strengthen the feeling of being part of an inspiring and helpful SoTL community.

CONCLUSION

As a first initiative to encourage and support SoTL at Utrecht University, a research-intensive university, two pilot programmes were set up. The aim of both was to increase current knowledge about effective strategies for supporting teachers engaged in SoTL, discover which approaches work and which do not, and analyse what knowledge and skills were obtained.

This study has yielded valuable information, suggestions, and direction. After these two initial pilots, a new course to support teachers of the faculty of science with SoTL was developed and implemented. The findings of the pilot studies proved extremely valuable and were incorporated when designing this course. These pioneering pilots were initiated by teachers passionate about SoTL and were set up because there were no other university initiatives for supporting SoTL. The new "follow-up" course was already more incorporated and aligned with the initiatives and aims of CAT. Alongside this new course, other initiatives, also supported by the university administration, were taken at UU—for example, an annual SoTL conference.

The two pilots described in this study were at the forefront of sustainable development to support SoTL at UU. The present study was an important first step, contributing to the further development and position of educational scholarship, in particular SoTL, at UU. Moreover, the results of this study are also considered relevant for other universities at the beginning of their journey to embrace, encourage, and support SoTL.

NOTES

1. DBER is an empirical approach to the investigation of teaching and learning in a given discipline (Dewar, Bennett, and Fischer 2018).
2. To use language understandable for a broad international public, we intentionally use the term teachers in this study, thereby referring to all academic or faculty staff at universities involved in teaching students, either full-time or in combination with research activities.

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GRANT

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