



PROMOTING GRADSPIRIT
PRINCIPLES:
INTERDISCIPLINARY,
INTERNATIONAL AND
INTERSECTORAL PRACTICES IN
GRADUATE SCHOOLS

A SUMMARY OF THE RESPONSES
FROM THE QUESTIONNAIRE FOR
EXTERNAL NETWORK

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1 Introduction

1.1 GradSPIRIT project & "the triple-I"

The Graduate School Program for International Researchers and Interdisciplinary Training (Grad SPIRIT) is an Erasmus + funded project aimed at collecting and disseminating good practices in doctoral education in particular in graduate schools focusing on humanities and social sciences. The Grad SPIRIT project focuses particularly on promoting internationality, interdisciplinarity as well as cooperation between sectors (intersectorality) in doctoral training. Additionally, the project aims to innovate how these could more readily facilitate to contribute to better training. Nine different European higher education institutes are partnering in this project. These partners offer high quality doctoral training and aim to share and gain excellent practices in doctoral education through this project.

The three themes of internationality, interdisciplinarity and intersectorality (together "the triple-I") are not unambiguous concepts, which can lead to somewhat vague definitions. For instance, the words *interdisciplinary*, *multidisciplinary*, *transdisciplinary* and *cross-disciplinary* may have a similar meaning and are therefore often used in parallel or overlapping contexts. The slight differences in meaning are possible (for example multi-disciplinary vs. inter-disciplinary) even though the concepts are close together. On the other hand, the term internationality can be interpreted in many ways, even though there are few competing terms for it. Thus, there is no single way to use and understand the terms. However, GradSPIRIT aims for true interaction regarding the all three aspects, which is why the chosen terms of "inter-X" are being used.

In addition, the terms themselves are necessarily not completely problem-free to translate either. When translating from English to other (non-Indo-European) languages a specific single word for each term might not exist. Therefore, coming up with good concepts with equal meaning might also affect the way the idea is interpreted. This adds to the fact that the meaning of the terms can be understood slightly differently as the concepts are not concrete. As a downside this could result in confusion with the respondents but on the other hand it could also lead into broader thinking.

1.2 The questionnaire and the respondents

The GradSPIRIT project seeks to map out a network of (European) graduate schools especially in Humanities and Social Sciences to promote the good practices and innovations that the project partners have to offer. An open questionnaire was formed to get other graduate schools to reflect their own practices and to report their current operating models. Approaching graduate schools with the questionnaire could also to awaken an interest for the topic and the project. Furthermore, the responses provide a glimpse of other graduate school's "triple-I" practices in general. The questionnaire was distributed in two parts, the first in April 2018 and the second in September 2018. The questionnaire included the same questions but

the other also included a short, informal explanation of the triple-I terms¹ and a more specified question no 7 of what would especially be appreciated in other comments or suggestions. In addition, some of the questionnaires had a last question of the details of the respondent. The respondents were selected randomly and via contacts. The respondents are mainly European universities although also including a Canadian graduate school and a collaboration graduate school for multiple national member universities. The respondents are from seven different countries; there are six Finnish universities, three Danish universities, three German universities, two Dutch universities and one university from Canada, the UK and Italy, respectively. This compilation includes all the 17 universities that responded, which are: the University of Turku, Åbo Akademi University, University of Vaasa, University of Jyväskylä, University of Oulu, Lappeenranta University of Technology, University of Copenhagen, University of Roskilde, University of Southern Denmark, Giessen University, Freie Universität Berlin, Friedrich Schiller University Jena, Leiden University, Delft University of Technology, Brock University, Scottish Graduate School for Arts and Humanities and Università degli Studi di Perugia. However, individual respondents are not specified in this compilation, except for single cases to explain how a particular practise has come to be or is conducted.

As all of the respondents did not specify their own position in the organisation it is sometimes somewhat unclear whether they were answering the on the behalf of the whole university's doctoral training or only on the behalf of e.g. the humanities and social sciences. Although the questionnaire was aimed for graduate schools specialising in humanities and social sciences, the questions were not limited to cover the administration and management of those disciplines alone. This allowed for freer interpretation. Furthermore, as about half of the questionnaires did not specify or define the used terminology, each university could interpret them in a way they see fit. The questionnaire was in English and it was composed entirely of open questions. The following summary is concluded from the answers received. The answers were different lengths depending on the respondent. Due to the purely qualitative nature of the questionnaire it should be borne in mind the responses are only telling the "top-of-mind" kind of frequency of mentioned practices and not the absolute amount of each mentioned practice or idea.

1.3 Background information on the universities

The number of doctoral students ranged from a few dozen to several thousand. This indicates not only the different-sized universities, but also the fact that some of the respondents were likely to count all the doctoral candidates of the university whereas others included only the part in their field of responsibility, e.g. those in doctoral programs in humanities and social sciences or an even smaller specific part of it. A few pointed out that they only included active or full-time postgraduate students which also might make a difference in the numbers

¹ The following explanation was in some of the questionnaires: "The first two "I's" in the buzzword "Triple I" (interdisciplinary and international) are common currency (though they are of course employed in many different ways); the third "I", intersectoral, is relatively new and in this context designates research carried out in cooperation with non-academic partners such as NGO's, governments, private enterprises and public institutions."

as there might be students enrolled as a doctoral candidate but are not actively studying due to gap years etc. Universities with over a thousand doctoral students were Turku, Jyväskylä, Oulu (in Oulu a quarter of all the postgraduate students were in the doctoral programs of human sciences), Freie Universität Berlin, FSU Jena and Delft. The Scottish Graduate School for Arts and Humanities also serves over a thousand PhD students. The biggest umbrella graduate school had a total of up to 3500 PhD candidates across ten different faculties.

Some of the universities had a defined "mission statement", some referred to the duties of the universities defined by the law. The management and administrative responsibilities were often divided in similar ways with a dean, rector or a board of directors in charge, although there were some differences, too. Partly, the differences could also be explained by the fact that different respondents described the responsibilities of the administration in different ways, others explaining it shorter than others. The quality control practices of the doctoral training varied by some having established quality control systems and some didn't.

2 Results

2.1 Interdisciplinary training (Interdisciplinarity)

Universities looked at interdisciplinarity in various ways, the most common were regarding their doctoral programs, curriculum and supervision. In addition, interdisciplinarity was observed through the nature and the operational environment of the university.

2.1.1 Organising interdisciplinary teaching

Only three universities mentioned that they have specific **multi- and interdisciplinary doctoral programs** (e.g. interdisciplinary humanities program or clinical doctoral program, which combines social sciences and medicine). One university explained that a model for creating multidisciplinary programs is under development, but currently this was not in place. So far, generally interdisciplinary doctoral programs still seem to be somewhat rare and more is relied on bringing together people from different fields to create a multidisciplinary atmosphere, which possibly creates interdisciplinary interaction. Five universities mentioned that they organise **joint courses for all PhD students** (e.g. research ethics) which offers the PhD students of different backgrounds a chance to "meet and mix" in these sessions.

One university stated that their obligatory course of methodology also introduces multidisciplinary research methods, and that they even have separate **courses on interdisciplinary research methods**. Another told that they organise **courses covering interdisciplinary topics** and third described that they have **training on interdisciplinary competence**. This was conducted by organising specific workshops that promote thinking and understanding across the border of disciplines. It was also pointed out by many that the university courses, seminars and other **lectures in principle have a cross-disciplinary approach as a default**.

The doctoral students' opportunities for interdisciplinary research were carried out in three universities in a manner that allowed their *doctoral dissertation to have a supervisor from another major/discipline*. Furthermore, one university had taken this into account by making it profitable for all the parties by paying "*a supervision compensation*": if the doctoral candidate's dissertation is multidisciplinary and the supervisors represent different disciplines, then the university will pay each unit a "supervisor compensation".

2.1.2 Interdisciplinary research environments and university atmosphere

Several respondents mentioned multidisciplinary research projects and four universities mentioned *project funding for interdisciplinary projects*. One university reported that some of their postgraduate students are members in major research projects that are cross-disciplinary. These students were not necessarily multidisciplinary or interdisciplinary themselves but in joint projects the thresholds for interdisciplinary influences may be lowered. Another stated that they give financial and organisational support for interdisciplinary work groups and research networks as well as for *interdisciplinary scientific events* of science policy related events. They also had subsidy for interdisciplinary group publications' printing costs. One university had recently created *multidisciplinary and interdisciplinary research platforms open to all their researchers* on three themes that supported the university's own focus areas. Additionally, universities can encourage doctoral students in presenting their research and promoting an interest towards other's disciplines by *organising events and competitions for presenting research of various fields*. Such events are for example 3-Minute-Thesis Competitions and Science Slam talks, which were described by one university.

The nature of the university also affects its multidisciplinary potential. Several respondents pointed out that the university's core nature is to be *a multidisciplinary institution*, which is true especially for the big umbrella universities. One university stated that as most of the graduate school's programs are interdisciplinary, so they do not feel the need to engage much more into a theme that they already have quite well covered.

In addition, *a special operating environment* or the core function of smaller universities *can promote an interdisciplinary approach*. For example, Lappeenranta's Doctoral School Programme of Business and Management is in the University of Technology, whereby the academic environment of the Doctoral School naturally benefits both. For example, conducting co-projects with experts from both technology and business fields the two of them gain a positive impact. A bit similar case is with the Scottish Graduate School of Arts and Humanities that has a sister organisation, the Scottish Graduate School for Social Sciences, and they have established a set of training programmes together. They have courses open to doctoral students from both institutions, delivered by academic staff drawn from across the two graduate schools.

Diversely, Roskilde University is specifically *set up for innovative and new types of solutions*, like their "*Project & Solution*" approach. This approach benefits from not only interdisciplinarity but also from cross-sectoral cooperation. According to Roskilde University this approach and method produces the *best solutions* to problems.

In general, it was noted that an interdisciplinary approach can be implemented not only *within a university but also between universities*. One respondent believed that more emphasis will be put on interdisciplinarity and it is *becoming an increasingly important theme*. On the contrary, two of the respondents reported that their graduate school had no interdisciplinary initiatives, but the responsibilities and arrangements belonged to the departments and supervisors. The division of who chairs which policies affect this.

2.2 International training (Internationality)

2.2.1 Organising international doctoral training: programs, atmosphere and practical arrangements

Attention has been paid to the internationality of doctoral programs. Some universities mentioned that as a default *doctoral education is always international*, and others pointed out that they have international degree programs at all their levels. One university reported that some of their special doctoral programs were organised in *international co-operation*, and one said that double-tier partnerships with international universities are normal for them. Another university noted that they have several international PhD programmes. Becoming more international is one of the major *strategic goals* of one of the responded universities and internationalisation is an important point in evaluation of the quality of the doctoral program for them. The ratio of international doctoral candidates is an indicator for the overall quality.

Multiple universities mentioned the *recruitment of international students*, and in one university over half of the doctoral programs' students are from abroad. One graduate school commented that for encouraging the programs to recruit internationally, they must *support the recruitment process* for instance by providing good IT-systems to manage the applications. Two also said that they offer some *special services for international doctoral candidates* to provide information and advice. *High tuition fees for international students hindered the attraction* of international students in one university but the university had already taken steps to address the problem. By providing a program that allows some students to be admitted with domestic fees, they are trying to seek to have the best qualified international students, too. Many universities noted that the application for paid doctoral training posts is always international.

In addition to foreign degree students, international *exchange students* are also regarded contributing to an international atmosphere. For some international interaction, two universities mentioned the *so-called Buddy system that connects the foreign and domestic students*. In two responded universities there are *mobility grants for foreign doctoral students who want to arrive for short-term* (few days or weeks) *relevant research assignments or stays*. The practice had come to be as foreign students often have fewer opportunities to travel than domestic students.

In addition to the students, some universities reported recruiting *staff from abroad*, one having almost half of its scientific staff of international backgrounds. Also the mobility of professors was mentioned. Numerous universities expressed that they have *international*

visitors (e.g. speakers for workshops or lectures), which is also an opportunity for the doctoral students to build international networks. One university regarded that they have good relations with other Nordic universities in particular, enabling a variety of international interactions.

Besides the various backgrounds of the people in the institution, the universities have also additional measures to promote internationalisation. In addition to international degrees and international study environment a couple of universities mentioned that they **encourage to publish in international, open journals. International visibility of the PhD candidates' research** through the events and communication channels of the university was also a mentioned arrangement to promote international ambience and help the doctoral candidate in getting recognised. One university told that some of the postgraduate students have **second supervisors/cosupervisor from abroad**. Additionally, one *member of the Evaluation Committee* must be from abroad, often more than one. Doctoral students were also able to **teach bachelor and master degree courses in English**. Several universities mentioned that their **communication is either in English or bilingual**. Four universities declared that all **courses and materials in their graduate school are in English**. However, being international does not mean just communicating everything in English, so one German university pointed out that they offer **language classes** in German and the Scottish Graduate School encourages the students to learn a second language.

2.2.2 Mobility programs and exchange

More than half of the universities mentioned a **research exchange program**. For instance Danish universities seem to have a mandatory exchange in another research institute, which practically always is a foreign university. The "change of environment" is often three to six months or a full academic year in duration. One higher education institution described that it is also possible to do an **international internship**, where the doctoral student is hosted by an international non-academic institution.

Correspondingly, around as many also noted that the universities offer support to apply for and participate in **international visits, projects and conferences**. The support was mainly specified as *money* but handing out *credits* were also referred to. One university expressed that *participation is encouraged even if there would not be a paper to present*. The amount of financial support varied; one university had a practice of funding at least one conference per year for the doctoral candidates and more if there is extra funds. Another university, on the other hand, paid an annual grant to doctoral students (EUR 2680 / DKK 20,000) to cover the cost for research visits, conferences and other research materials.

2.3 Cooperation between sectors (Intersectorality)

2.3.1 University courses and studies

Universities facilitate doctoral students' possibilities for working also in other sectors than pursuing an academic career by providing **courses on transferable skills and career services**. In addition to courses on transferable skills and help with career planning, the degree of

intersectoral measures varied. While one of the respondents mentioned that they are drawing up a plan for developing career orientation in doctoral education, some had even *intersectoral PhD programmes* and *internship programs*. A few respondents offered some kind of *qualification programme with an emphasis on career development* inside as well as outside the academia. This was to help the doctoral student to prepare and enhance the profile for future occupational fields. The different themes were “Leadership in Academia”, “Leadership in Industry and Society” and “Scientific Management”. Some smaller initiatives besides for example job application *workshops and career evenings* with speakers from different sectors.

Intersectoral PhD programmes and internship programs are larger scale initiatives for intersectorality in doctoral education. TU Delft participates in two intersectoral programmes, where the first one is called *SMO Promovendi* and is a collaboration between TU Delft and the Dutch Foundation for Society and Enterprise. The doctoral candidates of various backgrounds from around the country work on complex societal challenges with the stakeholders that range from NGOs to industry. SMO Promovendi is currently working on the themes of healthcare & wellbeing as well as circular economy and includes activities from innovation challenges to scenario thinking workshops. The second programme is a 5-day workshop training module called *Advanced leadership skills* that emerged after piloting the module in cooperative project with several universities and companies. The training focuses on team performance and distributed leadership. The Scottish Graduate School for Arts and Humanities, on the other hand, has a well developed *Knowledge Exchange and Partnership* programme that delivers internships with different external partners. They also fund PhDs, which require the student to be located in and supported by an industry partner for at least 6 months and the project must derive significant benefit for the partners. These are called *Collaborative Doctoral Awards* and *Applied Research Collaborative Awards*.

A couple of graduate schools offered specialised business trainings to support careers outside academia. Besides being employed at another institution, the option of entrepreneurship was also taken into account. One university declared that they have *open entrepreneurship courses offered in cooperation with many different actors*, another told that they work in close co-operation with the start-up service of the university. Sometimes engaging in entrepreneurship might not be the primary target but something to emerge from an intersectoral project: one university revealed that there has even spurred *spin-off enterprises* of their joint projects.

Intersectorality is also included in major research projects and agreements. One university stated that they are generally open to intersectoralism in doctoral education. One reported that about half of all doctoral education projects are *joint projects with an external actor* such as private companies and organisations, third sector non-profit organisations, other colleges and public organisations. It was also mentioned that some of the students are already intersectoral, as *many postgraduate students are in employed* in museums, teacher training schools and other public institutions.

2.3.2 University networks

A frequent amount of the universities mentioned that they have ***good relations with external actors and the surrounding community and society***. All types of sectors were recognised by the universities. Business and commercial organisations were mentioned a little more often, which could indicate that joint projects with companies are possibly more common than before. Also joint projects with industry were mentioned. One reported that the university has close links with health organisations, primary production companies and state research institutes. Science related centres also accounted for cooperation partners. It was pointed out that the fact that many of the graduate students are employed by various public institutions such as museums or educational organisations is *useful for both of them*, because this way it will both raise their competence and qualification and also produce *a better communication* between the university and society.

A diversity in working life and research cooperation can also be promoted through the mobility of university staff. One of the respondent universities have a *mobility program for its personnel, through which staff can carry out small projects with other organisations*. Time is taken out of the working hours and dedicated to other than university related work, for example, 1 day per week and a maximum of about six weeks.

Creating networks is not a necessarily always problem-free and one university regarded its location as somewhat challenging. According to their view, cooperation between sectors is hindered the fact that there are only a few big companies in the area and *the chances for small and medium-sized enterprises to commit to a long-term cooperation, are in turn, slightly more restricted*. In addition the creation of networks can be problematic, and to smooth things out *the relations between parties should already exist or be easily achievable*. Another respondent stated that lack of funding is an issue in this area, as they would need more support staff to be more proactive, and especially in terms of building links with the non-academic sector.

2.4 Other remarks raised by the respondents

2.4.1 The future role of university

The three GradSPIRIT focus areas of internationality, interdisciplinarity and intersectorality (“triple –I”) was also reflected on the basis of the University's tasks, expectations, goals and future ideas. One of the respondents visioned that the emphasis of universities will be in increasing internationality, external funding, publishing, mobility and an independent research profile. Another imagined the direction will be in enhancing digitalisation, internationality and cooperative actions. A third believed that interdisciplinarity will be more widespread due to university profiling. Fourth illustrated the complicated national “playground” for universities where there is a debate going on regarding doctoral education, internationalisation and funding science. Also the budgeting system for the university is due to change. All this contributes to the fact that at the moment the university will focus on its core tasks and orientate on other opportunities when possible.

2.4.2 Challenges: resources, lack of clear initiatives, attitudes

Attention is being paid to promoting internationality, cross-disciplinarity and sectoral cooperation, but they may also face various challenges. The most common problems mentioned were about resources, the undefined concepts combined with a vagueness of goals and evaluation, and the attitudes of different actors.

The issues related to resources concerned funding, workload and time. One of the respondents criticized the national funding model for universities, which leads to mass production of degrees and not of producing long-term science. In general, the challenges of financing was referred to by the majority of the respondents, one mentioned it to have an impact on for example international mobility. Internationalism, interdisciplinarity and inter-sectoral cooperation are all broad themes, and one of the respondents said they do not have enough time and funding to implement all of the above mentioned areas sufficiently. One of the respondents referred to manpower and to the fact that executing the triple-I it can easily generate large workloads to the parties involved. The lack of financial incentives for initiating and participating in triple-I planning and the need for additional funds and personnel for implementing and managing the triple-I activities were referred to by several graduate schools.

Slightly obscure concepts and a lack of concreteness also worried many. A couple of respondents pointed out that there is ***no clear definition*** of the triple-I, ***and there is no plan to promote them systematically***. One respondent declared that the triple-I does ***not have clear goals, so it is difficult to assess how well they are implemented***. One of the respondents stated that it is important to define both the responsibilities and the actors to carry out the process well. Sufficient resources for it must be ensured as well. Another was of the opinion that ***constant attention, awareness and evaluation of what works*** and what does not is needed, and also to have clearly articulated ***guidelines, which are transparent and understandable to all*** (i.e. doctoral students, instructors, administrative staff and potential external operators). One responded hoped for ***models of succesful interdisciplinary training*** programmes at PhD level. Another suggested that also ***help with formalities*** and legal issues would be beneficial, for example in cases where non-EU PhD candidate is planning to do a intersectoral internship. Additionally, a ***want for greater understanding*** of international specificities, differences and competencies and breaking down barriers between disciplines by understanding better the methods and epistemologies of different disciplines would contribute in pursuing the triple-I activities.

There were also some challenges related to attitudes. A few of the respondents were of the opinion that ***some of the researchers object*** the modifications and requirements related to the triple-I. One thought that older supervisors may not be in their own work very interdisciplinary or international, which is why it can be ***difficult to promote and supervise that kind of research***. Another made a point stating that the doctoral dissertation is the most important academic qualification and in general academic careers highly depend on the ***proof of disciplinary excellence*** whereas interdisciplinary profiles might hardly fit into faculties. Therefore, a moderacy in interdisciplinary training is needed to benefit from its inspiring and helpful aspects but avoiding to overdo it. One university regarded that the triple-I is not at this point a first focus area for the graduate school.

In addition to the internal attitudes of university personnel, the **reluctance of outsiders to the development** of horizontal administrative matters can make it difficult for them to be optimally implemented. One respondent criticizes that a common and serious problem in doctoral education in humanist and social science fields is **the lack of understanding of the significant importance of freedom of research and bottom-up diversity in doctoral education** (and that this lack of understanding can be found at almost all organizational levels from the management of departments all the way ministerial and parliamentary level).

2.4.3 Areas of further development

Universities mentioned different development targets that they themselves or in cooperation with others could improve. Development proposals concerned organising teaching in doctoral education, attitudes, internationalisation issues and the relationships and networks of the university.

One respondent considered that they could have **more courses for doctoral students**. Another regarded that it is important that **they would integrate doctoral students into interdisciplinary teams in the university and to international research networks even better**. In addition, it was noted that for the time being, teaching and supervision are offered only within the faculty of the doctoral student. **Joint supervision between different faculties does not add to teaching hours and therefore is not paid**. Changing this could promote interdisciplinarity.

Promoting the right attitude also requires some attention as it was felt that it would be important to overcome the obstacles of internationalisation, interdisciplinarity and inter-sectorality. One respondent pointed out that both the doctoral candidate and the supervisor should have a **positive attitude** towards the triple-I principles. One stated that **supervisor training** could be beneficial to support and empower the supervisors of this kind of PhD training. Another regarded that interdisciplinary activities are not actively promoted even if there would be many possibilities. For example, **focusing only on a monodisciplinary top-tier journals** can narrow putting interdisciplinarity into practice.

Internationalisation and cotutelle arrangements raised some discussion. One university stated that opportunities for **dual qualifications** should be encouraged whereas another explained that they find it difficult to make double degree contracts and have not had only good experiences with them. It was noted that joint degrees require strong partners and functioning administrative frameworks but that they try to facilitate the cotutelle degrees also because they are part of the PhDnet in which this is required.

One of the universities mentioned the **development of international recruitment** (that is, how to attract skilled students) and the improvement of mobility as something to improve in. Another marked the lack of following through the internationalisation strategy of the university as recently there had not been many foreigners in PhD positions. It was also stated that internationalisation is still sometimes hindered by different **regulations and requirements**, for example regarding the formalities of the disputation or regulations on language. A wish for **deeper language proficiency** was also considered. One university described that they strongly feel they are an international university already and have no

need to undertake extra activities for promoting internationalisation. On the contrary, they are more interested in *how to facilitate cooperation in the international setting*.

Developing intersectorality sparked some arguments, too. It was noted that it would be important to *create an atmosphere where non-academic careers are no longer regarded inferior* and to *break path dependencies* where each qualification step narrows the field of possible careers. In other words, career paths should be more transparent and secure. A couple of respondents were in the opinion that their graduate school should *go further in building networks with non-university organisations* and intensify exchange with them. More intersectoral partners in humanities and social sciences were warmly welcomed, however, one respondents stated that unfortunately there are *limited (financial) opportunities* for graduate schools in humanities with regard to intersectoral training. There is a contrast with other disciplines with greater proximity to business and industry in this regard. There was also another wish for more cofunded interdisciplinary PhDs. One respondent told that they recently have set up so called *Knowledge Exchange Hubs*, which aim to focus on external engagement and the development of programmes, which derive *mutual benefit*. In addition, their future ambition is to develop *Interdisciplinary Incubators* with graduate schools in physics, natural sciences and engineering but so far this level of interdisciplinary engagement remains a challenge.

Attention was also drawn from the point of view of the university administration to how things are organised and *what is regarded as a priority*. One respondent noted that the *organisational structure should support the implementation of the triple-I principles* (funding included). Another stated that *more support was needed for the different faculties* and *to assess how to make the best use of the interdisciplinary doctoral projects*. The third respondent reflected that universities need to keep focus and constantly remind them of priorities as sometimes they can drown into the sea of tasks where priorities struggle to meet the surface. One higher education institution noted that they are a big national organisation and therefore quite visible. Making connections should be natural, it is mostly a matter of time and priority and “taking the leap of faith”. What is more, one of the university raised an aspiration of a *national co-operation between different universities and academic institutions*, which would enhance and deepen the triple-I activities; according to the respondent, strong national consortiums would have better opportunities in the international “triple-I markets”.

2.4.4 Advantages and achievements

In addition to challenges and development objectives, many universities mentioned that the triple-I *areas are already at least fairly well managed*. One of the respondents pointed out that triple-I is easier with multidisciplinary universities than for example universities with merely technical focus. Secondly, another stated that it is easy for a small university to collaborate in multi- and interdisciplinary and multi-sectoral environments. *The operational environment of the university was considered to give an advantage or opportunities*, for example in particular when the operating environment is different from the ordinary, such as a school of business and management inside a University of Technology, which has good

relations with industry or in the case when the university was founded based on principles closely linked to the triple-I. Intersectoral work and also co-funding of project is well developed in Danish research according to one respondent. Another viewed clear advantages especially with regard to internationalisation and interdisciplinarity that are the main pillars of the graduate school and they have already great experience in international research training with a large number of partners.

One university thanked the advantage of being funded by the German Excellence Initiative, which helps to have *sufficient resources* to develop and sustain good initiatives. Furthermore, another respondent regarded it beneficial for the graduate school that it is *embedded in the highest executive level of the university* by a vice-rector, which helps the administrative issues. In addition, one university reminded that they want to be able to *maintain the good level that already exists*, such as retaining the allowance to allow doctoral students to access research stays abroad.

The *influence of the surrounding society* also helps to make the triple-I possible especially in regard with the cooperation between the sectors. The strengths of one university included that it is located in an area with many small hi-tech companies, several different education institutions and state research centers which contributed to a strong interdisciplinary profile and *support from the surrounding area*. Some good practices that the universities listed in their current triple-I activities in general were for example sending a doctoral trainees abroad for research visits and conferences, cooperation with industry, grants, as well as interdisciplinary research method courses.

3 Conclusion and discussion

A few respondents felt that their university performs triple-I related tasks already well, which is delightful. Based on this small survey of 17 different institutes of higher education, it seems that internationality, interdisciplinarity and inter-sectoral cooperation are familiar themes, although there are no clear established practices or strategic controls for all. This was also referred to by some of the respondents and is also an important consideration for the GradSPIRIT project: clarity is needed for contents and goals, so that the practices can be evaluated accordingly. At the moment it was emphasized that the doctoral education assumes that both teaching and supervision is, in principle, international, cross-disciplinary and also preparing for the needs of non-academic working life as a default. The sharing and testing of good practices is therefore meaningful for the project as they is a demand for solid practices and new innovations if and when universities want to develop their doctoral education.

Interdisciplinarity was in many cases seen as multidisciplinary practices, and the universities reported for example multidisciplinary doctoral programs, joint courses for all PhD students and open science/research related events, talks and competitions. These kind of means require a higher self-directed initiative for interdisciplinary interaction (e.g. when combining students of different backgrounds on the same course). They seemed to be slightly more common than systematic interdisciplinary teaching methods, even though true interdisciplinary mechanisms were reported, too. Such were for example interdisciplinary PhD programs, interdisciplinary

methodology courses, courses covering interdisciplinary topics and training on interdisciplinary competence. Additionally, the model of two supervisors for the PhD dissertation allows different perspectives and help for a interdisciplinary doctoral candidate. It can also provide an international perspective in cases where the cosupervisor is from abroad. It would be beneficial for the universities to think about how the system will be profitable for all parties in practise. For example, one university had solved this by offering compensation to both supervisors. One respondent aspired that cooperation could be better not only within the university, but also between universities. In addition to the doctoral education, universities can promote an interdisciplinary research profile. One way to bring together researchers is to open a research platform for the researchers based on focus areas of the university.

There were also some measures to promote internationality in the university. For example, recruitment of international students and staff, communicating both internally and externally multilingually or in English, receiving international visitors, connecting domestic and foreign students with buddy-system, and providing mobility programs and grants for exchange studies international visits, projects as well as conferences were quite common procedures. Different mobility programs were the most often mentioned single instrument for promoting internationalisation. One university mentioned mobility grants not only for outbound but also for welcoming foreign students. Support for international visits could be obtained not only in the form of grants, but also as credits. One university encouraged to travel to conferences even if the doctoral candidate did not present a paper there.

It was interesting to note that although the climate change issues have got a lot of global attention recently and air traffic in particular is seen to be very harmful for the planet, no references were made to the opportunities offered by technology to reduce traveling yet keeping international connections. For example, the displaying of conferences as an online stream in the university did not emerge as a possible option in any of the response. This way following relevant conferences would not solely fall as a responsibility of a single student or researcher all alone but would be facilitated by the university without a need for traveling to the spot. Of course it is possible that this kind of methods are already in place, but they did not occur to the respondents at that moment for a variety of reasons, such as the practise might not yet be well established or it is not considered to be part of the triple-I practices. Instead, the respondents reflected over how to increase mobility, language proficiency and smooth cooperation in a diverse international university setting. In addition, the development of international recruitment in order to attract the most talented candidates raised some questions. There was also an interest in the opportunities for dual-degree partnerships as they were not always regarded easy to organise.

Cooperation between the various sectors was built up by the curriculum and networks offered by the graduate schools. The doctoral student working life skills were supported by for example transferable skills courses and career services, and by organizing entrepreneurial courses and joint projects. It was even reported that spin-off companies had emerged of such collaboration. Some universities had also internship programs, though it was noted that more paid internships in humanities would be welcomed. Many universities mentioned that they have good relations with external actors, which is important for good communication and

knowledge transfer between different sectors. On the other hand, creating networks is not always problem-free. The university's location and the regional organisations' profile and capability of commitment of can either ease or hinder the creation of relationships. It was also noted that many PhD students are already employed by different private and public organisations.

Internationalisation, interdisciplinarity and inter-sectoral interaction seem already to be at a relatively good level with the universities that responded to the questionnaire. Projects in particular seem to enable a variety of synergies both in interdisciplinary, international and intersectoral point of view. There is still room for improvement in the clarifying the “triple-I” concepts in order to create a clear and understandable plan and instructions to make it easier for both setting and evaluation of the objectives. In addition to constructing some normativity, continuous assessment of how things are done and raising triple-I tasks on the priority list is needed for promoting the triple-I practises efficiently. The responses revealed that there might be some hidden negative attitudes towards the implementation of the triple-I themes. The GradSPIRIT project could help in making it easier to engage in new ways by introducing practices that are easy and assessed. However, as the respondents also pointed out, the university's organisational structures must also support their reception all the way including funding.

Some single questions that the respondents raised were for example, whether they have enough courses in their doctoral education, how to integrate postgraduate students better into interdisciplinary research teams and cross-sectoral networks and does focusing on field-specific top journals limit interdisciplinarity too much? In addition they brought up the issues of how to use cross-disciplinary projects in the most relevant ways and whether intersectorality is viewed holistically enough in regard to the fact that many doctoral students are employed and need to combine two different kind of “jobs” not forgetting also some private life with possible family obligations. One respondent pointed out that graduate schools must keep in mind not overburdening the individual PhD candidate; the priority is on the working on the research project, the rest is an add-on, which should support it and the degree but may result in prolonging the degree.

What is more, a few universities made remarks on their outside stakeholders. There was a wish for the national level decision-makers to understand that excessive control of research and universities will undermine the freedom of research and kill innovation. This was also linked to funding, otherwise resulting in a “mean and lean” type of organisation if there is a lack of resources. Some inspiring wishes on collaboration was for instance setting up some compiling national consortium to strengthen universities.

As a conclusion, the rich responses provides an overview of the triple-I practises of graduate schools and can also be a source of inspiration. Each university seem to have their strong point, some pioneering in interdisciplinary, some in internationality and others in intersectoral cooperation. The use of technology and digitalisation was brought up hardly at all, which could indicate to be an area that needs stronger integration to the themes.

Appendix 1. Questionnaire

Co-funded by the
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SPIRIT
Graduate School Program for
International Researchers and
Interdisciplinary Training

Dear XXXX,

We have received your contact-information via XX XX, one of our partners in the Erasmus+-project SPIRIT (Graduate School Program for International Researchers and Interdisciplinary Training, www.gradspirit.eu). The project focuses on Graduate/Doctoral School Programmes and Triple-I training (Interdisciplinary, International and Intersectoral), particularly but not exclusively in the Social Sciences and Humanities.

The project objectives are to:

1. Provide a systematic Inventory of current policies, procedures and practices to promote Triple-I training in the participating Graduate Schools.
2. Select and describe the best practices from the inventory in order to produce a 'Blueprint' for successful Triple-I doctoral training.
3. Develop, adapt and test innovative instruments for Triple-I training in each dimension (PhD candidates, staff, curriculum and organisation), resulting in an 'Innovation menu' from which individual GS can select and implement according to their needs.
4. Engagement of a wide range of Graduate Schools, both within the EU and across the globe, by opening and sharing results, using dedicated instruments for data- and knowledge sharing.

Since we believe that your experience in doctoral training policy and development will be of great value for our project, we kindly request to fill out the short Questionnaire below. Should you have any further questions at this stage, please do not hesitate to contact us.

We look forward to hearing from you and thank you in advance for your willingness to participate.

Kind Regards,

Erasmus University
University of Heidelberg
KU Leuven
Université Paris Saclay
Loughborough University

Polish Academy of Sciences
University Leipzig
University of Helsinki
Central European University

Questionnaire

I. Does your organisation have a mission statement?

If yes, please provide.

II. Management

Who is responsible for your organisation (the rector/chancellor, a dean, a manager,...)?

What are the responsibilities of your organisation?

Does your organisation have a doctoral education quality assurance system? If yes, please provide details.

III. Size of PhD-student Body

How many PhD-students does your organisation serve?

IV. 3i-promotion activities

- What kind of activities does your organisation develop to promote interdisciplinarity?
- What kind of activities does your organisation develop to promote internationalisation?
- What kind of activities does your organisation develop to promote intersectorality?

V. Needs and wants

- What are – in your eyes – necessary steps in PhD-training in terms of 3i?
- What can your organisation do more in terms of 3i training?
- What is your organisation lacking in terms of 3i training?

VI. Opportunities and bottlenecks

- Does your organisation have distinctive advantages enabling it to develop 3i-initiatives?
- What are potentially the principal obstacles preventing your organisation from properly delivering 3i-training (e.g. academic resistance to 'top-down' interference, lack of funding.)?

VII. Any other comments or suggestions.