

TEACHING AND LEARNING GENERIC SKILLS IN HIGHER EDUCATION

Organized by Rike Bron (University of Twente)

Chair: Liisa Postareff (University of Helsinki)

Discussant: Päivi Tynjälä (University of Jyväskylä) (?)

In the past decades, awareness has grown that providing university students with domain-specific knowledge and skills does not meet the demands of the labour market anymore. Lifelong learning is necessary for people to be able to adapt to the constantly changing environment in knowledge work. Therefore, higher education institutes try to prepare their study programs for the fact that they are educating students for jobs that might not yet exist. A growing body of research therefore has emerged, concerning the development of generic skills in higher education students. Students need to become excellent in communicating, reflecting, critical thinking and problem-solving. Universities are increasingly implementing changes in order to address these challenges by introducing more student-centred learning environments, e.g. by means of project- and problem-based education. This also, next to trends such as globalization and massification of higher education, asks for a different approach to teaching.

This symposium aims to provide insight in the variety of research concerning generic skills development in European higher education. Contributions from Norway, Finland, Estonia and Germany, addressing different specific skills and teaching practices, give detailed insights in innovative practices and student perceptions. Moreover, the different measurement approaches in the studies (Tuonen: mixed methods; Esterhazy: video observations; Bohndick et al.: experiment; Uiboleht: interviews) show the methodological possibilities for research on teaching and learning in higher education. The insights from the studies can inform further empirical research on generic skills development in higher education.

Development of generic skills in relation to learning

Tarja Tuononen and Anna Parpala

Centre for Research and Development of Higher Education, Institute of Behavioural Sciences, University of Helsinki, Finland

Abstract

The universities are expected to provide students not only with academic knowledge and skills but also generic skills, such as critical thinking, communication and collaboration and problem-solving skills (Kember et al. 1997). The aim of this mixed method study is to explore how students perceived to develop generic skills and what kind of factors are related to the development. A total of 1023 students filled in the questionnaire and 58 master's students were interviewed at the time of graduation. The quantitative data were analysed using Pearson correlation and qualitative data using inductive content analysis. The results showed that students scored highest on skills of Looking at things from different perspectives ($M = 4.35$, $SD = .75$) and Critical thinking ($M = 4.35$, $SD = .76$) and the lowest Cooperation and communication skills ($M =$

3.43 SD = 1.08) and Developing new ideas (M 3.61, SD = .96). Generic skills were positively related to deep approach to learning and organised studying and negatively to surface approach. Qualitative results indicated that understanding of concept of generic skills, own activity to learn generic skills and perceptions of theory and practice -relation at university were related to development of generic skills. For example, there were descriptions in which students mentioned that they have written essays instead of exam in order to understand content better and to learn writing skills. This study indicated that it is important that generic skills are explicitly written in curriculums and development of these skills are emphasised for the students.

Extended summary

Aims

The universities are expected to provide students not only with academic knowledge and skills but also generic skills, such as critical thinking, communication, collaboration and problem-solving skills (Kember et al., 1997). Studies have found a relationship between generic skills and deep-level learning (Kreber, 2003; Lizzio, Wilson & Simons, 2003). However there is not so much research on relation between generic skills and approaches to learning and especially the relation between organised studying and generic skills is scarce. The aim of this study is to explore how students perceived to develop generic skills and what kind of factors are related to the development. Furthermore, aim is to investigate how these experiences are related to students' approaches to learning. Our previous research revealed that some of the graduates had difficulties to describe their generic skills and see their development (Authors). Thus, there is need to further explore the students' experiences of generic skills development and to find factors that are related to the development.

Methodology

A present mixed method study combining qualitative and quantitative methods was conducted in one research intensive university in 2013. A total of 1023 students filled in the questionnaire at the time of their graduation. The survey measured students' experiences of the development of generic skills and their approaches to learning. Seven items measuring generic skills were used and students answered to the question of how the university studies have supported the development of those skills. Students' approaches to learning were measured by a 12-item modified version of ALSI (Approaches to Learning and Studying Inventory; Entwistle, McCune & Hounsell 2003; Parpala and Lindblom-Ylänne 2012), in which students were asked to answer items describing how they had been studying in general. The relationship between generic skills and approaches to learning was measured by Pearson's correlation.

In addition, 58 master's students were interviewed in order to clarify their studying at university and experiences of generic skills development. The interviews lasted from 24 to 99 minutes, and were recorded and transcribed verbatim. Interviews were analysed using inductive content analysis (Elo & Kyngäs 2007). First, the graduates' general descriptions of their learning and studying and experiences of generic skills

development were listed and coded. Three themes emerged from the data and each theme was analysed separately and in more detail and categories were formed. Categories were then created by combining qualitatively similar descriptions, and finally, main categories were created and named at a level of abstraction.

Findings

The quantitative results showed that students scored quite high on all generic skills. Highest scores were skills of Looking at things from different perspectives (Mean 4.35, SD = .75) and Critical thinking (Mean 4.35, SD = .76) and the lowest scores were Cooperation and communication skills (Mean 3.43 SD = 1.08) and Developing new ideas (Mean 3.61, SD = .96). There were statistically significant and positive correlations between generic skills and deep approach to learning and organised studying, and significant but negative correlations between generic skills and surface approach to learning. Correlations varied between 0.10 and 0.36.

Our aim was to clarify what kind of factors were related to experiences of development of generic skills especially in the light of student learning using interview data. Results showed three themes which were closely related to learning and experiences of generic skills development. These were: 1) own activity to learn skills, 2) understanding the concept of generic skills and 3) perceptions of theory and practice – relationship at university. For example, there were descriptions in which students mentioned that they had written essays instead of exam even if they considered it to be more difficult and time-consuming but in order to understand content better and to learn writing skills, they had chosen to write essays. In addition, some descriptions revealed that students had actively tried to think how theories can be used in practice. These students understood that studies are theoretical and therefore they actively search for practical applications of theories, for example, from their work.

Theoretical and educational relevance

This study revealed that experiences of generic skills development were related to students' learning and qualitative results supported quantitative results. Elements of deep approach and organised studying were found in the interviews, for example, how much effort students put in studying and learning of generic skills. Thus, the results deepen our theoretical understanding of the relation between generic skills and learning, and emphasise the role of organised studying which has not been focused so much in earlier research. The present study has also educational relevance. It is important that generic skills are explicitly written in curriculums and the development of these skills are emphasised for the students. Furthermore, study implies that students could be more supported to apply theories to practice and reflect their work experience.

The role of social interaction for developing feedback literacy in higher education students – an observation study

Rachelle Esterhazy

Department of Education, Faculty of Educational Science, University of Oslo, Norway

Abstract

How to make feedback practices more sustainable and beneficial for student learning is one of the central questions that are currently being discussed in the higher education research literature (e.g. Boud & Soler, 2015; Carless, Salter, Yang, & Lam, 2011; Hounsell, 2007). The ability to provide and use feedback in a productive manner has been referred to as feedback literacy (Sutton, 2012) and could be called one of the most central competencies that students need to learn during their studies. In the light of the importance of feedback literacy for lifelong learning, this qualitative study aims at improving our understanding of how students make sense of and act upon feedback information during higher education courses through their interaction with peers, teachers and the study material. Within the empirical research literature on feedback in higher education, only few authors have put a special focus on its processual and interactional aspects. In the current study, those processes will be investigated by qualitative analysis of video and audio observations of feedback practices supplemented with group interviews with students and semi-structured interviews with teachers. The cases comprise of two different study courses in two higher education institutions in Norway which have been selected due to their special emphasis on promoting student-active learning by encouraging discussions and social interactions as part of the learning process. The study provides an example of how the analysis of interactions based on observational data can be a useful analytical approach for exploring feedback practices in higher education. Moreover, it contributes to the theoretical development of understanding feedback as a practice in which both students and teachers have a core role to play and which is characterized by its relational and recursive nature.

Extended summary

Introduction

A large body of higher education research literature promotes the idea that feedback to students is generally beneficial for student learning. However, plenty of research indicates that learning is hampered when students don't know how to make sense of or act upon the feedback they receive (Evans, 2013; Jonsson, 2012). Making sense of feedback entails all processes by which students give meaning to the information they received. This happens in interaction with peers, teachers and the study material. It can be assumed that students are not able to act upon feedback productively unless they have successfully made sense of it first. Acting upon feedback refers to all actions that are driven by the attempt to improve one's academic output based on received feedback comments. The limited ability among students to act upon feedback productively has led to the assumption that common feedback practices in today's higher education are not sustainable (Carless et al., 2011; Hounsell, 2007). In other words, most feedback practices don't enable students to

develop feedback literacy (Sutton, 2012), i.e. the ability to read, make sense of, and use feedback both within and beyond the higher education context. As argued by Sutton (2012), the development of feedback literacy depends to a large extent on the social relations between students and teachers. This relational view on feedback literacy in this study is complemented by a dialogical conception of feedback practice as being more than merely “an act of information giving to students, but as a co-productive process in which both students and others have key roles to play” (Boud & Soler, 2015, p. 4). Moreover, feedback practices are considered to be of situated and sociomaterial nature, as they unfold in situ from the dynamic of the interaction with the sociomaterial context (Gherardi, 2012). Following this theoretical framework, this study puts its empirical focus on the interactions that constitute feedback practices within different higher education settings and investigates how they are related to students making sense of and using feedback in a way that is sustainable and useful beyond the higher education context. The following research questions are addressed:

1) What characterized interactions that take place between students, peers, teachers and their artifacts during feedback practices?

2) How do students perceive those interactions as helpful for their sense-making of and acting upon feedback?

Method

The research questions are investigated empirically on the basis of two study courses in two different higher education institutions in Norway: one course in a Bachelor’s program in Nursing and one course in a Bachelor’s program in Biology. Both cases have been selected due to their special emphasis on promoting student-active learning by encouraging discussions and a variety of sociomaterial interactions as part of the learning process, for example through group based simulations or group assignment based on video tutorials. Methods of data collection comprise video observations, observation of online activities, group interviews with students and semi-structured interviews with teachers. In order to explore interactions of students during feedback practices, the analytical focus will be on activities during the organized course time in which students work collaboratively on an academic output in form of a product or a performance after having received feedback information on this output. By letting three student groups record all their meetings in which they work on their group assignments, it is possible to follow their interactions over time. The method of analysis will first and foremost draw on principles of Interaction Analysis (Ajjawi & Boud, 2015; Jordan & Henderson, 1995), which allows to map interactions during the recursive feedback practices including negotiations of meaning among students and turn taking between human actors and their artifacts.

Anticipated contributions

As the data collection is currently still ongoing, it is not yet possible to provide concrete findings. While the complete data set will cover several weeks’ worth of field work in two study courses, the main focus during

analysis will be on episodes in which students receive formative feedback and are encouraged to use it for improving their assignment or performance. The recursive nature of the repeated feedback activities will give an interesting insight into the practices students engage in after having received feedback. The findings will be presented in different ways, for example by analyzing video recorded episodes that display interactions between students, their peers, teachers and artifacts. Moreover, sense-making processes will be elicited both from audio recording of student group work and from group interviews with the students. Finally, the way students act upon feedback will be analyzed based on data emerging from observations and the tracing of changes in different artifacts such as the student assignments. By understanding better what characterizes social interactions during feedback practices that lead to a productive use of feedback among students, the findings will contribute to the question of how feedback literacy can be promoted as a general competence both within and beyond the higher education context.

Promoting learning of generic skills in higher education by internet-based self-assessment Carla Bohndick^a, Susanne Kohlmeyer^b and Heike Buhl^b

^aUniversity of Koblenz-Landau, Germany

^bPaderborn University, Germany

Abstract

The development of generic skills in university requires self-reflection as a generic skills itself and a positive attitude towards learning. To promote self-reflection and the attitude toward learning of university students we developed an internet-based self-assessment (ISA). The ISA consists of 14 short questionnaires on different generic skills followed by an automated feedback report, including advice on possibilities for individual development. To analyze, if the use of the ISA enhances self-reflection, students of one cohort (N = 498, all in teacher training programs) were divided in an experimental and a control group. The experimental group had to work with the ISA (at least 5 questionnaires and their feedback), whereas the control group had no special treatment. Both groups were asked to rate their self-reflection and their attitude towards learning at three measurement points (before, 1-2 weeks after the ISA, and two month after the ISA). The results of analyses of variance showed significant interaction effects time * group when including the first two measurement points for self-reflection ($F[1, 352] = 7.28, p < .05$) and attitude toward learning ($F[1, 352] = 4.76, p < .05$). When analyzing all three measurements, no interaction effects were shown (self-reflection: $F[2, 428] = 2.72$; attitude: $F[2, 428] = 2.51$). The results are discussed with regard to implications for evaluation studies and practice.

Extended summary

The development of generic skills is often neglected in university curriculums and university teaching however, it is necessary for employability of alumni (Schaper, Schlömer, & Paechter, 2012). The development of the students has therefore to be highly self-regulated similar to lifelong learning. For lifelong learning Baert, De Rick, and Van Valckenborgh (2006) developed a model describing the decision-making

process of the potential learner. The model starts with the identification of a need. The potential learner must become aware of a discrepancy between the current status and the target status. To identify this discrepancy a certain level of self-reflection is necessary. As a second step in the model, the potential learner has to recognize the educational aspects of the need. This includes the idea that learning can help reducing the discrepancy. Therefore, the potential learner must have a positive attitude toward learning (Kyndt & Baert, 2013).

To promote self-reflection and the attitude toward learning of university students we developed an internet-based self-assessment (ISA). The ISA consists of 14 short questionnaires on different generic skills followed by an automated feedback report, including advice on possibilities for individual development.

To analyze if the use of the ISA enhances self-reflection and the attitude toward learning, students of one cohort ($N = 498$) were divided in an experimental and a control group. The experimental group had to work with the ISA (at least 5 questionnaires and their feedback), whereas the control group had no special treatment. The students were $M = 21.5$ years old ($SD = 7.84$), in their $M = 1.98$ semester of a teacher training program, and 73.9 % were female. Both groups participated in a survey with pre-post-follow-up-design. The first measurement point was conducted at the beginning of the semester when the experimental group was told to use the ISA in the next month. After this month, the second measurement point took place. The last measurement point was two months after the second at the end of the lecture period. The surveys took place in compulsory courses with a paper-pencil-survey. The students had to rate different statements regarding self-reflection (4 items) and attitude toward learning (3 items) on a five-point-scale. The internal consistency was satisfying ($.7 < \alpha < .82$).

The results of analyses of variance showed significant interaction effects time * group when including the first two measurement points for self-reflection ($F[1, 352] = 7.28, p < .05$) and attitude toward learning ($F[1, 352] = 4.76, p < .05$). Interested in long time effects, we analyzed all three measurements. Here, no interaction effects were shown (self-reflection: $F[2, 428] = 2.72$; attitude: $F[2, 428] = 2.51$).

With regard to implication for further research the results underline the importance of follow-up surveys. From a practical point of view the results suggest that the use of ISA can help students developing generic skills by enhancing self-reflection and attitude toward learning but it has to be implemented more regularly.

Students' self-reported outcomes of learning in consonant and in dissonant teaching-learning environments: a comparative study

Kaire Uiboleht ^a, Mari Karm ^a, Liisa Postareff ^b

^aInstitute of Education, Faculty of Social Sciences, University of Tartu, Tartu, Estonia

^bInstitute of Behavioral Sciences, Centre for Research and Development of Higher Education, University of Helsinki, Helsinki, Finland

Abstract

The interaction between teaching-learning environments and students' outcomes of learning have been the focus of research for more than 20 years. Previous studies in higher education have differentiated teaching-learning environments as content- or learning-focused according to the theory of approaches to teaching. Furthermore, some studies indicate that approaches to teaching are not always in consonance (theoretically coherent teaching practices are employed), but show some level of dissonance, meaning that theoretically inconsistent teaching practices are employed. This study explored Bachelor-level students' self-reported outcomes of learning in consonant and dissonant teaching-learning environments. The data for this study consisted of 33 semi-structured interviews with students from three different courses. For data analysis qualitative content analysis was employed. Results demonstrated that in consonant teaching-learning environment the students' outcomes of learning were of higher quality than in dissonant teaching-learning environment, as in consonant environment there was a higher proportion of students who described their theoretical knowledge as understanding the basic concepts and principles; and changes in thinking. The results also indicate that dissonant teaching-learning environment does not always result in limited number and low quality outcomes of learning.

Extended summary

Introduction

It is widely agreed that teaching-learning environment shapes students' learning experiences. One major factor affecting the nature of the teaching-learning environment is the teacher's approach to teaching (Prosser and Trigwell 2014). Previous studies have described two broad categories of approaches to teaching: content- and learning-focused (Kember and Kwan 2000; Postareff and Lindblom-Ylänne 2008). Some studies divide learning environments into constructivist and traditional environments (Tynjälä 1999), where the former is similar with a learning-focused approach to teaching, the emphasis being on students' learning and construction of knowledge. The traditional learning environment shares similar characteristics with content-focused approaches to teaching and the role of the students is to receipt information presented by the teacher.

Some previous studies on approaches to teaching suggest that the approach to teaching is either content- or learning-focused (Kember and Kwan 2000). However recent studies (e.g. Postareff et al. 2008; Uiboleht, Karm and Postareff submitted) on approaches to teaching have found that teachers do not always systematically apply only one approach – the learning- or content-focused - to their teaching, but they might mix elements from both of these approaches, resulting in a dissonant teaching approach.

Previous studies have found that consonant learning-focused teaching-learning environments nurture, in addition to higher cognitive level of domain-specific knowledge, the development of thinking and other generic skills (Tynjälä 1998a; 1998b; Mintz and Tal 2013). Thus, learning outcomes are of higher quality and broader than in content-focused environments. Studies on how consonant and dissonant teaching-

learning environments are related to students' learning outcomes are scarce. Yet, there are few studies showing that there is a link between dissonant teaching-learning environments and lower quality learning experiences, more precisely surface approaches to learning (e.g. Prosser et al 2003), which is more likely to lead to lower quality learning outcomes (Trigwell and Prosser 1991; Lizzio, Wilson and Simons 2002).

One possible way to evaluate the quality of students' learning experiences is to explore their learning outcomes. Students' learning outcomes are understood as statements about the results of learning (Adam 2004). Learning outcomes may refer to 1) theoretical knowledge, 2) practical knowledge, 3) generic skills or competencies.

Thus, the aim of the present study is to analyse students' self-reported learning outcomes in dissonant and consonant teaching-learning environments.

Research questions are:

- 1) What kind of subjective learning outcomes students express (concerning one specific course)?
- 2) How do students' learning outcomes differ in consonant and dissonant teaching-learning environments?

Methodology

Students' learning outcomes are compared in three different courses. Although all three courses dealt with the same discipline in two different universities, each course had a different teacher and their approaches to teaching (i.e. teaching-learning environment) varied, as found in our previous study (Uiboleht et al submitted). The approach to teaching of the first course was classified as systematically learning-focused and consonant as the teaching strategies (both teaching and assessment) encouraged learner's construction of knowledge. The second and the third course were classified as dissonant as the description of teaching practices reflected both content- and learning-focused approach.

The data of the study was gathered using semi-structured interviews with 33 students. The interviews with the students focused on their experiences of learning while participating in the specific course. The semi-structured interviews with the students were carried out one or two months after the end of assessment. Interviews lasted from 40 minutes to 1 hour and 20 minutes. Data was analyzed using inductive qualitative content analysis (Graneheim and Lundman 2003).

Results and discussion

As a result of the analysis of students' self-reported learning outcomes, four main categories emerged: 1) theoretical knowledge; 2) practical knowledge; 3) generic skills; 4) changes in thinking. When theoretical knowledge encompasses subject-specific factual and conceptual knowledge (Biggs and Tang 2007), then practical knowledge refers to the knowledge of procedures in the discipline (Tynjälä and Gijbels 2012). Generic skills are understood as applicable beyond the discipline (Strijos, Engels and Struyven 2015). Changes in thinking refer to the changes in understanding or awareness (Bowden and Marton 1998).

Regarding theoretical knowledge, students' descriptions showed that out of the three courses, the highest quality of theoretical knowledge was in the first course, a consonant course. Although in the second course, a dissonant course, the quality was similar to the first (the consonant) course, it was still however lower than the consonant course, as some students described their knowledge as limited theoretical knowledge i.e. the meaning of only some concepts was developed. The lowest quality of theoretical knowledge was in the third course, also a dissonant course, as the understanding of theoretical knowledge was described as limited in all descriptions for this sub-category. These results are in line with previous studies showing a relation between learning-focused environments and higher quality theoretical knowledge (Tynjälä 1998b; Kahl and Venette 2010).

The descriptions of Practical knowledge were quite similar for all three courses. However, in the dissonant courses some students expressed that the knowledge is limited: the knowledge developed only about these methods in which they engaged and the knowledge of other methods is vague.

The descriptions of development of Generic skills emerged only for the second, dissonant course. This may be because the development of skills might have been made explicit in this course (see also Drew 1998; Tynjälä and Gijbels 2012).

The category Changes in thinking emerged especially from the descriptions of the consonant course, but also to some extent from the descriptions of one of the dissonant courses. This finding is in line with Tynjälä's (1998b) study suggesting that the dissonant environment where content-focused teaching strategies were also employed is not likely to bring about this type of learning outcomes to the same extent as a consonant learning-focused environment.

This study confirms that consonant learning-focused teaching-learning environments nurture the development of higher quality learning outcomes more than dissonant environments do. Furthermore, this study showed that the dissonant teaching-learning environments do not always produce lower quality or poor learning outcomes but that some students are able to obtain high quality learning outcomes in these kinds of environments as well. Therefore it would be important to further study what enhances and hinders learning in this kind of complex teaching-learning environments.

References

- Adam, S. (2004) Using learning outcomes. A consideration of the nature, role, application and implications for European education of employing 'learning outcomes' at the local, national and international levels. UK Bologna seminar 1-2 July, Heriott-Wyatt University, Edinburgh. Scotland.
http://www.ehea.info/Uploads/Seminars/040620LEARNING_OUTCOMES-Adams.pdf retrieved 20.05.2015.
- Ajjawi, R., & Boud, D. (2015). Researching feedback dialogue: an interactional analysis approach. *Assessment & Evaluation in Higher Education*, 1–14.
- Baert, H., De Rick, K., & Van Valckenborgh, K. (2006). Towards the conceptualization of learning climate. In R. Vieira de Castro, A. V. Sancho, & P. Guimaraes (Eds.), *Adult education: New routes in a new landscape* (pp. 87-111). Braga, Portugal: University of Minho.
- Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university*. Berkshire: Open University Press.
- Boud, D., & Soler, R. (2015). Sustainable assessment revisited. *Assessment & Evaluation in Higher Education*, 1–14. <http://doi.org/10.1080/02602938.2015.1018133>
- Bowden, J., & Marton, F. (1998). *The University of Learning*. New York: RoutledgeFalmer
- Carless, D., Salter, D., Yang, M., & Lam, J. (2011). Developing sustainable feedback practices. *Studies in Higher Education*, 36(4), 395–407. <http://doi.org/10.1080/03075071003642449>
- Drew, S. (1998). Students' Perceptions of their Learning Outcomes. *Teaching in Higher Education*, 3, 197-217.
- Elo, S. & Kyngäs, H. (2007). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. doi: 10.1111/j.1365-2468.2007.04569-x.
- Entwistle, N., McCune, V, & Hounsell, J. (2003). Investigating ways of enhancing university teaching-learning environments: Measuring students' approaches to studying and perceptions of teaching. In E. De Corte, L. Verschaffel, N. Entwistle, and J. van Merriënboer (Ed.) *Unravelling Basic Components and Dimensions of Powerful Learning Environments* (pp.89–108). Oxford: Elsevier Science.
- Evans, C. (2013). Making Sense of Assessment Feedback in Higher Education. *Review of Educational Research*, 83(1), 70–120.
- Gherardi, S. (2012). *How to Conduct a Practice-based Study: Problems and Methods*. Cheltenham, UK: Edward Elgar.
- Graneheim, U. H., & Lundman, B. (2003). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24, 105-112.
- Hounsell, D. (2007). Towards more sustainable feedback to students. *Rethinking Assessment in Higher Education*, 101–13.
- Jonsson, A. (2012). Facilitating productive use of feedback in higher education. *Active Learning in Higher Education*, 14(1), 63–76.
- Jordan, B., & Henderson, A. (1995). Interaction Analysis: Foundations and Practice. *Journal of the Learning Sciences*, 4(1), 39–103.
- Kahl, D. J., & Venette, S. (2010). *To Lecture or Let Go: A comparative Analysis of Student Speech Outlines*

- form Teacher-Centred and Learner-Centred Classrooms. *Communication Teacher*, 24, 178-186.
- Kember, D., Charlesworth, M., Davies, H., McKey, J. & Stott, V. (1997). Evaluating the effectiveness of educational innovations: using study process questionnaire to show that meaningful learning occurs. *Studies in Educational Evaluation*, 23(2), 141–157.
- Kember, D. & Kwan, K. (2000). Lecturer's approaches to teaching and their relationship to conceptions of good teaching. *Instructional Science*, 28, 469-490.
- Kreber, C. (2003). The relationship between students' course perception and their approaches to studying in undergraduate science courses: a Canadian experience. *Higher Education Research and Development*, 22, 57–70.
- Kyndt, E., & Baert, H. (2013). Antecedents of employees' involvement in work-related learning: A systematic review. *Review of Educational Research*, 82(3), 273-313.
- Lizzio, A., Wilson, K. and Simons, R. (2002). University Students' Perceptions of Learning Environment and Academic Outcomes: Implications for theory and practice. *Studies in Higher Education*, 27, 27-52.
- Mintz, K., & Tal, T. (2013). Education for sustainability in higher education: a multiple-case study of three courses. *Journal of Biological Education*, 47, 140-149.
- Parpala, A., & Lindblom-Ylänne, S. (2012). Using a research instrument for developing quality at the university. *Quality of Higher Education*, doi:10.1080/13538322.2012.733493
- Postareff, L., Katajavouri, N., Lindblom-Ylänne, S., & Trigwell, K. (2008). Consonance and dissonance in descriptions of teaching of university teachers. *Studies in Higher Education*, 33, 49-61.
- Postareff, L., & Lindblom-Ylänne, S. (2008). Variation in teachers' descriptions of teaching: Broadening the understanding of teaching in higher education. *Learning and Instruction*, 18, 109-120.
- Prosser, M, Ramsden, P., Trigwell, K., & Martin, E. (2003). Dissonance in Experience of Teaching and its Relation to the Quality of Student Learning. *Studies in Higher Education*, 28, 37-48.
- Prosser, M., & Trigwell, K. (2014). Qualitative variation in approaches to university teaching and learning in large first-year classes. *Higher Education*, 67, 783-795.
- Schaper, N., Schlömer, T. & Paechter, M. (2012). Editorial: Kompetenzen, Kompetenzorientierung und Employability in der Hochschule. *Zeitschrift für Hochschulentwicklung*, 7 (4), I–X.
- Strijbos, J., Engels, N., & Struyven, K. (2015). Criteria and standards of generic competences at bachelor degree level: A review study. *Educational Research review*, 14, 18-32.
- Sutton, P. (2012). Conceptualizing feedback literacy: knowing, being, and acting. *Innovations in Education and Teaching International*, 49(1), 31–40. <http://doi.org/10.1080/14703297.2012.647781>
- Trigwell, K. and Prosser, M. (1991). Improving the Quality of Student Learning: The Influence of Learning Context and Student Approaches to Learning on Learning Outcomes. *Higher Education*, 22, 251-266.
- Tynjälä, P. (1998a). Traditional studying for examination versus constructivist learning tasks: Do learning outcomes differ? *Studies in Higher Education* 23, 173-189.

- Tynjälä, P. (1998b). Writing as a tool for constructive learning: Students' learning experiences during an experiment. *Higher Education*, 36, 209-230.
- Tynjälä, P. (1999). Towards expert knowledge? A comparison between a constructivist and a traditional learning environment in the university. *International Journal of Educational Research*, 31, 357-442.
- Tynjälä, P., & Gijbels, D. (2012). Changing world – changing pedagogy. In P. Tynjälä, M-L. Stenström, M. Saarnivaara. (Eds.), *Transitions and transformations in learning and education*. Dordrecht: Springer.
- Uiboleht, K., Karm, M. & Postareff, L. (2016 - submitted). How do university teachers combine different approaches to teaching in a specific course? A qualitative multi-case study.