



# The role of research-based evidence in cultivating quality of teaching and learning in higher education

Sari Lindblom

Professor of Higher Education, University of Helsinki, Finland

[Sari.lindblom@helsinki.fi](mailto:Sari.lindblom@helsinki.fi)

The quality of higher education comprises a variety of elements ranging from teaching methods, assessment practices, physical learning environments, and curriculum design, to students' learning practices and skills as well as to teachers' and students' personal characteristics. These elements form a complex dynamic system in which everything is intertwined. Therefore, quality is not achieved by changing or developing just one element, but instead by taking many elements and their complex interaction into account simultaneously. Thus, the development of teaching and learning processes in higher education takes place in real-life contexts, not in a vacuum, where it would be much easier to enhance the quality of teaching and learning in laboratory-like environments.

Fortunately, research can help identify factors that contribute to high-quality teaching and learning (e.g. Gibbs, 2017; Lindblom & Kola, 2018; Lindblom-Ylänne & Breslow, 2017; Stensaker, Bilbow, Breslow & van der Vaart, 2017). The key to the quality of higher education is *evidence-based development of teaching and learning* (Lindblom-Ylänne & Breslow, 2017; Lindblom & Kola, 2018). Quality enhancement cannot be based on intuition alone, nor merely on experience, even though it is true that in individual cases intuition and previous experience can sometimes steer quality development in the right direction. However, the systematic development of the quality of higher education requires a systematic approach, and here research is the answer. Evidence-based development offers a critical and analytical approach to explore and enhance quality in higher education.

Some evidence from educational research often makes sense intuitively and can even sound self-evident, but it is nevertheless important to generate empirical evidence to confirm teachers' and students' instincts (Lindblom-Ylänne & Breslow, 2017). For example, there is systematic evidence that students' intrinsic motivation, their interest in studying, as well as their metacognitive and self-regulation skills, predict success at university (e.g. Entwistle, 2009; Heikkilä et al., 2012; Hidi and Renninger, 2006; Parpala et al., 2010; Pintrich, 2004). There is also evidence that dilatory behaviour and procrastination are harmful

for students' study progress and success (e.g. Lindblom-Ylänne, Saariaho, Inkinen, Haarala-Muhonen & Hailikari, 2015; Steel, 2007). In addition, there is evidence that a learning-focused or student-centred approach to teaching enhances students' learning outcomes better than a content-focused or teacher-centred approach to teaching (Postareff & Lindblom-Ylänne, 2008; Trigwell, Prosser & Waterhouse, 1999).

On the other hand, empirical evidence often reveals complicated relationships or even counter-intuitive aspects that are important to take into account when enhancing teaching and learning in higher education. For example, working while studying at university can both enhance and impede study progress and success depending on how skilful students are at organised studying and effort management and in self-regulating their study processes (e.g. Tuononen, Parpala, Mattsson & Lindblom-Ylänne, 2016). Another example is the complex relation between interest and wellbeing. There is evidence that high interest, engagement and commitment in studying can both strengthen and weaken students' wellbeing. In an ideal situation, these factors combined with strong self-efficacy beliefs and good self-regulation skills help students to study effortlessly and successfully from entry to graduation (Lindblom-Ylänne, Haarala-Muhonen, Postareff & Hailikari, 2017). On the other hand, if the curriculum is not well designed and structured and/or a student has not developed good self-regulation and time-management skills, strong interest and commitment can lead to experiences of high workload and stress and even to doubting their own interest in the selected field of study (Lindblom-Ylänne et al., 2015; Mikkonen, Ruohoniemi & Lindblom-Ylänne, 2013; Ruohoniemi & Lindblom-Ylänne 2009). The third example concerns the complex relationship between the level of experienced challenge and students' learning processes. There is evidence that both a high level of perceived challenge and a lack of challenge lead to superficial learning (Postareff, Lindblom-Ylänne & Parpala, 2014). When students are challenged too much, they start doubting their skills and knowledge, which weakens their self-efficacy beliefs and motivation to study, and results in surface learning and fragmented knowledge. However, the lack of academic challenge has as severe a consequence as too much challenge. Students who lack challenges lose their motivation to study, do the minimal amount of work, and invest their efforts where they are able to find interesting and inspiring assignments (Postareff, Parpala & Lindblom-Ylänne, 2015).

It is understandable, but at the same time unfortunate, that often intuition, isolated experiences or simply policy measures steer decisions concerning the development of teaching and learning in higher education, because research processes provide evidence quite slowly, and there is not always time nor resources to collect empirical evidence. Furthermore, research on university learning and teaching can very seldom give simple and straightforward answers, because the phenomena are so complex (Lindblom-Ylänne & Breslow, 2017). In addition, creating research designs that can identify key factors that enhance quality in complex and dynamic real-life teaching-learning environments is very challenging. Therefore, systematic multi-method and longitudinal research on teaching and learning is necessary. It is also important to build on existing knowledge to further develop and deepen our understanding of factors enhancing quality of teaching and learning in higher education. In this way it is possible to together create a body of discipline-specific empirical evidence which will be helpful for all higher-education institutions in their

demanding tasks to enhance quality of higher education. Despite challenges, evidence-based development of teaching and learning is the only way to steer quality enhancement in the right direction and to find functional solutions for different kinds of teaching and learning environments in higher education.

The present theme issue of UNIPED (Studentsentretede perspektiver og tiltak i høyere utdanning. Et forskningsbasert innspill til kvalitetsarbeid i praksis) provides an excellent collection of examples from a large international research project, which has focused on enhancing quality in higher education by systematically exploring different elements of university teaching and learning in various teaching-learning environments.

The first article, by Damşa and de Lange, provides a theoretical overview of key elements of student-centred learning environments (SCLE) and explains the design principles behind SCLEs. Article two also presents examples of SCLEs from different disciplines. The authors argue that it is important to take into consideration that teaching and learning processes are interrelated. Teachers' approaches to teaching have an effect on students' approaches to learning and their study practices. Furthermore, the authors underline that it is this interrelation as such that is an important factor in determining the quality of teaching and learning in SCLEs. The authors also remind the readers that in curriculum design, constructive alignment is very important: students' learning activities, expected learning outcomes, and assessment methods and criteria need to coherently support high-quality learning.

The most important message of this first article is that teaching and learning processes are interrelated and that this interrelation needs to be taken into account in curriculum design and in the development of quality in higher education. The same concerns research on higher education. SCLEs can be used both as a curriculum- and course-development framework, and as a tool to create functional research designs.

The fourth article, by Esterhazy and Fiksen explores the evolution of a portfolio-based design in one disciplinary context, namely ecology. Portfolio-based design is an example of a student-centred approach in higher education. The paper provides readers with a good example of how the course design evolved during the three-year follow-up study. The results show that course design is iterative and continuous in nature. The study article also nicely shows how teachers exploratively search for the right balance and critically evaluate their decisions. The authors emphasise that it is important to take into account students' responses and feedback in order to design courses for the students' learning. This notion also underlines the interrelatedness of teaching and learning processes.

Article four is a very good example of evidence-based development of course design and of the importance of giving time for the development process. One 'cycle' is not enough. Instead, creating a high-quality teaching-learning environment calls for collecting evidence of both teacher's and students' experiences and perceptions, analysing this evidence critically and using it to enhance quality. The authors emphasise the importance of the cyclical process of course design. In this way it is possible to raise the teachers' pedagogical awareness 'to design *for* the students' learning', as the authors succinctly write.

Finally, the fifth article, by Hyttinen, Räsänen and Haarala-Muhonen focuses on exploring the relation between self-regulation, self-efficacy beliefs and students' experiences of teaching and learning in one discipline, namely law. Interestingly, law students scored on

average surprisingly low on the self-regulation scale, while they scored highly on the self-efficacy scale. The results showed that the higher the self-regulation scores were, the more positively the students had experienced their teaching-learning environment. In addition, the authors interestingly showed that self-regulated students were better able than other students to explain what they had learned, and they were also more aware of how to apply their knowledge and skills in new situations in the future. The authors conclude that it is important to provide support for the students to develop their self-regulation skills from the beginning of university education, because self-regulation is an important factor in successful studying and also pivotal in the working life.

Article five is a good example of how different elements of the teaching and learning process are intertwined. Furthermore, the results of this fifth study nicely show that a mixed-method approach helps to uncover the complex interrelations in the teaching-learning environment. For example, there is quite systematic evidence from previous research that good self-regulation skills correlate with strong self-efficacy beliefs. The results of article five show that this relation is more complex than that. Qualitative data can be used to explain statistical trends detected in the quantitative data.

To conclude, these three studies all emphasise the interrelatedness of the teaching and learning processes. They all show evidence of the higher-education context as being extremely complex and rich. All three studies also emphasise the importance of student-centred approaches to course and curriculum design. Improving the quality of students' learning process and their learning outcomes needs to be in the focus of all educational development. Putting the students at the centre guarantees that the interrelation between teaching and learning is not forgotten as we, enthusiastic developers of the quality of higher education, aim higher and higher.

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