TIPS & TRICKS

FOR TRIPLE-I DOCTORAL TRAINING

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SYNOPSIS

This report summarizes the findings and conclusions of the second intellectual output of the *Graduate SPIRIT (Graduate School Program for International Researchers and Interdisciplinary Training)* project delivered jointly by a consortium of nine European graduate schools[1], and funded by the Erasmus + program of the European Union. The work on this part of the project was initiated in March 2018 with the aim to explore the relevance of Triple-I[2] doctoral education and map existing best-practices of participating graduate schools in this regard. The assessment was carried out in three distinct, but interrelated phases. In the first phase, a general evaluation of the Triple-I concepts has been conducted based on a thorough review of the relevant academic literature. During the second phase of the project, a survey exercise has been carried out allowing partner institutions to provide examples of best-practices that they are implementing in order to foster the Triple-I character of doctoral education. These examples have been categorized into a catalogue of best-practices. In the third and final stage of the second intellectual output, project partners engaged in site visits to learn more about each other's practices and a small number of selected examples are described in more detail to aid their adoption. This includes the rationale and the challenges of their implementation, as well as the impact that these practices had in the respective graduate schools in terms of fostering internationalization, interdisciplinarity, and intersectoral cooperation.

The report focuses on summarizing the main outcome of the above described project phases with the aim to help European graduate schools to better understand the Triple-I framework and learn from the practices delivered by the project partners. The catalogue that results from the identification of the proven best Triple-I practices is innovative because it entails all dimensions of doctoral training (i.e. recruitment and admission, curriculum and program design, supervision and student support, and organization of the graduate school) and is not limited to one aspect, such as employability. The report has been presented and discussed locally at each graduate school to foster the spread of innovative practices and was also made available to other graduate schools through the project's dissemination and engagement activities.

The report helped graduate schools to identify areas where further innovations or improvements are needed with regards to Triple-I doctoral training. Following from this, project partners have identified a number of innovative activities they plan to implement as part of the project's next stage. These include (i) intersectoral training and employability activities, particularly by utilizing the graduate school's existing alumni network; (ii) training the trainers, which will strengthen a common approach to supervision in the Triple-I context; (iii) curriculum revisions, whereby employability, online learning, and interdisciplinary content would be the key areas to assess and improve, and finally (iv) the use of a specific tool (PPQ) that would help graduate schools tailor doctoral training to individuals' needs. These activities will be carried out in the subsequent stage of the project and form the basis of an innovation menu.

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[1] Project partners: Erasmus Graduate School of Social Sciences and the Humanities, Erasmus University Rotterdam (the Netherlands); Doctoral School in Humanities and Social Sciences of the Doctoral College, Université Paris Saclay (France); Graduate School Global and Area Studies, University Leipzig (Germany); Doctoral School of Political Science, Public Policy and International Relations, Central European University (Hungary); Loughborough Doctoral College, Loughborough University (United Kingdom); International Doctoral School for the Humanities and Social Sciences, KU Leuven (Belgium); Doctoral School in Humanities and Social Sciences, University of Helsinki (Finland); Graduate School for the Humanities and Social Sciences, Heidelberg University (Germany); and the Graduate School for Social Research of the Polish Academy of Sciences (Poland).

[2] Triple-I stands for International, Interdisciplinary, and Intersectoral. A more detailed review of these concepts and how they relate to each other is offered in the following section of the report.

INTRODUCTION

There is a broad consensus among European policy makers, representatives of the academic community, doctoral students and the representatives of the business sector that training of researchers is an essential part of the future economic and social model of the European Union. The terms 'knowledge society' and 'knowledge-based economy' depict the centrality of doctoral education in this regard, as acknowledged in the Salzburg I principles and their additions in Salzburg II. Placing research and innovation, and thereby the training of young researchers, in the forefront of economic and social development raises new questions concerning doctoral education. What is a PhD for? Who is a PhD for? How should PhD training be organized? The answers given to these questions define the policy directions taken by many counties and institutions with regards to doctoral education.

The EU recommendations prioritize internationalization, interdisciplinarity, and intersectorality (Triple-I) as the core principles around which doctoral education could be reconfigured to better match new political and social expectations. Graduate schools are being established across Europe to offer better structured doctoral education at universities. However, there is no uniform approach to the implementation of the Triple-I principles. Having different models of doctoral education in Europe warrants increased cooperation and greater learning from each other. The Graduate SPIRIT (Graduate School Program for International Researchers and Interdisciplinary Training) project originated from such a consideration and sought to identify adequate instruments for stimulating, organising and managing Triple-I training for doctoral candidates of social sciences and the humanities.

This report is envisioned as a tool to help European graduate schools, staff members, and doctoral students find examples of activities carried out by the project's consortium partners and study their approaches to foster Triple-I doctoral education. As such, the report gives an overview of best-practices in the field of social sciences and the humanities. These were identified by the members of the project consortium combining their extensive experience with observations of practices which provide the greatest benefit to their graduate schools. They should be viewed as suggestions of areas which could be further studied empirically to gather evidence about their effectiveness and impact. For the purpose of this report, these self-identified best-practices should be seen as guidelines for how to develop doctoral programs to reflect and encourage the Triple-I principles.

The report is structured into three parts. In the first part, the report examines the academic literature to offer a review of internationalization, interdisciplinarity, and intersectorality and their relevance for doctoral education, and more specifically the areas of doctoral training in which they can play a significant role. The outline of the first section served as the basis for developing an inventory of best-practices, which is presented in part two of the report. Considering the diversity of national contexts and the point that there is no single best-model for a successful Triple-I doctoral program, the report aimed to depict the breadth of different institutional approaches. Data was collected from project partners via a questionnaire, following the areas emerging from the literature review and allowing each partner to showcase appropriate examples. Practices are reported distinctly for each dimension of the Triple-I and also arranged into four thematic areas, namely (i) recruitment and admission, (ii) curriculum and program design, (iii) supervision and student support, and (iv) organization of the graduate school. Moreover, the report tries to take advantage of the distinction between umbrella and thematic graduate schools (a distinction established based on the legal and programmatic nature of graduate schools, whereby umbrella organizations serve as networks for several doctoral programs and their involvement in the teaching process is limited, while thematic ones are directly responsible for the doctoral education, usually in a relatively narrow subject area). The relevance of this distinction emerged from the first part of the Graduate SPIRIT project[3], and it

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[3] For more information about the first intellectual output, visit the project's website: www.gradspirit.eu

highlights important differences in scope, access to funds, and organizational autonomy. The final section of the report provides an in-depth description of nine best-practices, which were chosen by the project's participants based on their relevance and impact in fostering Triple-I doctoral education. The analysis seeks to provide the readers with answers on what is needed for implementing the selected best-practices, what are the benefits and expected impact from them, and how should such practices be evaluated.

The report is made available to other graduate schools through the dissemination and engagement channels of the Graduate SPIRIT project. The collected tips and tricks have been transformed into an interactive toolbox, allowing visitors of the project's website to search and pick activities they would like to emulate. For more information, please visit the project's website (www.gradspirit.eu).

SECTION I: TRIPLE-I IN DOCTORAL EDUCATION

As the first step in this phase of the project a thorough literature review has been conducted to gather information about common challenges and trends in doctoral education related to the three dimensions of Triple-I. The gathered literature is also available on the project's website[4] allowing external partners to access existing materials and submit new resources as well. Insights from this exercise served as guiding principles for identifying best-practices in the area of international, interdisciplinary, and intersectoral doctoral education.

INTERNATIONALIZATION

The definition of what constitutes internationalisation of education is as varied as the practices of introducing an international component into doctoral research, however a widely accepted understanding of what it means comes from Jane Knight and the International Association of Universities who said that 'internationalization of higher education is the process of integrating an international/intercultural dimension into the teaching, research and service elements of an institution' (Knight, 2008). Literature which then discusses internationalisation of education both for under- and post-graduate students often focuses on the growth of the area such as Altbach and Knight (2007), Knight (2013), OECD (2002), Gibble (2008), Teichelr, 2002), and Cummings, Bain, Postiglione and Jung (2014) and with growth also comes the hurdles to achieving the relevant goals. The obstacles that need to be addressed according to Cummings, Bain, Postiglione and Jung are numerous, they refer to the widely differing ways that institutions work in terms of hiring foreign-born or -trained academics, or how much their members engage in foreign collaboration or publishing (2014: 74-6). Publishing in a second language is cited as another issue, as is lack of funding and a lack of international content in taught courses (*ibid*). Reichert and Tauch echo the concerns about the lack of non-national European staff in European institutions where they do not form even a 'sizeable minority' in most cases (2003: 17). To this, Knight adds concerns about fake degrees but also reasons to overcome such problems in order to reap the benefits of 'co-operation, partnership, exchange' (2013: 89).

In her 2008 work, de Rosa examined the different iterations of the European doctorate that have taken shape over the years. The goal here is to create 'a structured international programme based on networking, multiple joint supervision, common rules for recruitment, training, and evaluation, and [provide] integrated physical and virtual mobility'. (de Rosa, 2008: 4). There have been several iterations which attempt to answer these needs such as the one established in 1993 with the requirements that a Doctor Europeus must have their thesis reviewed by two professors from institutions in different European countries other than the one the candidate defended it in, the jury must also contain at least one member who comes from an institution in a European country other than the one the thesis was defended in, a part of their thesis must be written in a second European language, and the doctorate must partly be the result of a research period of at least one trimester spent in another European country (*ibid*: 5). With respect to the language component, Choudaha and Chang noted in a report discussed more below that a way of increasing international interest is to invest more in language support services at the institution hoping to attract students (2012) which answers a concern raised by many international students about language barriers (Harman, 2003).

An alternative to the 1993 policy was then posed by the Stockholm Seminar in 2002 at which the following was suggested; '(a) there be two or more participating institutions in two or more countries; (b) the duration of study outside the home institution should be substantial and continuous; (c) joint degrees should require a joint study programme established by cooperation and confirmed in a written agreement between institutions; (d) joint

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degrees should be based on bilateral or multilateral agreements on jointly arranged and approved programmes, with no restrictions concerning study archives or subjects; (e) full use should be made of the diploma supplement and the European Credit Transfer System (ECTS) in order to ensure comparability of qualifications; (f) a joint degree should preferably be documented in a single certificate issued by the participating institutions in accordance with national regulations; (g) joint degrees and study programmes should require student and staff/teacher mobility; (h) linguistic diversity in the European perspective should be ensured; (i) joint study programmes should have a European dimension, whether in physical mobility or intercultural competence in their curriculum' (de Rosa, 2008: 6).

These examples from de Rosa (2008) provide a possible framework from which to begin establishing an understanding of best practice. To this end, Luijten, Huisman and van der Wende offer the suggestions that each institution be able to create a program that best fits their 'strengths, particular characteristics, environment' but that national governments must take the issue seriously and consider regulations '(e.g. with respect to admission, tuition fee and language policies)' to enable the institutions to expand as they need to (2005: 238-9). They also reiterate the need for an agreed upon framework amongst the institutions, such as the ones discussed by de Rosa (2008). Kalvemark and van der Wende point to Finland and the Netherlands as examples of good practice with international co-operation which they believe would help solve the issue of lack of criteria for evaluation (1997: 270). Teichler offers Germany as an example of good practice due to their growing numbers of students studying abroad which they credit as being due to need-based scholarships being available during the year that the student is in another country (2007: 228) though this example focuses on undergraduate students, funding being available internationally is a transferable best practice suggestion.

In terms of best practice for the students themselves, de Rosa's work on the Joint European/International PhD on Social Representations and Communication provides examples such as asking all candidates to sign a formal agreement outlining their commitments to the programme, these include 'attendance and participation, reports, work schedules, contacts with tutors, leaves of absence' (2004). Meetings for the candidates include three annual meetings and an international summer school which provide opportunities for 'mobility and interaction, combining face-to-face interaction with mediated virtual interaction (internet forum discussion, web-videoconferencing, streaming videos on the web, etc)' (*ibid*). For this programme, each student is supervised by three supervisors based in three different countries (*ibid*).

Literature which focuses on how international students are enticed to study at a particular university varies. As described by Chen, discussions can either focus on internationalisation of institutions through faculty, exchange programs and research collaborations or they can highlight the cost/price of tuition and the location of the institution (2007: 3-4). In Chen's study which examined motivations of international students studying in Canada, they found that aspects which could be considered effects of internationalisation were the most important factor for graduate students on research courses when making their choice (*ibid*). An example of this is that the speed of visa clearances in Canada rather than the United Stated (*ibid*). Alternatively, graduate students enrolled in professional programs (such as MBAs) ranked lower tuition or living expenses as being of high importance and 'were looking for a high perceived quality of education at competitive costs' (*ibid*: 13).

Mosneage and Agergaard used two Danish Universities as case studies in their 2011 report. One of the elements they identified for the success of the campaigns were the way the university marketed themselves with a clear strategy with the University of Copenhagen (KU) wanting its students to be able to say that they chose to study there because 'KU's subject knowledge is first class' (*ibid*: 528). The University of Denmark (DTU) had a similar slogan wanting its alumni to be able to say 'I graduated from DTU – I am a problem-solver' (*ibid*: 529). In these case studies, the emphasis was on the universities' 'excellent rankings in European and global surveys' (*ibid*: 532)

because 'higher rankings are seen really count when recruiting international students' (Andersen, 2009). Rankings as well as quality, reputation and faculty would fall under the umbrella term of internationalisation in Chen's findings which discussed the importance of these elements (2007: 15).

Whereas program features and cost fall into the category of marketing factors (*ibid*) which Mosneage and Agergaard's case studies also employed. In their example universities, the strategy began targeting EU students rather than non-EU after a change to the regulations which now require Non-EU students to pay fees while EU students are able to access the same free education as Danish nationals (Mosneage & Agergaard, 2011). This strategy additionally reflects concerns about funding which feed into literature regarding international study (Harman, 2003; Chen, 2007) as well as evidence of how wider governmental policies influence how institutions are able to grow (Mosneage & Agergaard, 2011).

For those universities that do engage in a heavy marketing-based approach (Chen, 2007), Choudaha and Chang's report on trends in international student mobility shows that social media usage has becoming a strong tool for approaching prospective international students (2012). In one example they describe how a university created a page on a popular Chinese social network 'to answer questions and connect with prospective students' which received positive feedback from students appreciative of the effort to speak their language (*ibid*: 4).

What came through clearly in Chen's report is the importance of knowing one's market (2007) as the above example demonstrates. For this literature review it is key that postgraduate research students are interested in institutions that evidence strong internationalisation such as through their faculty or reputation (*ibid*) thus supervisors become the key draw for international students, many of whom they might have met at 'international conferences, seminars and presentations by guest speakers' (*ibid*: 23).

INTERDISCIPLINARITY

The literature which discusses interdisciplinary practice within academia often focuses on the definition of the term and where it fits within multi-, trans- and post-disciplinary practice (Graybill, Dooling, Shandas, Withey, Greve & Simon, 2006). For the sake of this review, interdisciplinary will be used as an umbrella term encompassing all these definitions and channeling them through this understanding that interdisciplinarity is a 'mode of curriculum design and instruction in which individual faculty or teams identify, evaluate, and integrate information, data, techniques, tools, perspectives, concepts or theories from two or more disciplines or bodies of knowledge to advance students' capacity to understand issues, address problems, and create new approaches and solutions that extend beyond the scope of a single discipline or area of instruction' (Rhoten *et al.*, 2006 as quoted by Newell, 2007). Building on this, the goal for interdisciplinary education for Graybill *et al.* is to train students in 'collaborative methods through team research' (757), which is something which the authors themselves have experienced as participants of the interdisciplinary research and training (IDRT) initiatives program at the University of Washington. Their article responds to Dubrow and Harris's (2006) analysis of the same project from an institutional perspective.

Graybill *et al.* conclude that some of the most beneficial elements of their interdisciplinary programs came from when they were able to take ownership of their own development (2006: 761). Examples of activities which promoted 'a practice of collective responsibility' came from facilitating group teaching sessions or organising workshops and conferences (*ibid*). These helped the cohort to develop 'unique scholarly identities' (*ibid*) which answers an issue Lau and Pasquini (2004) recognise interdisciplinary scholars have, that of not knowing how to identify or relate to bodies of work due to having a foot in multiple camps of thought. Ownership for PhD students comes when they are able to teach but this is something which needs to be developed as there are limited

opportunities for them to teach within an interdisciplinary setting (Dubrow & Harris, 2006: 51). The lack of clear identity is a repeating theme throughout literature discussing interdisciplinary studies with Mitrany and Stokols establishing that students who enroll in transdisciplinary research form an identity as 'transdisciplinary scientists rather than establishing narrower identities anchored in a single, traditionally defined discipline' (2005: 439). This is an assertion which reflects the ultimate goals of such programs but is not paired with any advice on how to encourage this clarity of identity which other literature such as that mentioned above claim is difficult to establish. This point elucidates a continuing tension throughout the literature on interdisciplinary studies that although there is much to be gained from such a program both for the student and the institution, creating an interdisciplinary course requires considerations on macro and micro scales to ensure that the doctoral researcher is aware of their place and the place of their research.

Another comment which continues the exploration of solutions to issues that might arise during interdisciplinary study regards best practice for encouraging and supporting interdisciplinary PhD candidates from Graybill *et al*. is that there needs to be established support throughout the university for interdisciplinary education (2006: 761-2). This is especially the case, they felt when there were 'doctoral committee members who privilege one epistemological approach over another' (*ibid*). The importance of there being a strong institutional system in place to develop interdisciplinary practice throughout the university was a common theme throughout the literature with Lélé and Norgaard remarking on how promotion of interdisciplinary programs had to be 'complemented by strategies with major institution-level changes in curricula, incentives, evaluation criteria, and accountability' (2005: 975).

While the issue of evaluation criteria is one which will be returned to later when discussing Borrego and Newswander's work (2010), Lélé and Norgaard's comment on curricula and incentives corresponds with Graybill *et al*.'s assertion that institutions must offer intellectual and financial support (2006: 761-2). The intellectual support here means offering 'intellectual arenas' across campus to assist the PhD candidates with their goals of becoming 'future leaders of interdisciplinary science' (*ibid*). This is something which Dubrow and Harris acknowledge is difficult to achieve because there are often not the resources available to sustain a 'common intellectual core' (2006: 17). With resources assigned to the issue, then intellectual arenas might be nurtured which would include a 'dedicated space, speaker series, forums for student presentations, social gatherings, and additional incentives for interdisciplinary faculty meetings' (*ibid*). The need for such a space is reiterated by the findings of the Committee of Facilitating Interdisciplinary Research who found that there should be provision to create 'academic homes' for those students from departments 'unable or unwilling to accommodate researchers doing interdisciplinary work' (2004: 97-8).

In addition to these institutional alterations, there needs to be strategies implemented which free faculty from 'some departmental responsibilities, so that they can commit time to interdisciplinary programs' (*ibid*: 51). This would allow for the increased amount of support which Graybill *et al.* called for (2006), an issue which is picked up later by Lau and Pasquini (2004). The Committee on Facilitating Interdisciplinary Research reiterates the call for more to be done by the institutions with them calling for greater 'incentives for students and researchers to interact with other disciplines and to learn other languages and cultures' (2004: 95).

Graybill *et al.* conclude with an overview of the needs they believe, as interdisciplinary PhD students who have experienced the program themselves, are needed in order to enhance interdisciplinary programs. For them 'the processes of defining our intellectual homes, navigating multiple requirements, and meaningfully describing our experiences to future employers are as much a part of our training as are conducting and completing interdisciplinary research projects and disciplinary requirements' (2006: 763). This aligns with Dubrow and Harris's assessment that interdisciplinary PhD students would benefit from the ability to participate in 'professional

development programs relevant to the careers of those trained in interdisciplinary programs' (2006: 51). Echoing Graybill *et al*.'s conclusions, Dubrow and Harris assert that;

> 'in the long run, institutional success depends on creating a climate that fosters innovation in the research and educational enterprises' (2006: 54).

Just as Graybill *et al*.'s research seeks to respond to a gap in the literature from students' perspective of taking part in an interdisciplinary program, Lau and Pasquini (2004) also look to fill with their qualitative study interviewing interdisciplinary geography PhD students at Durham University and drawing on their own experiences of studying across several departments. For their participants, true interdisciplinarity came from working in a team, although the terminology they used to describe this varied (2004). A lot of Lau and Pasquini's analysis focused around the confusion regarding the definition of interdisciplinary, as touched on at the beginning of this literature review, which they blamed for being a reason that it is difficult for departments to promote and support such work (*ibid*: 56). For instance, 'If interdisciplinary research is regarded as geography linking with other disciplines, then most of geography should be considered interdisciplinary […] If, on the other hand, interdisciplinary research is regarded as the exploration of relations between the categories 'natural sciences', 'social sciences' and 'humanities', then the picture becomes a lot more complicated. (Lau & Pasquini, 2004: 56)'.

Part of the complications can be the difficulty communicating with one's own supervisors with whom a student may hold fundamentally different premises, which may not become apparent until the thesis stage of the PhD (*ibid*: 59). Though the participant acknowledged that this can occur with monodisciplinary students as well, it is possible to assume a shared base with a monodisciplinary student where it is not so with an interdisciplinary student, which can cause a rift in the working relationship (*ibid*). In best practice, this is an issue which supervisors and students should be aware of and work to remedy with improved communication. Additionally, interdisciplinary supervisors may need to be allocated more time from their departments to support their students as it can be a 'challenge' to keep up with interdisciplinary PhD students (*ibid*: 60). Such challenges include knowing where to direct them across departments if they need guidance in areas that the supervisor is unfamiliar with all the way to the selection of examiners (*ibid*). These issues make matters 'more complicated, but not necessarily more difficult if you get it right' (*ibid*) but getting it right might be facilitated by the formation of a better network on contacts for the supervisor to draw upon, which would be nurtured by an institution-wide environment of interdisciplinary research. Again, the issue of institutional support is brought up with recognition and rewards required for staff who are teaching outside their departments (Committee on Facilitating Interdisciplinary Research, 2004: 95).

An additional issue raised by Lau and Pasquini reflects concerns that Graybill *et al.* (2006) had regarding academic employability and experience is that interdisciplinary journals 'have very little standing so any interdisciplinary research is counted as very low grade' (Lau & Pasquini, 2004: 61) partly because 'the interdisciplinary researcher is seen as 'jack of all trades and master of none' (*ibid*: 62), which is an attitude that needs to be addressed in order for interdisciplinary projects to flourish. Mitrany and Stokols also show a concern for the standing of interdisciplinary researchers who must navigate developing depth of knowledge as well as breadth while worried that 'training in transdisciplinary fields will not prepare them for long-term success in their academic careers' (2005: 440). Though it is worth noting that although graduates of such programs conclude that the interdisciplinary nature of their study has 'adverse effects on their careers, they are convinced of the value of [interdisciplinary research]' (Committee on Facilitating Interdisciplinary Research, 2004: 66). It is worth noting here that the careers discussed revolve around an expectation that the doctoral researchers should wish to stay within academia whereas more recent research shows that the greater number of doctoral researchers seek employment

elsewhere upon graduation (see Vitae.ac.uk for statistics relating to the United Kingdom) and for them the interdisciplinary study is an added point of value on their research degrees.

Lack of standing might be connected to the 'lack of concise assessment criteria tailored to interdisciplinary studies' (Mitrany & Stokols, 2005: 440) which was alluded to earlier in Lélé and Norgaard's work (2005). Mitrany and Stokols draw upon suggestions for such criteria from Kahn (1993), Nash *et al.* (2003), Pellmar and Eisenberg (2000), Rosenfield (1992) and Stokols, Fuqua *et al.* (2003). They suggest that a successful interdisciplinary thesis contain 'integrative conceptual frameworks' and 'the diversity of research methods used' (Mitrany & Stokols, 2005: 441). Alternatively, Boix Mansilla, Durasingh, Wolfe and Haynes suggested ten judgements grouped into four categories; purposefulness, disciplinary grounding, integration and critical awareness (2016: 339).

Borrego and Newswander similarly address the lack of 'archival literature identifying learning outcomes, methods, or benchmarks for assessing interdisciplinary graduate programs and associated student learning' (2010: 61-2) although they acknowledge that Anthony, Palius, Maher, & Moghe (2007), Cowan & Gogotsi, (2004), Martin & Umberger, (2003) and Richards-Kortum, Dailey, & Harris (2003) have all made strides in this area. Borrego and Newswander's work focuses on establishing learning outcomes for interdisciplinary programs which they believe to be a key starting place for successful graduate programs (2010: 62). They did this by analysing successful funding proposals to assess the key objectives for interdisciplinary study. The study resulted in five categories of learning outcomes; disciplinary grounding, integration, teamwork, communication and critical awareness (2010) which should be kept in mind for all interdisciplinary program planning.

INTERSECTORALITY

Literature which discusses intersectoral projects often focuses on the benefits of intersectoral cooperation for academics and industry such as Boardman (2009), Lee (2000) and Siegel (2011), and occasionally the negatives (Anderson, 2001) with little directly relating to best practice for graduate programs. Boardman (2009) and Anderson (2001) respectively talk about political issues with intersectoral research with Boardman considering governmental run programmes and what they imply for researchers and academics. While Anderson considers the issues of patents and industry restricting academic publishing because of them.

Other literature in the field, such as D'Este and Patel (2007) focuses on the benefits of engaging in intersectoral work for academics and the profile of those who partake in such research. They note, for instance, that younger academics are more likely to engage in intersectoral work as this is increasingly perceived as positively contributing to one's reputation (2007: 1309). Throughout their work D'Este and Patel provide a few suggestions for best practice in this field, primarily that support needs to be maintained for a variety of channels not just easily commercialised activities (2007: 1310) in order to encourage growth of intersectoral partnerships.

In their 1999 report the Government-University–Industry Research Roundtable (GUIRR) identified gaps in the current literature regarding best practice for intersectoral projects which require further study, these are 'development of "accepted standards" for university and industry technology transfer' (1999: 14), development of 'a statement on acceptable indirect cost policies in university-industry research' (*ibid*: 15), development a statement on the responsibilities of industrial partners in research collaboration (*ibid*) and research into effective practices in research collaboration (*ibid*). Some of these areas have begun to be investigated with 'research funders, researchers, and research exploiters [seeking] to identify practical and robust metrics which can be used to evaluate the level and effectiveness of university-industry relationships' (Butcher & Jeffrey, 2007: 1240).

Barnes, Pashby and Gibbons are examples of the researchers examining these issues raised by the GUIRR and they offer a selection of attributes which intersectoral partnerships must adhere to in order to achieve a satisfying outcome for both parties (2002). These are commitment to the project, trust from both partners which includes an open flow of information, continuity of personnel and an understanding of project process and tangible outcomes (*ibid*) which amounts to expectation management on both sides so that the corporate partner does not become frustrated with 'slow progress' (*ibid*: 280). Other suggestions they make include establishing a method of partner evaluation, ensuring effective communication and good management lead the project, the ability to be flexible enough to react to changes while also maintaining the interest and commitment of both parties in order to reach a successful outcome which is of mutual benefit to both parties (*ibid*: 282).

Butcher and Jeffrey then reiterate these findings in their 2007 work. Using a survey to interview over 300 PhD students (*ibid*), they drew upon literature that outlined the most common aspects of a successful partnership, many of which are in line with findings from Barnes, Pashby and Gibbons (2002). These included the importance of mutual trust (Schartinger et al., 2002; Rappert et al., 1999; Senker et al., 1998), good project management (Starbuck, 2001; AURIL, 1997), mutual understanding of motivations and needs (Brannock and Denny, 1998; Konecny et al., 1995), clearly defined expectations (Barnes et al., 2002; Burnham, 1997), good communication (BHEF, 2001; AURIL, 1997; NAS, 1997) and agreement of project roles and responsibilities (BHEF, 2001; Starbuck, 2001) which align closely with the findings discussed previously (Butcher & Jeffrey, 2007: 1242). Interestingly they also raise a point about the necessity of close alignment between interests and expertise of the collaborating parties which draws on work by Molina et al. (1997). This latter point correlates with Butcher and Jeffrey's findings, that 'a large proportion of successful [intersectoral cases] involve partners who have worked together before, supervisors who both have a very good understanding of the work and have very high enthusiasm for the project' (2007: 1245).

Barnes, Pashby and Gibbons also discuss the role of PhD students within a collaboration, an area which is vastly under-represented within the literature (Butcher & Jeffrey, 2007). Within their work, Barnes, Pashby and Gibbons explain that often the doctorate students' role within a project does not take into consideration the requirements of completing a PhD and therefore their ability 'to add value to the project was significantly diminished' (2002: 281). Barnes, Pashby and Gibbons cite examples of doctoral researchers who suffered due to frequently changing or unclear project objectives (*ibid*) or because of pressure to produce results quickly which is often 'an indication of a much wider problem' within the project itself (*ibid*). A lack of understanding about PhD research from the industrial partner may be the root cause of this (*ibid*) and as such the issue might be remedied by setting 'clearly defined objectives […] based on well researched and empirically-supported facts' (*ibid*: 181-2). Here it is worth noting that Barnes, Pashby and Gibbons are approaching this topic from an engineering perspective but many of their suggestions can be adapted to social science needs, too.

As previously mentioned, there is not much literature which focuses on the role of PhD students within an intersectoral context, an exception being Butcher and Jeffrey (2007), discussed above, or Starbuck's work which considers the training which the 'internal managers of university projects' (Barnes, Pashby & Gibbons, 2001: 42) receive. This training should encompass; 'rules of engagement with university administrators and faculty members. Role of meetings in the two organizations. Decision-making differences between company and university. Integration of university schedules into company stage-gate process' (*ibid*). Additionally, there should be legal provision made for the likelihood of intellectual property resulting from the project (*ibid*). Implementing these measures can, Starbuck asserts, ease the process of collaborations between academia and industry. At the beginning of the project the PhD student working within the partnership should be 'they should be apprised of the negotiated overall scope/goals of the effort and of any secrecy and intellectual property expectations and their implications' (*ibid*: 43).

Carton and Ungureanu's 2017 contribution to the literature is interesting for this review because it focuses on the identities formed by academics working in industry, scholar-practitioners as they referred to them. Throughout the interviews they conducted, Carton and Ungureanu discovered that the interviewees had a blurred perception of their identity which led to tensions and resulted in each person having to find their own coping strategies to balance these tensions (2017: 441). These coping strategies might be beneficial for PhD candidates who find themselves in similar roles. These tensions begin with academic and industry managers both seeking to assert their priority on the scholar-practitioner (*ibid*: 443) and result in three strategies developing; role (re)ordering, role interspacing and temporary role bundling (*ibid*: 444).

Additionally, Carton and Ungureanu mention that most scholar-practitioners began their careers focusing on teaching and publishing but changed priorities when they became more involved in practical application (*ibid*: 444-5) which offers a point of consideration for PhD students embarking on an intersectoral study - what might they miss out on from the typical PhD experience while they are focusing on the requirements of industry or the public sector?

In the Fall of 2018 a questionnaire was sent to all project partners asking them to provide descriptive summaries of those activities, procedures and standards that they considered to be good examples for fostering the Triple-I features of doctoral education at their institution. The questionnaire was structured into 4 areas in which such best-practices could be identified:

1) Recruitment and admission of doctoral candidates
2) Curriculum and program design
3) Supervision and student support
4) Organization of the graduate school

Project partners were able to list any number of examples for each area and each of the Triple-I dimensions, that is to say best-practices that contribute to the internationalization of graduate education, its interdisciplinary character, and intersectoral collaboration in the area. The answers to the questionnaire were summarized and shared during the transnational project meeting in October 2019 in Budapest. The following section has been developed based on the responses of project partners to the questionnaire and reports examples in a similar structure, with the addition of groupings that cluster similar activities under the one category. Best-practices were formulated generally, and if appropriate, examples from project partners are provided as well. For each mentioned best-practice, we specify the number of project partners where the practices is avaiable and also make an attempt to distinguish between activities (i.e. course of action taken to achieve a particular purpose), projects (i.e. activities that partially depend on external funding and which are usually delivered over fixed period of time), and standards (i.e. required or agreed levels of expectation defined in institutional policies). It is important to note, that in some cases, these activities are organized and managed by the graduate schools themselves, while in others, they are run by other units of the university, but made available to students and faculty members of the graduate school.

Table 1: List of graduate schools (and their classification) that provided examples of Triple-I practices

Name of the university	Graduate institution	Acronym	Type: U/T[5]
University Leipzig	Graduate School Global and Area Studies	GSGAS	T
University of Helsinki	Doctoral School in Humanities and Social Sciences	HYMY	U
Central European University	Doctoral School of Political Science, Public Policy and International Relations	DSPS	T
Heidelberg University	Heidelberg Graduate School for the Humanities and Social Sciences	HGGS	T
KU Leuven	Leuven International Doctoral School for the Humanities and Social Sciences	DSHSS	U
Loughborough University	Loughborough Doctoral College	LDC	U
Université de Versailles Saint-Quentin-en-Yvelines	Ecole Doctorale Sciences de l'homme et de la Société	UVSQ	U/T

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[5] Graduate schools as umbrella organisations (U) serve as a network for several doctoral programmes and are not involved or only partially organize the training of the doctoral candidates. Thematically oriented graduate schools (T) are directly responsible for doctoral education.

Institute of Philosophy and Sociology of the Polish Academy of Sciences	Graduate School for Social Research	GSSR	T
Erasmus University Rotterdam	Erasmus Graduate School of Social Sciences and the Humanities	EGSH	U

OVERVIEW OF THE INVENTORY

The participating nine graduate schools provided a large number of examples, which were reviewed and categorized to obtain a final list of 101 distinct best-practices for fostering the Triple-I character of doctoral education. Most reported practices were in the area of internationalization (36) and interdisciplinarity (36), while the least in intersectorality (28) (Figure 1). As regards the distribution of activities between the four areas of the questionnaire, the most practices were reported in the area of curriculum and program design (30), closely followed by recruitment and admission of doctoral candidates (29) and organization of graduate schools (26). Graduate schools reported the least number of activities with regards to supervision and student support (15). The detailed breakdown of reported examples by area and the Triple-I dimensions is presented in Figure 2, 3, and 4[6].

FIGURE 1: DISTRIBUTION OF THE NUMBER OF TRIPLE-I EXAMPLES

- Internationalisation
- Interdisciplinarity
- Intersectorality

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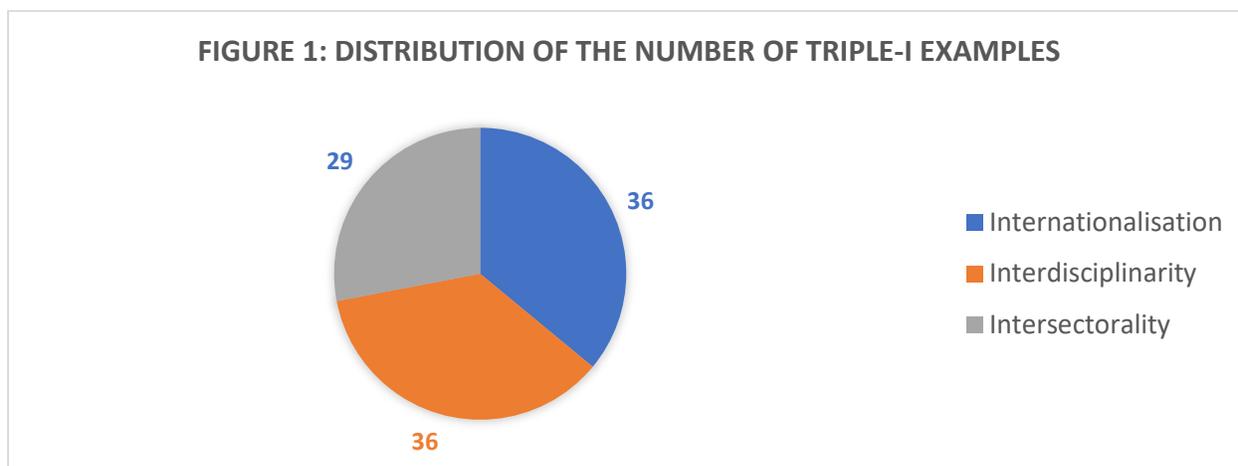
[6] Note that in some cases a graduate school may not be listed as observing a certain practice while the practice may well be available elsewhere in the institution to which the GS belongs.

FIGURE 2: NUMBER OF LISTED EXAMPLES IN THE AREA OF INTERNATIONALISATION

3
5
18
10

- Recruitment and admission
- Curriculum and program design
- Supervision and student support
- Organization of the graduate school
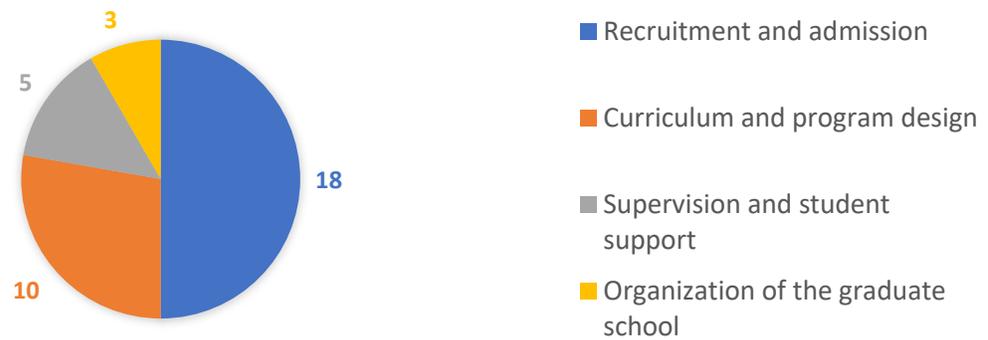
FIGURE 3: NUMBER OF LISTED EXAMPLES IN THE AREA OF INTERDISCIPLINARITY

4
14
12
6

- Recruitment and admission
- Curriculum and program design
- Supervision and student support
- Organization of the graduate school
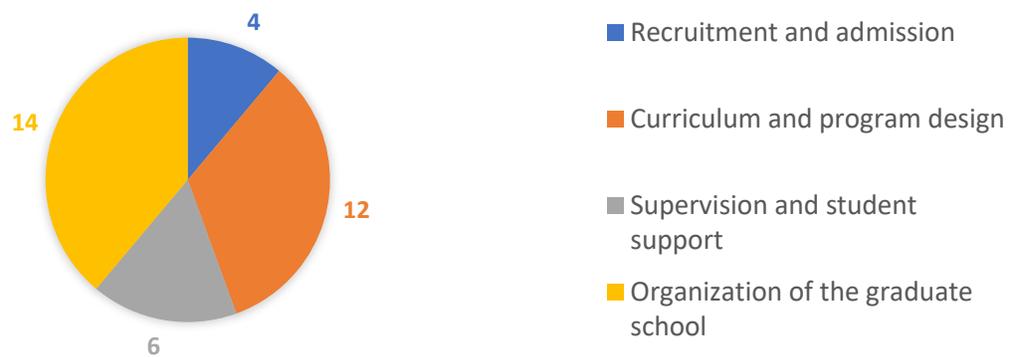
FIGURE 4: NUMBER OF LISTED EXAMPLES IN THE AREA OF INTERSECTORALITY

7
9
4
8

- Recruitment and admission
- Curriculum and program design
- Supervision and student support
- Organization of the graduate school

Recruitment and admission				
Promotion of PhD programmes				
1	Activity	Having **program descriptions** for applicants available **in English** or other foreign languages on the university's **website**. Example: PhD Course Guide on EGSH's website, Campus France		HYMY (U), DSHSS (U), EGSH (U), UVSQ (U), GSGAS (T), HGGS (T), GSSR (T), DSPS (T)
2	Activity	**Advertising PhD positions on international websites** (e.g. Euraxess, Campus France, Jobs.ac.uk, PhD Germany).		DSHSS (U), UVSQ (U), HYMY (U), LDC (U), GSGAS (T), HGGS (T), DSPS (T)
3	Activity	Maintaining a tailor-made **contact list** of international academics who visited the university and of alumni. People on the list are contacted once the recruitment campaign starts.		DSPS (T), HGGS (T)
4	Activity	Participating in **webinars to promote the PhD programmes** of the school.		DSPS (T)
5	Project	Participating in **site visits** and **educational fairs** at foreign institutions to establish contacts with potential applicants. Example: Campus France		UVSQ (U), LDC (U), EGSH (U), HGGS (T), GSSR (T), DSPS (T)
6	Activity	Establishing **contact with potential applicants, who started the application process** but seem to have abandoned the completion of it.		DSPS (T), GSSR (T)
7	Activity	Collaborating closely with university offices and **public bodies** that work on the internationalization of higher education.		LDC (U), DSHSS (U), UVSQ (U), HGGS (T)
Application and enrollment of foreign students				
8	Standard	Marking **PhD scholarships available to all applicants**, irrespective of their citizenship.		LDC (U), DSHSS (U), HYMY (U), UVSQ (U), DSPS (T),

			GSSR (T), HGGS (T)
9	Standard	**Reserving a number of places** for applicants from different regions and/or social backgrounds.	DSHSS (U)
10	Project	Offering **dedicated PhD scholarships** for international students.[7]	DSHSS (U), UVSQ (U), GSGAS (T), HGGS (T)
11	Standard	Enabling applicants to go through the **application process** (e.g. developing a research proposal, filling out the application form, interviewing candidates, etc.) **in English or other foreign languages**.	HYMY (U), DSHSS (U), UVSQ (U), GSSR (T), GSGAS (T), HGGS (T)
12	Activity	Maintaining a **service** (e.g. e-mail exchanges, phone calls, personal consultation) **for answering inquiries from foreign students**, who want to learn more about application process.	HYMY (U), DSHSS (U), EGSH (U), HGGS (T), GSGAS (T), GSSR (T)
13	Activity	Offering **online tools that help international students find professors**, researchers and potential supervisors at the doctoral school. Example: Research Portal TUHAT	HYMY (U), EGSH (U), HGGS (T)
14	Project	Organizing **a short-term stay** of international applicants at the university **for a personal meeting** with professors and potential supervisors. Example: project funded by DAAD IPID4all „Global Areas".	GSGAS (T)
15	Activity	Creating an **online tool for advising incoming international PhD students** arriving and setting in to a new country. Example: Uni Arrival Advisor at University of Helsinki, e-International Welcome Office at UVSQ	HYMY (U), DSHSS (U), UVSQ (U)
16	Activity	Disseminating **practical information to incoming students** to help them settle in to a new environment. Example: PhD Handbook at EGSH, Step-by-step calendar at UVSQ, A Getting started programme at EGSH	EGSH (U), UVSQ (U), HYMY (U), DSHSS (U), HGGS (T), GSGAS (T)
17	Activity	Organizing **orientation sessions for incoming international students** to acquaint them with the university.	LDC (U), DSHSS (U), EGSH (U),

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[7] The DAAD (German Academic Exchange Service) awards the HGGS scholarships for international applicants.

			HYMY (U), HGGS (T), GSGAS (T)
		Onboarding of international faculty	
18	Activity	Maintaining a **service for international scholars to support their arrival and settling in** at the university. Example: Welcome Center to which HGGS have access to	DSHSS (U), EGSH (U), UVSQ (U), HYMY (U), HGGS (T), GSGAS (T)
Curriculum and program design			
		International PhD programmes	
19	Project	Creating **joint degree/double degree/co-tutelle** PhD programmes, whereby part of the programme takes place at a foreign institutions. Example: Global PhD Partnerships at DSHSS, Global Minds Doctoral Scholarship Programme at DSHSS, PhDnet	DSHSS (U), HYMY (U), UVSQ (U), GSSR (T), HGGS (T), GSGAS (T)
20	Project	Developing **e-learning** opportunities (e.g. MOOCs) as means to a more flexible and accessible learning experience for international students.	EGSH (U), DSHSS (U), HYMY (U), HGGS (T)
		International programme elements	
21	Activity	Organizing **seminar series, workshops**, or similar events for PhD students with the participation of international guest lecturers.	HYMY (U), LDC (U), HGGS (T), GSSR (T), GSGAS (T)
22	Activity	Encouraging participation of PhD students in **international research projects**.	LDC (U), GSSR (T), HGGS (T)
23	Activity	**Inviting** graduate students from affiliated international universities to participate in the university's core courses.	HGGS (T), GSGAS (T)
		International mobility of PhD students	
24	Standard	Determining requirements for **international mobility** and participation at international conferences for PhD students as integral parts of their program.	HYMY (U), DSHSS (U), GSSR (T), HGGS (T), GSGAS (T)
25	Activity	**Dedicating funds for international mobility** (e.g. travel grants, conference allowance) of PhD students which enable them to spend research periods at foreign universities, conduct field work for their research topic, or participate at conferences.	LDC (U), HYMY (U), DSHSS (U), UVSQ (U), GSGAS (T),

26	Project	Supporting PhD students in acquiring t**eaching experience** at foreign universities. Example: Global Teaching Fellowship Program at DSPS	DSPS (T)
27	Activity	**Validating/certifying courses taken abroad** at foreign institutions or research centers by PhD students.	DSHSS (U), HYMY (U), HGGS (T), GSGAS (T)
28	Activity	**Collecting and sharing** information about travel grants and international conferences with PhD students.	DSHSS (U), EGSH (U), HGGS (T), GSGAS (T)

Supervision and student support			
Supervisory process			
29	Project	Developing a better understanding of different supervision and educational needs of PhD candidates. Example: **Diversity project** at EGSH.	EGSH (U)
30	Standard	Developing **formal agreements** between the PhD student and his/her supervisor to specify expectations that might be different based on the students' cultural background. Example: Training and Supervision Plans at EGSH.	LDC (U), DSHSS (U), EGSH (U), UVSQ (U), HYMY (U), GSGAS (T)
31	Activity	Encouraging **co-supervision** of PhD students by academics from foreign universities.	UVSQ (U), DSHSS (U), HGGS (T)
32	Activity	Including academics from foreign universities into the **supervisory panel** of the doctoral student.	UVSQ (U), DSHSS (U), HYMY (U), DSPS (T), HGGS (T)
Assessment			
33	Standard	Involving **international examiners in the defense committees** of PhD students.	DSHSS (U), UVSQ (U), DSHSS (U), EGSH (U), HYMY (U), HGGS (T), DSPS (T)

Organization of the graduate school			
Policies and strategies			

34	Activity	**Forming a transversal team to work on the institutional policy for internationalization and international partnerships** (e.g. establishing co-tutelle agreements, mobility opportunities for students, promote the PhD programmes abroad, maintain and develop relations with foreign universities)	UVSQ (U), DSHSS (U), GSGAS (T)
		Organizational incentives	
35	Standard	**Rewarding** academic staff members for winning international project grants.	EGSH (U)
		Networking	
36	Activity	Participating in international partnerships and **consortiums**. Example: GRADNET at DSPS, Europaeum Scholars Programme	DSHSS (U), EGSH (U), HYMY (U), HGGS (T), DSPS (T), GSGAS (T)

INTERDISCIPLINARITY

Recruitment and admission			
		Application and enrollment	
37	Standard	Making **PhD positions open to all interested candidates** from the humanities and social sciences, and if justified, also to students from other disciplinary areas.	LDC (U), DSHSS (U), HYMY (U), HGGS (T), DSPS (T), GSSR (T), GSGAS (T)
38	Activity	Offering **specific studentships/scholarships in interdisciplinary research topics**, which cross over disciplines with supervisors drawn from different areas.	LDC (U), DSHSS (U), UVSQ (U), DSPS (T), HGGS (T)
39	Standard	Assigning the evaluation of PhD applicants to an **interdisciplinary committee**.	HYMY (U), GSSR (T)
		Onboarding of faculty	
40	Activity	Favoring lecturers to be employed with a pronounced **interdisciplinary interest** for their PhD courses.	HGGS (T)
Curriculum and program design			
		Interdisciplinary PhD programmes	

41	Activity	**Organizing doctoral programmes thematically** around topics and based on overlapping research interests that require an interdisciplinary approach. Example: Thematic Clusters at HGGS (e.g. space-place-mobility; culture-identity-discourses; knowledge-norms-beliefs)	HYMY (U), EGSH (U), HGGS (T), GSGAS (T)
42	Activity	Developing flexible PhD **study plans/curriculum** that help candidates select courses that suit their disciplinary interests. Example: PhD trajectory plan at EGSH, Thessa at HYMY	EGSH (U), HYMY (U), DSHSS (U), HGGS (T), GSSR (T)
	Interdisciplinary programme elements		
43	Activity	**Dedicating funds** for interdisciplinary training initiatives, workshops, seminars and lectures organized by faculty members from different departments.	DSHSS (U), LDC (U), DSPS (T), HGGS (T)
44	Activity	Organizing **joint events** (e.g. annual conferences, summer schools, workshops, seminars, and colloquium) **that bring PhD students, supervisors, and faculty members from different disciplines together**. Example: SKY MEET at HYMY, doctoral colloquia and working group meetings at GSGAS, Academic Doctoral Conference and Departmental Seminars at DSPS, Workshops on interdisciplinarity at HGGS	HYMY (U), LDC (U), DSHSS (U), GSGAS (T), DSPS (T), HGGS (T), GSSR (T)
45	Activity	Structuring joint events **thematically** to allow perspectives on the respective topic from different disciplinary backgrounds. Example: Summer School at GSGAS	LDC (U), EGSH (U), UVSQ (U), HGGS (T), GSGAS (T)
46	Project	Organizing **community events** that promote interdisciplinary work and collaboration at the university. Example: Exchange days at UVSQ	UVSQ (U), EGSH (U), HGGS (T)
	Project	Organizing public events with PhD students on **socially relevant topics**. Example: #metoo event at EGSH	EGSH (U)
47	Activity	Offering **university-wide** training and support for PhD students to enable networking between peers from different departments. Example: YouReCa at DSHSS	DSHSS (U), HYMY (U)
48	Project	Allowing **PhD students from different disciplines to come together and form a joint proposal for an academic activity** (workshop, seminar, conference) that will be funded by the university. Example: Peer Mentoring scheme at HGGS	LDC (U), DSHSS (U), EHSH (U), HGGS (T)

49	Project	Organizing **practical courses or projects** that require collaboration among PhD students and interdisciplinary solutions to given problems/challenges in society. Example: Doctor' Preneuriales" seminar at UVSQ	UVSQ (U)
50	Activity	Organizing **courses that offer an overview of relevant research methodologies** across social sciences. Example: Deans Masterclasses at EGSH, Research Methods – Theory and Practice at HGGS	EGSH (U), LDC (U), DSHSS (U), HGGS (T), GSGAS (T)
51	Activity	Organizing **interdisciplinary courses** to PhD students that offer an overview of concepts, theories and methodologies relevant for social science researchers. Example: Research Seminars at GSGAS	LDC (U), EGSH (U), GSGAS (T), HGGS (T)
52	Activity	**Making courses open** to all PhD students irrespective of the disciplines in which they undertake their research.	LDC (U), DSHSS (U), EGSH (U), UVSQ (U), HYMY (U), HGGS (T), GSSR (T)

Supervision and student support

Supervisory process

53	Standard	Selecting supervisors for PhD students on the basis of a recommendation from an **interdisciplinary committee**.	GSSR (T)
54	Activity	Encouraging/allowing PhD students to have **multiple supervisors**, some of which can be from different disciplinary backgrounds, especially in cases where the student's research topic is interdisciplinary.	HYMY (U), UVSQ (U), LDC (U), DSHSS (U), HGGS (T)
55	Activity	Forming interdisciplinary **thesis committees/supervisory panels** to guide the study of the PhD student.	UVSQ (U), DSHSS (U), HYMY (U), DSPS (T), GSGAS (T),
56	Activity	Organizing **training courses for supervisors** on a university level which facilitates their interaction with peers from different faculties.	HYMY (U), LDC (U), DSHSS (U)

Assessment

57	Activity	Organizing **PhD thesis defense** in the student's chosen discipline and in a subsidiary subject.	GSSR (T)

58	Activity	Making interdisciplinarity a **criterion** for the evaluation of PhD students' work in graduate conferences and competitions. Example: Annual Graduate School Award for PhD Excellence at EGSH	EGSH (U)

Organization of the graduate school

		Governance	
59	Standard	Establishing a **governance framework**, whereby disciplinary fields/units are equally represented and can exercise oversight over curricular issues. Example: Steering committee at HYMY, Program Boards at EGSH, Leadership based on rotation at DSPS	DSHSS (U), HYMY (U), EGSH (U), EGSH (U), DSPS (T), HGGS (T), GSSR (T)
60	Activity	Maintaining **efficient communication** channels with the representative board members of the graduate school.	EHSH (U), HYMY (U), HGGS (T)
61	Activity	Offer stimulating **leadership** and develop strategic goals that can ensure disciplinary balance in the school's core team.	EGSH (U)
62	Activity	Ensure the **representation** of PhD students from different disciplinary areas in the school's governance bodies. Example: PhD Council at EGSH	UVSQ (U), LDC (U), EGSH (U), DSPS (T), HYMY (U), HGGS (T), GSGAS (T)
		Organizational incentives	
63	Activity	**Dedicating funds for interdisciplinary research projects**, which can also include positions for PhD students on those topics. Example: Research Excellence Initiatives at EGSH, IdEx Interdisciplinarity Initiative at UVSQ, Laboratories of Excellence at UVSQ	DSHSS (U), LDC (U), EGSH (U), UVSQ (U), DSHSS (U), DSPS (T), HGGS (T)
64	Activity	Promoting training on interdisciplinary perspectives by **federating the training resources** of the research units.	UVSQ (U), LDC (U)
65	Activity	**Supporting the work of interdisciplinary research groups or units** who engage PhD students in their work. Example: LinX-SHS Interdisciplinary Laboratory of the Polytechnic School of Humanities and Social Sciences at UVSQ, Peer Mentoring scheme at HGGS	UVSQ (U), HGGS (T)
66	Project	Offering **full fellowships** for PhD students to encourage interdisciplinary research projects.	UVSQ (U), LDC (U)

		Example: GS SHS fellowship at UVSQ	
67	Activity	Offering **teaching waivers** for faculty members from different faculties of the university, who engage in delivering interdisciplinary courses at the graduate school.	HGGS (T)
68	Activity	Supporting **co-teaching** of courses by faculty member from different disciplinary backgrounds. Example: University-wide Courses at DSPS	DSPS (T), HGGS (T), GSGAS (T)
		Networking	
69	Project	Collaborating with **interdisciplinary research centers/groups** who can provide support and guidance to PhD students. Example: The Collaborative Research Centre 933, which signed an agreement with the HGGS	HGGS (T)
		Policies and strategies	
70	Activity	Promoting interdisciplinary doctoral education through the institution's **strategies and policies**.	DSHSS (U), LDC (U), DSHSS (U), EGSH (U), HYMY (U), HGGS (T)
		Research management	
71	Activity	Specifying **research areas** which can serve as a platform for interdisciplinary research and training activities. Example: Fields of Focus at HGGS	HGGS (T)
72	Project	Establish interdisciplinary **research and service units** that can effectively engage in the organization of interdisciplinary seminars and trainings. Example: House of Human and Social Sciences at UVSQ	UVSQ (U)

INTERSECTORALITY

Recruitment and admission			
		Application and enrollment	
73	Activity	Offering a **short term programme** (one year) to fill in gaps in the academic background of acceptable applicants before they start the PhD.	LDC (U), DSHSS (U), GSSR (T), GSGAS (T)

74	Activity	Offering **dedicated PhD programmes** in applied and professionally oriented areas (e.g. performing arts). Example: Codarts at EGSH	EGSH (U), DSHSS (U)
75	Project	Offering **collaborative PhD programmes or studentships** that require close interaction between universities, public research laboratories, private companies, public bodies and NGO's. Example: Industrial Research Training Agreements (CIFRE) at UVSQ	UVSQ (U), LDC (U), DSHSS (U)
76	Activity	Allowing PhD students to undertake their **studies as a part-time project** beside their professional work outside of academia.	HYMY (U), DSHSS (U) EGSH (U)
77	Activity	**Accepting proposals** on research topics related to the applicant's professional expertise from his/her previous work experience.	HYMY (U), DSHSS (U) EGSH (U), HGGS (T)
		Promotion of PhD programmes	
78	Activity	**Targeting working professionals** and facilitating their re-entry into academia by making the study programme compatible with their career goals.	HGGS (T)

Curriculum and program design

Programme elements that foster intersectoral mobility

81	Activity	Offering **courses and training modules on transferable skills** that prepare PhD students for jobs outside academia. Examples: Writing for a General Audience, Presentation skills, Work-life balance and time management, Entrepreneurship	HYMY (U), DSHSS (U), EGSH (U), UVSQ (U), DSPS (T), HGGS (T)
82	Standard	Devoting a **percentage** of the PhD students study plan to learning various transferable skills (e.g. communication skills, pedagogy skills, research leadership, career planning).	HYMY (U), DSHSS (U) EGSH (U), HGGS (T)
83	Activity	Organizing **competitions** for PhD students that foster their transferable skills. Example: My thesis in 180 seconds at UVSQ	UVSQ (U), DSHSS (U), DSPS (T)
84	Activity	Fostering PhD students' ambition to **establish knowledge-intensive enterprises** by providing targeted training modules and services at the university. Example: Innovate, Protect, Spin it off & Start it up at HYMY, Doctor'Preneuriales project at UVSQ, Leuven Community for Innovation driven Entrepreneurship at DSHSS, Course on Entrepreneurship or How to turn scientific projects into innovations at HGGS	HYMY (U), UVSQ (U), DSHSS (U), HGGS (T)

85	Project	Educating PhD students about the way their **research has (societal) impact** and how it can be defined and evaluated. Example: Impact Clinic at University of Helsinki	HYMY (U), LDC (U), EGSH (U)
86	Activity	**Inviting experts** from private and public sectors to deliver workshops or seminars at the Graduate Academy and meet PhD student with whom they can share ideas about careers outside of academia.	EGSH (U), HYMY (U), HGGS (T)
87	Activity	Organizing **study trips** for PhD students to gather insights about real life societal problems and meet with representatives dealing with these issues (e.g. ministries, public servants, NGOs). Example: Study trips at GSGAS	GSGAS (T)
88	Activity	Offering **formal recognition** of PhD students' skills and competences in the form of credits or a separate certificate. Example: Skill Passport at DSPS	DSHSS (U), EGSH (U), DSPS (T), HGGS (T)

Supervision and student support

Supervisory process

89	Activity	Forming **thesis committees/supervisory panels** that can include mentors from outside of academia to guide the work of the PhD student and provide career advice.	DSHSS (U), HYMY (U), DSHSS (U), LDC8 (U)

Support services

90	Activity	Offering **educational services** to private companies or public authorities (e.g. courses in research methods). Example: Courses offered to the Belgian Court of Audit by EGSH	EGSH (U)
91	Activity	Establishing **career planning services** for PhD students that can support their placement outside of academia. Example: CV review at DSHSS	HYMY (U), LDC (U), DSHSS (U), DSPS (T), HGGS (T)
92	Activity	**Sharing information** on job openings both in academia and outside with PhD students.	HGGS (T)

Organization of the graduate school

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[8] In case of collaborative PhD studentships

		Governance	
93	Activity	Including representatives of companies and working professionals in the **council** of the school or the **advisory board** of PhD programmes.	UVSQ (U), GSSR (T)
94	Activity	Establishing special **advisory bodies with representatives from the world of work** to strengthen intersectoral cooperation. Example: External Stakeholders Council at DSHSS	DSHSS (U)
		Organizational incentives	
95	Activity	**Rewarding** staff members for participation in educational activities (e.g. with 40 working hours of their total workload).	EGSH (U)
96	Activity	**Dedicating funds** for research activities and projects with a potential to leverage contract research with industry, government or other societal operators or founding a spin-off companies.	DSHSS (U)
97	Activity	Supporting the work or **research groups and centers** that cooperate closely with external partners (e.g. private and private enterprises, governmental bodies) and can offer transformative knowledge to PhD students. Example: The research institute 'DRIFT' at EGSH	EGSH (U)
		Policies and strategies	
98	Standard	Promoting intersectoral cooperation in the institution's **strategies and policies**, which enables for new initiatives to emerge.	EGSH (U), LDC (U)
		Networking	
99	Activity	Supporting **meetings and networking opportunities** for PhD students with alumni and/or representatives of companies, to promote their career opportunities outside academia. Example: PhD career talks at DSHSS, PhD Career Day at EGSH, Doctor'Preneuriales seminars at UVSQ, LinkedIn group at UVSQ, PhD Talent Career Fair at UVSQ	DSHSS (U), EGSH (U), UVSQ (U), LDC (U)
100	Activity	**Cooperating** with external partners to deliver joint activities. Example: Cooperation with DEMOS and UH Business Team at HYMY	HYMY (U), HGGS (T)
101	Project	Establish **collaborative projects** with private companies that helps PhD students become familiar with concrete problems companies are dealing with and the companies gain new insight into the scientific process and what it can offer. Example: COHU project at University of Helsinki	HYMY (U), LDC (U)

The catalogue entails a list of best-practices for fostering the international, interdisciplinary and intersectoral character of doctoral education in the social sciences and humanities, as reported by the participating graduate schools. Because each school operates in distinct regulatory environments, has different historical trajectories, and operates with varying levels of resources, it would be impossible to provide a single model that would fit each European graduate school. Although some commonalities are obvious, based on how many schools reported a specific activity, the inventory aims to provide a wide range of options from which other graduate schools and universities can pick and choose.

Once the inventory was reviewed by all project partners, each institution nominated a practice they considered worthy of transposing to other schools and also selected one which they perceived to be important for taking over for their own school. Following this simple exercise, a short-list of best-practices was established, which later became the basis for selecting the 9 practices that are reviewed in the subsequent section.

SECTION III: BEST-PRACTICES IN ACTION

SITE VISITS OF GRADUATE SCHOOLS

Using the inventory as the starting point, the project partners engaged in an active collaboration to learn more about the way Triple-I training is stimulated, organized and managed at various graduate schools. The transnational project meetings in Paris, Budapest, Heidelberg, and Helsinki were structured in a way that allowed the host graduate school to showcase their best-practices in the areas of the Triple-I and allowed other participants to inquire about their structure and impact. During the transnational meeting in Paris, the participating graduate schools familiarized themselves with the school's unique environment for interdisciplinary actions, such as its program of 3-year fellowships for interdisciplinary doctoral Initiatives. The meeting also proved as a great opportunity to explore organizational matters and how to manage doctoral candidates across 9 participating institutions. During the subsequent meeting in Budapest, hosted by the Central European University, participants were presented with the university's innovative and effective employability programme for its PhD researchers, which is realized through intersectoral internships and teaching training (e.g. Global Teaching Fellowship Programme). In Heidelberg, the Graduate School for the Humanities and Social Sciences demonstrated the particular incentives they offer for staff to encourage their contribution to doctoral teaching and courses on interdisciplinary research that are specifically designed for doctoral students. Lastly, the transnational project meeting in Helsinki was organized in a way to allow participating graduate schools to learn about the multi-organisational model of governance present at the University of Helsinki and how to organize interdisciplinary training across 11 separate doctoral programmes, fostering exchange between them through season-schools and an annual conference. In addition, participants were able to learn about supervisory practices at the University, including the online tool called Thessa, which helps doctoral students connect with their supervisors and thesis committee, and representatives of the University of Helsinki also shared insights about their trainings for supervisors.

In addition to the transnational project meetings, a targeted site visit took place between the Université de Versailles Saint-Quentin-en-Yvelines and the University of Leipzig (Graduate School Global and Area Studies) in March 2018. The aim of the visit was to allow both schools to familiarize themselves with thematic scientific networks, which are available at both schools, such as the 4 area studies on the Americas, Africa, Islamic Worlds, Asia and the Pacific. In another targeted site visit a representative of the Institute of Philosophy and Sociology of the Polish Academy of Sciences visited the University of Helsinki in May 2018 to attend a supervisor training workshop organised by the Doctoral School in Humanities and Social Sciences and the Centre for University Teaching and Learning. The workshop was deemed an efficient way for preparing supervisors for working in an interdisciplinary and international environment, hearing and discussing about what works in doctoral supervision. Further site visits are currently planned (e.g. a visit of representatives of the Central European University to the Loughborough Doctoral College in September 2019) to explore in detail the mechanisms for establishing and managing co-sponsored doctoral positions with private companies, which are already a common practice in many UK universities.

In addition to the site visits and transnational meetings which are proved as very important learning instruments, the project partners also selected nine examples that have been followed up in more detail. Individual Skype video-call meetings were organized to collect additional information about each best-practice. To ensure that each partner's example is represented and there is an equal number of practices selected in each of the three dimensions of Triple-I a compromise had to be made. In this section we will offer a comprehensive explanation of the nine practices (Table 2).

Table 2: Selected best-practices for in-depth review

International	UVSQ (Paris)	Setting up and managing cotutelle arrangements
International	GSSR (Warsaw)	Practical Manual for Foreign Students
International	EGSH (Rotterdam)	Diversity project
Interdisciplinary	HYMY (Helsinki)	Academic Supervision and Supervisor Training
Interdisciplinary	DSPS (Budapest)	University-wide Courses
Interdisciplinary	HGGS (Heidelberg)	Seminars and workshops on interdisciplinarity
Intersectoral	GSGAS (Leipzig)	Study trips for graduate students to meet representatives of other sectors
Intersectoral	DSHSS (Leuven)	External Stakeholders Council
Intersectoral	LDC (Loughborough)	Collaborative studentships

The following descriptions look at a number of different aspect of the practice, starting from a more elaborate description of it (e.g. enabling and constraining factors), to the resources needed for its implementation (e.g. human or financial), the reasons and expected benefits of the practice, and finally to its evaluation and the justification for considering it as a best-practice for enhancing any of the three dimensions of a Triple-I doctoral training.

UNIVERSITÉ PARIS-SACLAY – COTUTELLE MANAGEMENT AND GUIDE

WHAT IS IT?

An office which manages international cotutelle programmes. The creation of the office brought together the experiences of several students who had, prior to its formation, arranged their cotutelle programmes individually. The office's primary role is to think of the small details associated with running a successful cotutelle so that the process can run as smoothly as possible.

Part of what it has achieved is that it has created a detailed checklist outlining the requirements for an International doctorate where the doctoral researcher is supervised by academics across two institutions and can, at the end of their studies, receive a doctorate from both universities. The international cotutelle agreement framework can be found on the University website and has pages detailing what a cotutelle agreement is, what the prerequisites are, how to form a cotutelle, who to contact, where they can find information about staying in France and information about the IDEX which can fund such an endeavour. Indeed, through its 'international initiative' the doctoral college at Paris-Saclay supports a few dozen PhD projects each year with fellowships that consider the extra cost of bilateral agreements.

The webpage on what a cotutelle is details the aspects that need to be in place to make the study a cotutelle - these include being enrolled as a doctoral researcher at two institutions - one in France, one elsewhere, and having alternating periods of study at the participating institutions (the periods of study at both institutions must be described and balanced). The prerequisites state that the foreign institution must be accredited to award a doctorate and authorised to supervise a doctoral researcher. Additionally the cotutelle must be clearly beneficial to be worth choosing rather than settling on a form of international cooperation within a less formal framework. The guide then offers a step-by-step instructions on how to set up an international cotutelle agreement and how to apply for a cotutelle degree at Université Paris-Saclay and what happens once you have it.

WHAT'S NEEDED?

Funding to create and staff the office. In Université Paris-Saclay's example this funding was pooled between the graduate schools to create a central hub which oversees all the cotutelle programmes. In order to create such a guide then one needs experience of running cotutelle agreements and degree, and a deep understanding of what it takes to organise such a programme. This requires input from people at all stages of the process to offer their knowledge so that the guide can be as complete and informed as possible.

WHY?

Arranging a cotutelle is not easy and is also outside the realms of most people's experience, this guide seeks to bridge that gap in knowledge and offer clear information for those considering the path. This guide seeks to ensure that prospective participants of a cotutelle know the right questions to ask and to consider when starting their inquiries. Prior to this guide there was no formal detailing of what was expected from the doctoral researcher or the institutions they were part of and no clear definition of a cotutelle degree. Previous experiences are that the cotutelle worked as a co-supervision but at the end of the PhD there would be no money available to fly the jury for the Viva over to the other institute, problems like this emphasised the need for the template. This guide ensures that every party involved with the cotutelle PhD understands and agrees to the terms of the co-supervision and co-degree, which prior to this guide they might not have thought to specify.

There is a high value placed on cotutelle degrees both by students and colleagues and encouraging the practice is seen as a good thing. Not only are cotutelle agreements between those directly involved with the PhD but they are between research teams, researchers and institutions which can develop into all kinds of international joint ventures.

THE IMPACT

The guidelines have not been in place for long so their impact has not been fully realised yet, however, the office has been gaining importance within the last two years. At present it is fair to say that the impact of this guide being available is that there has been less confusion regarding cotutelle and what they need to run.

EVALUATION

The success of the guide and the office can be assessed by the number of agreements that have been passed since it came into being and how many of these result in completed PhDs. The guide itself is altered and improved by feedback from students and stakeholders who have used the guide.

WHY IS IT BEST PRACTICE?

This is best practice because it encourages International study and eases the process of creating a joint PhD which in turn helps to forge links across institutions. The Internationalisation comes specifically because the student completing the cotutelle must travel between two countries and experience two different research environments.

THE GRADUATE SCHOOL FOR SOCIAL RESEARCH - PRACTICAL MANUAL FOR FOREIGN STUDENTS

WHAT IS IT?

The GSSR Practical Manual for Foreign Students is a comprehensive pdf available on the GSSR website to all incoming and prospective students. It is created by the doctoral students themselves and covers a broad range of topics. These include an introduction from the committee who put the booklet together then a table of contents covering what to do when you first arrive in Warsaw, how to find short stay and longer term accommodation,

setting up a bank account, details about travel, fares, phone contracts and internet providers, advice on banks and medical insurance, how to get necessary documents as well as links to places to build your language skills without needing to invest money.

For the information about what to do when you first arrive in Warsaw the pages are complete with photographs of the ticket machines that new arrivals will need to keep an eye out for and suggestions for the best value tickets to buy, the app to download and bus numbers and times. Alternately reputable taxi services are recommended and trainlines are detailed. All the information is laid out clearly and annotated with useful suggestions to aid the ease of arrival. From there the guide explains about currency exchange and gives examples of current exchange rates. It also lists a suggestion of reasonably priced hostels for staying in when you first arrive as it suggests waiting until you are actually in Warsaw to look for permanent accommodation. A section on the GSSR facilities explains the WiFi and username system at the university as well as details of the email portal and common spaces available to students. Particulars about finding a more permanent place to live are included along with websites to use and things that prospective renters should look out for. A detailed explanation of each of the areas in the city that students might want to consider living in and an estimate of how long it will take to get to GSSR from them is a useful addition for strangers to the area. The guide goes on to consider how to travel around Poland and outside of it once you are settled in Warsaw as well as how to obtain a Polish driving licence and whether that is something you will need to consider. There's a breakdown of internet and mobile phone plans to consider and also what to look at when searching for a bank. Specifics on obtaining the necessary documentation for staying in Poland are also included along with medical insurance programmes and a mock up budget. A useful section explains a few Polish customs as well as key phrases and advice on learning Polish without having to outlay too much or any money. The guide concludes with suggestions for interesting places to visit while in Warsaw and a map to help new students get around the city.

WHY?

The students began this initiative to offer their experience to newcomers in order to make their start in Warsaw a bit easier. The benefit of this being produced by students is that they have been through the process and know what they would have wished to know before they arrived.

WHAT'S NEEDED?

Students willing to lead the project. As the document is available online there are no additional costs associated with it, the main investment being that of the authors' time.

THE IMPACT?

The existence of this manual has eased the concerns of prospective international students who have considered applying to GSSR as it has demonstrated that not only are there resources available to support and assist their move to Warsaw but that there is a community at GSSR ready to support them.

Additionally, the fact that the manual contains so many useful pieces of information about visa requirements and residence permits has alleviated the workload of the administration teams who might have otherwise been fielding inquiries from concerned students.

The manual is considered a success because it helps put international students at ease and make them feel at home before they have even arrived.

EVALUATION?

Due to the nature of the manual, the only evaluation that has been collected thus far has been through verbal confirmation of its usefulness. Successive intakes into the GSSR's student committees are able to edit and refine the finished product to accommodate changes in Warsaw and to update the document with what they believe could be added to further improve it. Greater evaluation could be undertaken across the student population in the

form of a survey conducted by the student committee asking whether students found the document useful and what else they would like to see included.

WHY IS IT BEST PRACTICE?

This is considered best practice because it is a simple yet effective way of welcoming students new to Warsaw and to Poland, to the university and the area. It lays out in clear terms what incoming students need to do and what they might want to consider based upon the experiences of other students. It welcomes the new students into the community as much as it informs about budgets and hostels.

ERASMUS UNIVERSITY ROTTERDAM – DIVERSITY PROGRAMME

WHAT IS IT?

A rigorous and coherent inclusivity programme designed to ensure that international students and Dutch students with a migration background feel welcome and a part of the community during their time at the Erasmus Graduate School of Social Sciences and Humanities. The school works from the understanding that the recognition of diversity and organisation of inclusion needs time and care, the courage to address difficult issues and the strength to change. Each of these elements is supported by bespoke instruments.

Recognition of diversity is realized through the school's communication, diversity awareness programmes and cultural sensitivity training for students and staff. Time and care are provided through a PhD handbook with a clear outline of procedures and expectations for incoming students which is updated regularly according to the feedback of the PhD council. There is also a 'soft-landing' day where international students are invited to the university for a tour of the buildings and the city to begin to familiarise themselves with the area and a peer buddy system where a more experienced PhD student offers their time to help a newly arrived doctoral candidate settle in. The Peers who volunteer as buddies are also offered a workshop on cross-cultural awareness and communication so that the students are well prepared for the arrival of their buddies. A Colleague of the Year award has been introduced to acknowledge inclusive, collegial and kind behaviour amongst colleagues. There is funding for the arrangement of social events such as guided museum tours, book clubs and lunchtime lectures.

Courage is required to address the variety of issues that students encounter during their PhD. The EGSH does so through support and awareness tools and provides access to confidential counsellors and a psychologist specialising in PhD stress. Moreover, it has designed a modular training program about stress and safety during fieldwork, ranging from everyday risks to behaviour in high conflict areas. The school has been leading in the Dutch academic community in putting sexual harassment on the agenda through commissioning a play that shows different dimensions of harassment and functions as a vehicle for further discussion. Finally, the strength to change pertains, particularly, to staff composition and the content of the curriculum. The staff of the school is purposively diverse, and the curriculum has undergone a thorough diversity check to ensure that theories and cases presented in class come from a wide range of cultures and countries. The PhD Council composed of students from the various departments advises the school on these and other matters.

WHAT'S NEEDED?

The above set of instruments require differential investments of time, money and governance. While they are not standard operating procedures yet and take place in a wider university environment where diversity and inclusion have only recently become policy goals, there is a continuous risk of these instruments disappearing from the school's agenda and work planning. Some of the initiatives are straightforward in terms of funding and organising activities, e.g. the PhD handbook, the soft-landing programme and the peer buddy system, but they require a keen understanding of what incoming PhD candidates need and want to know before arriving. Others, such as addressing difficult issues and realizing inclusion in staff and curriculum are more complicated and need policy and financial autonomy of the school's management.

WHY?

The EGSH firmly believes in the epistemic and social value of diversity and inclusion. In a growing international and varied European community, it is imperative that PhD candidates understand different sources and standards of knowledge and are able to communicate and work with a wide variety of research participants and stakeholders. This will improve the quality of their research and help them in their future careers. The school recognizes that the academy, the research fields and the wider society can be places of exclusion and harassment and therefore prepares students for these risks as well.

THE IMPACT

The atmosphere and culture of the Graduate School have shifted towards being overtly inclusive and appreciative of diversity. The programmes have raised awareness of intercultural communications and sensitivity among staff and students. The School is considered a best practice within Erasmus University and is often looked at for inspiration and support. We notice through our regular contacts with our community that the time and care we spend on PhD-teaching and social events is highly appreciated. The play that we commissioned to put sexual harassment of PhD-candidates on the agenda reached some 150 students and 100 senior staff. It is now travelling to other Dutch universities and is under consideration of a number of European universities. Attendance at our other social events usually ranges between 30 and 70 students. We organize the soft landing usually for some 10 to 15 students. The PhD handbook has been downloaded 216 times from 32 countries (dd. April 2018).

EVALUATION

The EGSH has a formal governance that ensures continuous feedback of staff and PhD candidates: The Programme Board consists of staff and student representatives and convenes twice a year to discuss the curriculum and other matters of the School. The management of the School works closely with the PhD council which consists of representatives of each of the departments. Individual courses are always evaluated and allow for input from the students themselves; this was one of the instigators to look at diversity in the curriculum as well.

WHY IS IT BEST PRACTICE?

This is considered to be best practice because it works from a consistent narrative and coherent policy that addresses several dimensions of diversity and offers a range of bespoke instruments for them. It is designed in continuous interaction with staff and students and requires ongoing co-creation.

UNIVERSITY OF HELSINKI – SUPERVISOR TRAINING

WHAT IS IT?

Academic supervision at the Doctoral School of Humanities and Social Sciences is approached holistically guaranteeing that each doctoral researcher has at least two supervisors with one coming from their own department to ensure sufficient support. Supervisors are vital to the process of doctoral research and may face pressure as they ensure that doctoral researchers are accountable to someone for the work that they produce and provide opportunities to develop research plans, articles and papers. To ensure that even the supervisors are supported to the fullest they are provided training in university pedagogics and academic supervision.

The Centre for University Teaching and Learning (HYPE) is responsible within the university for organising courses on pedagogy for the academic staff. HYPE is a research centre on academic pedagogy providing training based on their research. Their curricula for staff offers courses covering topics such as learning in higher education, course

designing, assessment and feedback, and academic supervision. The courses are composed in study modules with basic studies for 25 ECTS credits and intermediate studies for 35 ECTS credits but academic staff with teaching responsibilities are welcome to pick only single courses, too. The courses are highly popular so the academic staff need to apply for them.

To provide a lighter possibility for the supervisors to strengthen their supervision skills the Doctoral School urges the Centre for University Teaching and Learning to run some intensive courses or workshops about successful PhD supervision for the supervisors of Humanities and Social sciences. The workshops for supervisors are usually composed of three-hour sessions and may include some small study assignments. The sessions are designed with the aim of ensuring that supervisors understand the supervision context and dynamics, know how to manage the process and it also gives them an opportunity to reflect on themselves as a supervisor. Additionally, the session offers supervisors a chance to analyse the promoting and hindering factors of the PhD supervision process and to consider the individual, group and community aspects of supervision.

The study assignment may be a preliminary assignment asking the supervisors of the challenges they have faced or to reflect on their personal aims as a supervisor, which involves considering their strengths and their areas for development. In case of a two-session intensive course, the second assignment could ask supervisors to draw a map of the PhD path or focus on reflecting on the supervision principles.

WHAT IS NEEDED?

Administrative infrastructure within the university to be able to offer the training programmes and workshops as well as experienced teachers and supervisors to plan and lead the sessions. In order to gain the trust of the supervisors, it is beneficial that the shared knowledge is research-based. This is why it is important that the sessions are lead by people who both have personal experience in supervision and of the related research. In the example given from the University of Helsinki, there is a research centre set up for the purpose of delivering pedagogic training to the staff. The courses that they offer include assessment of learning and constructive alignment in course design as well as the supervisor training. The existence of this office creates the necessary environment for the supervisor training module to flourish.

These sessions would also need to be timetabled into the academic calendar to allow (potential) supervisors to attend them. A training budget is also required to run the sessions to account for the trainers and the rooms. In addition, cooperation between different parties are required for the training modules and smaller workshops to succeed. The Doctoral School supports the organising and promotion of workshops on doctoral supervision for the supervisors in its programmes.

WHY?

Offering support to the supervisor increases support given to the doctoral researcher. Ensuring that the supervisors are better equipped to guide their PhD students through their studies increases the quality of these interactions and this has a positive effect on the doctoral training as a whole.

Training given on the importance of the PhD community is also important as it reminds supervisors of the value of the PhD student having a community outside of the supervision arrangement and therefore puts encouraging their students to engage with the available networks at the forefront of their minds.

THE IMPACT

The module for university pedagogics has run for over 10 years now and this programme's impact lies in the increased confidence it builds in the supervisors, both new and experienced as it offers a chance to reflect on

practices, build on knowledge and develop within a supportive peer environment. This experience can also increase motivation as it can ensure that supervisors know they are supported by their schools and the university as a whole. As the study module courses are offered to the entire academic staff of the University, the sessions offer a chance for academics from all disciplines to share their experiences, this interdisciplinarity adds further value to the course.

Within the university, completing the study modules is also seen as an advantage and a merit that can increase the chance of promotion and further employment, for example when applying for a professorship. Ultimately, taking a pedagogically focused approach towards supervision is considered to impact students positively because it provides them with more efficient teaching and greater support.

EVALUATION

Each course is evaluated through the feedback of its participants and from there it is developed and altered for the next cohort to go through the sessions. As the courses are not mandatory, it is also evaluated through its attendance, which continues to be high as the supervisors show their support for the course by signing up to the sessions. The University has received by an international audit group a label of quality[9], which according to the Quality Manager means, among other things, that researchers and teachers have well-functioning services at their disposal, including opportunities to develop their pedagogical skills.

WHY IS IT BEST PRACTICE?

The training programme is considered to be best practice because it equips supervisors with tools to use to support their PhD students and it gives the supervisors the chance to learn from colleagues in an interdisciplinary environment. It also develops the supervisors, ensures them that they are supported and builds their confidence, which are all elements which then feed back in to how their PhD students feel. The Doctoral School for Humanities and Social Sciences is proud to provide customised and interdisciplinary workshops for its supervisors that combine academic pedagogy with alternating supervision-relevant themes, such as research community dynamics or intercultural interaction. In this way, the supervisors can enhance their supervision skills even if they would not have time to commit in an entire study module at the time, or just want to refresh or deepen their knowledge.

CENTRAL EUROPEAN UNIVERSITY – UNIVERSITY-WIDE COURSES

WHAT IS IT?

An initiative that provides financial and administrative support for faculty members keen to develop and teach jointly courses that are going to be open to all students at CEU. University-wide Courses (UWCs) emerged at CEU in 2017 under the framework of the Intellectual Themes Initiative (ITI), which supports cross-departmental collaboration in the area of teaching, research and community engagement. Once a year, a public call for UWCs is published and the received proposals are evaluated by a selection committee, which is chaired by an external evaluator. The selected credit bearing courses need to be: a) interdepartmental by design, meaning that academic staff members from at least two different departments participated in the development of the syllabus of the course; b) co-taught by academic staff members from different departments and assisted by teaching assistants; c) open to all graduate students of CEU to register for them. These courses are not assigned to a single department,

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[9] University of Helsinki News: "Praise for the University's quality system" https://www.helsinki.fi/en/news/higher-education-science-policy/praise-for-the-universitys-quality-system

but are selected, managed, and evaluated at the university level. They receive a special "UWC" course code designation, and CEU informs the New York State Education Department (its accreditation body) each year about its UWC offer.

To date, the topic and format of UWC proposals remains considerably unrestricted, and the approved courses are quite diverse. Some courses deal with contemporary academic topics (e.g. Journalism and Social Change in Historical Perspective), some fostered the research skills of CEU students (e.g. Text Analysis Across Disciplines), and others offered more practical skills to support the students' future career (e.g. Strategic Management in Your Career and Life). UWCs are usually approved to run in one academic year, and those considered to be very successful, can reapply to be held in the subsequent academic year as well.

WHAT'S NEEDED?

The introduction of UWCs is meaningful at universities consisting of several autonomous and loosely integrated academic departments. The realization of the initiative will require a central administrative unit to take charge of the organization of the calls for proposals, the arrangement of the selection process, and subsequently, the administrative management (including budgets) of the approved courses. Beside the commitment of one or two employees, the institution also needs to devote financial resources to the selected courses, mostly to cover the potential costs of teaching materials and activities, accommodation and travel for envisioned guest lecturers, and compensation for teaching assistance if requested. The institution needs to ensure also that teaching UWCs counts towards the regular workload of involved faculty members.

WHY?

CEU aims to ensure that there is synergy among its academic departments and one way to do so is through supporting collaboration between its faculty members in the area of teaching. Collaboration in this respects allows faculty members to familiarise with each other's research interests, exchange teaching practices, and ultimately offer a more comprehensive learning experience for students. In line with this, the original aim of UWCs was to bring together faculty and students from across academic programs and departments to explore a topic of common interest.

THE IMPACT

The initiative has resulted in a number of new and innovative courses over the past two years and also paved the way for a university-wide approach to teaching. In 2017-2018 six UWCs have been offered at CEU for a total of 28 ECTS and 94 students registered for them. In 2018-2019 already 10 UWCs were taking place for a total of 48 ECTS and 203 students taking them. For the 2019-2020 already four UWCs have been selected. All but one courses fulfilled the expectation to attract a diverse group of students and had students from 6 departments on average each. UWCs also performed remarkably well in the course evaluations, given that these are new and experimental courses. The average score given by participating students to the question on the overall quality of the course was 7.9, compared to CEU's overall course quality average of 8.4.

EVALUATION

The courses are evaluated as part of the regular course evaluation process at CEU. However, in the 2018-2019 academic year students taking UWCs received a tailored evaluation form, which included questions on all instructors and general questions on UWCs. The results of these surveys are summarized and supplemented with additional information about the success of the call and submitted for review and follow up to the evaluation committee. The initiative was also presented recently to the evaluation team of the Middle States Commission for Higher Education, which noted the following in its report:

"The team recognizes the University-wide Course initiative, now in its nascent stages, as a laudable curricular development and encourages further development in this area as it aligns with interdisciplinary trends in higher education."

WHY IS IT A BEST PRACTICE?

UWCs represent a unique opportunity for academic staff members of the university to experiment with new teaching topics and methods that cross disciplinary boundaries. The initiative is also providing incentives for doing so by ensuring that the additional workload that comes from managing such courses and their delivery, is supported by adequate staff and teaching assistants. Therefore, UWCs are broadly considered as a best practice at CEU to foster cooperation among faculty with different disciplinary background.

HEIDELBERG UNIVERSITY – CORE SEMINARS ON INTER- AND TRANSDISCIPLINARITY

WHAT IS IT?

Team-taught core seminar on Inter- and Transdisciplinary offered by the Heidelberg Graduate School for the Humanities and Social Sciences. The main course runs for one day and includes required reading of key texts for PhDs attending the session. This reading guides the initial discussion into what interdisciplinarity means and how it relates to disciplinarity, multidisciplinarity and transdisciplinarity. Doctoral researchers attending the sessions are encouraged to consider the interdisciplinarity of their own research and how to drive ahead their current or future projects through interdisciplinary methods. Participants of the core seminar also work in peer groups on collaborative inter- and transdisciplinarity: they design projects that address 21st century challenges and submit these to the course leaders for further consideration.

In addition to the central course, further interdisciplinary seminars and workshops with leading authorities in the field are held during the year. They offer PhDs the opportunity to advance with their specific projects and foster peer discussions on inter- and transdisciplinarity.

The core seminar is aimed at first year doctoral researchers although others are welcome to participate. The follow-on courses are open to PhDs at any stage of their research. Originally the core seminar was created with a group of 15 participants in mind, but it has increased in size over recent years to include visiting students from partner universities. The new format has led to a greater diversity of experiences and added to the value of the interdisciplinary and international exchange for its participants.

WHAT'S NEEDED?

The budget to cover travel, accommodation and a stipend for any session leaders invited. These session leaders do not need to be published authors on the topic of interdisciplinarity, but they need to be sufficiently interested in the topic and able to suggest a short reading list in order to engage the participants on the given topic. It would also be ideal to have at least one professor or lecturer from the humanities and social sciences, who are willing to spend a day engaging with a group of PhD researchers from different disciplines.

An encouraging culture to stimulate and support this form of learning is also vital and this must extend from the senior management through to the departments. The success of the course in Heidelberg is in part thanks to the support of the head of the Graduate School who herself runs the sessions in collaboration with a colleague from a different discipline. The long-term viability of such a program requires that there be an expert on interdisciplinarity in the school or accessible and willing to host the sessions.

The time requirement of the session for the participants are a day's attendance at the core course and an additional day prior to the seminar to read the required materials.

WHY?

Interdisciplinarity has been identified as a key principle in doctoral research by the League of European Universities (LERU 2016), the British Academy (2016) and by numerous other renowned organizations and scholars in the EU

and abroad.[10] However, while it has been a key term in recent academic politics, interdisciplinarity itself and its methods and implications remain vague to many early career scholars. The Graduate Schools thus offers the core seminars on inter- and transdisciplinarity both to enhance participants' understanding of the concepts and to encourage them to design peer projects that address pressing societal challenges.

THE IMPACT

The course has had immediate and long-term effects on the individual PhD work and on larger peer projects. Importantly, it allows participants to sharpen their knowledge of interdisciplinarity as a key concept in research, but it also extends beyond the individual work and encourages creative peer collaboration. One of the biggest impacts of the core seminar is the exchange across the disciplines, which has led to the generation of transdisciplinary project ideas. In these instances, the sessions have succeeded in encouraging the doctoral researchers to take a risk and try out new scientific approaches in collaboration with researchers from other disciplines when addressing 21st century challenges.

These sessions have been considered enriching and excellent learning opportunities that are highly valued by the participants. PhDs from past sessions have stated that the interdisciplinarity courses have helped them to develop the skills to explain their research to people who are not experts in their field and to become more open to other research areas and non-academic stakeholders. The collaboration with peers from other disciplines in the approach to a societal challenge was seen as particularly valuable by the participants.

EVALUATION

The courses are evaluated with feedback forms presented at the end of the sessions. These forms ask for the participants' general impression of the course, description of what was of interest generally, what was useful for their specific project, and what they would change or like to see on the agenda. These comments have helped to tailor the course for future years as well as further affirm its importance within the curriculum.

Verbal response is also received from members of faculty who support the implementation of these courses as the exchange across the disciplines can generate innovative approaches to the research of their doctoral candidates.

At the end of each academic year, the PhDs submit a progress report to the Graduate School, in which they also reflect upon the long-term impact of the interdisciplinarity courses on their doctoral research.

The course leaders also evaluate the sessions as they collect the transdisciplinary peer projects that are generated in the seminars and give feedback to the groups. Outstanding projects are taking forward for further consideration and realization.

WHY IS IT BEST PRACTICE?

The core seminars offered by the Heidelberg Graduate School for the Humanities and Social Sciences are considered best practice because they open the door to discussion on the much used but little understood concept of interdisciplinarity. The sessions allow the doctoral researchers to reflect upon their significance of interdisciplinarity in relation to their own academic work and their discipline in dialogue with other research cultures. Importantly, in the core seminar they are also encouraged to take creative risks and work with peers from other disciplines on defining possible approaches to 21st century problems. For PhDs the transdisciplinary dimension of research is a highly valued add-on experience of the core seminar to their own academic work.

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WHAT IS IT?

A residential trip taken by graduate students to meet representatives of other sectors in different countries. The trip is usually 7-10 days long and offers doctoral researchers, typically first or second years, a chance to apply theory to real world settings and discuss the impact of research on the people who work in the areas either affected by it or work parallel to them (politics, administration, media, economy, education, police, military et al.). The trips are run by academics who are experts on the region but attended by doctoral researchers from different areas that may not be familiar with that specific region.

This trip is paired with a seminar beforehand hosted at Leipzig which acts as a way of informing the doctoral researchers about the area they are going to. At these seminars each researcher is asked to present a review of a book dedicated to the region they will be visiting which gives a chance for all the trip members to become better acquainted with the history of the area and the present-day situation.

When on the trip the students and members of staff accompanying them have the chance to meet with people of the region in all areas such as ambassadors, museum staff, leading ministry directors, leads from research institutions and other industry professionals. Each meeting is designed to give the students a chance to explore the theories they have been learning and apply them practically, in doing so they are given the chance to widen their views and understanding.

WHAT'S NEEDED?

These trips could cost a lot of money so to lessen the costs that the doctoral researchers are asked to pay third party funding is needed. An encouraging and supportive environment would also be needed within the graduate school to ensure the longevity of this programme.

Additionally, the trips require an expert in the field to take responsibility for the organisation of the trips and for them to either have the contacts or access to contacts to arrange the meetings. This then means that the lead academic would need the time to organise the trip and support from the graduate school to encourage participation in the trip. Part of the responsibility for organising the trips would also be considering risk assessments as they can often take place in traditionally unsafe or unstable areas which can be incredibly rewarding but also potentially dangerous. For the logistic planning, it is recommended that you find a travel agency on site which can book the hotels and domestic transport.Since the study trips serve on the one hand for the mutual knowledge transfer (academia – practice and vice versa) and on the other hand for getting insights into the non-academic world, it is necessary to choose a topic for the research trips with which the PhD candidates are familiar (regional, political, cultural expertise). Before the trip starts, the participants should be trained in the topic of the trip intensively by a preparatory research seminar.

WHY?

These trips were put into place to offer doctoral candidates a chance to experience different cultures and industries which run parallel to their fields of research. At the same time the study trips serve as a platform/arena for contact with social actors outside the academia, for knowledge generation (citizen science) and knowledge transfer.

Specifically, these excursions filled a gap for Leipzig's Global and Area studies graduate school which specialises in International research as they offer the PhD candidates a chance to experience an international context even if it was not the specific climate they were researching.

Wider benefits of the trips are that they have broadened the doctoral researchers' minds about what is available after academia by introducing them to industries which benefit from their field of study while also getting them to think about the implications of their research.

THE IMPACT

The study trips foster the dialogue between science, practice, and public and enable doctoral candidates to impart the transfer to political actors. These include issues such as the design of communication in the political space or the various types of policy advice. The meetings of doctoral candidates with non-scientific stakeholders from the regions enable knowledge exchange by learning from each other. Doctoral candidates gain new perspectives from non-academic experts who apply different work methods and the other way around. Through mutual exchange of ideas, evidence and expertise the process benefits research with the graduate school and strengthens cooperation with relevant actors from governments, economy, and civil society.

In addition to giving the doctoral candidates a range of intersectoral experiences and chances to exchange ideas with industry, the programme also allows the students a chance to bond with one another and create a greater community in the graduate school. The trips are seen as fun in addition to being formative experiences and this helps the atmosphere of the graduate school and its appeal to future students.

EVALUATION

After the trip is concluded, the participating students are asked to complete an evaluation piece about how they assess the trip went and then an additional seminar is held to offer the doctoral candidates a chance to reflect on the experience. This seminar offers a chance for further discussion and interdisciplinary learning as the diversity of the group would offer a variety of responses and insights from the students. A report is written about the journey that is usually published (journal article, working paper, blog post).

WHY IS IT BEST PRACTICE?

It is best practice because it combines Intersectoral practice with its links to a variety of industries, with opportunities for interdisciplinary discussions thanks to the variety of focuses represented on the trip and internationality with the setting of the trips. In addition, these travels support the transfer idea by facilitating knowledge transfer between academia and practice. This is an excellent fusing of the three Is which offers extensive scope to be developed and explored.

UNIVERSITY OF LEUVEN - EXTERNAL STAKEHOLDERS COUNCIL

WHAT IS IT?

The External Stakeholders Council is an advisory body made up of representatives from other-than-academic sectors who provide suggestions and recommendations for doctoral training. Members of the ESC come from all walks of life such as the media, politics, industry, finance, pharmaceutical companies, embassies and biotech companies.

The suggestions from the ESC have thus far included the idea that PhD projects should include serious reflection on how the findings will be disseminated outside of academia from the very start. Additionally, supervisors should be encouraged to consider involving non-academic experts from the first stages of the research design and invite them to be part of the process as it develops, including joining annual progress report discussions. External experts should be invited to early-stage PhD presentations and these may even be organised differently with the specific intention of inviting an audience beyond academia. Another suggestion was that properly monitored internships outside academia should be recognised as valid components of doctoral training programmes.

WHAT'S NEEDED?

A supportive environment within the organisation to facilitate implementation of the changes suggested by the ESC. The environment must understand that academic work does not always flourish fully within a bubble of academia and that if it is to reach out to the wider world, asking for advice on the best way to achieve this is a great way to start that process. The lack of this support mixed with organisational headaches and a resistance to change have been the primary obstacles for the project and have led to difficulties getting the project off the ground.

Further elements that are required are external experts willing to be part of the Council and to get involved with doctoral research. Populating such a board requires connections in the first instance. Overall, though, external stakeholders appreciate being invited to join this type of intersectoral consultation.

WHY?

This council looks to find ways to broaden the prospects of doctoral researchers at the end of their PhD by ensuring that the applications their research may have outside of academia are monitored throughout the research cycle. If the suggestions are implemented then they would also provide the doctoral researchers with external connections and experience presenting to members of the wider community, which would add to the value of their project and develop their skills further. The ESC also strengthens ties between the university and the areas that the stakeholders represent which over time brings benefits to both sectors.

THE IMPACT

The results of the ESC mainly stem from the development of an increased understanding between the academics and the external members involved. Further impact is hard to gauge given the hiatus the initiative has been on.

EVALUATION

In its current iteration, the ESC is part of a career support programme for early stage researchers which is held accountable to the Flemish government. A Flanders-wide external assessment of the programme in 2018 established that the programme has a positive impact on young researchers and on universities: young researchers are more productively aware of career opportunities after academia, acquire skills attuned to such careers, and establish contacts with potential employers outside academia; universities assume a more active responsibility for the future careers of young researchers. The impact on future employers, however, was found to be relatively limited, though nonetheless real. In response to this assessment, the Flemish universities are currently adjusting the career support programme, and part of this adjustment involves a reactivation and upscaling of the ESC as an interuniversity initiative.

WHY IS IT BEST PRACTICE?

The External Stakeholders Council is considered to be best practice because it provides a link from the very start of the doctoral training to external partners where currently many doctoral researchers never have any contact with potential employers outside academia. This then theoretically has the impact that when the doctoral researchers complete their studies, should they be unable or unwilling to stay within academia, they will have contacts in places where they might gain employment or have references outside of academia which might boost their CV. The advice gained from the ESC regarding the training that doctoral researchers receive might also ensure that they gain a wider range of skills which make them more employable in a role outside of University settings. In addition, senior researchers active as supervisors of doctoral students may also benefit from intersectoral consultation: input from partners outside academia may inspire them to explore non-obvious avenues of research eligible for impact-driven funding.

LOUGHBOROUGH UNIVERSITY – COLLABORATIVE STUDENTSHIPS

WHAT IS IT?

Collaborative doctoral studentships are joint funded by the Economic and Social Research Council (ESRC), one of the participating universities in the Midlands Graduate School (MGS), and external agency drawn from private, public or third sector. The level of funding contribution provided by the external agency is variable and dependent upon the financial means of the external agency. While private companies may contribute to student fees and maintenance grants third sector organisations may simply contribute to research expenses of the student and in kind through providing office space and access to mentoring.

The MGS aspires to award 18 collaborative studentships per annum on a competitive basis. The awards are made to academic teams who have developed a research proposal with an external agency. The studentships are then advertised, and students apply for a specific project. The studentships can be held on a full-time or part-time basis and the length of award is between 3- and 4-years dependent upon the prior research training of the successful student.

The external agency is encouraged to offer an internship or work placement. Usually the research project pertains to a subject of interest to the external agency and the student will use data from the external agency and/or will work with the external agency to collect data. The external agency also commits to engage with a version of the research findings towards the end of the studentship.

As part of the Collaborative Studentship application form students are asked to name a co-supervisor/mentor who is based within the collaborating organisation. This person should act as a 3rd supervisor and a student will always require two academic supervisors who meet the supervision regulations from the university where the student will be registered.

- Studentships available from October 2019 onwards to be found at: https://warwick.ac.uk/fac/cross_fac/mgsdtp/collaborativeandjoint/#collaborative

- Examples of external agencies: Greenpeace, Citizens UK, Living Wage Foundation, Overseas Development Institute

WHAT'S NEEDED?

The initial steps require finding a company that is open to working with academics and considering the ways in which a PhD project could offer information that would be of value to the company. This can be accomplished by either tailoring the project to a specific company's needs or finding a company which fits with an already conceived project. Social Science disciplines have a great deal of skill to offer to a wide variety of industry partners, one just needs to consider what information a sector might benefit from which can be accessed by the methods used in Social Sciences.

Once a project idea has been settled on and the initial interest has been struck, it is vital to begin conversations about expectation management, this applies to both parties and is a theme which might need to be readdressed as the relationship evolves. The outcomes of the PhD are unlikely to revolutionise how that company operates however applying the tools of a social science study to an aspect of their work will hopefully provide them will valuable information and insight that they might not previously have considered which will be beneficial to them in the long run. It is key that an understanding be reached at the beginning of discussion regarding creating an inter-sectoral PhD to avoid misunderstandings which might complicate the doctoral researcher's position.

The discussion of benefits and expectations must come hand in hand with one about the contribution the company is willing to make – the contribution may not be just financial but also in terms of mentorship, office space, expenses associated with data collection. The bigger the contribution potentially the greater the expectations on

what the project will deliver so a balance needs to be struck between these elements and that requires honest communication.

It is worth noting that building the relationships required to be able to approach a company and offer this kind of project can require a great deal of relational labour on the part of the academic organiser therefore you need a lead who is willing to make this commitment.

WHY?

The collaborative studentships are intended to give students experience of work outside of academia. The studentships are also intended to encourage students to address 'real world problems' i.e. those identified by academics in collaboration with external agencies. The studentships also give experience of research having a direct impact on the operation of external agencies.

THE IMPACT

The impact as yet is difficult to assess. There are three potential impacts: on the students themselves, on the careers of their supervisors in building external relationships and on the external agency itself.

EVALUATION

There has not been a formal evaluation of the collaborative studentships. Any evaluation would have to take account of views of students, supervisors and external agencies and take regard of indicators of research quality (strength of the thesis, quality of publications) as well as future career path of students.

WHY IS IT BEST PRACTICE?

This is considered to be best practise in the area of intersectorality because it gives students a broader perspective on the world of work beyond academia, it encourages students to address pressing economic and social issues through their research related to the concerns of external agencies, it gives students work experience, and experience of presenting their research findings to external agencies thereby giving students greater skills in terms of the dissemination of their results to audiences beyond universities potentially making their research more comprehensible for society.

CONCLUSION

The project created a general environment for cooperation and sharing of best-practices between participating institutions. It highlighted that graduate schools recognize the importance of internationalization, interdisciplinarity and intersectorality as the key principles around which their doctoral education needs to be reorganized. Moreover, graduate schools have demonstrated eagerness to take actions in these areas. We can find the majority of the reported best-practices, in one form or the other, across all participating graduate schools. While there is openness for innovations and improving existing practices, it would be difficult and impractical to devise a single best model for fostering Triple-I doctoral education. Nationally distinct regulations, the diversity of internal organizational set-up, specifically, with regards to umbrella and thematic schools, and the varying levels of avaiable resources limit the extent to which all practices are transferable to all graduate schools.

The report has also shown that graduate schools are better equipped to address and expand the international and interdisciplinary aspect of their doctoral education than that of intersectorality. With regards to internationalization, graduate schools are first and foremost engaged in practices that would help them attract

international students. They organize various promotional activities (e.g. advertise their programs on international websites, participate in webinars and educational fairs) and seek to assist international students arriving to their institution, mainly by providing tailor made information to them and orientation sessions. The three practices worth outlining in this area is the management of cotutelle programs, as best showcased by the University of Paris-Saclay, the development of a practical guide for incoming international students, described based on the example of the Polish Graduate School for Social Research, and lastly the organization of special events that familiarize students and faculty with cultural diversity, as practiced at the Erasmus Graduate School of Social Sciences and the Humanities.

Doctoral schools were very keen on supporting cross-disciplinary training of doctoral students as well. To achieve it, many have reported innovative practices that aim to create organizational change or adjust the structure of the program and the curriculum. Offering various forms of incentives for cross-departmental collaboration and organizing thematic courses that would incorporate different disciplinary perspectives were among the most frequently mentioned examples. The Heidelberg Graduate School for the Humanities and Social Sciences organizes seminars and workshops on inter- and transdisciplinary for its PhD students to encourage and support them. The Doctoral School of Political Science, Public Policy and International Relations at the Central European University has launched University-wide Courses that are developed and taught jointly by faculty members from various departments. The University of Helsinki seeks to support PhD supervisors with special pedagogical training to help them manage doctoral projects that are increasingly cross-disciplinary. These concrete examples highlight the importance that graduate schools place on interdisciplinarity and are best-practices worth considering of transposing to other graduate schools as well.

Incorporating intersectorality into doctoral training was perceived as the most difficult task by doctoral schools in general. Such initiatives prove to take root in the area of social sciences and the humanities very slowly. Especially few best-practices have been reported with regards of aligning doctoral supervision and support to the needs of other sectors. Instead, graduate schools focus on attracting mid-career doctoral students with relevant working experience and modifying the program and curriculum to suit their needs better. The Graduate School Global and Area Studies at the University of Leipzig started organizing study trips for their doctoral students to meet representatives of other sectors in different countries. The Loughborough Doctoral College, with the financial support of a public funding agency, has initiated collaborative doctoral studentships allowing interested candidates to collaborate with private, public and third sector organizations. Organization wise graduate schools are also actively looking at ways to involve representatives of other sectors in the management of their programs. For example, the Leuven International Doctoral School for the Humanities and Social Sciences has set up an External Stakeholders Council to seek advise on how to align better their doctoral training to the needs of other sectors. These examples demonstrate that there is potential for expanding intersectorality in doctoral education.

With the help of the participating graduate schools in the project, we have collected an extensive list of examples for advancing internationalization, interdisciplinarity and intersectorality in European doctoral education. These tips and tricks can facilitate the transposition of best-practices to other graduate schools, therefore the report will be also made avaiable online in the form of a toolbox for other interested institutions. Moreover, a few best practices were picked from each of the project partners that are considered especially effective in fostering the Triple-I character of doctoral education. These examples are described in detail allowing other graduate schools to assess the possibility for their implementation in their given circumstances. Thus, the report is envisioned as a blueprint for identifying and supporting the spread of best-practices among European graduate schools.

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