INTERNATIONAL ENTREPRENEURSHIP SKILLS EUROPE

Measuring innovation competences in international business contexts

Meiju Keinänen

Co-funded by the Erasmus+ Programme of the European Union

Content

Co-funded by the Erasmus+ Programme of the European Union

Introduction

In today's globalized and rapidly changing working life, the importance of innovation is highly emphasised. Innovations are seen as solutions for global problems, key elements for organisations and companies to survive in a changing world, economic boosters, and as a popular concept highlighted in many policies. The renewed EU agenda for higher education institutions (European Commission, 2017) highlights the unique role of higher education in contributing to innovation. The OECD Innovation Strategy (2015) also states that broad curricula, updated pedagogical practices, and the development of tools to assess innovation-related skills are important in education. Beyond subject-specific expertise, higher education should also develop students' creativity, critical thinking, entrepreneurship skills, and communication skills (OECD, 2015). To succeed in developing these innovative individuals who are ready and willing to work in an international and multicultural globalized environment, educators' play a key role.

However, although teachers' innovation competence in education is paramount to the realization of better student achievement and outcomes, it has been shown that the teachers' performance in the roles of innovating, facilitating a knowledge society, collaborating and networking, developing higher education, and entrepreneurship should not be considered satisfactory (Kasule et al., 2015). Teachers require professional development to ensure that those charged with the privilege of educating learners for the 21st century are themselves well skilled and can in turn teach these skills effectively to their learners. Effective teaching in this new paradigm requires a shift from teaching basic to applied skills, from teaching facts and principles to investigating questions and problematizing, from mere theory to practice, applying the relevant theories, and from working with a fixed curriculum to working on authentic real-life projects. It calls for a move away from competitive learning to collaborative learning, from classroom tied contexts to foot-loose global learning networks (Kivunja, 2014; Trilling & Fadel, 2009.) Moreover, previous studies emphasize that there is a lot to improve with regards to research into the competences that can be taught and learnt to prepare students for international innovation-oriented action.

Therefore, to respond better to these requirements, the aim of the INTENSE (International Entrepreneurship Skills Europe) project is to pilot and develop an international study module for university-business cooperation (Figure 1), wherein not only the students and staff of universities but also SMEs can foster their internationalisation, entrepreneurial and innovation skills. Additionally, a further aim of the INTENSE project is to

Co-funded by the Erasmus+ Programme of the European Union

offer interesting research results for this under-explored research topic by using a novel innovation competence assessment tool in a new context and with new target groups by measuring the innovation competences and international skills of students, teachers and SMEs during university-company cooperation.[1]

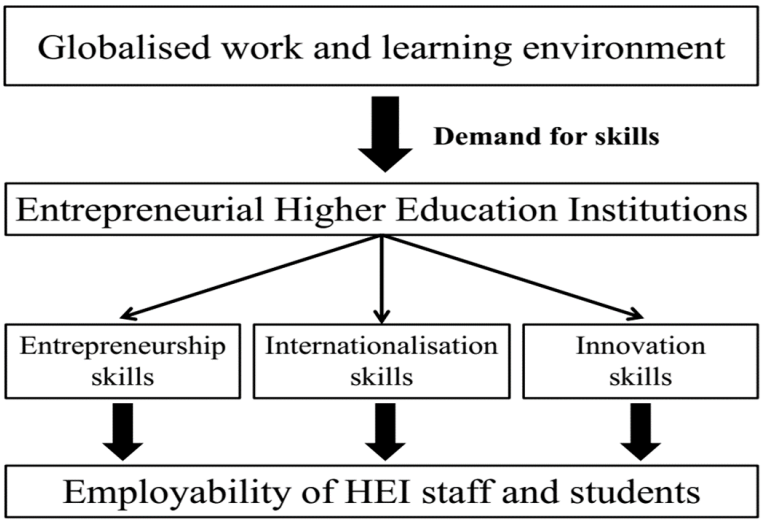
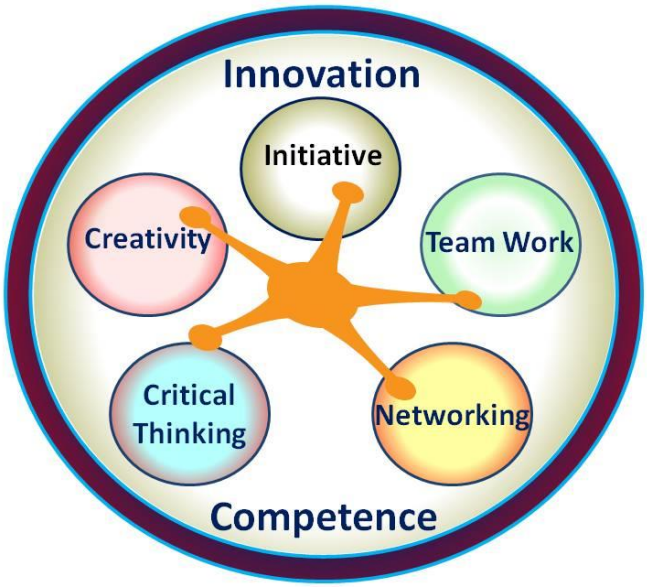


Figure 1. Context of INTENSE project (Saulich & Lehmann, 2017, 904).

The project used the FINCODA Innovation Barometer Assessment Tool (Figure 2, Attachment 1), which is a psychometric tool that measures an individual's capacity for innovation. The FINCODA tool has been validated and created for both educational and business contexts (Pérez-Penalver et al. 2018; Butter & van Beest, 2017; Marin-Garcia et al., 2016). In the INTENSE project, the tool is deployed in an international environment and has been redeveloped so that it includes extra questions related to international skills. Hence, the INTENSE project created new information about innovation competences and their association with international skills in the context of international university-business cooperations. The project also promotes collaborations between SMEs, universities of applied sciences, and other stakeholders.

[1] The core of the INTENSE project is innovation, entrepreneurship and internationalization. It is an Erasmus+ funded project, which combines the conjoint inputs of five European higher education institutions: Hochschule für Technik und Wirtschaft (HTW), Germany; Hogeschool Utrecht (HU), The Netherlands; University Colleges Leuven Limburg (UCLL), Belgium; Turku University of Applied Sciences (TUAS), Finland; and J.J: Strossmayer University of Osijek, Faculty of Economics (EFOS), Croatia. The project started in autumn 2016 and will end by autumn 2019. The basic idea of this project is to support SMEs in their internationalization endeavours with the help of students. The SME gives an assignment to a local student team that relates to their internationalization. Student teams from different countries work together with the local team on that assignment. More information about the project can be found http://intense.efos.hr/.



© FINCODA UPV-SEE-CSP team (2017). *Innovation Competence Model*

Figure 2. Innovation competence model (FINCODA-UPV-SEE-CSP team, 2017).

This report summarises the outcomes of the project's output: "Measuring innovation competences in international business contexts" and presents the main results of study. First, the report describes the collected data and methods used, and after that, it presents the key results of three target groups. Finally, the conclusions are discussed briefly.

Data

Students

During the INTENSE module[2] the students assessed their innovation competences and international skills two times. The first assessment was conducted from September to December 2018 at the beginning of the INTENSE study module. The questionnaire included background questions (gender, country) and questions related to the innovation competences and international skills. First, the students were asked to assess their innovation competences (creativity, initiative, critical thinking, teamwork, and networking) with 34 statements (see Attachment 1) in the context of their daily activities during their typical studies. These 34 items

[2]A major component of the INTENSE module is the transnational student consultancy. The module is taught parallel at all INTENSE partner institutions. Before or simultaneously, students receive training in international management, project management and consultancy skills. These teaching materials are unified among all the INTENSE partners but adopted to the curriculum and demands of each partner institution. The consultancy project is designed for students who are in the midst or end of their bachelor studies. Here, students consult a real SME in its internationalization endeavour. The consultancy project is supplemented by a blended learning course. In order to enhance the students' internationalization skills, student teams cooperate transnationally. (http://intense.efos.hr/index.php/teaching-materials/.) More information about the INTENSE module can be found: http://intense.efos.hr/.

Co-funded by the Erasmus+ Programme of the European Union

were assessed on 5-point Likert-scales: 1 = Very poor, 2 = Need to improve, 3 = Pass, 4 = Good, and 5 = Excellent. There was also the option, 'I can't assess', which resulted in an exclusion from the final analyses. After that, the students were asked to score how well they felt they had learned international skills during their regular studies, similarly on a 5-point Likert-scale: 1 = Not at all, 2 = A little, 3= Some, 4 = A lot, and 5 = Very much. They were also asked to describe with concrete examples the kinds of international skills they had learned during their current studies. In the first round, in total, 123 students answered the questionnaires[3]. Of these, 104 students provided written, informed consent for their answers to be used for research purposes within the INTENSE project.

The second assessment was conducted in the spring of 2019 at the end of the INTENSE study module. Similar to the first assessment, the questionnaire included background questions (gender, country) and questions related to the students' innovation competences and international skills. First, students were asked to assess their innovation competence (creativity, initiative, critical thinking, teamwork, and networking) with the same 34 statements on the same scales as before, but now in the context of their daily activities within the INTENSE module. After that, the students were also asked to score on the same scale how well they had learned international skills during the INTENSE module. They were also asked to describe what kinds of international skills they had learned during the module and to provide concrete examples. In the second round, in total, 75 students answered the questionnaires[4]. Of these, 64 students provided written, informed consent for their answers to be used for research purposes in the INTENSE project In addition to the second-round self-assessments, the students carried out peer assessments. In the peer assessments, the students were asked to assess one of their project team members. The students were recommended to assess those students with whom they had worked most in the project. The data for the peer assessments consisted of 67 student assessments[5]. Of these, 58 students provided written, informed consent for their answers to be used for research purposes in the INTENSE project

[3] Of these 123 students, 19 stated that they did not want their answers to be used for research purposes. These respondents were removed from the final analyses.
[4] Of these 75 students, 11 stated that they did not want their answers to be used for research purposes. These respondents were removed from the final analyses.
[5] Of these 67 students, 9 stated that they did not want their answers to be used for research purposes. These respondents were removed from the final analyses.

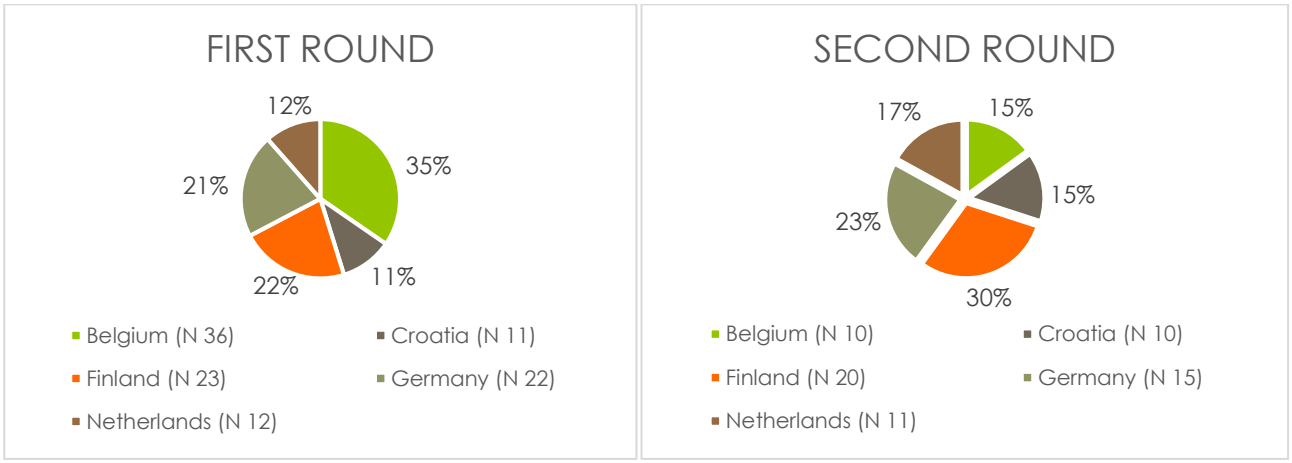


Figure 3. The number of student self-assessment respondents per partner country.

In addition to the surveys, students kept learning diaries in three runs of the module (at the beginning of the INTENSE module, in the middle, and at the end of the module). In these diaries, they reflected on their and their team's learning and behaviour in the INTENSE module. The students were asked to mark concrete examples or situations that illustrated their or their team member's innovation competences during the activities in the INTENSE module. They were also asked to reflect on whether these competences supported their project's progress or prevented it. Finally, the students created a summary of their common reflections within the project teams related to the innovation competences based on the individual learning diaries. The summary was added to their final presentation. The teams' summaries (N 23) were used as supplementary data to the quantitative results.

Teachers

The teachers also assessed their innovation competences and international skills during the INTENSE module. At the beginning of the module the teachers were asked to individually assess their innovation competences during their daily teaching activities and to make some notes or provide examples on how these competences unfold in their daily teaching activities. At the end of the INTENSE module the teachers were asked to individually check the previous assessment of their innovation competences, assess their competences now in the INTENSE module activities, and write some notes or provide examples of how these competences were deployed in the module. After that, they were asked to compare the results of their pre- and final assessments and to draw conclusions based on the comparison. Moreover, the teachers were guided to assess and describe how their international skills developed and unfolded during the INTENSE module. After these individual tasks, the teachers discussed their assessments and reflected on their experiences as a team. Based

on these common discussions and reflections the teachers wrote summaries of their team members' innovation competences and international skills. In total, four summaries were analysed.

Entrepreneurs

SMEs' experiences concerning internationalization and innovation competences in the context of university-company cooperation were collected during the feedback discussions with teachers at the end of the study module. In these discussions the SMEs were asked first, whether their companies' awareness of potential cross-border business markets had developed, and whether the work of the students had boosted their internationalization progress. Second, they were asked what the probability would be that their companies would start or continue cross-border operations based on their participation in the INTENSE project. After that, they were asked whether they felt that their international skills and innovation competences developedor if they had developed overall during the INTENSE module. Furthermore, they were asked if they recognised creativity, critical thinking, initiative, team working or networking competences in the students' work (an external assessment). They were also requested to describe their observations with some concrete examples. Additionally, during the interviews, the SMEs had the opportunity to provide open feedback about their cooperation with the universities and students. In total 17 interviews were analysed.

Results

Working with real-life projects support students' innovation and international skills

The results of the quantitative and qualitative analysis demonstrate that students do not always need to work in a firmto learn needed competences and international skills. As demonstrated in Figure 4, all students assessed their innovation competences[6] as quite good, not only in their daily activities during the INTENSE module, but also in their regular studies. Similarly, the students' peer assessments were very consistent and in line with the self-assessments. Albeit students seemed to assess their team members' innovation competences to be higher than their own.

[6] Before the analyses, the five sum scales were created from the 34 items on innovation competence (creativity, initiative, critical thinking, teamwork, and networking) for all of the data, based on the previous psychometric validation work of the FINCODA project (Butter & van Beest, 2017).

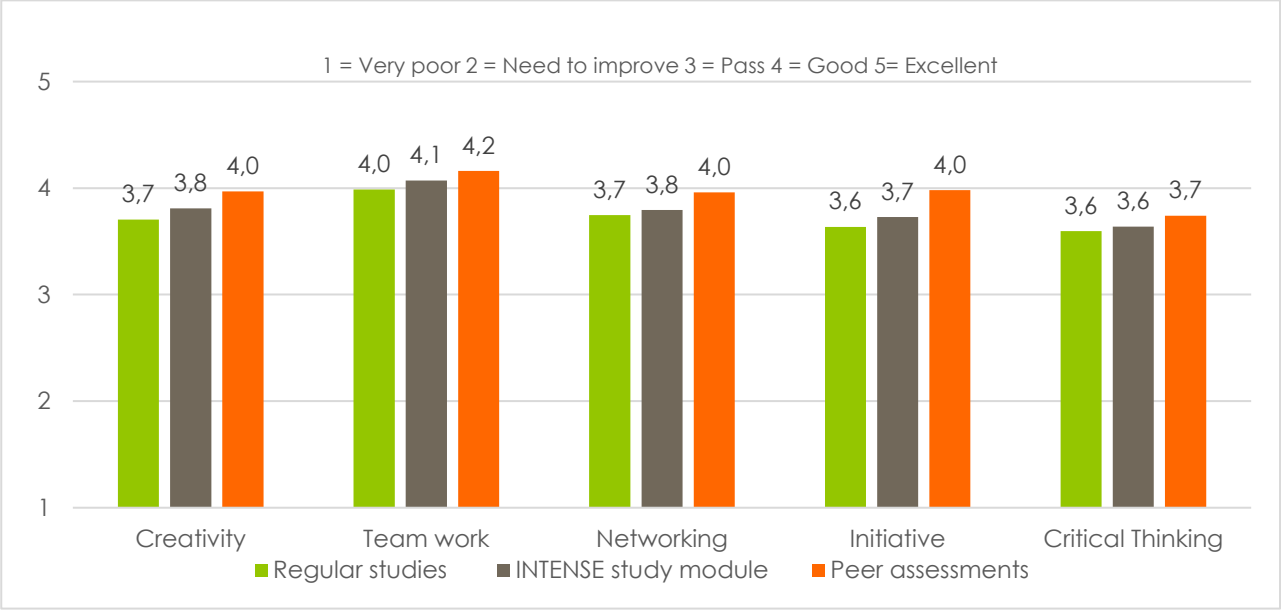


Figure 4. Assessment of students' innovation competences[7].

The results also show that there are differences in the self-assessments at the country level (Figure 5). For instance, in both assessments the Croatian students assessed their innovation competences to be higher than students from other countries.German students reported their competences to be lower than the others. Belgian students assessed their innovation competences to be clearly higher in the context of INTENSE module than in their regular studies.

[7] Because individual students cannot be identified in the data, statistical tests could not be used to verify the statistical significances of averages between different assessments.

Co-funded by the Erasmus+ Programme of the European Union

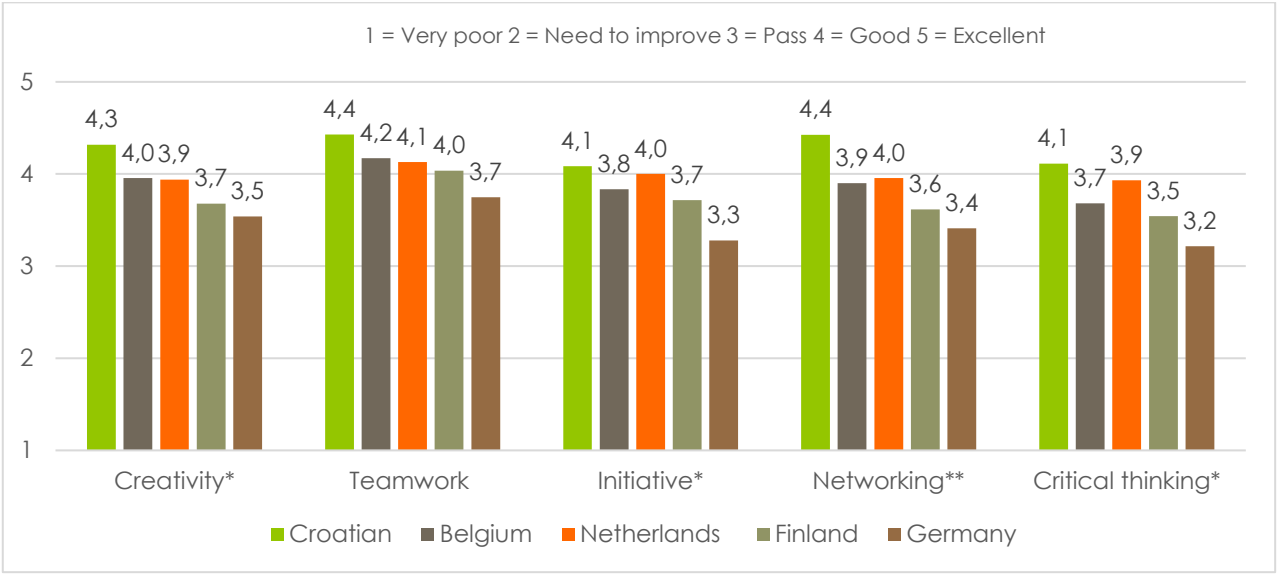
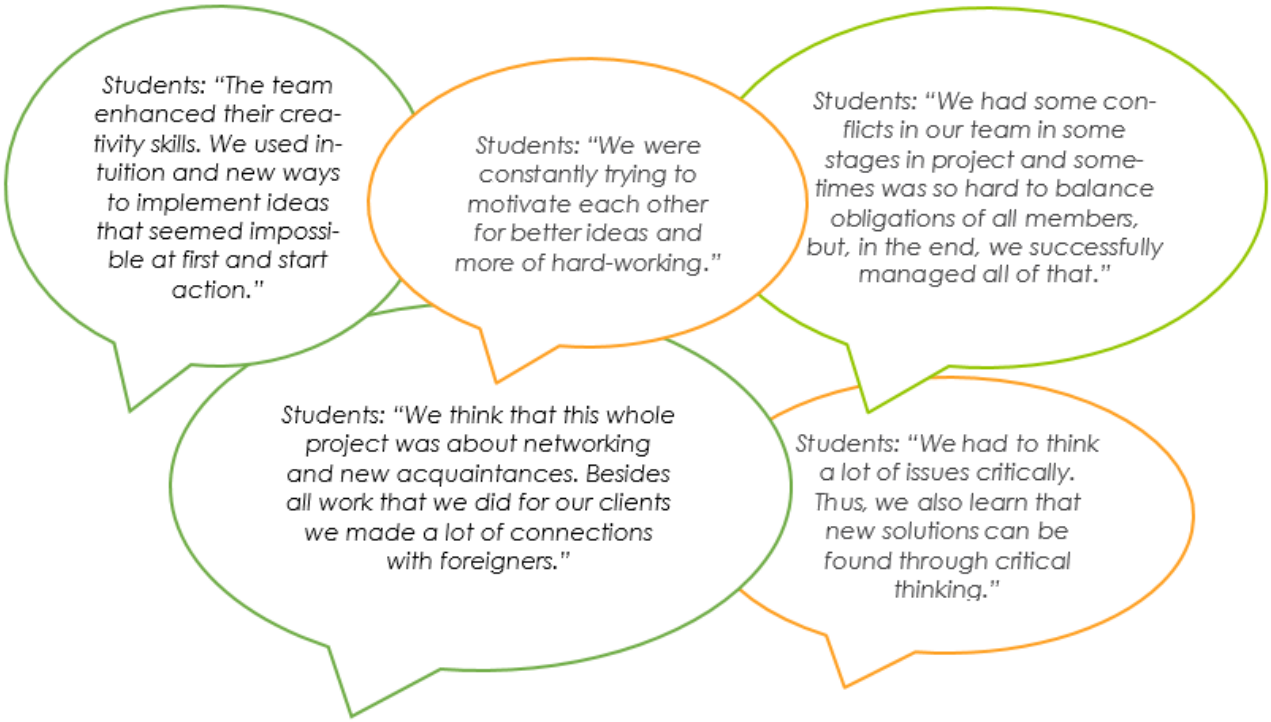


Figure 5. Students' innovation competence assessments per country[8].

Similarly, the student team reflections supported the results from the quantitative analysis. The students' qualitative descriptions show that students can learn innovative behaviour already during their studies. With the FINCODA tool, student teams provided several concrete examples of how their innovation competences manifested themselves within the module. They were also able to describe how the module supported enhancing their competences. Although some student teams noted that they faced challenges during their projects, they were satisfied with the results in the end and felt that these challenges were good opportunities for learning.

[8] The results are based on nonparametric *Kruskal-Wallis t-tests* (* < .05, ** < .01, *** < .001).

Co-funded by the Erasmus+ Programme of the European Union



Moreover, the research also indicates that in addition to innovation competences, the students also learnt versatile international skills during the INTENSE module. Almost half of the respondents (46 %) reported that they had learnt a lot or very much about international skills. This is in contrast to their regular studies for which only a third of the students (33 %) reported comparable learning success. However, there are differences between countries. For example, the Croatian and Belgian students reported that they learned more about international skills during the INTENSE module than in their regular studies. Students from Germany reported the opposite.

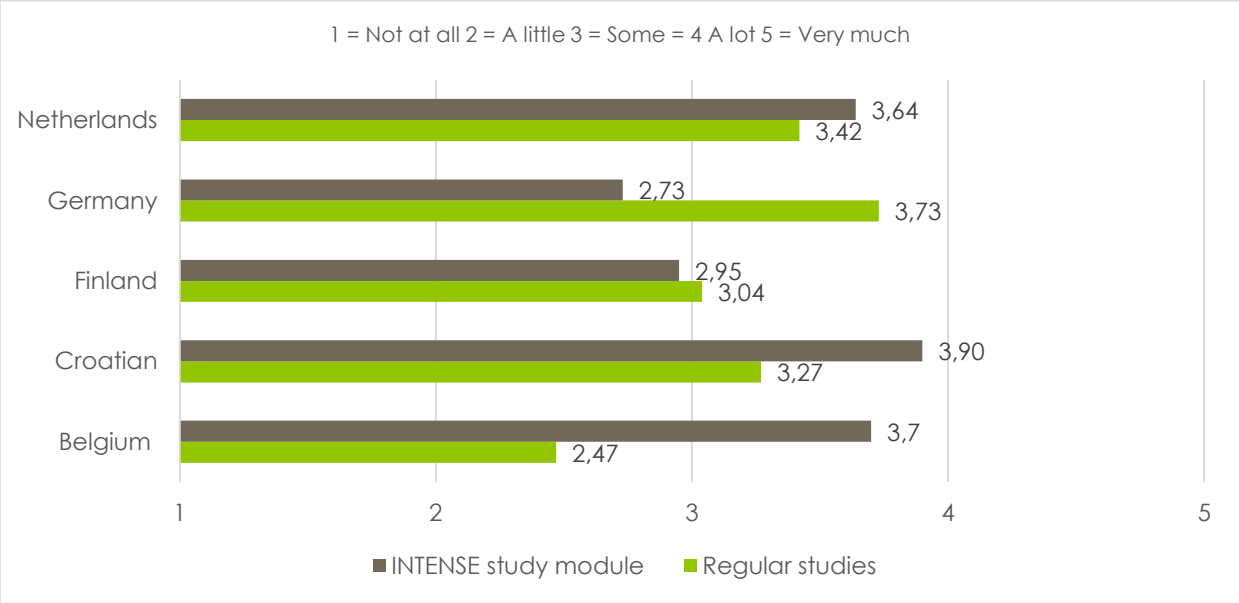


Figure 6. Learning international skills per country.

Additionally, the students' answers to open questions on what kinds of international skills they had learnt demonstrate clearly that they had learnt versatile international skills during the INTENSE module. The 71 different items[9] can be grouped in three categories: skills, knowledge and attitude (Oksanen, in press.). For example, the students mentioned they had learnt language and communication skills, international and cultural project skills, teamworking skills, presentations skills, understanding about other cultures and cultural differences, and knowledge about international business (such as markets, laws and regulations). Moreover, they reported that they learned tolerance, respect, self-confidence and encouragement, as well as new things about themselves. The students' answers showed that an international and multicultural working context does not only increase their knowledge about internationalization in business. It also provides practical experience in working with different cultures, which encourages students to use their acquired international skills in different settings. For example, students' answers based on the first assessment round was centred more on simple examples, e.g., just language skills, in contrast to the second round in which their examples were more versatile and fundamental. For instance, there were more examples in the attitude category. This shows that an authentic international working experience increased the students' understanding of being international as a concept itself (Oksanen, in press).

[9] In total, this question received 66 answers, which contained a total of 98 different items. Of these, 17 were empty and 10 items were beside the point.

Interestingly, the study also shows that learning international skills seems to be significantly associated with the students' innovation competences. Namely, those students who assessed their level of innovation competence to be higher also learned more international skills compared to those students who assessed their innovation competence more poorly.

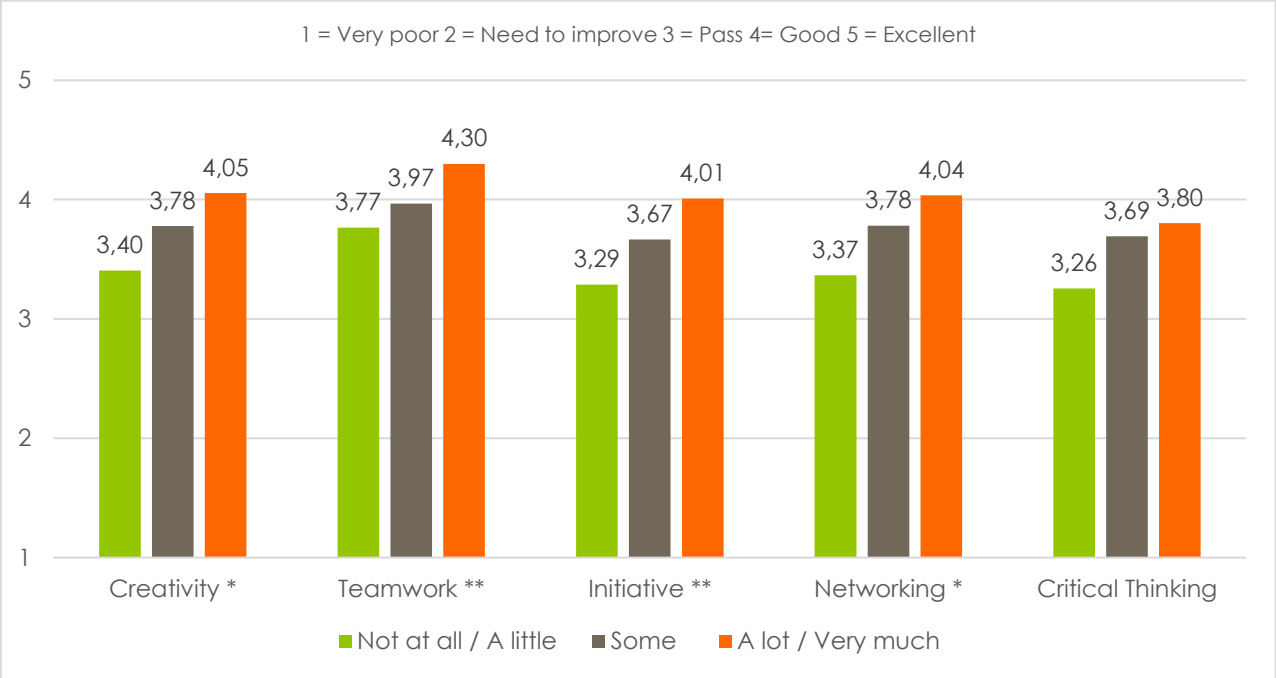


Figure 7. The association of the students' international skills and innovation competences[10].

Multicultural cooperation offers varied learning opportunities for teachers

Additionally, the results of the INTENSE module show that not only the students developed their international skills and innovation competences.Teachers learnt a lot by cooperating with companies, other university partners and students. Within this new working environment, teachers had better opportunities to deploy and develop their innovation competences. All teachers agreed that their innovation competences increased due to the INTENSE module. However, the teachers reported the development of very different skills.. For instance, one teacher reported that his critical thinking skills improved during the project, another teacher reported that she improved her teamworking skills, and some others noticed that their creativity developed.

[10] The results based on nonparametric *Kruskal-Wallis t-tests* (* < .05, ** < .01, *** < .001).

According to the teachers' reflections, ***creativity*** was highlighted as crucial for implementing these student consultancy projects. Creativity was needed to plan the course that accompanied the student consultancy projects. This involved new ways of teaching, duties or activities which required multitasking and inventiveness in using resources. Moreover, most teachers reported that when working with various stakeholders, things did not always run smoothly, and it was important to adapt to new situations and to constantly come up with new solutions. Flexibility and readiness for change were also integrated under ***initiative***. Some teachers mentioned that their initiative skills came into play especially when assignments were needed in situations which required new perspectives. Additionally, one teacher highlighted the importance of risk taking as an initiative skill. Implementing a student consultancy project with external firms involves taking risks. Although it is not very likely, the students or companies could drop out in the middle of the semester, or not take the cooperation seriously, or the cooperation could fail. Moreover, throughout the project, the teacher reported that she developed a higher risk propensity. You need to be willing to take risks in order to try out new ways of teaching. On top of this, she also had to convince the companies and students involved that it was worth taking the risk. Additionally, the teacher team mentioned that in the process of course preparation, they were proactive and consulted each other about materials and teaching methods which also relates to initiative skills. Each team member suggested different teaching approaches and they all suggested innovations and changes to improve the quality of the program. While working they also learned how to convince other colleagues from their faculty to support innovative teaching ideas, which they can deploy in their own courses.

Teacher: "We found that the INTENSE project lectures were outside our normal routine and made us do things differently… We got insight into new ways of teaching which has helped us gain new ideas for future students' assignments."

Teacher: "One important lesson learned for me and for my students was that project management is not about making a perfect plan but to be able to react quickly and find solutions to unforeseen challenges."

Similarly, ***critical thinking*** was also recognized in different ways. For example, one of the teachers highlighted the change in the teacher's role and how that helped them to approach tasks from different points of view. According to her, instead of taking on the role of a lecturer, she took on the role of a coach. As a coach her aim was not to teach specific contents related to internationalisation, but to guide the students through the

Teacher: "By taking on the role of a coach rather than a lecturer, I had to put myself in the shoes of the students and the companies and had to think about their needs and challenges. This was an interesting experience for me that helped me to adopt a different perspective on teaching."

project and assist them in structuring their work. Adopting a new role as a teacher brought forth new approaches to meeting the students' and SMEs' needs and challenges and offered a different perspective on teaching. The same teacher also mentioned that an interesting lesson learned was that some students found it difficult to change their perspective and expectations towards the lecturers. While some students appreciated the fact that she took on the role of their coach, others were confused or even disappointed that there were no regular lectures. Moreover, another teacher also mentioned that international cooperation with different partner universities showed how different teaching and pedagogical traditions are in each country. This raised awareness of those differences and similarities, and thus challenged the status quo. In addition, one teacher stated that implementing this kind of student consultancy project was definitely a trial and error experience.

Many teachers agreed that during the module their ***teamwork*** skills strengthened. One team of teachers mentioned that one result of this module is that they have more courage to delegate tasks to each other now. Another team added that using good teamwork skills supported them in facing and solving problems. According to them, working with five different universities, and even more nationalities was challenging. Not everything was always easy, and problems and disagreements occurred. By talking, listening and debating they managed to go further and to achieve alignment. On the other hand, one teacher reported that these challenging situations had also deepened their self-awareness, such as understanding how they might personally react to demanding circumstances. Overall, collaboration with people from different universities and different companies was reported to offer significant benefits for the team members. It broadened the teachers' perspectives on new ways and approaches to solving problems and helped them to develop skills and knowledge. One teacher team mentioned that working closely with lecturers and researchers from five countries and universities was very inspiring because each of them were different and they could learn a great deal from each other. They also pointed out that as a result of this module they were now not only in closer cooperation with the stakeholders but also better in building relationships within their organization.

Additionally, all teachers highlighted their ***networking*** skills. One teacher mentioned that implementing successful modules definitely required good networking skills. The teacher stated, "On the one hand, I had to build up a network of external partners and SMEs. On the other hand, I had to deal with a broad range of stakeholders (e.g., students from the own and other universities, other lecturers). The people I worked with had different backgrounds and interests and it was not always easy to balance these interests in a productive way." Meeting people with different ideas and perspectives extended some of the teachers' knowledge domains. Working in a multicultural context empowered them to approach and understand their identity as a teacher in novel ways, which also surprised some of them. The teachers also reflected that they were able to build better relationships with stakeholders and expanded and strengthened their own business networks during the module.

Teacher: "We were also in touch with the companies from our partner network. Interesting to experience how those foreign SMEs work and how we could contribute to their internationalization strategy. We expanded our business network."

Moreover, all the teachers experienced that throughout the module they enhanced their ***international skills*** in many ways. For example, teachers mentioned that they increased their knowledge of internationalization, as they became familiar with different perspectives and challenges of internationalization for SMEs and as they better understood the performance of SMEs aiming to internationalize their business. The teachers also felt that they strengthened their cultural understanding and increased their confidence regarding their teaching skills when using English. For instance, one teacher team mentioned that when students come

Teacher: "First, I broadened my knowledge on SME internationalization from a scientific perspective… I had to familiarize myself with theoretical concepts related to internationalization and with state-of-the-art research on the topic. Second, implementing the student consultancy projects required practical internationalization skills. Not only did I teach and communicate with most stakeholders in English, these stakeholders also had different backgrounds and nationalities."

Teacher: "During the INTENSE module we worked very closely with SMEs involved in this project and by stepping into their shoes we managed to understand issues they face during the internationalization of their businesses. This collaboration increased our knowledge of internationalization and the performance of SMEs aiming to internationalize their business."

from all over the world, intercultural sensitivity was important to avoid conflicts and to better understand the students' challenges. Another teacher team added that this experience helped them to better understand exchange students in other courses. On the other hand, a close working relationship with the students offered an opportunity to learn and better understand the students' experience. For example, one of the teacher teams stated that they were pleasantly surprised by the students' willingness to be part of the project and how they responded to the challenges that were giving to them during the project.

Students that challenge SMEs' traditional ways of thinking, offer creative ideas and open up new networks

Overall, the SMEs were very satisfied with the cooperation. Almost all of the SMEs reported that the INTENSE project served as a great opportunity to develop their business and as an experience to learn from students. The SMEs mentioned that their awareness of potential cross-border target business markets developed during the project. They also mentioned that the students' work encouraged their company to internationalize their business. Some of the SMEs also stressed that their companies would start or continue cross-border operations based on the participation in the INTENSE project.

SME: "The participation in this project helped our company to get a new perspective on cross-border businesses, how to operate and function in international markets, and what our next step should be, so we could say that the probability is very high."

SME: "The students' work has certainly opened our eyes in terms of realizing different approaches to internalization for our franchise business."

International cooperation with student teams challenged the SMEs' traditional way of thinking, offered creative ideas and solutions, and opened up new networks. SMEs feltthat it was a useful win-win situation for all partners. Many of the SMEs also showed interest in upcoming joint projects and thanked the students. Many of the SMEs were surprised how talented and competent students were.

SME: "Definitely, I was pleasantly surprised, because I was student once at this same university. The level of knowledge, the interest shown from the students' side to understanding my problems, and will and effort to help me find solutions was excellent."

Co-funded by the Erasmus+ Programme of the European Union

SME: "Honestly, when we started this project, I didn't expect this sort of co-operation. I thought that the students would do it just to get rid of it, but when we started I saw that they got really serious… Now, I can say that I am really pleased with the results of this project, and I hope that other sides are pleased too."

Additionally, many of the SMEs reported that their international skills and innovation competences had developed, at least partly, during the cooperation. In particular, they highlighted their critical thinking, creativity and networking skills. Obviously, the SMEs' background, their specific needs for consultancy and their activeness in the project influenced how they experienced the development of skills and competences. For example, some SMEs described not only the development of their own but also the students' innovation competences in versatile and concrete ways. From the students' innovation competences that they observed they especially emphasized creativity, teamwork and networking skills. Whereas, some of them mentioned that, because of the short duration of the project or their low level of involvement, they could not observe any development in their own or the students' innovation competences. Similarly, a few SMEs reported that they were already actively working in international business contexts and thus this project did not boost their international skills highly, albeit they were satisfied with the project results. On the other hand, some of the SMEs felt that the cooperation had definitely developed and increased their international skills.

SME: "This kind of project gives students and companies an opportunity to develop a set of innovation competencies. The results of the research give an opportunity for creative and critical thinking and proactive actions during the process of entering a new, international market."

Conclusions

Higher education institutions have an important role in enhancing innovative and global individuals. However, in the light of previous studies there still seems to be a lot to improve regarding research into the competences that can be taught and learnt to prepare students for innovation-oriented action. Similarly, training students for global and innovation-driven working life, requires the ability to work and teach in that kind of context, and thus, the ability to possess good international skills and innovation competences as a lecturer. The same requirements are also essential for SMEs who are trying to compete in rapidly changing global markets.

Co-funded by the Erasmus+ Programme of the European Union

The INTENSE project does not only offer some results for the under-researched topic by testing a novel innovation competence assessment tool in a new context and with new target groups and variables, but it presents an interesting and promising model for university-company cooperation. This study shows that international university-company cooperation can be an effective learning environment boosting not only the students' but also the teachers' and SMEs' innovation competences and knowledge, as well as skills related to internationalization.Thus, it can be used as one teaching model to respond to the needs of today'a business world.

This study also demonstrates that students do not always have to be in the workplace to learn needed competences and international skills. However, to succeed in this, it requires changing traditional teacher-centred pedagogy. It requires not only learning new ways of teaching and studying but also unlearning old ones, especially when adapting a new role as a teacher or student across geographical and cultural boundaries. The study shows too that there seemed to be differences in pedagogical practices between partner countries and perhaps differences in the students' cultural behaviour related to innovation-oriented actions or style of assessments. Although this study cannot offer answers for the possible underlying mechanisms behind the results, the outcomes can be deployed as a framework or to form a basis for further discussions on those differences, and thus, make it possible not only to share good practices, but also to learn from each partner.

Similarly, there seem to be differences in the SMEs' experiences. Overall,the SMEs were satisfied with the cooperation and it offered them new innovative ideas and support in the internationalization of their business. However, the development stage at which the company was, what needs it had and how actively it participated in the project affected the experience and final results, especially related to skills and competences. This study indicates that SMEs which just started to internationalize their business benefitted the most from the INTENSE module. Despite some differences in the results of the different research subjects, the study suggests that this kind of university-company cooperation offers win-win opportunities for all players and can be used as a beneficial learning platform wherein all of the members can learn from each other.

Co-funded by the Erasmus+ Programme of the European Union

References

Butter, R. & Van Beest, W. (2017). *Psychometric validation of a tool for innovation competencies development and assessment.* Retrieved from https://www.fincoda.eu/fincoda-blog/2017/3/27/psychometric-validation-of-a-tool-for-innovation-competencies-development

European Commission. (2017). Communication from the commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the regions on a renewed EU agenda for higher education. Brussel, Belgium 30.5.2017.

FINCODA-UPV-SEE-CSP team. (2017). Innovation competence model.

Kasule, G. W., Wesselink, R., Noroozi, O., & Mulder, M. (2015). The current status of teaching staff innovation competence in Ugandan universities: Perceptions of managers, teachers, and students. *Journal of Higher Education Policy and Management,* 37, (3), 330–343.

Kivunja, C. (2014). Innovative pedagogies in higher education to become effective teachers of 21st century skills: Unpacking the learning and innovations skills domain of the new learning paradigm. *International Journal of Higher Education*, 3(4), 37–48.

Marin-Garcia, J. A., Andres, M. A. A., Atares-Huerta, L., Aznar-Mas, L. E., Garcia-Carbonell, A., González-Ladrón-de-Guevara, F., & Watts, F. (2016). Proposal of a framework for innovation competencies development and assessment (FINCODA). WPOM-Working Papers on Operations Management, 7(2), 119–126.

Oksanen, H. (in press.) *Development of international competence in a multicultural learning environment.* The final thesis. Degree programme of Business Administration. Turku University of Applied Sciences.

Organisation for Economic Co-operation and Development, OECD. (2015, June). *OECD Innovation Strategy 2015, An Agenda for Policy Action.* Meeting of the OECD Council at Ministerial Level Paris, 3-4 June 2015.

Pérez-Penalver, M.J., Aznar-Mas, L. E., & Montero-Fleta, B. (2018). Identification and classification of behavioural indicators to assess innovation competence. Journal of Industrial Engineering and Management, 11 (1), 87–115.

Saulich, C. & Lehmann, T. (2017). Boosting the Employability of Students and Staff at European Higher Education Institutions: An Educational Framework for Entrepreneurship, Internationalisation and Innovation. In: Domenech i Soria, Josep et al. (Hrsg.): Conference Proceedings of the 3rd International Conference on Higher Education Advances (Head'17). Valencia: Universitat Politècnica de València, pp. 899-907.

Trilling, B., & Fadel, C. (2009). *21st Century Skills: Learning for Life in Our Times*. San Francisco: Jossey-Bass.

ATTACHMENT 1. Items of innovation competence.

No.	Code	Items
1	CR1	Think differently and adopt different perspectives.
2	TW1	Be attentive when others are speaking and respond effectively to others' comments during the conversation.
3	CR2	Use intuition and own knowledge to start actions.
4	TW2	Invite feedback and comments.
5	IN1	Foster improvements in work organization.
6	TW3	Obtain constructive comments from colleagues.
7	CR3	Find new ways to implement ideas.
8	TW4	Identify sources of conflict between oneself and others, or among other people, and to take steps to overcome disharmony.
9	IN2	Take an acceptable level of risk to support new ideas.
10	IN3	Go beyond expectations in the assignment, task, or job description without being asked.
11	NW1	Meet people with different kinds of ideas and perspectives to extend your own knowledge domains.
12	IN4	Convince people to support an innovative idea.
13	IN5	Systematically introduce new ideas into work practices.
14	IN6	Act quickly and energetically.
15	CR4	Generate original solutions for problems or to opportunities.
16	CT1	Use trial and error for problem solving.
17	CT2	Develop and experiment with new ways of problem solving.
18	NW2	Acquire, assimilate, transform and exploit external knowledge to establish, manage and learn from informal organisational ties.
19	CT3	Challenge the status quo.
20	CT4	Face the task from different points of view.
21	CR5	Make suggestions to improve current processes, products, or services.
22	CR6	Present novel ideas.
23	CT5	Forecast impact on users.
24	CR7	Show inventiveness in using resources.
25	CR8	Search out new working methods, techniques or instruments.
26	TW5	Provide constructive feedback, cooperation, coaching or help to team colleagues.
27	TW6	Work well with others, understanding their needs and being sympathetic with them.
28	NW3	Share timely information with the appropriate stakeholders.
29	TW7	Consult about essential changes.
30	NW4	Build relationships outside the team/organization.
31	CR9	Refine ideas into a useful form.
32	NW5	Engage outsiders of the core work group from the beginning.
33	CT6	Ask "Why?" and "Why not?" and "What if?" with a purpose.
34	NW6	Work in multidisciplinary environments.

Co-funded by the Erasmus+ Programme of the European Union