DRIVE DEVELOPING RESEARCH
AND INNOVATION CAPACITIES IN ALBANIA AND KOSOVO

Guideline for research supervision/mentoring (D 2.3)

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Introduction

The objective of this Guideline is to facilitate the work of individuals involved in the supervision of student theses and PhD dissertations, especially junior academics, PhD candidates who act as supervisors of student theses, as well as experts from the Doctoral (PhD) Offices, the Student Office and other relevant university units. This Guideline also aims to identify the supervisor's characteristics, capacities and capabilities to stimulate an attractive research and supervision setting and to achieve appropriate supervision outcomes in the form of research results. The principal actors who may be directly or indirectly involved in the supervision processes are defined in Section 2. Section 3 derives generic and institution-specific recommendations that can guide academic staff with less experience in supervision processes to achieve the effectiveness and high quality of supervision outcomes. The focus is also on supervisor-student relationships, which are an important element of the supervision process for successful supervision experiences. This Guideline also creates a wide dialogue for mutual understanding at the partner universities on the improvement of university practices and supervision processes.

1. Framework conditions

This Guideline is based on the results of the analysis of the current need for new practices in research mentoring (D 2.2), which provided the country- and institution-specific framework conditions for research supervision and mentoring at partner HEIs. In the context of this Guideline and further on in the text, we tend to understand supervision as a short-term, task-oriented activity (in terms of this Guideline, the completion of students' and PhD theses) and mentoring as a long-term, development-oriented activity that focuses on the personal development of the individual student or PhD candidate. Further, on in the text, we tend to use the term 'supervision' in relation to students' and PhD theses and mentoring when addressing the individual development and personal growth of individuals.

As mentioned in the respective analysis results, partner universities from Albania and Kosovo face similar deficiencies and problems in the supervision of students and PhD theses; similar barriers and obstacles stand in the way of improving supervision practice. The basic problems can be grouped as follows: (i) interpersonal problems and deficiencies in relationships between supervisors and mentors; (ii) difficulties in selecting thesis topics and involving students and staff in research projects, especially international projects; (iii) difficulties in involving industry stakeholders in university-industry relationships and research activities, as well as in co-supervision of students and PhD theses.

The institutional framework conditions for research supervision and mentoring are outlined in more detail below:

POLIS University (U_POLIS): The problems of supervision and mentoring of the students' and PhD theses are addressed specifically the following **groups of needs**: (i) specific capacities and capabilities to supervise and mentor students and their theses; (ii) specific needs for industry stakeholders relations and industry involvement in university research. The particular focus for **capacity building** is on enhancing interpersonal and collaborative skills, as well as improving multidisciplinary and research skills and competencies in particular, for collaboration in research projects and with industry. The basic fundamentals for the efficiency and quality of supervision are regarded in different dimensions: firstly, the **interpersonal interactions between supervisor and student** in order to improve the supervision practices, feedback mechanisms, etc. secondly, the **multidisciplinary skills and competences** of the university staff to supervise the interdisciplinary student projects and thesis topics; and finally, the **research skills and competences** of the university staff through the research and industrial project activities, such as defining research problems, writing research projects, supervising research and industrial projects, etc. Basically,

the following are identified as potential **gaps and barriers** in relation to supervision practices: (i) gaps in interaction with industry stakeholders; (ii) lack of funding and opportunities to engage stakeholders in university research; (iii) lack of opportunities (including funding issues) for specific capacity building of university staff.

For this purpose, several elements are identified that are crucial for improvement of supervision practices, such as: (i) improving opportunities for **academic exchange** (outgoing and incoming activities); (ii) facilitating **access to different programmes** and grants such e.g. Marie Sklodowska-Curie Actions (MSCA), etc.; (iii) enhancing the skills needed to participate in national and international **research projects,** such as Horizon Europe; (iv) expanding **funding opportunities** for PhD candidates for participation in the international conferences; (v) strengthen **technology transfer** and joint industry supervision and promoting activities with industry stakeholders; (vi) promoting **networks** and collaborative relationships to involve students in the research activities of the faculties/professors; (vii) increasing **support from public entities** for academic exchange and networking activities.

European University of Tirana (UET): The key point in identifying barriers and gaps in existing supervision practices concerns the specific interpersonal relationships as well as the available infrastructure and funding opportunities. Among some deficiencies and insufficiencies in **supervisor-student interaction**, the need to spend more time on face-to-face and regular meetings as part of the supervision process is specifically mentioned. Some deficiencies are also noted in the existing research infrastructure, such as the need for enrichment of the existing library system, including online services; ICT improvement in the university environment; physical infrastructure for disabled students. A particular focus is also on enhancement of **networking and collaboration** with a view to improving professor-student interactions and involving students in faculty/professor research activities.

Polytechnic University of Tirana (PUT): Among the needs of the university, a need for enhanced resources and skills to support student supervision and doctoral theses is expressed. There is also a need for university-level agreements for collaboration with other universities or institutions for expert feedback and support regarding the input dataset; for more up-to-date infrastructure to process Big Data; trainings for mentors and collaboration with industry. With regard to **interpersonal relations in supervision**, the following are mentioned as the most important problems and gaps: (i) some weaknesses and needs to improve the supervision style (leadership and communication skills, friendly approach, openness to share the experience with students), which can be crucial to motivate students, build trust and reduce the distance to students; (ii) gaps in some specific skills along with the needs to improve PBL (Problem Based Learning) skills in relation to the supervision process and the role of the supervisor, (iii) some deficiencies in the time dedicated to students due to the overload of staff, including PhD students, with teaching hours. Among others, the needs for **specific competences** to ensure efficiency and quality in the supervision of students, expertise in the specific field and **research methods**, as well as a required **experimental basis** for advanced research, are specified. The particular focus for **capacity building** is on: (i) co-supervision approaches; (ii) enabling access to the research ecosystem for PhD students; (iii) enhancing soft skills and competences related to supervision activities; (iv) enhancing the specific qualification (specific expertise) of supervisors and assessing their expertise through a quality assurance board; (v) encouraging students in networking activities, to conduct the interdependent research and gain specific, e.g. technical, feedback. In order to bring about the effectiveness of capacity building measures and the quality of supervisory practice, the university needs some **resources,** such as: (i) financial support for publications and participation of academic staff in conferences, congresses, etc.; (ii) support for facilitating access to research networks; (iii) optimising the workload of PhD students, e.g. reducing their teaching hours. Special attention is also given to the need to involve **industry in university research** and to improve collaboration with industry for co-

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supervision and use of industry data. In relation to the **support mechanisms** needed to improve some university practices such as student and PhD thesis supervision, some weaknesses in funding arrangements are mentioned, such as the reallocation of the budget for the needs of the department but not for the needs of the specific professor; bureaucratic hurdles such as payment for online papers and library services; and legal frameworks that are constantly changing.

University of Prishtina "Hasan Prishtina" (UP) – Faculty of Electrical and Computer Engineering (FIEK): In view of the existing **gaps and needs** in student and PhD supervision, the key areas of focus are seen as follows: (i) specific **capacity building** of university staff, especially transversal and soft skills and specific supervision methods; as well as offering Master and PhD courses/programmes in English; (ii) applying innovative pedagogical **approaches and methods** such as PBL and POBL (Project Oriented Based Learning) integrated in curriculum; (iii) increasing industry involvement in university research; (iv) facilitating **technology transfer** to increase applied research to solve real-world problems; (v) strengthening **networking** activities and academic exchanges, in particular by inviting lecturers from other institutions and increasing joint Master's and PhD programmes with EU universities. Some improvements are needed in the existing **research infrastructure**, such as facilitating access to digital libraries, including through national and institutional level support tools; plus improving research laboratories and organising an annual scientific conference. Particular attention is given to **technology transfer and entrepreneurial** activities, with a focus on specific support mechanisms, joint supervision, specific training and regulations, such as extended study periods for students employed full-time in industry, and bilateral agreements between universities and industry/companies. The next essential aspect in improving supervisory practices lies in the increasing involvement of the university's academic staff in national and international **thematic research projects**, the ensuing involvement of students in the research activities of the faculty and the concerned professor, and the increase of recognised research results published in peer-reviewed journals and conferences. Some weaknesses are also defined for the funding support schemes, such as the limited number of scholarships, i.e. funding for doctoral activities and research abroad; no funding for students' participation in scientific conferences, which could be enabled by the specific budget line through the scientific projects at the faculty level.

University of Gjakova "Fehmi Agani" (UGJFA): The university faces the same problems and barriers as other higher education institutions from Kosovo, such as low involvement of stakeholders from industry in university research, some needs for **capacity building** and enhancing the skills of supervisors involved in supervision processes. The UGJFA has also defined some common issues in the existing supervision practices, such as the lack of student involvement in the research projects, as well as the lack of **specific topics** for students' theses which ought to be linked to the research projects, and the lack of financial support for students, e.g. for conference participation. In addition, some deficiencies of collaboration between students and academic staff in research papers, as well as published joint results, are pointed out. The next essential gaps and barriers are the low level of **collaboration between university and industry**, as well as the lack of understanding of the university entrepreneurship mission. Particular attention is paid to the low number of supervisors and particular, supervisors with a specific research field, and as a consequence, their overloading due to a high number of students.

Universum College (UC): The college has a two-cycle system and offers primarily Bachelor's and Master's degree programmes. In terms of problems and needs, the UC has defined the same key dimensions as: (i) need for industry involvement in **university research activities** and lack of interest in university partnerships from industry stakeholders; (ii) need for **capacity building** addressing, inter alia, new subject areas, communication skills, time management and online mentoring practices & individual student support

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provision; (iii) needs to increase international **bilateral agreements**, e.g. for dual degree programmes, and (iv) increase student involvement in research projects and sufficient financial incentives to support international research activities of students. Particular attention has been paid to the problem of the lack of literature in Albanian, which prevents access to information for non-English speakers as well as specific aspect of the small-scale economy in Kosovo, which prevents the expansion of research studies and outcomes. One of the next essential issues in supervision practice is the insufficient number of full-time academic staff and their overload due to the increasing number of students, whereas there is a demand to expand even more Bachelor's and Master's programmes at the institution. The next essential aspect is providing supportive instruments and **funding initiatives**, such as specific funding for supervision activities, co-supervision initiatives with industry, financial initiatives to support international student research activities. A particular issue concerns the complexity of accreditation requirements and rules, especially for curriculum update procedures.

2. Principal actors in the supervision process

This section focuses on the principal actors who may be directly or indirectly involved in the supervision processes, and are the key targets of this guideline. They are (i) the teaching staff, including the supervisors and mentors of the diplomas or PhD students in the partner universities of Albania and Kosovo, (ii) the administrative staff, e.g. the PhD offices, in the partner universities of Albania and Kosovo, (iii) the university level resource management, e.g. library and IT infrastructure, in the partner universities of Albania and Kosovo, and (iv) diplomas or PhD students.

Teaching staff: Supervisors and mentors are the most influential people in providing a satisfactory and rich experience to diplomas or PhD students. Supervisors hold core responsibilities towards the diplomas or PhD students and their project. They periodically arrange supervisory meetings with the students to discuss their work, provide feedback and support to the work in progress, and read drafts of academic research publications. Mentors offer emotional and social support, career advice and role modelling beside the advice and guidance to the development of academic knowledge, supporting the students in facing the challenges during the program and along the way in reaching their goals. Teaching staff may also include other roles that are in the way to support the diplomas or PhD students in the academic knowledge and personal development, including the institution lecturers, invited instructors, and industrial supervisory in some cases, etc.

Administrative staff: Administrative staff are those who provide support to the process of diploma or PhD education. The responsibility of PhD or diploma offices include, but not limited to, the general office management of diploma or PhD programs, supporting the collective decisions of the school for the diploma or PhD programs, answering to the administrative questions and requests to the diploma or PhD students, interaction with departments and external entities on with respect to diploma or PhD programs, arranging inward and outward exchange experiences, and managing the general dissemination of the diploma or PhD programs and outcome. Research service office is a university-wide support service with the scope of promoting and providing assistance relative to the acquisition of research funding opportunities, and stimulate the institution's participation to national and international research projects. Their activity may include scouting of information related to research and competitions, presenting research proposals to the institution, support to contracting and administrative management, as well as training to the writing of research proposals.

University level resource management: There are a range of resource collectively managed at the university level. Among them, the ones that are strictly related to the research activities are highly influential to the development of research and innovation capabilities of the diplomas or PhD students. These include the library resources on quality publications, the access to trusted databases relevant to the scope of the diplomas or PhD programs, and the availability of necessary research infrastructure and computer programs. These resources are crucial in assuring the significance and relevance of the diplomas or PhD research product.

Diploma and PhD students: These are the students' target groups that are specifically addressed in this guideline. They are the end users of the supervising and mentoring activities and the beneficiaries of the improved research capacity of the three aforementioned target groups, that are the teaching staff, administrative staff and university level resources.

3. Guidelines for supervision and mentoring practices and processes

Based on the current need for new practices in research supervision and mentoring (D 2.2), the guideline is developed considering each of the four categories of principal actors (supervisors and mentors, PhD office and administrative staff, university level resources, diploma and PhD students) involved during the process, and are affected by the project of research capacity development. Due to the specificity of the target group of diploma and PhD students, the guidelines for this target group is developed as *Target group X – Students Relationship* where Target group X refers to the first three target groups as teaching staff, administrative staff and university level resources. In this report, each guideline is specified for the institution where it applies based on the gap and need analysis.

3.1. *Guidelines for supervisors and mentors*

With respect to current problems related to the supervisors and mentors, the core issues highlighted from the gap analysis can be summarized as follows:
   (i)   Limited practical supervisory skills and specific knowledge of supervisors and academic staffs related to field expertise and research methodologies.
   (ii)   Limited commitment or unbalanced workload of supervisors and academic staffs between other academic activities (e.g. teaching) and diploma and PhD supervision.
   (iii)   Limited collaboration between supervisors and academic staff and diploma and PhD students on scientific research projects.
   (iv)   Unclear rule on the outcome of diploma and PhD students of research projects including the publication of PhD theses and academic dissemination.
   (v)   Shortcoming in the current resource base of supervisor and academic staff caused by limited experience in supervisory activity for diploma and PhD programs and limited number of full-time resources.

The guideline on research supervision and mentoring based the aforementioned gaps are outlined in more detail below:

Table 1 Guideline for target group: Supervisors and mentors

Target group of the guidelines	Guideline for the supervision and mentoring practices and processes	Institution where the guideline applies					
		U_POLIS	UET	PUT	UP–FIEK	UGJFA	UC
Supervisors/ Mentors	To set up plans for programs for developing academic and practical skills (e.g. research methodology, field expertise, on-line mentoring, co-supervision with industry) of diploma and PhD supervisors and academic staffs for enhancing the effectiveness of the supervisory activities, including the support in setting research directions and offering mentoring workshops	x	x	x	x		x
	To develop and share explicit and feasible guideline for the supervisory activities, including the specification of the time that the supervisors and academic staffs should dedicate to the supervisory activities of the diploma and PhD students	x	x			x	x
	To understand the benefit and necessity to collaborate with diploma and PhD students in research projects and scientific publication, and to engage students in the professional research network		x		x	x	
	To set up formal standards and agreement with diploma and PhD students on the final outcome of the research projects (e.g. PhD theses, scientific publication, attendance to academic conferences)				x	x	
	To establish a formal roadmap in developing experiences in conducting research project and in supervising diploma and PhD programs for existing supervisors and academic staffs		x		x		
Supervisors/ Mentors - Students Relationship	To coach and support diploma and PhD students by sharing knowledge and expertise during research conduction, and to involve students in research projects for shared benefit	x	x	x	x	x	x

3.2. *Guidelines for PhD offices and administrative staff*

Considering the PhD offices and administrative staff, the main problems emerged from the gap analysis are summarized as:

(i) Lack of funding to diploma and PhD program scholarship and financial support for participation in international conferences and open-access scientific publication.

(ii) Limited effort in scouting for opportunities of academic exchange abroad and international research projects, as well as in establishing double-degree programs with partner universities.

(iii) Limited support in arranging networking activities both within and beyond the boarder of the institution.

(iv) Lack of effort dedicated to the supporting activities of academic research, including the organization of promotion campaign for diploma and PhD program and regular staff training.

(v) Lack of development of multidisciplinary and entrepreneurial skills.

The guideline on research supervision and mentoring based the aforementioned gaps are outlined in more detail below:

Table 2 Guideline for target group: PhD offices and administrative staff

Target group of the guidelines	Guideline for the supervision and mentoring practices and processes	Institution where the guideline applies					
		U_POLIS	UET	PUT	UP–FIEK	UGJFA	UC
PhD offices/ Administrative staff	To set up a standard function in the PhD and administration office in scouting of funding opportunities for diploma and PhD programs at national and international level, to scout for opportunities related to national and international scientific competitions, and to promote the awareness and benefits of diploma and PhD program research output	x	x	x	x	x	x
	To establish a roadmap of university-industry relationship development to collaborate on practitioner-oriented research project and joint activities, e.g. corporate training, management consultancy, problem solving consultancy, that helps to contextualize research projects within the specific reality and to seek for industry financing on diploma and PhD programs	x	x	x	x	x	x
	To set up a standard function in the PhD and administration office in scouting of academic exchange opportunities, and to establish a roadmap in developing networks and alliances with other HEI for potential exchange and double-degree programs				x		x

Target group	Guideline	U_POLIS	UET	PUT	UP-FIEK	UGJFA	UC
	To develop an institutional understanding of the needs of networking activities and put in place a process for organizing and promoting PhD networking events inside and across institutions		x	x			x
	To establish regular training programs for the diploma and PhD students on developing multidisciplinary, entrepreneurial and soft skills (e.g. time management, project management)			x	x	x	x
	To establish regular training programs on regulations and innovations on administrative process in facing the administrative staff			x			x
PhD offices/ Administrative staff – Students Relationship	To develop or update teaching materials in providing students with general information and methodological knowledge on how to develop thesis works and PhD dissertations (e.g. webinar, MOOCs)	x	x	x	x	x	x

3.3.   Guidelines for university level resource management

As for university level resource management, results from the gap analysis are synthesized in the following aspects:

(i)   Lack of structured process to engage industrial participation in research projects (e.g. collaboration, sharing of industry data), and

(ii)   Need of updating library systems in accessing scientific digital databases and improving the on-campus physical infrastructure.

The guideline on research supervision and mentoring based the aforementioned gaps are outlined in more detail below:

Table 3 Guideline for target group: University level resource management

Target group of the guidelines	Guideline for the supervision and mentoring practices and processes	Institution where the guideline applies					
		U_POLIS	UET	PUT	UP–FIEK	UGJFA	UC
University level resources	To establish a dedicated university-level office that manages the institutional relationship with companies, acquires feedback from industry to contextualize research projects within the specific reality, and promotes the research project output among company networks (e.g. associations)	x	x	x	x	x	x

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	To set up schedules to organize occasions and events for companies to regularly meet research groups of interests that helps to develop research direction with practical relevance, and respond to the actual need of industry stakeholders	x	x	x	x	x	x
	To invest in the development of alumni association and network that helps companies to get access to the university intellectual resource of interest while supporting diploma and PhD students in career development	x	x	x	x	x	x
	To regularly update library infrastructure and systems concerning the access to scientific databases and improve the on-campus physical infrastructure (e.g. experimental instruments, disabled student's accessibility)		x	x	x		
University – Student Relationship	To set up a plan for the regular interaction with student offices, student representatives and student associations to collect the needs of diploma and PhD students in developing master and PhD theses (e.g. interaction with industry)	x	x	x	x	x	x