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To cite this article: Jörgen Ödalen, Douglas Brommesson, Gissur Ó. Erlingsson, Johan Karlsson Schaffer & Mattias Fogelgren (2019) Teaching university teachers to become better teachers: the effects of pedagogical training courses at six Swedish universities, Higher Education Research & Development, 38:2, 339-353, DOI: [10.1080/07294360.2018.1512955](https://doi.org/10.1080/07294360.2018.1512955)

To link to this article: <https://doi.org/10.1080/07294360.2018.1512955>



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Published online: 08 Sep 2018.



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Teaching university teachers to become better teachers: the effects of pedagogical training courses at six Swedish universities

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ABSTRACT

Do pedagogical training courses for university teachers have desirable effects on the participants? We set out to answer this question by following a panel of 183 university teachers from Sweden's six largest universities, who participated in pedagogical training courses. Our study reveals that the participants' self-reported confidence in their role as teachers increased slightly, and their self-assessed pedagogical skills increased notably after they had finished their courses. Even though the courses were rather short, we could also observe some changes in fundamental approaches to teaching in some of the subgroups of respondents, both toward more student-centeredness and, perplexingly, toward more teacher-centeredness. Additionally, most respondents (7 out of 10) found the courses useful or very useful. Course satisfaction was most notable among participants with less than three years of teaching experience. Considering the fact that we find the positive effects of pedagogical training courses to be present mainly in the group of participants with less than three years of teaching experience, we discuss whether a policy of making these courses mandatory for all university teachers implies an overestimation of their impact.

ARTICLE HISTORY

Received 12 December 2017
Accepted 25 June 2018

KEYWORDS

Approaches to teaching; mandatory pedagogical training; higher education; pedagogical training courses; university teachers

Are pedagogical training courses the solution?

Several countries have introduced, or are planning to introduce, mandatory pedagogical training initiatives for higher education teachers (see, e.g., Hanbury, Prosser, & Rickinson, 2008; Lindberg-Sand & Sonesson, 2008; Stigmar, 2008; Trowler & Bamber, 2005; Weurlander & Stenfors-Hayes, 2008). When considering the usefulness of mandatory pedagogical courses for university teachers, it is wise to take a closer look at systems of higher education where such courses have already been made compulsory. In order to do this,

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we turn our attention in this paper to the pedagogical training of university teachers in Sweden.

In many regards, Sweden is a critical case of a system of higher education where pedagogical training courses have been given an important role in the professionalization of higher education teaching. For the past 25 years, higher education in Sweden has undergone a dramatic transformation; the number of students attending universities has more than doubled since the early 1990s. Following the Swedish government's ambition to create a 'mass university', and subsequent growing demands upon teachers, Swedish universities have progressively introduced pedagogical training programs for their academic staff (Roxå & Mårtensson, 2008; Stigmar, 2008). At most Swedish universities, participation in these courses have become a *de facto* requirement for employment as a lecturer, or for promotion to professor.

This development is yet another example of how a 'professionalization' of teaching in higher education – through the creation of new professional standards – serves as a response to changes in the scale of higher education brought about by, among other things, massification (Shaw, 2018). With the creation of new professional standards comes a legitimate worry, however, that these standards, which are often shaped and influenced by policy-makers located at some distance from the practice itself, might be too generic and 'make little concession to individuality or to institutional context or conditions' (Daniels, 2017).

We believe that there are valuable lessons to be drawn from the Swedish experiences of this particular kind of professionalization of teaching, especially since the issue of making teacher training in higher education mandatory is, or has been, under discussion in several other European countries, such as the UK, Finland and Norway (see, e.g., Hanbury et al., 2008; Trowler & Bamber, 2005).

Offering academic staff pedagogical training might certainly be seen as a welcome development. But making such courses *mandatory requirements* for permanent employment, or for moving up the career ladder, is a qualitatively different issue which raises critical questions. First, before implementing such a generic reform, one ought to be certain that there is a problem to address in the first place; is university teaching today in need of so much improvement that participation in pedagogical training courses should be *mandatory*? Second, are the courses on offer of adequate quality, and do they have desired effects on the participating teachers?

The aim of this paper is to answer the latter set of questions. More precisely, from studying a panel of 183 individuals participating in courses focused on 'teaching in higher education' at the six largest universities in Sweden, we aim to answer the following four questions:

- Do the courses have desired effects, or, more precisely, do they make participants more 'student-centered' (rather than 'teacher-centered') in their fundamental approaches to teaching?
- Do the courses positively influence how the participants assess their own pedagogical skills?
- Do the courses positively influence how confident the participants feel in their role as university teachers?
- Do the participants feel satisfied with the quality of the courses?

The paper proceeds as follows; we initially briefly discuss previous research on the subject, before presenting our theoretical approach. After presenting our data and methodology, and subsequently our results, we conclude the paper with a section where the results are discussed from a more general policy perspective.

Previous research

Research into the effects and effectiveness of higher education pedagogical training is a growing field. Most early studies found positive effects from participating in pedagogical training, but made no claims to be generalizable (see Coffey & Gibbs, 2000), and were rather small-scale (see Stefani & Elton, 2002). More recent research includes an increasing number of qualitative, quantitative and mixed-methods studies. The current consensus seems to be that the effects of pedagogical training are indeed positive, but usually quite small (cf. Stes, De Maeyer, Gijbels, & Van Petegem, 2012; Trigwell, Caballero Rodriguez, & Han, 2012).

Of particular interest for a Swedish context is a study by Weurlander and Stenfors-Hayes' (2008). They conclude that pedagogical training courses are able to contribute to changes in the participants' approaches to teaching and learning, as well as their teaching practice. The study is small-scale ($n = 19$), however, and carried out at only one university. Our study bears more semblance to the large scale studies by Gibbs and Coffey (2004), Postareff, Lindblom-Ylänne, and Nevgi (2007; 2008), and Hanbury et al. (2008) which show that pedagogical training can improve the participants' attitudes to teaching, that students appreciate instruction by teachers who have undergone pedagogical training more compared to teachers who have not, and that students instructed by teachers who have participated in pedagogical training learn more effectively.

Although most studies show positive results from pedagogical training, a few are more skeptical. When, for example, Norton, Richardson, Hartley, Newstead, and Mayes (2005) compared attitudes to teaching between a group of individuals that had participated in a course, and a group that had not, they found no significant differences. Hence, although most studies show positive results, previous research raises at least some contradicting expectations concerning the effects of pedagogical training courses.

What effects should we expect?

A basic assumption in this study is that a university teacher's *fundamental approach to teaching* has an important potential to influence her students' attitudes to learning. In the literature on teaching and learning in higher education, this is a rather uncontroversial assumption (see, e.g., Gibbs & Coffey, 2004; Prosser & Trigwell, 1999; Richardson, 2005; Stes, Min-Leliveld, Gijbels, & Van Petegem, 2010; Trigwell, Prosser, & Waterhouse, 1999).

Our understanding of the concept *fundamental approach to teaching* stems from the distinction between *teacher-centered* and *student-centered* approaches to teaching (Trigwell et al., 1999). Teachers embracing a teacher-centered approach are first and foremost interested in and focused on their own behavior; for example, on how the course material is presented. One could say that the main aim of a teacher-centered teacher is to *transfer* information from teacher to students.

For a student-centered teacher, on the other hand, transferring information is just one component of teaching (Postareff et al., 2007). The student-centered approach turns the focus away from the teacher and directs it toward the students and their learning. Employing such an approach has far-reaching implications for how teaching is carried out in practice. Most importantly, student-centered teachers take an interactive approach and continuously strive to ensure that students understand the course material and the concepts that are being taught. The student-centered approach also appreciates and takes into account the heterogeneity of needs that can be found within a given group of students (see, e.g., Biggs & Tang, 2011; Gibbs & Coffey, 2004; Lea, Stephenson, & Troy, 2003; Postareff et al., 2007).

With this distinction comes a number of normative implications. Several scholars have argued that the student-centered approach is superior in enhancing students' ability to learn as well as increasing their willingness to take responsibility for their own studies (Biggs & Tang, 2011; Lea et al., 2003). Further, some have argued that a teacher-centered approach fosters students to adopt so-called surface approaches to learning and stimulates cue-seeking behavior, whereas the student-centered approach promotes students to adopt a deep approach to learning and conversely minimizes cue-seeking (e.g., Trigwell et al., 1999). Consequently, Gibbs and Coffey (2004) have suggested that it is important that pedagogical training courses for higher education teachers have as their purpose to make participants more student-centered rather than teacher-centered.

This theoretical background provides the rationale for our first question; do pedagogical training courses promote a student-centered approach in the participants' fundamental attitudes to teaching?¹ Even though this hypothesized effect is perhaps the most important one, we also study two other effects which are reasonable proxies for whether pedagogical training courses contribute in making participants better teachers. First, do participants – after finishing a course – feel more confident in their role as educators? Increasing teachers' self-confidence would be a desirable effect of pedagogical training courses since studies have shown that teachers who are confident in their role as educators tend to be more effective at enhancing their students' ability to learn (Gordon & Debus, 2002). We also study whether courses positively affect how participants assess their own pedagogical skills, since this, in turn, can be assumed to strengthen participants' confidence in their teaching abilities. Furthermore, we will also take a closer look at if the participants are satisfied with the quality of the course they have taken, in the sense that they believe the training has been useful for them in their role as university teachers.

Methods and data

During the fall term of 2014, we approached all 459 university teachers who were registered to participate in pedagogical training courses at the six largest universities in Sweden (Uppsala, Lund, Gothenburg, Stockholm, Linköping and Umeå) with e-surveys. We chose to study participants in introductory courses since these courses are usually a Swedish university teacher's first encounter with pedagogical training. In this important regard, the courses at the different universities were comparable. There were some differences between the courses; they differed in length (from two to five weeks), and the content in terms of learning outcomes and syllabus differed to some extent. After a review of the course descriptions we concluded that the latter kind of differences were rather modest; all

course descriptions included introductions to the student-centered approach and they all aimed at furthering the participants' understanding of basic pedagogical concepts.

The courses also had in common that their participants came from various academic disciplines.² The courses were also mixed when it came to the academic positions and teaching experience of the participants, although they tended to be dominated by PhD students and junior faculty. In this context, we should mention that in the Swedish higher education system PhD students usually have rather extensive teaching responsibilities which often include lecturing as well as undergraduate thesis supervision.

The first round of surveys, conducted between one to two weeks before the courses begun, received 239 responses. We returned to the participants with a follow-up survey shortly after they had finished their courses. This panel-like design enabled observation of any changes in the respondents' approaches to teaching, pedagogical skills, and confidence, which occurred during their participation in a course. The follow up survey received 183 responses out of the 239 that had answered the first survey. This gives us a response rate of 40% (183/459). Of these 183 responses between 175 and 178 could be used for the pre- and post-course comparative analyses. We also received responses from 77 respondents who did not answer the first survey; these responses were used in an analysis of course satisfaction, but could not be used for any comparative analyses.

Comparisons made between responders and non-responders give us no reason to suspect that our respondents differ from non-responders in any systematic way. As it turned out however, respondents from the University of Gothenburg constituted a large part of the target group. 43% of participants in the target group were registered for a course at the University of Gothenburg, compared to 20% for Uppsala University and about 10% each for the remaining four universities. The fact that Gothenburg respondents dominate the target group does not necessarily constitute a problem unless it turns out that they systematically respond differently compared to the other respondents. Hence, it is important to check whether our results remain valid even if we exclude our Gothenburg respondents from the analysis. All the analyses presented below have been performed in versions where the Gothenburg respondents were excluded, and we have indicated when they responded in a way which was systematically different from the other respondents.

In order to observe any changes in fundamental attitudes to teaching, our survey included a version of the *Approaches to Teaching Inventory* (ATI) developed by Trigwell et al. (1999). The ATI consists of a set of claims that respondents are asked to consider, which can then be used to assess their level of student-centeredness and teacher-centeredness.³ The ATI is considered to be a carefully developed instrument with good psychometric properties (Poole & Iqbal, 2011; Trigwell & Prosser, 2004), and it has been used in several studies by other researchers (e.g., Hanbury et al., 2008; Nevgi & Löfström, 2015).⁴ Further studies by Prosser and Trigwell (2006) have confirmed that using the ATI for different subject areas and in different cultures, than in their original study, is, in the main, consistent with the original design of their instrument.

Our version of the ATI, which we call ATI-swe, was shorter than the original ATI as it contained only eight items. We selected those items from the original ATI which we saw as most relevant for the present study, and translated them into Swedish. We excluded, for instance, all questions in the original ATI relating to formal assessment. The reason for

this was that the introductory courses we studied were mainly intended for PhD students and junior faculty with little to no experience of formal assessment.

The claims used in the ATI-swe questionnaire to measure a teacher-centered approach were:

- ‘I feel it is important to present a lot of facts to students so that they know what they have to learn for this subject.’
- ‘In this subject I concentrate on covering the information that might be available from a good textbook.’
- ‘I feel that I should know the answers to any questions that students may put to me during this subject.’

The claims used to measure a student-centered approach were:

- ‘In my interactions with students in this subject I try to develop a conversation with them about the topics we are studying.’
- ‘In teaching sessions for this subject, I use difficult or undefined examples to provoke debate.’
- ‘I make available opportunities for students in this subject to discuss their changing understanding of the subject.’
- ‘I set aside some teaching time so that the students can discuss, among themselves, the difficulties they encounter studying this subject.’
- ‘I feel a lot of teaching time in this subject should be used to question students’ ideas.’

Respondents were asked to answer how well these claims applied to them, on a five-point scale running from ‘1. it is *only rarely* true that the statement applies to me’, to ‘5. it is *almost always* true that statement applies to me’. The ATI-swe was included in the pre-course survey as well as in the post-course survey, and changes were observed using *t*-tests.

The pre-course survey data was used to test the psychometric properties of the ATI-swe. A principal component factor analysis was performed, and as can be seen from the rotated factor matrix shown in Table 1, the analysis supported the two-scale structure of the ATI; only two factors had eigenvalues above 1.0 (2.62 and 1.74, respectively).

Table 1. Factor analysis of items in the Approaches to Teaching Inventory-swe.

Item	Factor	
	1	2
SC1	0.84	
SC2	0.77	
SC3	0.68	
SC4	0.67	
SC5	0.64	
TC1		0.78
TC2		0.74
TC3		0.73

Notes: Principal components factor analysis, with varimax rotation, of the ATI-swe, using the pre-course survey data. Eigenvalues >1.74. Loadings less than 0.3 removed. $n = 178$.

Factor 1 contained high positive loadings on all five student-centered items, and no loadings above 0.3 for the teacher-centered items. Factor 2 contained high positive loadings on all three teacher-centered items, and no loadings above 0.3 for the student-centered items. These results suggest that the ATI-swe has good construct validity. Scale reliabilities were also acceptable for both measurements, with a Cronbach's Alpha of 0.77 for the five-item student-centeredness scale, and an Alpha of 0.6 for the three-item teacher-centeredness scale ($n = 178$).

As stated above, we also examined how satisfied our respondents were with the course they had taken, their self-assessed changes in teaching skills, and changes in their level of confidence in their role as teachers. Hence, we included questions in the survey on how confident our respondents felt in their role as teachers, and to what extent they felt they had the pedagogical skills they needed to perform the functions of a university teacher. These questions were measured on a 4-point likert scale. We then analyzed whether there were any differences in how respondents answered these questions before and after they had participated in pedagogical training courses. Once again, changes were observed using t -tests. In the follow-up survey, we also asked the respondents how relevant the course they had taken was for their teaching practice.

Results

Below, we present the results from the e-panel study. First, we answer whether the pedagogical training courses affect the participants' fundamental approaches to teaching. We then go on to compare the before-course and after-course results in the participants' level of confidence, if their subjectively perceived pedagogical skills have increased, and if they are satisfied with the course they had taken.

Were fundamental approaches to teaching affected?

Using the ATI-swe, we assessed the level of student-centeredness among our participants before and after they had finished their pedagogical training courses. Here, it is important to note that the level of student-centeredness was quite high even before the participants entered their courses – the mean value was 3.9 on a five-point scale. Hence, there was not much room for improvement in this respect. As it turns out, the student-centeredness mean value after the courses had ended was also 3.9. When we consider the whole population of respondents then, we do not see any changes in their level of student-centeredness.

If we exclude the Gothenburg University respondents from the analysis, however, we do see a small positive change from a mean value in student-centeredness of 3.8 to 3.9. Further, if we exclude the Gothenburg respondents and break down the data further, we also see that the group of individuals with moderate teaching experience (i.e., 1–3 years of teaching) displays a positive change, from a mean value of 3.8 in student-centeredness to 4.0 (Table 2).

Turning from student-centeredness to teacher-centeredness, we can suppose that if participants, after finishing a course, become *less* teacher-centered, this might be seen as another proxy for becoming a better educator. We will problematize this assumption in

Table 2. Student-centeredness before and after pedagogical training course.

	All respondents			Gothenburg University respondents excluded			
	Mean	SD	<i>N</i>		Mean	SD	<i>N</i>
Before course	3.9	0.65	175	Before course	3.8	0.62	69
After course	3.9	0.64	175	After course	3.9	0.59	69
Change	0			Change	0.1		
<i>t</i>	-0.05			<i>t</i>	1.61		
<i>p</i>	n.s.			<i>p</i>	<.1114		

Respondents with 1–3 years teaching experience.
Gothenburg University respondents excluded

	Mean	SD	<i>N</i>
Before course	3.8	0.4	13
After course	4.0	0.52	13
Change	0.2		
<i>t</i>	2.14		
<i>p</i>	<.0534		

Notes: The degree of student-centeredness (measured on a scale from 1 to 5) in the respondents' fundamental approach to teaching, before and after the completion of a pedagogical training course. The results are shown for the whole group, and for subgroups where significant results were found.

the concluding section below, but let us first see if pedagogical training courses in higher education make participants less teacher-centered.

Perplexingly, finishing training courses make the participants *more* rather than less teacher-centered. Our respondents move from a mean value of teacher-centeredness of 3.2 (on a five-point scale) before participating in the course, to 3.4 after finishing. We can see that much of this change is driven by a change among the participants with least teaching experience.

As can be seen in [Table 3](#), we also observed a change in the mean value for teacher-centeredness from 3.2 to 3.4 for the group with more than three years of teaching experience. But this result did not remain when the Gothenburg respondents were excluded from the analysis. In the group with one to three years of teaching experience we observed a decrease in teacher-centeredness from a mean value of 3.4 to 3.3, but this change was not statistically significant.

Table 3. Teacher-centeredness before and after pedagogical training course

	All respondents			Respondents with <1 year teaching experience			
	Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	
Before course	3.2	0.7	175	Before course	3.2	0.72	106
After course	3.4	0.64	175	After course	3.4	0.59	106
Change	0.2			Change	0.2		
<i>t</i>	3.67			<i>t</i>	3.82		
<i>p</i>	<.0003			<i>p</i>	<.0002		

Respondents with 1–3 years teaching experience

	Mean	SD	<i>N</i>	Respondents with >3 years teaching experience			
	Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	
Before course	3.4	0.67	35	Before course	3.2	0.7	33
After course	3.3	0.73	35	After course	3.4	0.69	33
Change	-0.1			Change	0.2		
<i>t</i>	-0.47			<i>t</i>	2.10		
<i>p</i>	n.s.			<i>p</i>	<.0436		

Notes: The degree of teacher-centeredness (measured on a scale from 1 to 5) in the respondents' fundamental approach to teaching, before and after the completion of a pedagogical training course. The results are shown for the whole group, and for three subgroups with different levels of previous teaching experience.

To sum up, we see that our results concerning fundamental approaches to teaching are not entirely straightforward. The problem is that the respondents from the University of Gothenburg, which dominate the target group, in some respects tend to respond differently from the other respondents, and they respond in a way which goes against our theoretical expectations. When the Gothenburg respondents are included, we observe no changes in student-centeredness. But when these respondents are excluded, we can see some positive changes, particularly in the group with 1–3 years of teaching experience. Regarding teacher-centeredness, we saw that the group with more than three years of teaching experience became more teacher-centered after the course. But this result did not remain when the Gothenburg respondents were excluded. The result that course participants with less than one year of teaching experience became more teacher-centered was more robust, however, in that it remained in all versions of the analysis.

We also analyzed potential effects stemming from the fact that the courses studied were of different lengths; they ranged from between two to five weeks. We did not however, observe any differences in post-course student-centeredness or teacher-centeredness between groups that had taken courses of different lengths. This is not surprising, given that the differences in course lengths were not that significant. When Postareff et al. (2007) studied the effects of different lengths of pedagogical training courses, they observed that teachers with longer pedagogical training scored higher on student-centeredness and self-efficacy. But they saw these effects mainly in teachers who had taken pedagogical training courses of a combined length for a year or longer, when they were compared to two other groups who had taken courses for either a combined length of between six months and a year, or less than six months. All of our respondents had less than six months of pedagogical training, and hence no significant differences in student- or teacher-centeredness within this group were to be expected.

Did the course participants become more confident in their role as teachers?

To find out whether our respondents became more confident in their role as teachers after finishing a pedagogical training course, we asked a question about this before they entered a course and after the course was finished. The question was ‘How confident do you feel in your role as a university teacher?’

Our study suggests that the courses tended to make participants a bit more confident. More than 30% of the respondents answered that they felt ‘much’ or ‘rather’ unconfident before the course. In the post-course survey, this number had decreased to 25%. When we perform a *t*-test, we see a change in the mean value from 2.8 to 2.9 on a ‘confidence scale’ from 1 to 4. If we break down the data in subgroups, we find no significant differences between different groups of participants. Although this positive effect is not particularly strong, it is there, and the relative increase in confidence is statistically significant (Table 4).

Were self-assessed pedagogical skills affected?

The questionnaire also included a question designed to assess the extent to which the respondents felt they had the pedagogical skills needed to perform the functions of a university teacher. When comparing the results before and after the pedagogical training

Table 4. Confidence in the role of university teacher before and after pedagogical training course.

	Mean	SD	N
Before course	2.8	0.71	178
After course	2.9	0.68	178
<i>t</i>	-1.87		
<i>p</i>	<.0313		

Note: Confidence felt by respondents in their role as university teacher (measured on a scale from 1 to 4) before and after the completion of a pedagogical training course.

courses, we find an increase in the number of respondents who consider themselves to have adequate pedagogical skills. In fact, the change is quite dramatic. The share of respondents who answered that they had adequate pedagogical skills ‘to a very small degree’ and to ‘a rather small degree’ decreased from 40% before the course, to 26% after the course. When we perform a *t*-test, we see a change in the mean value from 2.6 to 2.9 on a scale of self-reported pedagogical skills from 1 to 4. The change is statistically significant, and we find no significant differences between different sub-groups of respondents (Table 5).

Were the participants satisfied with the courses?

In order to study if the respondents were satisfied with the courses they had taken, the post-course survey included the question ‘You have recently completed a course on teaching and learning in higher education. What relevance do you think the course content had for you in your role as a university teacher?’

On an aggregate level, looking at all six courses at the six different universities, the participants seem quite content; 32% of them stated that the course had little or no relevance for them as university teachers, whilst 68% stated that it had a large or very large relevance. But there are apparent differences between the different courses; at three of the universities more than 80% of the participants stated that the course had a large or very large relevance for them (Lund: 85, Gothenburg: 82, Stockholm 83%). At two of them, the figure is much lower (Uppsala: 59, Linköping: 62%). Umeå places itself in between these two groups at 76%.

It is worth noting that the group with between one and three years of teaching experience was most satisfied with the course they had taken: 78% of the respondents in this group stated that the course they had taken had a large or a very large relevance for them. The least satisfied group was the one with most teaching experience (more than

Table 5. Self-assessed pedagogical skills before and after pedagogical training course.

	Mean	SD	N
Before course	2.6	0.71	178
After course	2.9	0.62	178
Change	0.3		
<i>t</i>	-5.13		
<i>p</i>	<.0000		

Note: The extent to which respondents felt they had the pedagogical skills needed to perform the functions of a university teacher (measured on a scale from 1 to 4), before and after the completion of a pedagogical training course.

three years of teaching); only 58% stated that the course had a large or very large relevance for them. Among those with least teaching experience (less than a year), 68% stated that the course had a large or very large relevance for them (Table 6).

Discussion

As far as we can tell from this study, pedagogical training courses in higher education seem to be unsuccessful in making participants more student-centered. But this could be a premature conclusion. First, it should be noted that the surveyed participants displayed a high degree of student-centeredness even before entering the course, which meant that there was a limited potential for improvement. Second, one could argue – as suggested by, for example, Postareff et al. (2007) – that fundamental approaches to teaching are hard to affect in a short-time perspective. Third, we *did* actually observe some positive changes toward student-centeredness, even if the results were not entirely straightforward.

Yet, if fundamental approaches to teaching and learning are difficult to affect, it is surprising that many of our respondents became *more* teacher-centered after participating in a pedagogical training course. This was not an expected effect of course participation. This increase in teacher-centeredness was primarily observed, however, in the participants with least teaching experience. If we take this fact into consideration it could be argued that increased teacher-centeredness is not necessarily a bad thing. A young, rather inexperienced academic who is beginning to shape their identity as a university teacher will likely undergo a development described by, for instance, Kugel (1993), where the first stages toward becoming a ‘mature university teacher’ implies evolving through teacher-centeredness. An increase in teacher-centeredness in this group of course participants may have to do with the fact that many of them, for the first time, are provoked to reflect upon their identity as university teachers. Hence, they are taking the first steps on ‘Kugel’s ladder’ toward becoming mature university teachers.

Interestingly, Postareff et al. (2007) observe a related effect in that teachers who have just begun a pedagogical training course score lower on a student-centeredness scale than teachers who did not have any pedagogical training. Only after a year of pedagogical

Table 6. Satisfaction with the completed pedagogical training course.

	Little or no relevance (%)	Large or very large relevance (%)
Total	32	68
<i>University</i>		
Lund	15	85
Stockholm	17	83
Gothenburg	18	82
Umeå	24	76
Linköping	38	62
Uppsala	39	59
<i>Teaching experience</i>		
<1 year	32	68
1–3 years	22	78
>3 years	42	58

Notes: The table shows how satisfied the respondents were with the pedagogical training course they had completed, understood here as the relevance they attributed to the course content for their role as university teachers. The results are presented for the whole group ($n = 259$), for the six different universities in the study, and for three subgroups with different levels of previous teaching experience.

training, Postareff et al. (2007) conclude, did the teachers display levels of student-centeredness above the levels of teachers who did not have any training. One might also suspect that the positive effects of participating in a pedagogical training course will only present themselves after some time has passed, during which a teacher will have had the chance to reflect upon what they have learned, and put their new knowledge into practice (cf. Parsons, Hill, Holland, & Willis, 2012). Recent research by, for example, Hood and Houston (2016) and Trigwell et al. (2012) suggests that this might be the case.

When it comes to improving course participants' confidence in themselves as educators, we observed a positive change, albeit a small one. The increase in self-assessed pedagogical skills, however, was relatively large.

A high degree of satisfaction with the pedagogical training courses were primarily observed in the group with moderate teaching experience (1–3 years). One interpretation is simply that pedagogical training courses are most relevant for these individuals. Participants who have very little experience (less than a year of teaching) might have a hard time integrating the content of a course with their own limited experience and will perhaps not appreciate the usefulness of the course. Teachers with more extensive experience, on the other hand, might already be molded in their teacher role and perceive that these kinds of courses are of little use to them, because they already possess the necessary skills.

Our results ought to be put into their proper policy context: there is an ongoing professionalization reform taking place at Swedish universities which includes, among other things, making pedagogical training courses mandatory for eligibility to be employed, or promoted, as a university teacher. However, if pedagogical training courses are to be ascribed such importance they need to be thoroughly assessed, analyzed and evaluated, beyond simple participant satisfaction assessments (cf. Spowart et al., 2017). The present analysis is one such attempt.

Admittedly, our study has its limitations. We employ a survey to assess self-reported variables such as confidence and pedagogical skills, and we only study the participants themselves, not how they, in their turn, affect their students' learning. Still, we wish to *tentatively* assess whether our results give us reason to support the notion that pedagogical training courses in higher education should be mandatory. The courses entail substantial costs; direct costs which include facilities, teaching staff and administration, and opportunity costs for participating individuals and their departments. Given these known costs, it might be argued that the gains of pedagogical training courses are not large enough for them to be ascribed the weight they are given in today's higher education system in Sweden.

On one hand, we observed rather high levels of student-centeredness to begin with. This raises the issue of whether there is really a problem with teacher quality in Sweden that needs to be rectified by creating mandatory courses. On the other hand, we could see that the courses had some positive effects. We can also, a bit cautiously, conclude that those who are most positively affected, are teachers with less than three years of teaching experience. This group is most satisfied with the course they have taken, and there is also *some* indication that this group is the one which is most positively affected in their levels of student-centeredness.

We believe the courses should be offered. However, given that teachers with less than three years of teaching experience seem to benefit most from them, they should primarily be offered to early career academics. In a Swedish context this would entail that pedagogical training courses should be offered as integral parts of PhD-programs, after the PhD

students have gained some initial teaching experience. However, considering that the positive effects of pedagogical training seem to be mostly present in the group of participants with less than three years of teaching experience, it is difficult to argue that they should be mandatory for *everyone*.⁵

Notes

1. The potential for change must, however, be taken into account. A teacher who is already very student-centered in their approach has less potential for change towards higher degrees of student-centeredness compared to a less student-centered colleague. This issue of the potential for change will be discussed below.
2. Trowler and Cooper (2002) argue that participants from different academic disciplines, or, rather, from different 'teaching and learning regimes', might experience educational development programmes quite differently. Whilst this is an interesting hypothesis, we do not have the space to test it in this article.
3. There is also a revised version of the ATI, called the ATI-R (see Prosser & Trigwell, 2006). This revised version of the ATI includes new formulations of a few questions in the ATI, but we have not seen these changes to be of any significant relevance for our study.
4. See, however, the critique of the ATI by Meyer and Eley (2006).
5. This study was funded by IFAU – The Institute for Evaluation of Labour Market and Education Policy. We wish to thank the editors and two anonymous reviewers of HERD for their helpful and encouraging comments.

Acknowledgements

We wish to thank the editors and two anonymous reviewers of HERD for their helpful and encouraging comments.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the Institute for Evaluation of Labour Market and Education Policy [grant number Dnr 177/2013].

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