NAVIGATING UNCHARTED WATERS: A ONE-YEAR GERMAN-FINNISH FACULTY EXCHANGE

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ABSTRACT

This paper describes the decision of two higher education teachers from Finland and Germany not to leave internationalization solely to their students and the exchange that ensued, which took place over the full academic year 2020/2021 with the enthusiastic support of the participants' institutions, universities of applied sciences located in Turku, in the south of Finland, and Hamburg, northern Germany. The paper will reflect on our personal experience of the exchange and our perceptions of teaching-related differences between the participating institutions, alongside conceptions of pedagogy and their influence on the competencies we expect of and test in our students. Though we intended to keep the exchange as simple as possible, we soon learned that the conditions associated with health insurance and employment contracts posed significant challenges to our project. It was impossible to simply extend a one-week exchange, of the type frequently undertaken and familiar to the higher education scene, to a full year. The project raised numerous administrative issues in both institutions, neither of which had blueprints setting out how to tackle them. All these challenges notwithstanding, this paper tells a success story. While some of our approaches in relation to the exchange will not translate entirely to other settings, the key message remains: the exchange added value both to the personal lives of the families that spent the academic year in another country and to the organizational development of the institutions involved. The exchange additionally represents a good example of faculty development in line with CDIO (Conceive, Design, Implement, Operate) principles and of implementation of the new optional CDIO standard regarding internationalization and mobility.

KEYWORDS

Internationalization, higher education, exchange, PBL, Standards: 4, 5, 6, 8, 9, 10

INTRODUCTION

Internationalization creates value particularly for export-oriented countries such as Finland and Germany. Both policymakers and those responsible for strategic organizational development in higher education (HE) institutions recognize this fact and attempt in this context to address the challenges of preparing students for careers in multinational teams within organizations that operate across country borders. Interaction and communication among people from a range of cultural backgrounds, at individual and institutional level, are integral and indispensable aspects of any academic education. For the two HE institutions that are the subject of this paper, Hamburg University of Applied Sciences (HAW Hamburg) in Germany and Turku University of Applied Sciences (Turku UAS) in Finland, cultural diversity therefore represents significant capital for the advancement of their research, teaching and degree programs.

In this context, internationalization is a key pillar of HAW Hamburg's development and emerging institutional profile. International connections and academic collaboration with partner institutions across the globe are boosting the institution's competitiveness and attractiveness to potential students and staff, as well as being vital to the formation of early career researchers. The internationalization strategies of both HAW Hamburg and Turku UAS have defined 'internationalization at home' as a key area for action. This concept encompasses, alongside other measures, the internationalization of degree programs and teaching to the end of improving institutions' full inclusion and incorporation of researchers from abroad into teaching, giving their curricula a stronger international emphasis and flavor, and enabling them to offer a greater number of English-language modules and classes (Hans de Wit, 2015). Accordingly, HAW Hamburg has established a specific international mobility fund for teaching staff and provides financial support for the creation and implementation of curriculum development measures that center on internationalization. Increasing the proportion of teaching faculty with international experience is of central importance to the progress of internationalization. Such individuals contribute crucial new content, insights and points of view to teaching, help internationalize degree programs, and strengthen links with institutions abroad. International mobility enables faculty members to exchange ideas and gain new insights and has thus a strong impact on faculty development.

All this said, the incentives for educators and administrators at HE institutions to initiate and organize international exchanges of faculty members are currently limited, and the two-year preparatory phase that led up to our exchange was replete with hurdles to clear, calling on all our reserves of enthusiasm. Having successfully carried out the exchange, we – the authors of this paper, each of whom was directly involved in the process in one way or another - are firmly convinced that the endeavor has reaped plentiful rewards. We would caution, however, that anyone planning an international exchange at faculty level should be aware of the extent of individual and organizational effort and goodwill required from all involved.

Finland and Germany: a comparative overview

Finland is one of the northern states in the European Union (EU), usually considered as part of Scandinavia, although Finnish, unlike the other primary languages in this region, is not a North Germanic language. Germany is geographically in the EU's center. The historical ties between the two countries remain evident today. One of the most noticeable differences between Germany and Finland is in population density, Germany having 234.7 inhabitants per km^2 and Finland 18.1 per km^2 (eurostat, 2020). Nevertheless, the proportion of residents living in urban areas is higher in Finland (85.5%) than it is in Germany (77.5%).

Finland and Germany share comparable demographic issues, with total fertility rates well below 2 in both countries, leaving them – and the two institutions that are the subject of this paper - facing similar challenges with regard to attracting sufficient numbers of students. Differences in the field of education include a marked divergence in public spending on education as a percentage of GDP; in 2016, Finland was eighteenth in the world (6.9 % of GDP), while Germany was at position 73 (4.8 % of GDP). Admission to higher education also follows a different route in the two countries. After nine years of joint basic education, Finnish pupils can either obtain a vocational qualification or continue with general upper secondary education (*Lukio* (fi) / *Gymnasium* (sw)) leading to a matriculation examination. Both tracks take another three years. About 40 % continue with vocational training and 54 % with upper secondary education, with those not remaining in education amounting to a small minority of 2.6 % (Statistics Finland, 2020). Both of these tracks lead to eligibility to apply for higher education, which works on a twofold system offering research-centered universities and more practically- and vocationally-oriented universities of applied sciences. ~~Reference (Finnish Education System, n.d.) provides A~~an overview of the Finnish education system's structure can be found at the Finnish Ministry of Education's web (Finnish Education System, n.d.). In Germany, admission to higher education is the preserve of those who have completed academic secondary schooling (*Gymnasium*) or those holding a particular level of vocational education culminating in acquisition of the status of technician, *Meister* (master tradesperson) or an equivalent. At tertiary level, proportions of the total population who have attained a degree (cumulative figures for Bachelor's, Master's, and doctoral degrees or equivalents) are very similar, standing at 19.2 % in Finland and 18.5 % in Germany. Universities and universities of applied sciences have similar statuses and missions in the two countries, and educational tracks which cross from a university to a university of applied sciences or vice versa are - in principle - possible in both.

HIGHER EDUCATION

In Finland, the Ministry of Education and Culture is responsible for the planning and implementation of higher education and science policy and preparing statutes, national budget proposals and government decisions that apply to them. The system consists of 13 universities and 22 universities of applied sciences (Higher Education and science, n.d.). Universities of applied sciences are legal entities and are usually maintained by a public limited company. They have extensive autonomy over their research, teaching, and internal administration. The Ministry's principal steering instrument is funding, determined in annual negotiations with the universities of applied sciences (Steering, financing and agreements of higher education institutions, science agencies and research institutes, n.d.). Degree programs set out their specific content, and the teaching and assessment methods used, in their program descriptions and program implementation plans respectively, with considerable scope for faculty members charged with individual and team-based course delivery to choose how they wish to implement and assess a program.

In Germany, education is within the remit of the federal states, among which provisions may vary to some extent. Each state's education authority steers the development of HE institutions by defining overall generic targets which are associated with minor financial grants. HE institutions manage the delivery of their programs via self-administration bodies which control many aspects of teaching delivery in what is, certainly compared to Finland, a striking level of detail. Higher education institutions may be state or state-accredited (universities, universities of applied sciences and colleges of art and music) or private; most of the latter are universities of applied sciences. ~~Overall~~Overall, there are 397 higher education institutions in Germany

(Higher Education System, n.d.). ~~(German Rectors' Conference, n.d).~~ Universities are the only institutions that can confer doctoral degrees in their own right; universities of applied sciences feature a strong emphasis on education and research that engages with real-world and practical settings and applications.

The institutions involved in the exchange described in this paper are located in the cities of Hamburg and Turku. Turku is the sixth largest city in Finland and Hamburg the second largest in Germany. However, their populations differ considerably, with 0.18 million people living in Turku and 1.8 million in Hamburg. Both institutions are universities of applied sciences, attract a significant number of students from their surrounding regions, and serve as significant economic factors in their cities. Turku UAS is one of the largest institutions of its kind in Finland (Turku University of Applied Sciences, 2020). Established in 1992, it currently offers Bachelor's and Master's degree programs for about 9,600 students across three faculties: Engineering and Business, Health and Well-being, and Arts Academy. It also offers courses at the Open University of Applied Sciences, in-service training, and research, development and innovation (RDI) services to businesses and other organizations. The Turku Open University is of particular interest to German HE, as it constitutes an innovative complement to more traditional academic tracks: anyone ~~resident in Finland~~ can enroll on its courses and attain credit points that can count toward a subsequent degree course. HAW Hamburg is one of Germany's largest institutions of its type and can trace its history back to 1970. It delivers 40 Bachelor's and 34 Master's degree programs to an approximate total of 17,000 students (as of winter semester 2019/20) in its four faculties, Business and Social Sciences; Design, Media and Information; Engineering and Computer Science; and Life Sciences. HAW Hamburg is engaged in raising and developing its research profile while maintaining its central focus on the excellence of its teaching and degree programs. Of its approximately 17,000-strong student body, 2,649 (15.5 % as of winter semester 2019/20) are international students, originating from more than 100 nations.

TEACHING AND LEARNING IN TURKU AND HAMBURG

As outlined above, teaching with a practical, real-world focus and internationalization are cornerstones of the way universities of applied sciences work. One might expect in this context that HE institutions would embrace the idea of enriching curricula with courses delivered in English; this was, however, to prove a not entirely uncomplicated issue in our cooperation arrangements. Many students also shared a perspective that regarded English, as a language of instruction, as adding to their overall workload. The associated terminology, particularly with regard to technical terms, was new to the students and its management required considerable efforts by students and staff alike.

Andreas Baumgart: a teaching experience from Turku

The classes I delivered in Turku were mostly for undergraduate students and ranged across the engineering curriculum. I was lucky to have colleagues who were willing to offer additional support to students in Finnish during critical phases. I admit, however, to having been rather surprised that in a country like Finland, where most people one encounters day to day are fluent in conversational English, the use of the English language should prove a significant constraint in lectures.

Language, of course, is far from being the only aspect of the complex cultural differences in our social behaviors, beliefs and habits. In Hamburg, I like my students to engage actively in

taking on and managing challenging tasks. This means I need to understand where they are in their individual learning processes. I rely on their feedback so I can provide appropriate interventions in class. This approach, challenging enough in Germany, proved beset with issues in Finland. Most of my attempts to initiate interaction with students did not meet with much success, whether they took place in the context of face-to-face events or online plenary or breakout sessions. I used timers set to 60 seconds to ensure I allowed sufficient time for questions or feedback during lectures. This “slow-down” proved to be the aspect of my teaching in Finland to which I found it most difficult to adjust. There were many occasions during live lectures when I wondered whether a recording would not be a more suitable offering for these students. Conversations with exchange students, mostly from Germany, confirmed my impression.

As a specific example of teaching I was involved in during my time in Finland, I will now outline a first-semester project, in the context of a physics-based modeling course primarily delivered by Pekka Jukantupa, Piia Pesso, and Antti Meriö, in which students designed and 3D-printed pumps and “raced” their designs in a competitive game whose aim was to deliver the best-performing product. This class represents a good example of a Design-Implement project as described in CDIO Standards 4 and 5. Students were given some piping, a DC motor and battery and an experimental setup and asked to come up with the most effective water pump. I found that this project’s real-world-related creation of an engaging learning experience at a very early stage in students’ programs encompassed a number of factors which we in Germany might take as inspiration. The use of student teams in Covid-19 times, with distance learning dominating the student experience, provided students with clearly defined points of contact with others on their program. Further, the collaborative approach employed, with each student required to contribute their part in a time-critical framework during the initial weeks of their studies, appears to me to be a useful way of helping students establish a healthy and productive routine. It is doubtless challenging for some students, new to higher education, to get out of bed each morning, to settle down to work independently, to revise on their own initiative and to produce deliverables on time. This project is likely to have helped them with this. Another result-enhancing aspect of the project is the fact that students are likely to be relatively blunt in letting their teammates know about discrepancies between expectations and performance.

From an academic point of view, the project enabled students to acquire concepts and terminology in basic physics. As centrifugal pumps are among the more challenging subjects in conventional engineering, students had to rely on their intuition rather than on formulae and needed to discuss matters with their teammates without background knowledge in the subject. The project appeared to afford them an opportunity to discover, in a hands-on fashion, the nature of physical phenomena, on which they will be able to draw as they progress to higher semesters. The team working process was supervised and the students were required to document their approach and reflect on their own role in the team.

Being more of a theory-oriented engineer, I found the use of 3D printing as a cheap and hands-on way of producing a “thing” - something tangible - very convincing. If you are unable to attach a pipe to your pump or if more water leaks from the pump than it delivers, then the design is not persuasive. I also noted the competitive nature of the project as generating a positive effect. Competition is known to be a strong driver of motivation, particularly for students whose focus is on high performance. The project’s set-up in the form of a competition to create the design with the highest delivery rate supplied an incentive to students to optimize their work. Overall, I experienced the project as evidence of the potential of project-based learning to make study more engaging and enlivening in higher education settings.

Patric Granholm: Teaching in Hamburg

As Andreas Baumgart's counterpart in the exchange, I had the opportunity to teach a class in Applied Computer Science in English, taking on one of three groups comprising the approximately 180 students registered for the course. The other two groups had tuition in German and were considerably larger than the English-language group, in which 40 students had enrolled. The students in the group with tuition in English were offered a complementary language course. A specific problem with the course's implementation was that several students signed up for the course but never showed up, neither did some of them re-emerge once the inevitable initial switching between the groups was complete. None of those who did show up took the supplementary English language course offered by the International Office. A further difficulty was presented by Covid-19, which forced us to hold the course completely online. The online teaching experience did not differ much from my earlier online courses for Finnish students; the issues of activating students and the lack of direct feedback were the same, and the assigned slots for classes and the available teaching materials had been designed with face-to-face teaching in mind. Adjustments and modifications to the course's layout and materials to the end of better supporting this mode of delivery were impossible due to time constraints. All these difficulties notwithstanding, the small, active and respectful group of students that attended made the course a positive experience overall.

INTERNATIONALIZATION

The EU strongly encourages international exchange of both students and faculty via its ERASMUS programs; however, there was no appropriate support structure in place for a one-year exchange of faculty, leaving us required to rely on creating our own and endowing the whole endeavor with a sense of "navigating uncharted waters." The section that follows outlines some of the key points of internationalization at the two institutions involved.

At Turku UAS and HAW Hamburg alike, most classes take place in the language of the country, which students need to have a working knowledge of if they are to benefit from the full range of courses offered at these institutions. Nevertheless, both institutions offer classes specifically tailored to incoming international students, which are usually in English, and language courses for non-native speakers of the local language. In Turku, the International Student Services office assigns peer "tutors" (Turku UAS degree students) to all incoming exchange students and offers the "Get Finternational" course, which aims to bring Finnish and international students together and improve their cultural awareness, to support the peer activities. As a foreign lecturer, I was invited to put on a workshop for outgoing and incoming international students at Turku UAS.

An average of 780 students at Turku UAS are of non-Finnish origin; they include exchange students and those completing their entire degree at the institution. There are no tuition fees for students from the EU and EEA, but fees of 4,000 to 20,000 euros for students from elsewhere (Studis online, 2020). According to the DAAD, international students in Finland must acquire a command of the Finnish language sufficient to follow a class before they commence their studies. This said, there is an increasing range of English-language programs on offer, for which, depending on the program, a good command of English is required. (DAAD, n.d.)

HAW Hamburg offers a wide range of semester courses in English for international exchange students from its partner universities and in the context of the Global E3 (Global Engineering Education Exchange) program, where students would like to study for a semester or a year in Germany but have no or limited knowledge of German. In general, students must choose classes within one program and only those delivered by a department with which their institution has a cooperation agreement. HAW Hamburg runs a buddy and support program titled “weBuddy” for its new international visiting and degree students, which involves experienced HAW Hamburg students helping the newcomers to settle in and find their feet as they commence their studies. When they arrive on campus, they take part in a Welcome Week (or Weeks) including a diverse range of events whose purpose is to help them get to know other students, the campus and the city. A range of intercultural programs of events takes place during semesters. HAW Hamburg runs a comprehensive language program with free-of-charge German courses for international students alongside beginners’ and advanced learners’ courses in seven additional languages, which the institution’s International Office part-funds.

ADMINISTRATIVE REQUIREMENTS AND FUNDING OPTIONS

HAW Hamburg’s International Office supports teaching stays abroad for its faculty with a special mobility fund and Erasmus funds for teaching and job-shadowing stays abroad. Turku UAS also offers Erasmus funds for HE teachers. Both institutions used these funds to support two fact-finding missions undertaken by the faculty members involved in the exchange; they visited their prospective host institution, department and city in advance to explore the proposed exchange’s feasibility. The one-year exchange that eventually ensued proved a pilot project, breaking new ground and exceeding the traditional scope of regular Erasmus-funded projects – which last up to two weeks rather than a whole academic year. New administrative frameworks were accordingly called for. The International Office at the University of Hamburg generously supplied a model cooperation agreement for the two institutions. Work on implementing the exchange began in 2019, with the HR and legal departments at each institution drawing up various drafts of the agreement and sending them back and forth between Turku and Hamburg. Issues to resolve included agreeing upon teaching loads to be undertaken at each host institution, acquiring the necessary health, occupational accident and liability insurance, clarifying intellectual property rights, and setting out terms for maintenance of the participants’ existing employment statuses at their home institutions. The host institutions, to the extent of their capabilities, were to provide practical (rather than financial) assistance to the participants in finding accommodation. The cost of travel between the two institutions was, in principle, the responsibility of the participants. This notwithstanding, HAW Hamburg’s Faculty of Engineering and Computer Science and its International Office joined forces to reimburse Andreas Baumgart, who moved to Finland with his family for the year, for his removal expenses, and Patric Granholm received support from Turku UAS for travel expenses to Hamburg.

PERSONAL IMPRESSIONS AND NOTES FROM THE EXCHANGE

Big or Small

Turku is a small city, not a metropolis on the scale of Hamburg or other major European cities. The decision to go for “small”, to move from Hamburg to Turku, stemmed from our desire for our children to explore their area independently. Notwithstanding my awareness of Turku’s

relative size, I had hoped and expected to find an active cultural life in my new temporary home, including art exhibitions, concerts, and interesting restaurants. Indeed, I am certain this is all to be found here under normal circumstances, but, regrettably, the Covid-19 restrictions had closed everything down. Instead, I enjoyed pleasant cycle routes and outdoor activities in nature reserves outside the city center.

Education

The teacher of one of my daughters in Turku told me: "I think that in Finland, teachers kind of stand behind their pupils: they coach them, they see to it that each stays tuned – [including] in difficult phases - and cares for their development. Teachers in Germany seem to be more of manager[s]: standing in front of the pupils, marking the targets and giving instructions." We noticed that in Turku, our daughters developed deeper and emotionally more attached relationships with their teachers than they had with their teachers back in Germany. This highly positive observation causes me to wonder whether the same is true in higher education. A further difference from Germany that I noted was the extent of provision of technology – PCs and iPads - to secondary school students, which ensured that they had the hardware required to switch easily to distance learning during Covid-19.

Responsiveness, good faith, and a little help

The signed confirmation letter that gave the exchange the go-ahead arrived on the very morning that I left with my family to catch the ferry to Helsinki. This initial lesson in flexibility and responsiveness to an evolving situation has been succeeded by numerous others during the course of the exchange, not every part of which was planned down to the last detail; much took place in good faith that both parties would find ways to handle any challenges that presented themselves. The support of both institutions' executive boards proved crucial in overcoming last-minute hurdles. Both Turku UAS's Rector and President Vesa Taatila and HAW Hamburg's President Micha Teuscher personally went out of their way to make this exchange happen.

CONCLUSION: NEW BEGINNINGS IN UNSETTLING TIMES

Every long-term stay abroad divides life into a "before" and an "after". It changes the way we perceive and value things in our professional and personal lives. As the German writer Hermann Hesse put it: "*Jedem Anfang wohnt ein Zauber inne*" -- there is a magic inherent in every beginning. This particular beginning, planned long in advance and supported with great commitment by our respective institutions, happened to coincide with Covid-19, with concomitant impact on both our personal and professional experiences during the exchange. In the pandemic's second wave, students and teachers had acquired greater routine in managing the ongoing limitations, but were beginning to tire of them. We lecturers faced teaching environments markedly different from the previous norm. While Turku AMK was delivering lectures face-to-face at least at the beginning of the autumn semester, HAW Hamburg had closed down completely. Turku AMK has a new open lounge, where many teachers met and continue to meet regularly over lunch or a cup of coffee; HAW Hamburg offered no such casual get-together spaces at this time. We thus found ourselves with highly unequal opportunities for face-to-face discussion and networking. Pandemic aside, the general level of collaboration between lecturers seems to differ in the two countries: while in Finland the exchange lecturer was frequently involved in cross-departmental matters such as

organizing workshops for Erasmus students or acting as a visiting evaluator in student group meetings, this does not appear to be common practice in Hamburg.

Despite all difficult circumstances and cultural differences surrounding the experience, the exchange detailed in this paper represents a very practical example of faculty development in line with CDIO principles. It provided two HE teachers with a specific opportunity to reflect on their teaching and their ongoing learning in a new context. The length of the exchange made it possible for the participants to understand higher education in another country in a way that would not have been accessible to them from the traditional, very short type of exchange experience. Alongside its influence on the perceptions of teaching and learning held by those involved, the exchange has opened up valuable insights and new points of view at both participating institutions and among their faculty. What is likewise beyond doubt is the highly positive nature of our personal experiences in our host countries, notwithstanding the Covid-induced limits on cultural activities. Once the initial excitement had abated and a routine had gradually set in, we began to discover that features of our daily lives at “home” that we had taken for granted are not such fixtures everywhere. It is this more profound understanding of “culture” and its elusive essence that we believe can only emerge from a longer period of exchange than is currently typical. On this note, we will conclude by expressing our hope that this paper might inspire fellow teaching staff in HE to take the initiative and venture into the unknown. And we hope it will encourage institutions to take a broader and above all longer view on internationalization and mobility, encompassing staff – teaching and non-teaching alike - alongside students and promoting the benefits of a longer-term exchange experience. We hope this paper may inspire fellow teaching staff in HE to take the initiative and venture into the unknown. And we hope it will encourage institutions to extend their view on internationalization and mobility to encompass staff – teaching and non-teaching alike - alongside students.

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BIOGRAPHICAL INFORMATION

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Patric Granholm is a Principal Lecturer at Turku University of Applied Sciences, Faculty of Engineering and Business. He is an experimental physicist with experience in nuclear physics and nuclear safety, solid state physics, electrical conductivity in organic materials, measurement techniques, and data analysis. He has a special interest in engineering ethics. His most recent teaching activities have focused on statistical data analysis for quality control, measurement technology, and physics. He is an ambassador for the Phyphox app in Finland.

Juha Kontio is a Doctor (Turku University of Applied Sciences, 2020) of Sciences in Economics and Business Administration. He received the M.Sc. degree in Computer Science from the University of Jyväskylä in 1991 and the D.Sc. degree in Information Systems from Turku School of Economics in 2004. Currently he is Dean of the Faculty of Engineering and Business at Turku University of Applied Sciences. His principal research interests are in higher education-related topics; his publication and presentation track record encompass over 100 papers. He is a former co-leader of the European CDIO region and a CDIO Council member.

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