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Erasmus+ Programme
of the European Union

Mapping of Local Approaches to DigCompEdu - Intellectual Output 1 Report

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1. INTRODUCTION

Digitalization has been a key aspect of the contemporary higher education landscape, one which has received growing attention in recent years, (even prior to the dramatic impact of the current global pandemic). The role of teachers in the digital transformation of Higher Educational institutions (HEIs) is central to the enhancement of learning. As such, an effective institutional strategy of the HEIs has a fundamental role in directing, supporting and incentivising the improvement of teacher's digital competencies.

The project **"Competencies for Universities - using Technology in Education" (CUTE)** is an example of an international collaboration focused on considering the implications of digital technologies in higher education teaching and learning, from an organisational perspective. The CUTE project specifically aims to support strategic thinking at an institutional level to the development of digital competencies for university teaching, generating a proven methodology for other institutions to follow. The approach is based on the European Framework for Digital Competence for Educators (DigCompEdu). **DigCompEdu** was developed by the European Commission as a framework for defining digital competencies for educators in a structured manner across Europe.

This report constitutes the first part of the CUTE approach and provides a detailed, multi-level picture of how those competencies have been developed and supported from an institutional level in Higher Education. At the same time, this work explores the extent to which DigCompEdu, as a transnational framework, is being implemented across Europe (using the partner institutions and their networks as a sample). The data we have collected from both interviews and desk research, along with the methodology and analysis employed, aspires to form the basis of the following phases of the project. In the next steps, the project aims to engage with each partner European Higher Education organizations, to support conversations and foster the digital competence of those who teach at a strategic level.

Intellectual Output 1 "Mapping of Local Approaches to DigCompEdu" aimed to characterize the current approach to developing the digital competencies on the national, institutional, and academic level, outline the actions and practices used in partner countries to develop those competencies, and map them with the DigCompEdu framework.

Each partner carried out an analysis of current approaches to digital competencies in their local and institutional context, using standardized research tools, such as desk research and interviews. Contextual information regarding the development of the general professional competencies of educators in HE institutions were also analyzed **to capture a broader perspective and identify potential opportunities** for the inclusion of digital competencies.
A secondary aim of the research phase was **to establish a relationship with the stakeholders** and introduce them to the project and its objectives for future short/long term actions and dissemination of the outcomes of the further stages of the project.

The potential impact of the findings of the Intellectual Output 1 is to create **a basis for road maps of short- and long-term actions tailored to the needs of each institution or local context analyzed during the research stage.**

This report serves as an overview of the use of DigCompEdu and shows **institutional readiness** for the use of this framework to develop the digital competencies for academic teachers in the partners' institutions in Denmark, Poland, Spain, Ireland, Iceland, and Austria. It is formed as a collection of local, institutional approaches to digital competencies development in Higher Education. The report will be utilized as a starting point for planning to design further actions and road maps for local development.

2. RESEARCH METHODOLOGY

The research consists of two parts. The 1st exploratory phase focused on **secondary data analysis** for gaining a broader understanding of the digital competence of academics in the local context. It was also a preparatory phase for the research team to the next step of the study - **in-depth interviews** with key representatives of partners' institutions. Capturing a wide perspective allowed the research team to sound credible during face-to-face interviews. In the later stage, the data collected from both research phases described below was mapped with the areas of the DigCompEdu, however, no assessment on the progression scale was made. The purpose was to recognise indicators of the areas of the DigCompEdu in national documents and practices, in order to attempt to depict the indicative snapshot of each participating institution.

Research tools

Two main research tools were selected according to research aims and defined to gather essential data:

- **Desk research / secondary data analysis**

  Reviewing secondary data was the quickest way to understand the domain of digital competencies. Questions tackled **4 main areas**: **national and regional level, institutional level**, **research on digital competencies of academics, support for academic staff** (Appendix 1).

  The research encompassed identification and collection of various documents from the partner countries with the focus on:

  - governmental/non-governmental reports on digital competencies (eg. OECD reports),
  - legal acts, resolutions, ordinances (national, regional, institutional),
  - procedures, (national, regional, institutional)
  - standards and national strategies (national, regional, institutional)

- existing frameworks on (digital) competencies
- internal documents (resolutions, ordinances, strategies, policies, etc).

- **Interview questionnaire**

  The purpose of the interview was to collect the local approaches and practices from the authorities in each respective institution. Questions were designed to tackle the following areas:

  - digital technologies integration and comparison to other institutions
  - training of educators
  - professional development
  - relationship between the research and the didactics
  - knowledge and implementation of the DigCompEdu framework and potential channels of implementation, threads and chances.

The data gathered during the interviews held by representatives from each partners' teams helped examine the current situation in each institution.
The interviews were intended to delve into the institutional context of digital competence development and ways of enhancing this process by each institution. The interview questionnaire (Appendix 2) was designed to:

(1) to check how the documents identified in the desk research resonate with the reality (whether the DigCompEdu is already in use in real-life and how it is being implemented),

(2) to define direction towards the project's next actions through analysis of the interviewees' feelings, opinions and expectations for the development of digital competencies for academic teachers.

Target groups

Four main target groups were identified in the exploratory phase of research:

- staff development units
- university and HE institutions decision-makers
- academic teachers
- assessment and evaluation units

However, as a result of discussions among CUTE partners, the scope of research was narrowed to only two target groups that were finally addressed during interviews:

- staff development units
- university and HE institutions decision-makers

Academic teachers as individuals who develop their digital competencies were excluded from the scope of research as the main objective of the project is to address the DigCompEdu development **institutionally**. However, academic teachers will be approached later on in the project with e.g. short-term actions that are designed and planned to be delivered as part of institutional support for digital competencies development.

Assessment and evaluation units were also out of the scope of the research as they are mostly responsible for administrative issues covering students' assessment and teachers' evaluation. Their approach to measurement is quantitative through general surveys used for monitoring. Those units, typically, don't have a direct influence on shaping the strategy towards digital literacy development at universities involved in the CUTE project.

Piloting the questionnaire

AGH (Poland), the coordinator of IO1, carried out the pilot interviews to determine whether the questions are clear and understandable and if they vary enough to gain in-depth information on digital competencies. The length of the interview was also monitored to adapt the time to the interviewees' schedules.

Feedback from the pilot interview:

- The institutional focus of the project and the interviews should be underlined and short information on CUTE's actions targeted at the institutions should be added to the introduction part of the interview.
- The questions are not obvious and provoke further discussion with the respondent. They stimulate the reflection on the actual condition of the institution and its relation to digital competencies development, although they may require further explanation.
- As the interviews were mostly carried out in March 2020, the CUTE research team agreed that COVID has had a tremendous impact on HE institutions and can lead to some relevant insights, thus leading to the inclusion of an additional question.
- Duration of the interview: 35 minutes planned for 12 questions was not enough. The pilot lasted 1 hour. After the discussion, the duration was changed to 45 minutes up to 1 hour.

Summary of interviews

The total number of interviews: 18

Institution	Staff development unit	University & HE institution decision-makers
AGH, Poland	(1) e-Learning specialist in the Centre of e-Learning	(2) Coordinator of the pedagogy development team (3) Faculty vice dean for pedagogy and teaching
NUI Galway, Ireland	(1) Director of Learning & Teaching and Academic Affairs, IUA (2) Director of National Forum for the Enhancement of Teaching and Learning	(3) Member of the University Senior Management Team (4) Head of School (5) Director of Academic Staff Development Unit
UNAK, Iceland	(1) The director of the Center of Teaching and Learning	(2) Dean of the School of Humanities and Social Science (3) Managing Director
UCPH, Denmark	(1) Head of the Pedagogical Unit for the Humanities, TEACH. (2) Head of the Department of	(3) Prorector for education (4) Dean of Humanities

	Science Education	
UM, Spain		(1) Vice-chancellor of Digital Strategy. University of Murcia (2) Vice-dean of Strategy and Internationalization. Faculty of Education.
GTN + PHOOe Associated Partner, Austria	(1) Head of Virtuelle PH (National Competence Center for Distance Learning Austria)	(2) Dean of Pedagogical University College Upper Austria

3. Institutional profiles

The analysis below constitutes an initial mapping of the development of the digital competencies, and indications of the DigCompEdu framework awareness in partners' institutions based on the desk research conducted by each participating partner, and the interviews with the authorities of respective institutions. The picture demonstrated is based on the data gathered during the research phase, and is therefore subjective, and may be dependent on the particular timeframe and circumstances of the study (e.g. pre and during COVID restrictions, which varied across countries). The Intellectual Output 1 serves to demonstrate the baseline of the institutional approach regarding the development of digital competencies with the use of the DigCompEdu framework.

The questions in the interview and all parts of the secondary data analysis were deliberately structured to collect the data regarding the institutional approach and practices, and its impact on educators not on learners. The effect on the learners will be examined in the further stages of the project. Therefore, the last three areas of DigCompEdu (Assessment, Empowering Learners, Facilitating Learners' Digital Competencies) were not distinguished as much as the first three (Professional Engagement, Digital Resources, Teaching and Learning). Empowering learners, Assessment and Facilitating Learners' Digital Competencies are targeting the learners rather than the educators, whereas the whole project focuses primarily on the institutions and decision-makers.

The University of Copenhagen (Denmark)

The University of Copenhagen (UCPH) was founded in 1479. It is the oldest university in Denmark and like all universities in Denmark, it is funded by the state. UCPH is divided into six faculties, which again are subdivided into 36 departments and 118 research centres. UCPH has 9,400 employees of which 4,600 are administrative staff members. In summer 2020, 37,500 students were enrolled at UCPH. Every year 5,000 students graduate.

Overview

In Denmark, the public debate on digital competence is present on a fairly advanced level. The digitalisation of the public sector (schools, university, hospitals, municipalities and all governmental institutions) has been regulated with national strategies since 2001, the latest being Digitalization Strategy for the Public Sector 2016-2020[1]. As a result of the strategy, several projects were conducted with a shared focus on digital literacy. Earlier on, European Computer Driving Licence (ECDL) was a primary guideline for the development of digital skills.

Denmark has no regional or national frameworks or policies addressing the development of digital competencies within academic institutions. Neither for development on a strategic level nor development of the teachers' skills. The lack of regulation is a result of the universities being self-governing institutions. The governance is regulated/negotiated through a 4-year framework contract with the Ministry of Higher

[1] https://en.digst.dk/policy-and-strategy/digital-strategy/

Education and Science. However as part of the law regulating[2] the universities, the universities are obliged to offer teacher training and completion of a general teaching course (200 hours at UCPH). This is a requisite to obtain permanent positions as an associate or full professors. Each HEI is obliged by the government to integrate teaching competencies into **pedagogical courses** hosted locally by the universities, and digital skills are often integrated with these courses, however, this is up to the institution.

The Ministry of Higher Education and Science has had a focus on students' digital competencies in the latter years, in order to equip students with digital skills required for a digital future[3]. In 2019 the Ministry of Higher Education and Science launched **a grant programme** regarding **digital competence of HE teachers** - "Technological Upgrade" (2019, 45 mln DKR total). Within this programme, HE institutions, preferably in cross-sectoral collaboration, could apply for grants for specific projects aimed at enhancing teachers' digital competencies development. UCPH is participating in two projects from this grant.

At the University of Copenhagen (UCPH) The DigCompEdu Framework is not known but digital competencies are omnipresent and are often mentioned as an aside to the general teaching competencies. UCPH runs 3-5 year consecutive strategic programmes **across the university** in both research and teaching. The largest initiative regarding teachers' digital competencies, was "Online and Blended Learning (2013-2016)" (23 mln DKR) aimed at teachers and carried out by the support units collaborating across UCPH. Following up on that the current **UCPH strategy for the years 2019-2023,** "Talent and collaboration"[4], one of seven strategic projects "Common goals for the digitalisation of programmes" is focused on 3 dimensions of digital education 1) students' digital literacy 2) digitalisation of degree programmes 3) digital tools in academic courses. Teachers' digital competencies development is not mentioned explicitly but exists as an underlying part of these three dimensions.

Both strategic projects initiated a **shift in approach to competence development** - from initiatives carried out locally at the faculties towards cross-university actions.

[2] https://www.retsinformation.dk/eli/lta/2019/778

[3] https://ufm.dk/uddannelse/videregaende-uddannelse/universiteter/styring-og-ansvar/strategiske-rammekontrakter/ku_strategisk-rammekontrakt-2018-21.pdf

[4] https://about.ku.dk/strategy2023/

The interviewees at UCPH all consider the level of digitization to be average - UCPH neither considers itself a frontrunner nor a laggard. The Head of Pedagogical Unit for the Humanities, TEACH, reflecting upon the university as an institution, says that "*although we have an overall strategy for the development of digital competencies, it's not always fully reflected in the average teacher's daily teaching practice.*"

The interviewees **had not known the DigCompEdu framework** before the CUTE project made them aware of it. They see great potential in working with a framework. However, when asked about the possible obstacles on the way to implement it in their institution, they all mentioned a need for adjustment to the local context and the particular needs of the institution. The Dean of the Faculty of Humanities pointed out that a *"one size fits all-approach would definitely not work since the faculties have great freedom and flexibility in shaping their programmes."*

According to the desk research, some university colleges have used EU Digital Competencies Wheel[5] for teachers' self-evaluation but based on DigComp, not the DigCompEdu framework.

Research on digital competencies of academics has been carried out on an average scale. **The Danish Institution for Evaluation** (EVA) conducts an analysis of the quality of teaching and learning in Denmark in a specific field or institution. EVA publishes reports and recommendations to the teachers - a recent publication[6] targets the concept of learning from a different angle. There are at least 3 main **peer-reviewed magazines** on teaching and learning published once or twice a year by Danish universities or other agencies: *Learning and Media* (by the University of Aarhus), *Improving University Science Teaching and Learning - Pedagogical Projects* (by The Department of Science Education, UCPH) and *Dansk Universitetspædagogik Tidsskrift* (by Danish Network for Educational Development in Higher Education).

[5] https://digital-competence.eu/
[6] https://www.retsinformation.dk/eli/lta/2019/778

UCPH and DigCompEdu Framework

The DigCompEdu framework is unknown at UCPH. The UCPH regulations and policies do however address the development of digital competencies.

Professional engagement

The desk research showed that, according to Danish regulations, UCPH facilitates a 200-hour **pedagogical course** for teaching staff. The course is mandatory for all tenured teachers from the adjunct level.

Teachers are also obliged to keep a **teaching portfolio**. Since 2015 the portfolio has been a mandatory part of the job application[7] for any teaching position and since 2018 all teachers must have such a portfolio, which is being revised and discussed at their annual employee appraisal (a meeting with their head of a department in order to talk about next steps in the professional development plan).

The portfolio required at UCPH is based on the university's **pedagogical competence profile** developed in 2014, which covers 7 areas important for mapping a university teacher's overall teaching competencies. The digital competencies are not mentioned as a separate category of teaching competence but hidden somehow under general pedagogy skills.

The UCPH Vice-Rector pointed out that the pivotal role in transferring knowledge and competencies inside the University is played by **the network of pedagogical consultants** (launched in 2013). This is especially important as the faculties are organized differently, and their approach to designing online courses and the amount of time designated to online teaching varies.

The University of Copenhagen has **three teaching and two e-learning units to support faculty members.** They provide several courses and workshops on various subjects:

[7] https://employment.ku.dk/faculty/recruitment-process/job-application-portfolio/

supervision of students, presentation techniques, educational technologies in a didactic perspective, oral exams. There is a common practice at UCPH to offer an individual or group tailor-made workshop to address the specific needs of the teachers. Also, after any implementation of new digital tools, UCPH launches courses to introduce faculty members and updates the website with resources on learning[8] to help them make the best of the tools.

According to the Head of TEACH, the teachers generally fall into two groups: frontrunners/ early adopters & their colleagues who need more help. Those are the people that TEACH unit needs to reach with training and support for the development of digital competencies. There have been funds allocated to support these assumptions and address the development of digital learning.

Digital Resources

UCPH has focused on supporting digital administration. The University provides access to a **fast wireless internet** connection, available widely on campuses since 2016. This is treated as a prerequisite for most digital teaching and learning, as it gives the flexibility to use online tools for enhancing classes.

Teachers at UCPH have been provided with an **LMS platform since around 2006** (It's Learning until 2016, Canvas from 2016), and several systems running at faculties level before that. All courses have been created automatically since 2008 and the use of the LMS is mandatory for all teachers.

Teaching and Learning

Digital pedagogy is an important aspect of teaching at UCPH. The Head of the Department of Science Education gives examples of teachers making lectures more interactive by different means of technology. There are many **examples of innovative teaching** - from simulated experiments that make it possible for a larger group of students to follow an experiment which is carried out at a different location; through using voice over when correcting the students' translations, to structured quizzes in an advanced course in Danish grammar.

[8] https://obl.ku.dk/

The Head of the Department of Science Education reports that some teachers record their lectures and upload them. She sees multiple problems in this. Firstly, watching a recorded lecture is less motivating for the students. Secondly, this leads some teachers to worry about intellectual property regarding the recordings. Some fear that they might become useless if they put their lectures online and therefore lose their jobs.

The interviewees asked about the **balance between research and teaching** pointed out that both are important, but it depends on the type of agreement a teacher has signed. The recruitment of temporary teachers is based on their teaching skills evidenced in e-portfolios, while permanent position teachers are recruited for their scientific research quality. In general, university teachers are ranked according to their list of publications and the quality of their teaching is less vital for their careers. The Dean of Humanities underlined that the change is needed as *"teaching should be acknowledged in the same way as research has been done".*

Facilitating Learner's Digital Competencies

The students and the teachers are represented at all levels of decision making at UCPH. The voice of the students is heard through mandatory course evaluations and meetings between the vice-deans and students representatives.

The development of student's digital competencies is one of the aims of the current 2023 strategy: "Talent and collaboration". The ongoing work at UCPH includes topics like data management, digital research and methods, digital ethics, digital scientific information retrieval, and understanding of technology.

Assessment and **Empowering Learners** areas were identified neither in the desk research nor in the interviews.

Influence of COVID-19

The Coronavirus outbreak had a big impact on teaching practices at UCPH. The University responded to the new situation quite rapidly and showed a **high level of expertise.** Also, the interviewees reported rather positive attitudes towards this

unexpected change amongst the teachers, even though it was the first time teachers were expected to teach online without really knowing how to do this. Academic staff, reluctant so far, got the final push, while the frontrunners have moved even further. The Head of the Pedagogical Unit for the Humanities TEACH, when asked about the future claimed that "*this might either mean that teachers stop their development at a slightly higher level or that there'll be a rising call for courses, workshops, more knowledge".*

According to the observation of the Head of the Department of Science Education, the University **reached a new stage in online education**. When asked about the future shape of education at UCPH, she pointed out that "*it all depends whether the majority of the teachers have recognized the potentials of online teaching or they simply wish to return to normal practice they are used to before the lockdown"*.

The Prorector of UCPH referred to the **students' perspective** on educational change related to COVID-19. She reported that at UCPH the students might fear that the contact hours will be reduced to the minimum since before the outbreak the contact hours were already low (12h - BA and 8h at MA). But on the other hand, the Prorector believes that "*the hours spent at the university, can be spent more wisely e.g. teachers might design for more flipped learning".*

Also, the Head of the Department of Science and Education referred to students' attitudes and she underlined that the **students are aware that COVID situation** is a challenge for the University and the teachers. *"There has been a lot of goodwill from the students' side. In general, there's an attitude of openness and a willingness to experiment that we haven't experienced before."*

Recommendations

As the above analysis showed, the University of Copenhagen is well advanced in digital competence development of academic teachers and students. UCPH had put a lot of time and effort into supporting the academic teachers which allowed them to reach the current level of development. What is worth stressing in the context of recommendations is the current strategy for years 2019-2023 that covers 3 dimensions of digital education. The University also has its pedagogical competence profile with digital competence written into it. Besides, the requirement of teaching e-portfolio is a mandatory part of the

job application for any teaching position. The University of Copenhagen is one of the few examined institutions that has a strategy towards digital literacy. However, there is no framework implemented so far. Based on the evidence mentioned above, a conclusion can be drawn that awareness raising actions targeting the institution's authorities and educators should be the starting point. Positive attitude and openness of the decision-makers at UCPH towards competence development is a window of opportunity for implementation of DigCompEdu framework with special focus on 3 areas - Digital Resources, Assessment and Empowering Learners.

The University of Science and Technology, AGH (Poland)

AGH University of Science and Technology is one of the oldest and one of the most prestigious technical universities in Poland. Having 25 193 students and 4169 teaching staff the University offers courses in 62 branches of science within 16 faculties. The university offers studies at three levels of education, the so-called Bologna System:

- 1st cycle (6-7 semesters) leads to awarding a bachelor's degree,
- 2nd cycle (3-4 semesters) leads to awarding a master's degree,
- 3rd cycle – doctoral studies – prepares students to teach and conduct independent research, and leads to awarding a doctor's degree.

The research activity of the AGH University of Science and Technology comprises eight subject areas.

Overview

There is a residual reference on the topic of digital competencies in national policies and strategies, however, **no official frameworks** to follow. The first postulate[9] headed over to the Ministry of Digitalization by the Polish Economic Institute in 2019, states the urgency in compilation of the development of digital competencies strategy in Poland. There are,

9 https://www.digitalpoland.org/assets/publications/kompetencje-przyszlosci-w-czasach-cyfrowej-dysrupcji/kompetencje-przyszlosci-w-czasach-cyfrowej-dysrupcji-raport.pdf

however, several documents and references to different projects (especially EU-funded/ driven) as well as data processing on digitalization enhancement in the education sector. One of them is the Model of Media, Information and Digital Education (2019) that according to its authors refers to DigCompEdu.
Another document, Digital Competencies Catalogue[10] (2016), published by the Ministry of Digitalization, does not contain any standards or strategies to follow. It is, however, a reference point for further development. The data gathered during desk research shows that the initiatives are **born at grassroots,** within institutions or even work of individuals rather than as a strategy for the whole education sector. Amongst related fields, media literacy, media education and European Computer Driving Licence have their frameworks implemented nationally, which signifies a great potential for the DigCompEdu to fill the gap of the digital competencies policy.

In the **Higher Education sector** in Poland, no structured frameworks have been published to undertake the implementation of digital competencies among academics. In AGH documentation a short utterance was found addressing the use of new technologies and online teaching. According to the results of the research conducted as the first phase of the project, some of the faculties and units of the institution do integrate digital competencies in their development plans, but in a rather scattered way, without having any framework or official recommendations to refer to. In comparison to other institutions in Poland, interviewed employees consider theirs to be a leader in using technology in teaching and learning. They point out its robust IT infrastructure and a set of tools that academics have access to in their work.
As far as the didactics are concerned, the University emphasizes professional development. Several courses on the use of technology, conducted by E-Learning Centre and Information Centre (UCI) are offered and various new projects are being carried out regularly. These actions are, however, decentralised and rather voluntary than obligatory, detached from the core didactic training for teachers.

The interviewees **were not aware of the DigCompEdu** before. When asked about the possible obstacles on the way to implement the framework to their institution, they all mentioned that there is a lack of understanding of the need for such a framework to be executed. Another important thing was altering the mindset of teachers around the

[10] https://cppc.gov.pl/images/uploads/zal.-13-Ramowy_katalog_kompetencji_cyfrowych.pdf

technology itself, as a new way of communicating with students and a new form of teaching and learning - roles some still refuse to acknowledge. Respondents pointed out the urgency of that matter, as AGH aspires to be one of the best HEI in the whole country, striving to attract the best candidates who often come from high schools where lessons are conducted interactively, blended with informal learning and technology. They expect the same and more from their future university/college. To achieve that the whole programme of the studies needs to change, as well as training for teachers. The institution lacks resources (also the human resources) to have a well developed and centralised didactic strategy that includes the development of digital competencies of academics, admitted The Vice-Dean for General and Students Affairs in the Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering. Furthermore, he indicated a **time factor** to be a problem, as teachers and university staff are overloaded with current tasks.

The respondents of the questionnaire indicated the IT department along with the E-Learning Centre, Project Centre and the Centre of Education to be the units included in the implementation of the DigCompEdu framework pilot in AGH. Channels of influence and communication mentioned in the interviews were mostly the internal surveys, newsletters and actions conducted by E-Learning Centre (CeL).

Research on digital competencies of academics has been carried out on a rather small scale. There are several papers and projects on digital competencies in education in general, or in the primary and secondary sector. As for higher education, the work of dr hab. Eugenia Smyrnova-Trybulska (University of Silesia, Katowice) stands alone among dissertations and projects on academic competencies for its reference to digital competencies. When it comes to DigCompEdu in particular, it is being mentioned and referred to in several papers and projects in a European level, such as the Analysis of the Strategy and Operations aiming to the development of digital competencies in European Union Countries[11] (Digital Poland Foundation, 2018), or DigComp into Action [12](European Commision, 2018).

[11] https://cppc.gov.pl/images/Analiza_strategii_i_dzia%C5%82an_majacych_na_celu_rozwoj_kompetencji_cyfrowych_w_panstwach_Unii_Europejskiej.pdf
[12] https://publications.jrc.ec.europa.eu/repository/bitstream/JRC110624/dc_guide_may18.pdf

AGH and DigCompEdu Framework

Professional Engagement

As desk research showed, the training for educators is hardly integrated into the university's policy. AGH has a Teaching Development Study Centre at the Faculty of Humanities, obligatory course for teachers, and online courses provided by the E-Learning Centre, certifying teachers on designing communicative and properly structured online courses with the use of university's Virtual Learning Environment (UPeL) (4ECTS). The Quality Assurance department is proposed to be reoriented and the development of digital competencies is to be included in their new strategy. Many ongoing projects are targeting the research and didactic competencies of educators in AGH. One of them is the "POWER" project. It is a National Grant for Competence Development. As a part of this project educators and administrative staff participate in a variety of courses and training. There is also the Research University Project that aims to enhance the level of education through research and informal education (interest groups, research groups). It intends to acknowledge research as a part of the learning process. The university demonstrates great cooperation with the industry sector in Poland. This relationship reinforces the significance of the research as a part of academics' career, presenting it more prestigious than didactics.
When it comes to the development of teachers' digital competencies and support in using technology in education, E-Learning Centre offers regular courses, webinars and meet-ups related to these topics. The Centre reinforces the development of didactics in traditional, online and blended approaches.

Digital Resources

AGH has many tools and programs at its disposal. Teachers mostly use a variety of communicators and platforms to communicate with students and collaborate with other academics. E-Learning Centre systematically hosts webinars and short courses on how to use different systems and online tools available for teachers, how to exploit open sources and respect copyright rules when using, modifying and sharing resources. All the employees have access to the university platform hosted on Moodle, where they share their repositories of resources with students as part of their courses as well as

create online courses - either as a form of support to their courses held in the classrooms or as stand-alone online courses. Since 2010 E-Learning Centre coordinates and develops "OPEN AGH - open sources" and "OPEN AGH - textbooks" projects. The first is the university's repository of materials and courses, the second - digital textbooks and manuals, posted on a platform for publishing, reviewing and using e-textbooks online. All materials available at Open AGH can be copied, distributed, as well as transformed and adapted to one's needs under the Creative Commons Licence.

Teaching and Learning

Strategies are being revised and enhanced with the use of technology. AGH adapted new technologies to interact with students and encourage them to use digital resources in their collaborative and self-regulated activities. A part of the teaching and learning activities is set up in the digital environment.

Educators more and more see the necessity to respond to students' needs, who as they acknowledge, use digital tools in their everyday lives. Their guidance to make this use meaningful and ethical is a critical part of higher education, they claimed during the interviews. Also, the development plan for the QA department anticipates including a didactic training for teachers to emphasise the new challenges in the ways of communication with students and tailoring their teaching methods to be more suitable for the current generations.

Assessment

Formative and summative assessment is not fully incorporated in the digital environment. Educators mostly rely on old-fashion tests and exams options to be conducted in the classroom. However, often it appears that some of them do use certain methods and solutions, but do not consider them as a part of the digital competencies. One of the resources mentioned was the grade book function of the Moodle-based platform, UPeL (University E-Learning Platform).

Empowering Learners, and **Facilitating Learners' Digital Competencies**

The technology used is accessible for all the students. Educators are aware of the problems students might face, such as internet connection and access to a proper device. More and more teachers gravitate toward the blended learning model. Learning

activities are incorporated and subject to a given context. Those who went online with parts of their courses started to see the personalization and sustainability of digital education and its feasible outcomes for students.

Impact of COVID-19

The Coronavirus outbreak forced most of the educators to explore the digital facilities available at the University. Those who were reluctant and perceived the use of technology in teaching and learning as redundant were forced to familiarise themselves and adapt their academic courses to the digital environment. The interviewees describe this experience as rather positive. They express hopes that this difficult situation will trigger a wave of positive changes in terms of technology use and digital skills development. The challenges observed during this period oscillated around the difficulties with accessibility of various programs, tools, licences and issues related to GDPR.

Recommendations

E-Learning Centre (CeL) in cooperation with the Education Support Centre and the Representative for Education Quality regularly conducts numerous initiatives and projects that could influence further actions, anticipated in the subsequent part of the project. Open webinars, certifications, projects, conferences, tools and tutorials, meetups are just several examples of their operations. Drawing on the outcomes of the desk research and interviews, actions to **raise awareness of the DigCompEdu** framework among the **decision-makers, as well as academic teachers**, would be a good starting point. Parallelly to raising awareness, the **implementation work actions** need to be on the agenda, to tackle the problem realistically in a situational context.

The University of Akureyri (Iceland)

University of Akureyri (UNAK) is a rather small university having 2,466 students and 228 staff that offers programmes in the following subjects: social sciences, media studies, nursing, occupational therapy, teacher training (preschool and primary school), biotechnology, law, police science, modern studies, psychology, fishery studies, computer science and business administration.

Overview

The level of digitalisation of UNAK is advanced. In comparison to other institutions, interviewed employees consider their institution to be a leader in using technology in teaching and learning but follow in others. According to the director of the Centre for Teaching and Learning, "*digital technologies are up to 80% integrated into the teachers' daily practice, all lectures are recorded and published on LMS and 75% of final exams are online*". These impressive data links with types of classes being carried out online such as online study sessions, telepresence robots, group work, lab work, online exams with or without lockdown browser and oral exams online.

Although there is **neither a direct strategy nor institutional standards** addressing the professional development of the university and individuals, UNAK has established a **clear vision** on how to develop digital competencies of teachers and PhD students. The overall Strategy of the University of Akureyri for 2018-2023 [13] states that all courses should be offered in a **flexible form understood as blended or fully online mode**. This requires some level of teachers' expertise both in the digital environment and online teaching and learning. To reach and maintain the master level of ICT usage, UNAK has implemented a training and consultancy system for the academic community (for teachers and students). This is required by the Quality Enhancement Guidelines for Icelandic Higher Education (2017), that clearly define that the responsibility for enhancing and supporting teachers' development in digital competencies lies with HEI, individually.

13 https://www.unak.is/static/files/Haskolinn/stefnur/strategy-of-the-university-of-akureyri-2018-2023.pdf

The interviewees have heard about the DigCompEdu before but in a more general context than national or institutional. Respondents pointed out that the implementation of DigCompEdu shouldn't be problematic as the **university decision-makers have a rather positive approach to the framework.** It is seen as a useful tool for digital competence development of academic teachers especially for (self)evaluation and planning own next steps on raising the quality of work. Despite the positive approach to DigCompEdu, there is **a risk** observed that the **benefits** of its implementation will be **not fully understood** by UNAK teachers. Furthermore, the respondents indicated a **time factor** in risk management as teachers' and university staff are overloaded with current tasks. All interviewees underline the **importance of an in-depth analysis** of the current University condition to catch the "big picture" and develop an implementation plan in details to be ready to start after the evaluation process planned for 2021.

Channels of influence on academic community and communication mentioned in the interviews were mostly university policy with a clear statement on digital competence development, a strong path for training and support and **internal students surveys** (realistic criticism to be used for improvement).

Desk research indicated **a lack of any research and research paper** on digital competencies and DigCompEdu Framework especially**,** conducted nationally or institutionally.

UNAK and DigCompEdu Framework

Professional engagement

As desk research showed, the training for educators is integrated into the university's structure. UNAK has its Center of Teaching and Learning (CTL) that supports academic staff in digital competence development at all levels across the university. The support is designed in a form of **training** for staff groups as well as for individual teachers and **consultancy** (both online and on-campus). Since all UNAK courses are blended or completely online, the common topics being consulted are teaching and technology.

Interview with the Director of the Centre for Teaching and Learning at UNAK showed that The Centre emphasizes **coherent training services**. The unit has designed and launched 10 ECTS course entitled "University Teaching". The teaching staff hired after 2016 are obliged to participate in this course since 2016. The course is both theoretical and practical. Its scope focuses on teaching methods and digital tools that should be mastered by teachers to be able to use independently the digital technologies that the Center provides and supports.

Parallel to "University Teaching" course and consultancy, the academics get support in their development of digital competencies in the form of EduCamps meetings and webinars, Wiki page with instructions for all the tools and online helpdesk.

Digital Resources

As far as the Digital Resources are concerned, UNAK has many tools and programs at its disposal. Since all lectures are recorded and published on LMS, the production of digital resources is on an advanced level. UNAK is very well equipped with ICT for that purpose. The Director of The Centre for Teaching and Learning at UNAK reported all digital tools should be mastered by teachers for facilitating their blended and online courses.

At the same time, online classes are not limited to uploading digital materials on the LMS platform. The focus in teaching is put on keeping online relation and regular contact with and between students. UNAK teachers design courses in a way that engages students in communication and collaboration and consequently use tools enhancing social activities. The Dean of the School of Humanities and Social Science took this approach as a **big shift in teaching.** *"There are no longer just lectures online. We are focusing on* ***relation and connection*** *with students through Zoom, Teams and work in small groups to enhance communication."*

Teaching and Learning

According to the Dean of the School of Humanities and Social Science, UNAK has made great progress in using ICT and now the "***technology*** *is* ***no longer an obstacle*** *for*

teachers". But at the same time, there was a huge development in teaching methods without enough support or training for academics.

Another important insight from the interviews and the desk research is the importance of teaching about digital technologies through pedagogical and didactic perspectives. UNAK teachers are aware that tools should always serve pedagogy, not the other way around. They consider using digital tools in the context of learning outcomes.

On the other hand, teachers **like to learn how to use digital tools, rather than pedagogical innovations** and as the Managing Director at UNAK, pointed out, some of them consider their **digital skills as an additional task** they should get paid extra for, rather than as a part of regular work.

The respondents, asked about the balance between research and teaching, pointed out that both are important with, according to the Dean of School of Humanities and Social Science, slightly more focus on teaching as it is the primary activity at the University. However, the **research** seems to be **more prestigious**. Teachers are given a commendation for scientific projects, not for teaching. However, there are **no consequences** for lack of research at the University.

Assessment

This area of DigCompEdu was not mentioned a lot in the interviews. Since UNAK focuses on online learning based on social activities and collaboration, assessment should be adjusted to the types of learning. Certainly, learning outcomes are linked with each course and the assessment strategy must be associated with them.

Empowering Learners, and **Facilitating Learners' Digital Competencies**

These areas of DigCompEdu were not mentioned directly in the interviews and the desk research, but based on data collected, some assumptions can be made in this regard.

Online and blended learning at UNAK seems to be the best way to **differentiate and personalise** learning by allowing students to advance at different levels and speeds, and to follow individual learning pathways and objectives.

Innovative pedagogy at UNAK, focusing on social learning and collaboration also gives a good basis for another aspect of empowering learners - **active engagement**. Students

and teachers (who also act as learners while participating in professional development activities) are supported by online helpdesk where they can ask for help regarding anything related to their teaching or learning.

Information gathered above, in the **Teaching and Learning** part, allows us to believe that also the last area of DigCompEdu, Facilitating Learners' Digital Competencies, are addressed by UNAK teachers. Different types of classes such as online study sessions, telepresence robots, group work online, lab work online require rather **higher cognitive skills** and **complex learning outcomes** (according to revised Bloom's taxonomy, 2001) that are listed in DigCompEdu Framework.

Influence of COVID-19

Blended and fully online courses are the regular educational offer at UNAK and the unexpected outbreak of Covid-19 didn't change that. Most academic teachers at UNAK facilitate online/blended courses daily, so both students and teachers are used to working remotely.

Despite this fact, the Dean of the School of Humanities and Social Science has observed that some teaching staff was pushed to use more communication tools in their classes. Even though at the beginning they were reluctant, after a few months of a fully online and social mode of teaching, they now see more opportunities than obstacles.

Recommendations

The university decision-makers have a rather positive approach to the DigCompEdu Framework and the University has established a clear vision of online education with a well-defined path of teachers training and consultancy. UNAK community seems to be well prepared for the DigCompEdu implementation. However, as the interviewees reported teachers and the university staff are overloaded with current tasks. There is a risk that the benefits of implementing any new framework supporting their development will be not

fully understood and that the teachers remain resistant. Taking that into account, the implementation of DigCompEdu should be focused on **mapping the existing actions** and the way how they can be **adjusted to the 6 areas of the framework.** A new path for competence development based on DigCompEdu might be also discussed with the whole community of teachers to **raise their awareness** and explain the **advantages** of DigCompEdu.

The National University of Ireland, Galway

The National University of Ireland, Galway is 175 years old, and according to the latest data, employs 2,681 staff, and provides education for over 19,000 students. NUI Galway offers programmes in the following subjects: Art, Social Science and Celtic Studies; Medicine, Nursing and Health Sciences; Business, Public Policy and Law; Engineering and Informatics; Science; Adult Learning and Professional Development.

Overview

Ireland has some considerable integration of digital competence development at both national and institutional levels. There are several policies, regulations and frameworks which guide each level of education: primary, secondary, 'post-secondary' (ie further education and training), and higher education. At the primary and secondary levels, the Irish Digital Strategy for Schools[14] is underpinned primarily by the 2011 UNESCO ICT Competency Framework for Teachers[15]. However, subsequent Digital Learning

[14] Irish Digital Strategy for Schools (2015)
https://www.education.ie/en/Publications/Policy-Reports/Digital-Strategy-for-Schools-2015-2020.pdf
[15] UNESCO ICT Competency Framework for Teachers (2011)
https://unesdoc.unesco.org/ark:/48223/pf0000265721

Frameworks[16] make explicit reference to both the EU's DigCompEdu and DigCompOrg frameworks. The SELFIE tool[17] for self-evaluation is also in use among various primary and secondary schools. .

In Higher Education, the National Forum for the Enhancement of Teaching & Learning[18] (established in 2012) plays an important role, developing frameworks and guidelines, as well as providing funding for teaching innovations. All institutions have representative 'Associates' to contribute to the Forum's policy and strategy development, and the organisation is a semi-independent body within the overall domain of the Higher Education Authority (main funding body for the sector). Other influences on policy and institutional practices stem from the national quality agency: QQI -Quality & Qualifications Ireland.[19]

The National Forum has developed a Professional Development Framework[20] (for all those who teach or support learning in higher education) which identifies five broad domains which allow staff to identify and structure their professional development, typically by building a portfolio and participating in formal or informal courses or events. Many institutions have their post-graduate level qualifications that align with this framework, completion of which is not mandatory but is often considered in applications for promotion and career development.

According to the one interviewee, Ireland is not lagging behind other European countries in putting a focus on digitalization in the education sector. Irish institutions participate in various European projects that reinforce digital skills among students and teachers (including CUTE and other Erasmus+ partnerships).
Numerous national initiatives and organizations contribute to the enhancement and innovation of learning, and digitalization is undoubtedly on their agenda. The current Government has made education provision, the knowledge economy and innovation in their overall strategy, explained the Director of Learning & Teaching and Academic

[16] https://www.dlplanning.ie/
[17] SELFIE https://ec.europa.eu/education/schools-go-digital_en
[18] National Forum for the Enhancement of Teaching and Learning https://www.teachingandlearning.ie
[19] https://www.qqi.ie/
[20] https://www.teachingandlearning.ie/publication/national-professional-development-framework-for-all-staff-who-teach-in-higher-education/

Affairs, IUA in an interview. The fifth domain ("Personal and Professional Digital Capacity in Teaching and Learning") of the *National Professional Development Framework for all Staff Who Teach in Higher Education* covers the digital skills of teachers and learners. The National Forum (for the Enhancement of Teaching and Learning), has recently run the 'INDEX' survey[21] to establish both teachers' and students' perspective on digital technologies and competencies. This provides for better-informed needs analyses, and the findings set a benchmark for further roadmaps, support and enhancement initiatives. The organization tries to encourage different disciplines across universities (and the other institutions providing higher education) to *"engage with technology and to engage with teaching and learning enhancement"* (Director, National Forum). Another initiative is to create a national *learning community* - a space for communication and collaboration between disciplines across institutions. The 'All Aboard[22]' project (funded by the National Forum) to provide support for digital competence development (for students and staff) identified tens of existing models and frameworks and used these to develop an approach deemed to be well-suited to the Irish educational context.

Domain 5 of the national Professional Development Framework is most relevant to DigCompEdu, with its focus on the development of personal competence in digital skills, and is underpinned by the National Digital Skills Framework for Education[23] (All Aboard). Those frameworks capture **Identity and well-being** which is absent as an explicit reference in DigCompEdu. This category is related to understanding the nature of your online self, data, and information privacy and protection, and taking care of yourself, others and information, in ways that are ethical and respectful.

Other sources of digital skills enhancement used in the country include those provided by major companies such as Apple, Microsoft, and Google, each of which has a major presence in Ireland. Continuing Professional Development educator programmes, including Apple Teacher, Microsoft Certified Educator, and Google Educator Certification, specifically aimed at teachers in K12, with some extending to Higher Education. Irish educators can also avail of the Association of Learning Technology (ALT) CMALT[24]

[21] https://www.teachingandlearning.ie/index/
[22] https://www.allaboardhe.ie/
[23] https://www.teachingandlearning.ie/wp-content/uploads/NF-2016-Towards-a-National-Digital-Skills-Framework-for-Irish-Higher-Education.pdf
[24] https://www.alt.ac.uk/certified-membership

certification, and both the UK Staff and Educational Development Association (SEDA[25]) and Advance HE[26] fellowship awards, along with National Forum Open Courses[27].

Research on digital competence, DigComp or DigCompEdu as well as digital competence in the HE context has been carried out by various institutions and in national and European projects. Desk research showed that there have been at least two Masters level dissertations looking at digital skills in higher education since 2018 and an EU Project summarising case studies of professional development initiatives. National projects, such as the EDTL[28], have also produced conference publications and major reports to date, employing a national approach to encompassing DigCompEdu in higher education institutions.

Within NUI Galway, the extent to which digital skills, technologies, and practices are present or embedded varies between Faculties and Departments (Director, CELT). Relative to some other HEIs the university has had limited resources (including staffing) in this area but has a solid foundation and can identify areas for improvement and enhancement. The authorities acknowledge the significance of nurturing students' digital literacy as this is one of the requirements the modern world sets for graduates, (Senior Management Member) The technology is realised to provide the means to tackle numerous obstacles including "*... students not being able to be in class all the time, and [has] the ability to reach diverse groups of students, geographically, socially, economically*" (Director, Learning & Teaching and Academic Affairs, IUA). The university participates in programmes for enhancing the digitalization of teaching and learning (such as those facilitated by the National Forum and the IUA) and implements several external quality frameworks and guidelines, through its internal QA system. Annually an effort is put to interview candidates for master programmes and learn about students expectations, also in the digital domain.

[25] https://www.seda.ac.uk/
[26] https://www.advance-he.ac.uk/
[27] https://opencourses.teachingandlearning.ie/
[28] https://edtl.blog/

The DigCompEdu competence grid was familiar to the respondents before the interviews. According to the Director of the Centre for Excellence in Learning & Teaching, DigCompEdu has already been implemented in local frameworks and practices, including the Postgraduate Certificate in Teaching and Learning[29] and the Postgraduate Diploma in Academic Practice[30]. The Centre is well-connected with and influences the work of academic staff across Faculties. It organizes projects, conferences, and other events that have high levels of academic staff participation. It has recently started an open "Teaching and Learning Forum" for ideas sharing and discussion (through MS Teams).

Some of the challenges to implementing DigCompEdu (and the development of digital competencies generally) identified in some of the interviews include (a) the range of perspectives held by staff with regards teaching, research, and appropriate skills development, some being innovative, and others being more traditional in their approach; (b) the importance of obtaining senior management support and leadership; (c) the limited resources allocated for training and development; (d) the need to make a more explicit connection between technical skills and pedagogy (since some misconceptions may exist).

NUI Galway and DigCompEdu Framework

Professional engagement

Training for teachers and support in professional development is explicitly included in the university strategic plan 2020[31]. The University has also developed a 'Competency Framework for Academic Roles' to ensure that the candidates demonstrate a set of attributes that would enable them to effectively perform their professional roles and support duties. For new employees, the University offers several programmes for career support and development. Even though these programmes do not explicitly underpin digital competencies, there is certainly a potential for implementing doing so in future.

29 http://www.nuigalway.ie/centre-excellence-learning-teaching/professionaldevelopment/courses/postgraduatecertificate/

30 http://www.nuigalway.ie/centre-excellence-learning-teaching/professionaldevelopment/courses/postgraduatediplomainacademicpractice/

31 http://www.nuigalway.ie/strategy2025/

Examples mentioned in the desk research identified scope for more explicitly incorporating relevant aspects into the Curriculum Management System and formal programme and module descriptions.

The University is also actively engaged with the National Forum, and as with all Irish institutions can avail of the resources and materials arising from any National Forum projects (in fact, in most cases, National Forum resources are released publicly on a Creative Commons licence and so can be used beyond Ireland). The Forum itself has a digital strategy for supporting technology up-skilling in the institutions and works in close partnership with student organisations also. (Two relevant funded project projects are All Aboard[32] and TELU[33]).

In the interview, the Member of the University Senior Management Team clearly stated that the focus on such skills development should be on academic staff rather than students, which aligns well with the objectives of the CUTE project. He believes that the younger generation already speaks in the language of technology, and those who teach need to have such skills to communicate with their students on common ground. He strongly believes that the concept of being an academic has changed significantly and needs to be revised to serve the needs of the 21st century.

The Centre for Excellence in Learning and Teaching[34] (CELT) at NUI Galway supports the professional development of academic staff and others in the broad area of contemporary academic practice, with a focus on teaching and learning. The Director of the Centre also noted that *"technologies are taught explicitly in some of our modules on these programmes, but also through workshops, online training, and indeed we use it to support and deliver our own courses so that participants can learn about effective technology use just by virtue of taking any of our courses."*

Some of the interviewees commented that when it comes to the relationship between the research and teaching dimensions of academic careers, for many years, research has been dominant in terms of recruitment, promotion, and prestige. Now, in more recent times the situation has been changing and teaching is gaining more attention and stature.

[32] https://www.allaboardhe.ie/
[33] http://telu.me/
[34] http://www.nuigalway.ie/celt/

Digital Resources

The university's Learning Management System (Blackboard Learn) was first activated in 2003 and is used by all academic staff, though to varying degrees. It is used for announcements/notices, assignments and assessment, project and group-work and for hosting content of various types (e.g. PowerPoint, PDF, video clips, etc). Technology is used generally for teaching in the classroom as well as online. Polling tools, simulation (especially in medicine) and other approaches supported by technology are also used.

Teaching and Learning

The University is, according to the Head of School interviewed, increasingly moving towards a more blended approach. Different strategies need to be adapted to keep students engaged in a digital model and to teach synchronously and asynchronously. The Senior Management representative sees the need to have an explicit link between technology and classroom interactions. He suggested that most lecturers would want a full classroom of attentive and engaged students. Students, on the other hand, he suggests, are used to having their screens on and are fluent users of social media and creators of digital content. They are no longer thrilled by listening to a lecture, looking at the class board and reading texts. To reach the new type of students, in his view, educators will have to adopt a new set of skills as well as link students' academic work and technology.

Assessment

The interviewees acknowledge that technology adds a new dimension to the assessment process in terms of innovation, reliability and variation. It also aligns with developing students' digital literacy, in addition to aiding the processes from submission to grading. There is an increased use of multimedia assignments and assessments in a break from the traditional forms.

Empowering Learners and Facilitating Learners' Digital Competencies

Students in NUI Galway are engaged in numerous projects (e.g. Digital Champions) and activities that use technology and which nurture and develop their digital competencies. The interviewees believe that digitalisation has brought more personalisation to the

relationship between the teacher and students, enabling direct contact at different times and geographical location, increasing students' engagement and participation by enabling new channels for learning and interaction.

Influence of COVID-19

Most of the interviews and desk research were conducted immediately before the outbreak of COVID-19 in Ireland. The Director of CELT, who was interviewed later, summarised the situation:" This [pandemic] has had a massive effect. Suddenly, all levels of the institution realise the value in 'the digital' and the crucial need to upskill our staff in the effective selection and use of technologies to support our teaching mission. DigCompEdu is in a perfect position to be adopted because it provides a ready-made framework in which we can position these training and development initiatives."

Recommendations

It was clear during the research phase of the project that NUI Galway has already been mapping its frameworks and policies with DigCompEdu. The digital aspect of education has been incorporated into training and professional development and the Centre for Excellence in Learning & Teaching promotes technology's legitimate role in modern pedagogy. Taking into account its existing actions and projects, the assumption can be made that the awareness of digital competencies and DigCompEdu in NUI Galway is constantly growing and more **consolidating** and **reinforcing** action would be beneficial. The focus could be directed to different **areas of the framework** and precisely mapping them with current practices to identify short and long-term actions that best address any such gaps and lead to targeted enhancements in these areas.

The University of Murcia (Spain)

The University of Murcia (UM) is a public University, **the largest in the Murcia** region, with 33,000 official students, 2,650 teaching staff and 1,200 administration staff. UM is organized in 5 University Campuses, 21 faculties and offers 51 Degree Programmes, 68 Masters Programmes, and 51 PhD programs from the 5 main knowledge areas (Sciences, Social Sciences, Humanities, Health and Arts). Among its main objectives are the creation, development and research into science, technology and culture through study and research and the transmission of such knowledge through education.

The context / Overview

The **debate on digital competence for teachers** and especially the framework has been **present in the Spanish academic community** for around a decade.

In Spain, digital competencies for teachers have been implemented first nationally in 2015 by the **National Institute of Educational Technologies and Teacher Training** (INTEF), which is the unit of the Spanish Ministry of Education and Vocational Training. INTEF developed its framework for Teaching Digital Competence in collaboration with administrations and educational institutions, INTEF worked towards a digitally competent education in three areas: institution, teachers and students.

After the **Joint Research Centre**, the European Commission's science and knowledge service developed **DigCompEdu Framework**[35] In 2017, INTEF has re-written and adjusted its framework to the European one.

[35] http://aprende.intef.es/mccdd

In Spain, each autonomous community can make independent decisions with regards to education. In Catalonia, the **regional frameworks** on digital competencies were developed within the project called "Competència digital docent del professorat de Catalunya[36]". It prepared the basis for regional **certification for the teaching profession** (just for public education) as well as redefined the pre-service initial teacher training programmes.

Other regional development on portfolios for teachers' digital competencies[37] that regulates criteria and digital evidence for each competence level (according to DigCompEdu) or Digital Agenda of Euskadi 2020 for improving digital skills for people, companies and organization, is worth mentioning as well.

Research on digital competence, DigComp or DigCompEdu as well as digital competence in the HE context has been carried out by various institutions. Quick research in Google Scholar resulted in more than 2000 of research papers and publications . These areas seem to be very common research topics in Spain. Desk research also showed that digital competencies have been the focus of national and European (research) projects, over the last decade.

Digital competencies and HEI

According to the desk research, the most important insight in the context of this report is that even though some general frameworks are addressing digital competence in a universities context, the formal law or regulation on the digital competence of educators **at higher education level have not been developed yet.** The lack of digital competencies is also observed in the process of the accreditation (at national or regional level). On the other hand, the National Conference of Spanish University Rectors is developing some actions with the horizon on the DigCompEdu that could be addressed to the universities. Also, some Spanish universities, including the University of Murcia, are collaborating with the EU Joint Research Centre on the **piloting of a self-assessment tool for DigCompEdu** to receive constructive feedback from the HEI perspective.

36 http://ensenyament.gencat.cat/web/.content/home/departament/publicacions/monografies/competencia-digital-docent/competencia-digital-docent.pdf

37 https://recursos.educarex.es/pdf/porfolio/porfoliopublicadoendoe.pdf

Analysis of the University of Murcia (UM) current situation regarding digital competencies, led to interesting findings. The Vice-Chancellor of Digital Strategy, has started an **Institutional Project of Digital Strategy** that includes "digital education" as one of its objectives. The strategy assumes that the University will be digitally transformed within 3 main areas: teaching model/pedagogy, tools for classes enhancement and digital competence development. However, no actions have been initiated towards digital competencies development so far.

In comparison to other institutions, interviewed employees consider the University of Murcia to be **well digitized**, taking into account that UM offers mostly face-2-face courses. Vice-Chancellor of Digital Strategy of The University of Murcia, observed that some faculties are leading in digital education over others due to their specialization. The majority of teachers have very well integrated technologies into their practices.

The interviewees were aware of the DigCompEdu before. When asked about the possible obstacles on the way to implement the framework to their institution, the **resistance to change** or the **lack of interest** of some teachers and the **complexity of the UM structure** were mentioned.

UM and DigCompEdu Framework

Professional engagement

As desk research showed, the training for academic teachers is present in the university's structure, however in a form of rather **decentralised**, individual actions such as seminars and courses, rather than obligatory or systematic initiatives. The Vice-Chancellor of Digital Strategy however mentioned a plan for teachers' training that is developed annually but underlined that such a plan is detached from the general vision of DigCompEdu framework at the institutional level.

Two units of UM theoretically support staff´s competencies:

- Centre of Training and Professional Development[38] (Centro de Formación y Desarrollo Profesional). The main areas of its responsibility are the design and the

[38] https://www.um.es/web/centrodeformacion/

development, the management, the monitoring of the teaching and administrative staff training results and applicability, human resources.

- Unit of Innovation[39] (Unidad de innovación) is in charge of the promotion, the organization and the evaluation of educational innovation initiatives in the teaching and learning (however its responsibility has been reduced to the minimum since 2016).

Teachers can also find support for competencies development in the network of university libraries.

According to the Vice-Chancellor vision, further steps towards the development of a coherent programme for staff development cover: (1) current situation analysis (2) an alignment competence with training strategy (3) list the training needed for the competence development.

As mentioned earlier, some Spanish Universities collaborate closely with the EU Joint Research Centre (JRC) on DigCompEdu framework. The University of Murcia is one of the leading institutions in this process. Instead of making its frameworks at the university level, UM, among other universities, shares the experience of using DigCompEdu with the JRC to create only one, coherent frame.

One interesting insight from the interviews is the fact that the academic community at UM **doesn't have any influence** on supporting their digital competence development.

Digital Resources

Innovation groups within the University of Murcia investigate the use of ICT and produce resources for the students. The UM Innovation Unit launches initiatives aiming at teaching materials production and exchanging good practice between teachers.

The LMS (Aula Virtual, based on SAKAI) is completely integrated with UM structure. Some teachers use the platform for innovative pedagogy, while others treat it as a

[39] https://www.um.es/web/innovacion/

repository of digital resources prepared for students. Some of the digital resources produced by UM teaching staff have been released as Open Educational Resources.

Both academic staff and students have unlimited access to the very well equipped network of university libraries where they can find resources and receive support. Additionally, UM has a repository of resources, a Data repository, a TV Channel, and many other facilities that are part of the digital transformation strategy of the institution in the last 20 years.

Teaching and Learning

Academic teachers at UM are used to digital tools and pedagogy in general. The University is equipped with digital tools and resources for enhancing face-to-face classes, but the level of innovation in pedagogy can vary between faculties.

According to the observation of The Vice-Chancellor of Digital Strategy, the leading role plays The Faculty of Computer Science, where teachers are familiar with digital infrastructure and are digitally competent to use these tools for effective and engaging teaching. This faculty hosts many national conferences where teachers have the opportunity to share experiences on digital teaching.

The interviewees, asked about the **balance between research and teaching**, pointed out that both are important and teachers try to be involved in both fields. The Vice-Chancellor of Digital Strategy of the University of Murcia, reported that "*we are "multiversities" and we want to be the best of both*." But at the same time, he reflected that the research-teaching balance varies between faculties. Some faculties are more focused on research due to their specializations e.g. the Faculty of Education should be a natural leader in both teaching practice and research on pedagogy since these two elements can improve their teaching in the faculty and therefore the educational experience of future teachers that will learn new ways of teaching.

Assessment, **Empowering Learners** and **Facilitating Learners' Digital Competencies** areas of DigCompEdu framework were identified neither in the desk research nor in the interviews.

Influence of COVID-19

The Coronavirus outbreak forced most of the educators to explore the digital facilities available at the University. Those who were more resistant to online teaching, after the lockdown are more aware of the importance and benefits of online education.

From the perspective of UM authorities, this unexpected lockdown created a space for reflection upon the digital transformation process at the university that can lead to detailed plans with actions defined and timeline assigned.

Recommendations

The authorities of the University of Murcia are aware of the importance of digital competencies. The Vice-Chancellor has decided on the development of the **Institutional Project of Digital Strategy** that includes "digital education" as one of its objectives. However no systematic actions have been taken so far, and this fact could be seen as a window of opportunity. Since the existing form of professional development is rather scattered, the detailed action plan can be made to design a coherent and clear process of digital competence support. Drawing on the outcomes of desk research and interviews, some actions to **raise awareness among academic teachers** would be a good starting point. Also **actions that focus on the implementation** of the DigCompEdu framework into the University structures addressed to **decision-makers** would be beneficial for the University.

Pedagogical University College Upper Austria

Pedagogical University College Upper Austria is the second biggest teacher training institution in Austria. It offers bachelor's and master's degrees programmes in Primary Teacher Education, Secondary Teacher Education, Vocational Teacher Education. There are 5500 students and 400 teachers in the organisation.

Overview

In Austria, Digital Competencies have been implemented in the form of competence grids for primary, lower and upper secondary schools within the Austrian school system as well as for teachers.
Competence grids are developed out of published curricula for most subjects but also developed for the gain of digital competencies being interdisciplinary. These exist for digi.komp4 (Primary schools) digi.komp8 (Lower Secondary schools) and digi.komp12 (Upper Secondary schools) communities. Competencies or competence grids are used to connect Open Educational Resources to competencies with the COMET-tool. For digikomp-communities there are around 300 examples/tasks that can be used by teachers to strengthen digital skills of themselves as well as their students. eEducation, an initiative of the Federal Ministry of Education, Science and Research aims at developing digital skills of teachers in the school systems. It focuses on societal aspects of media change and digitalization, information, data- and media-competence, operating systems and standards applications, media design, digital communication and social media, security, technical problem solving and computational thinking. The leading model for Digital Competencies of Teachers is called digkompP (Digital Competencies for Pedagogues). This model is widely spread and known to Austrian educators. In Fall 2019 the DigCompEdu was mapped to the digikompP model and enriched by the transfer of gained digital competencies of teachers towards their students. A publication

of the revised grid is expected to be released in the summer of 2020. The frameworks are now aligned but they can also be seen as complimentary on certain parts, but certainly not competing, stated the Head of the Virtual Pedagogical University College for Teacher Education (VPH) in Austria in the interview.

As far as the **Higher Education** sector is concerned no general policies are in place yet. Nevertheless, for Pedagogical University Colleges an expert-group of representatives of each institution was constituted to develop policies related to the digital competencies for each institution. The digi.kompP-model serves as a benchmark for this initiative. The practical implementation of staff development and training differs among Pedagogical University Colleges, but they all adhere to the same framework. University colleges offer study programs that focus on digital competencies for teachers. They also benefit from courses offered by the Virtual Pedagogical University College for Teacher Education (VPH), said the Head of the mentioned institution.

For Pedagogical University College of Upper Austria, as the Rector of the Institution, noticed, the digital competencies are in place, but not to the extreme extent. Teaching in a modern context is a value which is well established within the organization, therefore also the use of digital technologies is included. He indicated the Department of Vocational Education to be the leader in developing digital concepts. Compared to other institutions, the Pedagogical University College ranks in the top 1/3 according to the Rector. A team of e-didactic specialists has been formed to provide support with the digital aspect of education for the whole staff. Rector sees several ways to better implement the digitization concept. He mentioned focusing on the development of cross-sectorial competencies of both teachers and students and the expertise of eEducation, as a central outward concept to have its effects inside the organization. The Rector sees the need to include the development of digital skills as a part of a central strategy of the rectorate, to reach all the institutes and staff members. A contributing factor to that strategy would be to make the incentive income for academics specializing in digital education. Whereas the Head of the Virtual Pedagogical University College for Teacher Education (VPH) points to e-buddy-concepts, in which educators that are hierarchically on the same level support each other, to be a great way of strategic enhancement of digital competencies in line with reflective appraisal interviews within each organization.

Problems related to introducing digital aspects into teaching are, according to the Rector of Pedagogical University College of Upper Austria, non-existent, however, many topics have had a higher priority in the past, putting the e-learning agenda middle distance. Also, teachers who are not as digitally fit are hesitant to use technologies. There is also a lack of knowledge related to GDPR and copyright-issues.

Pedagogical University College Upper Austria and DigCompEdu Framework

Professional Engagement

There are different career-paths of academics. For those who obtained a PhD at universities, going towards research tends to be the natural scenario. However, in universities with a teaching background, PhD students in most cases become lecturers. The comparison between research and teaching is 50% of graduates are in schooling, 20% in research and 10% in administration, says the Rector of Pedagogical University College of Upper Austria.

Austrian HEIs adhere to the curriculum for teaching didactics, which used to be obligatory when pursuing the pedagogy occupation. However, due to the high number of credits (60 ECTS) which had to be earned, it has not found a broad acceptance throughout Austria. 10 ECTS out of the 60 were related to online teaching. The University is currently working on a concept of digital learning opportunities for teachers. For the future up to 20% of all teaching in further education can be considered to take place online, said the Rector.

The Virtual Pedagogical University College for Teacher Education (VPH) in Austria is in charge of all online further education of teachers related to strengthening their digital competencies. The VPH has various online-formats and continuously develops new content in the e-lecture /coffeecup-learning / online seminars-formats. The main target group is teachers at the Pedagogical University Colleges. Besides focusing on individuals the Pedagogical University Colleges are being helped in implementing blended learning scenarios.

Digital Resources

For the Pedagogical University College of Upper Austria, a team of e-specialists supports educators with the use of certain online tools and systems, such as Office365-Teams, Moodle, G Suite for Education and other additional tools like BigBlueButton.
All platforms can be utilised to facilitate using digital media for teaching and learning. A single-sign-on is being established with spring 2020 that connects all different platforms. Also, there is a base leading user system called PH-Online. This system is employed by all Pedagogical University Colleges throughout Austria for user administration and courses. This system contains all users (both pedagogical staff and students) and is therefore used as the leading user management system. This system is connected to eduroam. For the utilised platforms this means that with web-based-scripts it is possible to prepare the entry steps for academic staff as well as students. This is still work-in-progress but the attempt is to automatically prepare distance learning settings in different platforms per semester (example: pedagogical staff has automated LMS-rooms depending on the courses that are given per semester). Last year the ZLM (Zentrum für Lernplattformen) was installed on the Pedagogical University College which hosts all Moodle-installations of schools Austria wide, added the Rector.
Technology, in the opinion of the Head of the Virtual Pedagogical University College for Teacher Education, has made their way into Universities, also at a strategic level. Deans are aware of learning management systems, lecturers use them. Most of them use video conferencing software. Tools are used only to that extent to serve specific context. Zoom, Adobe Connect, Ms Teams and WebEx are the most common online tools, some use BigBlueButton. The innovative practice is most seen towards collaborative working (for example Padlets, etc.).

Teaching and Learning

The Head of the Virtual Pedagogical University College for Teacher Education believes that at the university level, more traditional ways of teaching are in place. Also compared to schools, universities do not have as much room to experiment with new forms of teaching, which makes this target group harder to reach. What teachers primarily like to learn about is tools, not so much pedagogical innovation. The next logical step would be to learn how to use these tools more innovatively in a didactic context, she states.

In the Pedagogical University College of Upper Austria, currently, most educators are involved with practical teaching with the use of technology, as well as e-learning.

Assessment, **Empowering Learners** and **Facilitating Learners' Digital Competencies** areas were identified neither in the desk research nor in the interviews. However, drawing on the advanced level of digital competencies integration to teachers' everyday practice, it is undoubted that these competencies are being transmitted to students. The evidence could be found in a revised version of the national competence framework, mapped with DigCompEdu, amended of the Learner-oriented areas.

Influence of Covid-19

With the unexpected outbreak of Covid-19, all pedagogical staff has been trained online to use the communication platforms that the institution focuses on (G Suite, Moodle and Office365, BigBlueButton). Many realised that online tools are not that hard to use and discovered ways on how to integrate them into the education process. Rector of the Pedagogical University College Upper Austria deems that a question will arise towards sustainability of the changes that the pandemic imposed, especially how to cope with the situation after lockdown. Evaluation of online training has been made and will serve as a base for deciding in which fields the development in the sustainability of the digital agenda will be made. The major learnings were that the e-didactics team had to be doubled during lockdown-phase to cope with all inquiries. Specialists related to different tools were put in place and many online-sessions were taken and produced. A survey that had been sent to students after the lockdown showed that basically they felt looked after by their teachers. However especially for studies with many practical elements (for example supervision in schools, class-rooms) the lockdown-phase meant a shift to alternative communication channels.

Recommendations

In the national context, the Austrian education system has the digital competencies integrated into its professional training and schooling agendas. eEducation and digikomp initiatives are only two examples among many, of potential stakeholders to the project's future actions. Austrian academics appear to be well aware of the importance of digital competencies in professional development as well as in teaching and learning, the recommended actions would be **more deepening and focused rather on empowering**

learners and facilitating their digital skills, as well as **on integrating various ways of assessment with the use of digital tools.**

4. CONCLUSION

The very first part of the project aimed to shed the light on a **current approach** and practices towards DigCompEdu implementation in partners' institutions and form a **base** for short- and long-term actions layout. In the second data analysis, national and institutional perspectives were considered to better fit the further operations in the local context and social criteria. The readiness of the institution majorly depends on how a given matter, in this case, digital competencies development among academics, is anchored nationally, as this has the greatest influence on its success or failure. For that various existing frameworks and policies were examined, as well as institutional strategies and research fields.

The interviewees of the second part of the research were adequately selected. Although teachers are the main group that directly participate in the teaching and learning process and fosters students' skills development, their statements were not considered in this study, The project's objective was to target the HEIs on the organizational level, thereupon the respondents of the interview stage had been chosen among decision-makers and institution's authorities. Their opinion and point of view have a crucial impact on future actions and the overall success of the whole project, whereas their broader view on the institution helps tailor those initiatives properly and according to authentic needs.

The outcomes of the Intellectual Output 1 showed that each institution has a slightly different level of progression when it comes to digital skills embedding in pedagogy and didactics. Some are way ahead with the framework or strategy already implemented, some had not been well familiar with it before. In Spain and Ireland there are existing policies and national frameworks which address the digital competencies of academic teachers. In Austria teachers and students can avail from a self-assessment tool to determine the level of their digital skills. On the other hand Poland, Denmark and Iceland, have not yet adopted any official regulations regarding the development of digital

competencies for academics and its structure. A conclusion can be made that although the framework was thought to standardize the level of digital skills among HEIs in the European countries, **a lot of work should still be done in this area**, and projects such as CUTE have a great potential to bring the aspired goals closer to success.

The research conducted in Output 1 serves as preparatory work for further steps in the project. Data gathered in the first exploratory Output helped the CUTE team to learn and reflect upon the local, institutional context of digital competence development. The in-depth analysis of the data, presented in this report, will be useful in shaping next project results, such as the institutional roadmaps of actions that will be developed in Output 2, a toolkit for using DigCompEdu framework which is a result of Output 4 or planned for Output 5 policy recommendations for the development of DigCompEdu for higher education.