

A peer-mentoring model for accelerating employability of students in higher education

Handelshøyskolen, NMBU

Generell informasjon om tiltaket

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Kontaktperson for nominasjonen:	Studiedirektør Ole-Jørgen Torp
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Kort om tiltaket:

In this nomination, we present an advanced peer-mentoring model facilitating development of key core-competencies essential to increase employability of students in higher education. The model is developed and implemented by faculty responsible for the Masters Programme in Entrepreneurship and Innovation at the School of Economics and Business, NMBU. The peer mentoring model represents a unique and new initiative in advanced peer learning in practice-based education in Norway. The model has evolved dynamically as a cooperation between faculty and students since 2014, and has been inspirational for developing a national mentoring project involving five higher

Hvordan tiltaket oppfyller kriteriene for Utdanningskvalitetsprisen:

Backdrop for developing the model: Major challenges in the future labour market and higher education

In Norway, the continuing oil price drop had highlighted the need for an economic transition to more sustainable nonpetroleum industries. Furthermore, our society is facing rapid technological change and adaptation of new technologies is critical for competitiveness and innovation capability in the private sector (regjeringen). The early twenty-first century has seen the emergence of massively disrupted economies, technologies and business models (Christensen, 2013). This trend is predicted to increasingly displace existing jobs, which at the same time creates enormous opportunities for the creation of new jobs, new investments, and innovations. In Europe, the labour market is likely to see substantial disruption and change. A continued shift from manufacturing to services, enabled through technology, will increase the demand for highly skilled employees. (Dolphin 2015).

Traditionally, most Norwegian students are security oriented but we are now moving towards a more global and unstable labour market, which subsequently will effect Norway. For example in UK, the labour market are already changing with a 45% increase in self-employment, short term and part-time work (Oliver, 2015). These trends project a more dynamic and fluid movement across jobs, markets and technologies for all European countries.

The rapid changing labour market will require constant supply of new advanced knowledge, but most of all, it will require the future workforce to constantly combine their existing knowledge and skills into new forms and architectures to meet the need for innovation and adaptability. The university will

therefore be more obligated to prepare the students for a future professional life where the ability to cope with unknowable uncertainties and to drive new initiatives through to fruition will be much more important than in the past. At root, this includes developing more comprehensive and generic competencies to empower students to “learn how to learn”, thus increasing their employability through critical reflective thinking and deliberate practice (Harvey, 2003; Baron and Henry, 2003; NMBU’s Learning Philosophy, 2013).

Employability more than employment

The universities are now more and more challenged to take responsibility for students’ adaptability and employability. According to Stephenson (1998), the concept of employability is best understood as the capability of becoming an effective operator in the labour market (whether it is in an existing job, moving between jobs or generating new jobs as entrepreneurs). Being an effective and capable operator encompass confidence to take action, be able to solve problems, work effectively with others, learn from experiences as individuals and in associations with peers. In such, employability is less about getting employment, and more about enabled and empowered students.

Innovating teaching in higher education

This disrupted and rapid changing society demands some rethinking to operationalize ‘employability’ into higher education pedagogy (Oliver, 2015). The faculty responsible for the Master Programme argue that higher education does not have time to wait until students have left the university to make the link between the learned theoretical knowledge and their current workplace problems. The students need to face a variety of “sticky problems” and test their, often naïve, assumptions. The faculty team has therefore taken a leading role in emphasizing experiential and action based learning through various didactic activities as internships and project based team learning. (Kubberød and Pettersen, 2017a;b). Contemporary higher education programs typically employ experiential approaches, wherein students, through social interaction with fellow students, construct the learning themselves (Löbler, 2006) through for instance advanced internships (Kubberød and Pettersen, 2017a) or through real life project based learning (Kubberød, Fosstenløyken and Erstad, 2017). However, this poses major challenges for us as educators, because the most important learning outcomes of such practice-based approaches cannot be secured through traditional teaching inside a classroom. In line with this, Ruskovaara and Pihkala (2013) have argued the more complex learning methods educators implement, the more “backstage” support must be established. Raelin (2007) so insightfully captured this pedagogical challenge:

“In this way the conventional task of teaching as that of imparting knowledge can make room for the more dynamic process of facilitating learning. Imbued with learning, practitioners need not rely on old formulas as much as invent new tools with the help of their peers and teachers to find and work with current problems”

From insight to action

Higgins et al. (2013) argue practice-based pedagogical methods have ignored the complexity in social practice and how teachers shall approach these. Higher education scholars rarely discuss these issues. Implementing an experiential and students centered approach to learning significantly changes the role of the teacher in the learning process Within the Master for Entrepreneurship and Innovation, the faculty team work as enablers, facilitating student learning. The team has taken their facilitation role very seriously and experimented with various peer-learning strategies in their practice-based curriculum. In particular, the peer-mentoring model is described by educational scholars as a very powerful learning strategy that puts students in charge of the learning process (Topping, 2005). The

peer-mentoring interaction provides fellow students with multiple opportunities to process complex experiences into learning, and to increase self-reflection and mastery development (Kutzhanova *et al.*, 2009). Grounded in established mentoring research (Bozeman and Feeney, 2007; Haggard *et al.*, 2011; Kram and Isabella, 1985) and a national mentoring project (Kubberød, 2016), the faculty has worked for 3,5 years with developing and implementing a peer-mentoring model in practice-based course in the Masters Programme in Entrepreneurship and Innovation (M-EI).

An innovative peer mentoring model – enhancement of core competencies

The peer-mentoring model was developed as a pioneering pilot in the nationally funded project initiative *The Mentor Role as an Element in Entrepreneurial Expertise*, which ran from January 2014 to June 2016 (Kubberød, 2016). Responsible faculty developed this project to advance expertise in peer mentoring and for building a network and practice community on mentoring models in higher entrepreneurship education. Four additional institutions were invited into the project (Western Norway University of Applied Sciences, University of Oslo, University College of Southeast Norway and Kristiania University College). For more than 10 years, the faculty have developed an action and experiential learning pedagogy that embraces students with a wide variety of disciplinary backgrounds, including veterinary science, food science, biotechnology, renewable energy, nursing and economics.

The collaborative course design

The peer mentoring model is implemented in a 20-credit, mandatory course called “Entrepreneurship in Practice. The overall aim is to engage students in entrepreneurial and deliberate practice in order to enhance their generic competencies. Students work in cross-disciplinary teams (based on diversity in background) and, during a 6-month period (Sept-March) face real-life business challenges together with external entrepreneurs and companies. Students are thus enveloped in a social learning context that enabled multiple opportunities to learn from trial and error and allow for personal growth in collaboration with fellow students. They must pitch projects in external arenas, do real market testing, attract potential stakeholders, and solve sticky problems in collaborative teams under time pressure. Peer mentors support the teams during the learning process. At the end of the course, the students present a business plan to real investors and external experts for final assessment and academic grading.

Engaging the students - the peer mentor role

Unlike traditional mentoring, peer mentoring involve mentors and mentees who are about the same age and position in a social hierarchy. In the university student setting, peer mentors and mentees are closer in age and have the same position in the educational system, which provide learning opportunities beyond just pure academic skills (Terrion and Leonard, 2007), such as moral and social support. In the peer mentoring model, more experienced individuals provide assistance and support to less experienced individuals along two primary dimensions; 1) functional and professional support (i.e consulting, feedback) and 2) psychosocial and emotional support (i.e friendship, acceptance, confirmation and role modeling) (Bozeman and Feeney, 2007; Kram and Isabella, 1985; Terrion and Leonard, 2007; Haggard *et al.*, 2011). A peer-mentor deviates from a classical peer-tutor role, as the peer mentors are to a large extent independent from teachers during the experiential process. (Topping, 2005). The peer-mentor is most of all available for fellow students to get the most out of their learning.

Practicing the model

The mentor model has been tested for three years and now has a research based and stable format developed in close cooperation between faculty, student mentees and peer mentors (Kubberød, Fosstenlökken and Erstad, 2017). The peer mentors are practicing three distinct and co-existing mentor roles and training of the peer mentors is focusing on how these can be practiced. The first role is the *familiar role model* that the mentee can model in their own experiences and development. The second role is a *learning facilitator*, in which the peer mentor encourage the mentees to take action and reflect upon and learn from experiences. The third role is as the *supportive coach*, wherein the peer mentor provides confirmation and emotional support in emotion-laden, learning situations; such as highly exploratory trial-and-error actions in socially demanding situations where creating the neutral space for dialogue in a team is critical. This last role in the role repertoire has also shown to be essential in enhancement of mastery experience and self-efficacy through the mechanism of social persuasion (Bandura, 1977), see Table 1 for a summary of roles and functions that have been documented through our experiences and research among students and faculty:

Table1. Mentor role repertoire

Core competencies	Mentor functions in the learning process	Mentor roles
<i>Action oriented learning</i>	Encouragement / sounding board	Learning facilitator
	Confirmation and emotional support	Supportive coach
<i>Learning from experience</i>	Conversation (sharing similar experiences)	Familiar role model
<i>Reflection upon experience</i>	Asking challenging questioning, discuss	Learning facilitator
<i>Social learning</i>	Providing the neutral space for dialogue, link between team members, trusting relationship	Supportive coach
<i>Self-efficacy</i>	Model for similar experience, Supportive feedback	Familiar role model Supportive coach

Organizing of the mentee-mentor interactions

As a formal part of the course, the peer mentors and mentees meet every month during the fall semester, with the meetings structured around four deliverables (5 project assignments defined by teachers connected to project feasibility focusing on business model, market strategy etc.) The mentees and peer mentors are encouraged to stay in regular contact outside the formal part of the course through social media, telephone etc. For the mentoring program to realize the full potential of a mentoring relationship, the mentors should not have too much contact with, nor influence from teachers during the process. Instead, the course teachers arrange two ‘reflection-upon-practice’ sessions to allow the mentors, mentees and the faculty to meet and reflect upon practice (November and February). Prior to the course, the faculty recruits peer mentors among the second-year students in the Masters Programme, each of whom signs up voluntarily in exchange for experience and competence. This format is based on the general mentoring literature and common practice from real-life, business relationships, where experienced mentors almost exclusively serve without compensation (see Mathisen, 2015). As second-year students, peer mentors have; (i) completed the same, 20 credit course, (ii) completed an international, internship program (30 credits) working in an American venture for three months where they use reflection tools to learn from practice experiences, and (iii) attended a 3-days training course in peer mentoring arranged by the faculty. After completion of their mentor role, peer mentors are

awarded a Certificate of Contribution by the faculty dean. The student centered peer-mentoring model is illustrated in Figure 1:

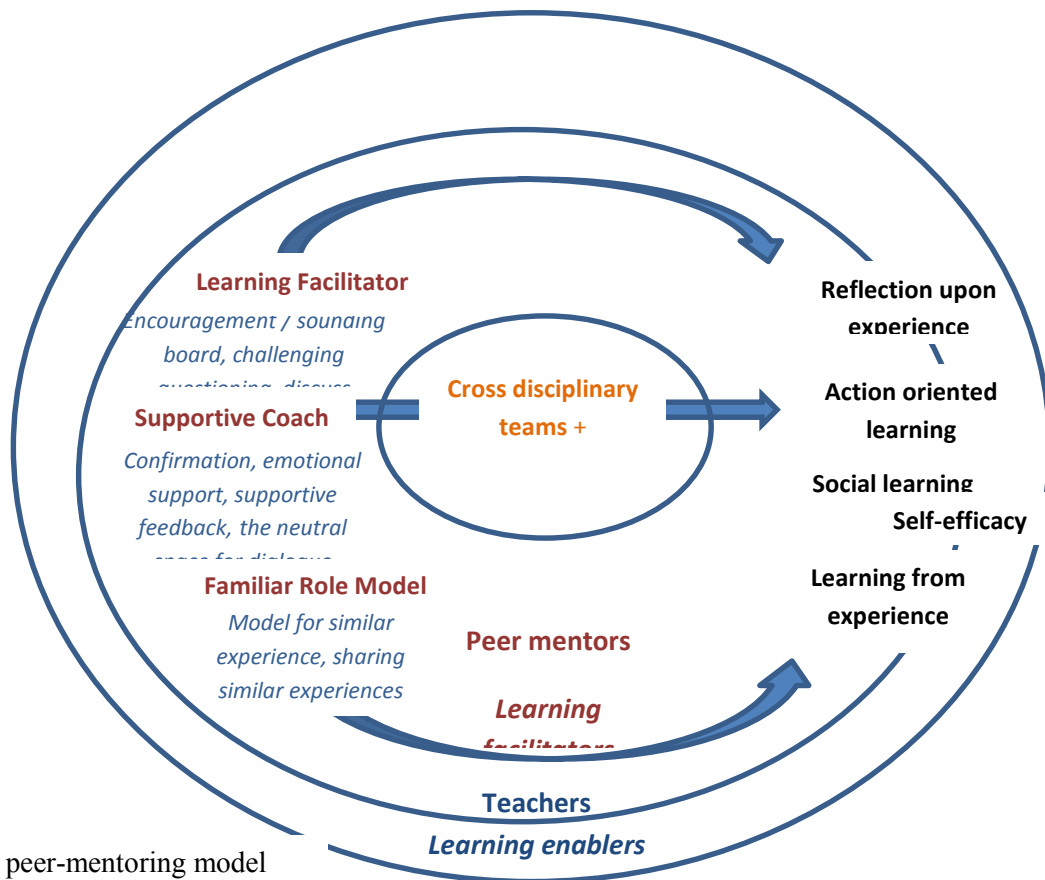


Figure 1. The peer-mentoring model

Enhanced education quality: Increased learning outcomes for mentees

The faculty’s research on the model has shown that peer mentoring is characterized by equal status and reciprocity between the parties in the mentoring relationship (Kubberød, Fosstenlökken and Erstad, 2017). The model is highly favorable due to the rich repertoire of psychosocial, supporting functions provided between fellow students. Furthermore, in a more traditional, career development paradigm, mentors are associated with ‘older’ and ‘wiser’ persons that can guide using their vast experience. However, in the dynamic of a rapid changing economy where individuals are constantly exposed to new situations; long experience might represent yesterday’s news. Thus, it is not the mentor’s expertise, which is most salient in mentoring relationships, but the mentor’s capability for empowering students through encouragement from a more familiar role model. Accordingly, adopting a peer mentoring strategy is expected to be more efficient in response to the rapidly changing labour market (Parker, 2008).

To summarize, the peer mentoring model implemented is an efficient tool for facilitating development of important generic competencies in action based learning processes (see figure 1). Peer mentoring enhances abilities like reflection and social learning in teams, provides feedback, confirmation and emotional support during action and opportunity taking, and functions as a more familiar role model for similar experience, which contributes to learning from experience and developing enhanced self-efficacy (ie. “if he did it last year, so can I”). More specifically, a peer mentor may create greater possibilities to lower learning barriers and learn from mistakes, , hence enabling exploration of new knowledge territories, and facilitate self-directed learning.

Interestingly, Bandura (1977) has pointed out that it is essential for the individual to have a slightly higher self-efficacy than abilities would indicate, which stands in sharp contrast to what is normally expected of students in university. One can argue that peer mentors may encourage the mentee, through emotional support and confirmation, to take on more challenging tasks and put in the extra effort during difficult times, which demonstrates the effectiveness of peer mentoring in practice-based education. The specific effects reported by peer students are depicted in Table 2 (see Erstad, 2015; Kubberød, Fosstenlökken and Erstad, 2017)

Table 2. Effects of peer-mentoring on learning

Learning dimension	Supporting quotes
Expanding the learning space	<i>Second opinion. It just provides another glance at something you are working on. I do not think that it should be like that the mentor will tell you what to do, but just see things from different angles and provide input. Maybe they see something that you have not seen.</i>
Taking action and learn from mistakes	<i>It was just so liberating to have talked with our mentor. Then, we had suddenly more energy in the group/ Yes, it's good with a conversation partner then. A third person who might function a bit like a psychologist</i>
Reflection on what works and not	<i>I acknowledge that my thoughts are not always the most brilliant. Instead of being locked on one thing you think is really good, but actually being able to open up for others' perspectives and rephrase it in a new way: "This was much better!". It was an "a-ha" experience for me</i>
Improved team process/reveal team conflicts and reduced drop out	<i>Knowing that I have somebody's [mentor] support, this support has a lot to say in dealing with a conflict</i>
Mastery experience	<i>They've tried to build us up, gave us confidence, showcased things and felt positive about what we showcased. That contributed to mastery</i>

Increased learning outcomes for peer mentors

It is of high value for students to serve as a mentor, which particularly trigger meta reflection upon their own learning long before they leave the university. This has proven to increase their self-confidence and employability (Seyitkuliev, 2016). Having served as voluntary mentor is highly appreciated by potential employers and is reported by several alumni members to be a competitive advantage when competing for vacant positions. There is limited research on mentor roles from the mentors' perspective in higher education, and after two peer mentoring trials, faculty responsables performed an evaluation of the peer mentoring model from the peer mentors' perspective (Seyitkuliev, 2016). The current evaluation revealed interesting and transformational learning outcomes for peer mentors themselves. These are qualities seldom trained in a university setting, but never the less highly relevant in a multi-cultural labour market, see Table 3:

Table 3. Learning outcomes for peer-mentors

Learning dimension	Supporting quotes
Meta learning (deep learning)	<i>When you think of Entrepreneurship in practice [the course] and that we have been through a process, we get a kind of repetition of the process again, by being with them [mentees]. We learn better or understand the entrepreneurial process in a better way. I have learned a few things and then I learned how they [mentees] have learned it, and got even another perspective on how to actually push an idea forward. Then we as [mentors] got both repetition, but also more learning from being with your mentees.</i>
Self-awareness	<i>I think I'm very easy to talk to ... I am open and do not take sides. I'm actually listening to what they [mentees] have to say.</i>

Openness to other perspectives and people	<i>The understanding that we are different, but we share a common goal; that we need, regardless of personal differences ... so we need to do a job and the job we have to solve together anyway.</i>
Challenge one self	<i>I've never been mentor before. That's the reason. Try something new....</i>

Key “take aways” for faculty

The faculty team has reported that peer mentoring supports and facilitates student learning in cross-disciplinary teams in a more effective way than conventional tutoring offered by faculty, including assistance in resolving team conflicts and to make progress in the experiential learning process. However, an evaluation (see Kubberød, 2016) reveals potential conflicts inherent in having a role as evaluator of students’ achievements and at the same time give moral and emotional support as a mentor. Sometimes team learning can lead to unexpected and unforeseen outcomes, which are loaded with emotional exposure and make the peer mentor model particularly applicable. The model provides the necessary distance between faculty and students so they can learn without constraints (Kubberød, 2016). From a teacher perspective, the most important reflection from the team is that student peer mentors have greater credibility as a learning source in reflexive learning from practice and are better role models than teachers, as teachers do not have the same experience in learning as their peer mentors.

Impact and dissemination of the peer mentor model

The peer mentor model is still in its infancy, but has already received both internal, national and international recognition. The mentor model has involved 120 students in mentoring relationships within the Master Programme from 2014. The peer mentor program has been carried out in three trials (2014-2016), and has a continually refined format for 2017. The University leadership is now discussing how the peer-mentor program could be facilitated through the Learning Centre and integrated into other NMBU study programmes. The learning effect from peer mentoring is reflected in increased satisfaction in evaluations of the focal course, from 4,4 (in average before 2014 to 4,8 in 2016 (scale ranging from 1 to 6). Candidates from the Master Programme find work within three months after completing the programme and student completion is close to 100%. (the drop out rate is also low; with only 4 students the last three years). Furthermore, with regard to employability, one out of three candidates are involved in generating new jobs through establishing a new company.

Nationally, the peer mentoring model has served as inspiration and spread to our partners from the Norgesuniversitetsprosjekt. At Western Norway University of Applied Sciences (HVL), a variant of peer mentoring is implemented in a bachelor course in innovation for engineers, involving over 200 students. There master students in innovation are also here functioning as peer mentors for engineer teams.

Internationally, the peer-mentoring model has been shared among the members of the NMBU hosted SIU project “Teaching, learning and outreach” as a unique example of student centred, facilitated learning. And is also involved as a model for cooperation in another INPART network application with the title: “Developing entrepreneurial mind-sets across cultures: A Norway - South-Africa collaboration” between Nord University Business School, Western Norway University of Applied Sciences (HVL), Norwegian University of Life Sciences (NMBU), The University of Pretoria and Stellenbosch University (South Africa).

The effort behind the peer mentor program led to a university nomination for innovative teaching at NMBU in 2016 and the Master Programme ended up as a runner-up for the NMBU education prize in 2016. The peer mentoring model was highlighted in an external evaluation of the Master Programme in 2015. The international committee stated in their report: *“The applied entrepreneurial learning methods are a special strength. The program is research-based, and manages to balance theory and practice, in order to reach its main goals and learning objectives”*

Since 2014, the peer-mentor model has been reported in research publications (Kubberød and Hagen, 2015; Kubberød, Fosstenlökken and Erstad, 2017), documented in two master thesis’ and presented at international education conferences and national education conferences (see Appendix 2). The peer mentoring model has also been presented and discussed in the NMBU pedagogy course for scientific personnel: PPUN400 Teaching and Learning in Higher Education. The program has had influential impact and given inspiration for the higher institutions that participated in the “Norgesuniversitetsprosjekt” (see Kubberød, 2016). See appendix 1 for research references and Appendix 2 for dissemination and merits.

The faculty responsible for developing and implementing the peer mentoring model into the Master of Entrepreneurship and Innovation Programme have experienced that peer mentoring support has contributed to increasing learning outcomes in practice-based education beyond what is achievable from traditional teacher support.

“The practice led me to more easily relate studies to working life, and afterwards I see that this has given me a stronger insight and safety in the work I'm doing now”

“Companies are increasingly demanding efficiency and development, and many are therefore looking for employees who have an “innovation mindset”.

Alumni Testimonials

Future initiatives

The goal is to establish a continuation project with the original consortium from the previous mentoring project founded by Norgesuniversitetet, now also with a greater involvement of external networks such as business, innovation and public administration. The team is planning to apply for funding from the FINNUT programme (for research and innovation in the educational sector) focusing on “authentic learning” forms and mentoring support with both internal (peer mentors) and external network (business mentors). Additionally, NMBU leadership has recently granted the group the possibility for a PhD in *Entrepreneurship Education and Employability*, with the main goal is to use the peer mentoring model as a focal theme of study in the research project. Furthermore, the group continuously works to publish their research in renowned journals and results will be used to create a broader interest in advanced learning forms within higher education in Norway and internationally.

To conclude, the model is relevant for other disciplines that have ambitions for problem based and experiential learning, is shown to be highly scalable and is compatible with digital learning forms in higher education. Most of all, peer mentoring is a mutual way of learning, allowing both parties to develop important competencies that will assist them in self-directed and lifelong learning, and increase their employability in future job markets..

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Appendix 2

Learning and the peer mentoring model – publications, conferences and citations

Edupreneurs with a vision

- We are a dynamic group clearing ground while doing and learning through innovative pedagogical ideas and actions. Our vision is to build, establish and diffuse peer mentoring as a prosperous new way of enabling student autonomy and student learning in higher education.

As we move along, we do the things we believe in - such as engaging the students! Sometimes we set the teacher aside and let the students lead the way. We trust them to take care of their own learning through peer mentoring relationships, where mentees, through group work, learn to become change agents in real work practice. Through this model, we co-create useful, meaningful and individually unique entrepreneurial journeys for each and every one of our students. We do not have a long history, so we learn as we go along, we consider ourselves as *edupreneurs*. During this short time, we have received positive feedback on our work from students and colleagues and even as nominees for various prizes. We think that these results are achieved because we do teaching *for* and *through* action that is highly relevant for the labour market. Our mentoring model provide security to try out things and allow our students to test the waters. In this way, we challenge and provoke, support and motivate, all to increase employability of our students.

Our teaching and research projects (ongoing and recently completed)

- **Mentoring in entrepreneurial expertise: Developing the mentor role in entrepreneurship education.** 2014-2015. Teaching and research project funded by Norgesuniversitetet. Partners: Bergen Univ College; Telemark Univ College, Centre for Entrepreneurship, UiO; Young Entrepreneurship Norway; Centre for Continuing Education, NMBU.
- **Teaching, learning and outreach: Promoting practice in teaching.** 2016-2017. Teaching project funded by The Norwegian Centre for International Cooperation in Education (SIU). Partners: Noragric, NMBU; RU-German-Russian Exchange, Russia; University of Tampere, Finland.
- **Enhancing local wool value chains in Norway: Cases of Entrepreneurial Learning.** 2015-2018. Research project funded by The Research Council of Norway, Bionær. Partners: SIFO and CBS.

- **Innovative teaching:** Video generated self education – Sharing and learning. 2016. Nils Sanne. Teaching project on innovative teaching funded by NMBU
- **Entrepreneurship education and employability.** PhD project funded by NMBU, started August 2017.

We engage students in our activities

- **Peer mentoring in practice based learning in higher education.** An advanced peer-mentoring model facilitating development of key core-competencies essential in team based learning. We have done three trials of the model since 2014, with excellent learning outcomes for the mentees.
- **We have developed a course portfolio in peer mentoring for mentor students** (3 x 3 days course), the first two years in cooperation with the pedagogy groups at NMBU.
- Fall 2014, three M-EI students creates a **digital strategy for NMBU** focusing on Live streaming, Digital summaries, Quizze “Kahoot” and Digital solution suggestions by Nils Sanne.
- **We have developed a new internship model** which is rolled out during 2017
- We frequently **invite Alumni Students** into our classrooms as presenters and facilitators.
- **We let students develop workshops** for their peers. For example a former student with exceptional sales skills who also wrote a master thesis about entrepreneurs and sales, have developed a one-day sales workshop for fellow students. This he did already before he graduated.
- **We write papers together** with our master students
- **We invite ourselves to visit our alumni members in the first semester** on our yearly innovation journey with our fresh students.
- **We always invite second year students** to present their master thesis and practice projects for first years students in two of our courses
- **Students are members of our Faggruppemøter**

Publications and working papers (selected out of relevance for this nomination)

- **Kubberød, E. and Hagen, S. T.** 2015. Mentoring models in entrepreneurship education. *EDULEARN proceedings*, 4059-4069, ISBN: 978-84-606-8243-1.
- **Kubberød, E. and Pettersen, I.B.** 2017. Exploring situated ambiguity in students’ entrepreneurial learning. *Education + Training*, 59 (3), 265-279.
- **Kubberød, E. and Pettersen, I.B.** 2017. The role of peripherality in students’ entrepreneurial learning. Accepted for publication in *Education + Training*.
- **Kubberød, E., Fosstenløyken, S. M. and Erstad, P. O.** 2017. The role and impact of peer mentoring on students’ entrepreneurial learning, in review process in *Education + Training*.
- **Kubberød, E. and Pettersen, I.B.** 2017. Entrepreneurial identity matching through cross-cultural learning, in review process in *Uniped*.
- **Viciunaite, V., Kubberød, E. and Fosstenløyken, S.M.** 2017. Entrepreneurial co-creation in establishing a sustainable value chain, working paper.
- **Ladegård, G. and Kubberød, E.** 2017. A role-based theory of entrepreneurial mentoring, working paper.

- Kvalitet og progresjon i høyere entreprenørskapsutdanning [*Quality and progression in higher entrepreneurship education*], Special issue forthcoming in 2018, *Uniped*. Guest editors: Elin Kubberød (NMBU), Truls Erikson, Leif C. Lahn (UiO), Inger Beate Pettersen (HVL).
- **Erstad, P O.** 2015. Mentoring - en vei til entreprenøriell mestring? En casestudie av mentoring i praksisbasert entreprenørskapsutdanning. Master thesis.
- **Seyitkuliev, B.** 2016. Mentorrollens utvikling i en læringskontekst – En casestudie av mentorordningen i høyere praksisbasert entreprenørskapsutdanning. Master thesis

Conference presentations

- **Kubberød, E. and Jervell, A. M.** 2014. Transformative Learning by Reflection in Entrepreneurship Education-Role of Mentoring. 3E Conference - ECSB Entrepreneurship Education Conference, 10. – 11. April, Turku, Finland.
- **Kubberød, E. and Pettersen, I.B.** 2015. The Role of Cross-Cultural Exposure on Transformative Entrepreneurial Learning. 3E Conference - ECSB Entrepreneurship Education Conference, 23- 23 April, Lüneburg, Germany
- **Ladegård, G. and Kubberød, E.** 2015. A typology of mentor roles in entrepreneurial learning. ISBE Conference 2015, 11-12. November, Glasgow, UK
- **Kubberød, E. and Hagen. S. T.** 2015. Mentoring models in entrepreneurship education, 6.-8. July, EDULEARN, Barcelona
- **Kubberød, E. and Pettersen, I.B.** 2016. Kubberød, E. and Pettersen, I.B. 2016. Prior Knowledge – A Barrier to Entrepreneurial Learning? 3E Conference - ECSB Entrepreneurship Education Conference, 10-13 May, Leeds, UK

Seminar presentations

- Teaching, Learning, Outreach: Promoting Practice in Teaching. Nils Sanne, Siw Fosstenløy and Elin Kubberød presented practice based learning and peer mentoring at seminar in SIU project led by Noragric NMBU, 23 January 2017.
- National Student Advisor Seminar: Presentation of Learning Effects from the Peer Mentoring program at Master 21 at NMBU, Sept 2015
- Presentation of the peer mentoring model and research at Seminar in Entrepreneurship Education, Western Norway University of Applied Sciences (HVL), Feb. 11, 2016
- Presentation of the Norgesuniversitets project and peer mentoring at an international Jubilee Seminar at Center for Entrepreneurship, UiO, 15. Oct 2015
- Led a faculty seminar on mentoring: Mentoring in higher entrepreneurship education, why and how - transferability to other programs?, 2. Des 2015.
- Flipped Classroom – creating an active learning milieu for students and teachers. Presentation at the NMBU Learning Centre by Nils Sanne, 7. Oct 2016. <https://www.nmbu.no/ansatt/laringscenteret/kurs-og-kompetanse/kurs-og-seminarer/node/24484>

- Video generated self-education – sharing and learning. Presentation at the NMBU Learning Festival, by Nils Sanne, 1 June 2017. <http://vitenparken.no/utstilling/laeringsfestival/>
- The innovative «mind set» – students take self responsibility. Stand at the NMBU Learning Festival, Eik Ideverksted and Alexander Hansen, 1 June 2017.

Citations

- In 2015 an **external evaluation committee** concluded that our applied entrepreneurial learning methods are a special strength of our programme. The committee states that «The Master Program in Entrepreneurship and Innovation has successfully evolved over the last ten years. It has academic standards well in line with similar programs in Norway and abroad” and “ The program has successfully developed entrepreneurial learning methods”
- 2013 – Elin Kubberød got the “**The entrepreneurship award**” from Youth Enterprise for spreading the spirit of entrepreneurship at NMBU University.
- 2016 - Kubberød, E. and Pettersen, I.B. 2016. **Best research paper nominee** for the paper: Prior Knowledge – A Barrier to Entrepreneurial Learning? at 4th 3E Conference, ECSB Entrepreneurship Education conference, 11-13th of May, 2016, Leeds.
- 2016- **Nominee for best education program** at Norwegian University of Life Sciences NMBU.
- 2016- **Nominee for innovative teaching prize** at NMBU for the **peer mentoring model**.
- The peer mentoring model is presented and discussed in the NMBU pedagogy course for scientific personnel: PPUN400 Teaching and Learning in Higher Education.

Web articles and videos

<https://www.nmbu.no/om/fakulteter/samvit/institutter/hh/node/16824>

<https://www.nmbu.no/om/fakulteter/samvit/institutter/hh/aktuelt/node/23894>

<https://www.nmbu.no/aktuelt/node/28276>

<http://hauge.vgs.no/22-styret>

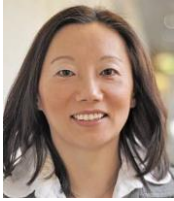
The edupreneur team



- Elin Kubberød is **Associate Professor in Entrepreneurship and Innovation** and holds a master in food technology from NMBU and doctorate from BI Norwegian Business School in consumer behavior. Elin has worked as a researcher and Project Manager Innovation in Nofima (Norwegian Research Institute) for 7 years. From 2007 she left Nofima and gained her own entrepreneurial experience in a startup company, then as marketing manager. In 2009 she returned to NMBU and worked as team leader at the university's TTO with entrepreneurship and commercialization of research and cultural activities for collaboration and innovation between faculties. In 2013 she was employed as associate professor and became head of the master's programme in Entrepreneurship and innovation. Elin's research interests are within entrepreneurial learning and mentoring in entrepreneurship and higher education. Her broad experience is really coming at hand as an entrepreneurial teacher and researcher; having developed own methodologies in innovation that have been employed in practice based teaching and project facilitation. Elin led the mentoring project *The Mentor Role as an Element in Entrepreneurial Expertise* that ran from January 2014 to June 2016 founded by Norgesuniversitetet.



- **Nils Sanne is Assistant Professor in Entrepreneurship and Innovation.** Nils has a degree in Finance from Norwegian School of Business. Since 1999, he has worked as Area Manager for Exxon Mobil, started and operated three Hi-Fi Klubben stores and taught at several schools. He is also one of the founders of a successful high school (Hans Nielsen Hauge) in Fredrikstad. Nils teaches several different courses from Financial Management to Creativity and Entrepreneurship. Business contacts and students in Internship have been one of his priority areas. Recently, Maker Space and Prototyping has taken much of Nils's time as he recently took initiative to build a MakerSpace in Fredrikstad a creative sandbox for high school students. Here, entrepreneurship and innovation students from the peer mentoring program are functioning as mentors for the students. NMBU has perhaps Norway's largest Makerspace with over 200 active students.



- **Siw M. Fosstenløy is Associate Professor in Entrepreneurship and Innovation.** She has a doctoral degree (Dr. Oecon.) from BI Norwegian Business School (Dr. Oecon.) and holds a profession degree in pedagogy (Cand. Paed.) from the Department of Education, University of Oslo. Siw has for nearly 20 years been working with learning, competence and knowledge practices in various settings like start-up companies, knowledge intensive firms, retail chains, hospitals and maritime industry. Currently, she is engaged in a teaching project on peer mentoring in education as well as in research projects on sustainable value creation and entrepreneurial learning as well as on user innovations. She has published in Organization Studies, Human Relations, California Management Review and The Learning Organization. Siw has experience from project management and has previously served as associate professor at BI, senior researcher at the Work Research Institute (AFI), post doc at the University of Oslo and visiting scholar at Stanford University and Stockholm University.



- **Joachim Sholderer is Professor in Innovation and Entrepreneurship.** Joachim has an extensive international career in teaching and research. He is new on the team as of September this year. He comes from a position at Zürich University and has worked at Aalborg University and several universities in Germany.



- **Nils Mange Killingberg is a PhD candidate** and former lecturer from UiO at Centre for Entrepreneurship. He holds a master's degree in innovation and entrepreneurship. The last NIFU report (NIFU report 2, 2015), recommends empirical research to assess the learning outcomes of different pedagogical approaches implemented in higher education. Furthermore, a comprehensive investigation of the relevancy of this form of education for the labour market is currently missing in Norway. The PhD project intends to go in depth to explore and uncover important relationships between higher

entrepreneurship education and learning outcomes of relevancy for employability and the labour market. How entrepreneurial approaches in university affect graduates' career approach and development is therefore the focus for this PhD project.



- **Viktorija Viciunaite is a PhD candidate** working on the project Entrepreneurial learning and Sustainable Business Models in the Wool Value Chain, financed by the Research Council of Norway. Viktorija is currently organizing a business network for female entrepreneurs in the wool industry to enhance their business models through an upcoming workshop in October. Here networking, shared practice and peer learning is central elements



- **Alexander Hansen is project coordinator for the Master Programme in Entrepreneurship and Innovation.** He holds a bachelor degree in marketing from Kristiania University College and a master degree in entrepreneurship and innovation from the Norwegian University of Life Sciences. As a project coordinator, his responsibilities consist of organizing and coordinating various tasks such as study admission and recruitment of new students, establishing connections with external partners both on and off campus, marketing and more. Alexander is project coordinator for the peer mentoring initiative. He is also in charge of facilitating for practice based education and coordinates all the learning activities with external stakeholders (entrepreneurs and business actors, public sector etc) and internal faculty and peer-mentors. His involvement in the peer mentoring program also consists of recruiting new peer mentors as well as putting together interdisciplinary groups of peer mentees. He is also coordinates the two “reflection-upon-practice” sessions between mentors, mentees and faculty.

