Final ITE Monitoring Report

Report #3- D2.2.3

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# TABLE OF CONTENTS

INTRODUCTION .................................................................................................................................................. 1

1 RESEARCH AND DEVELOPMENTS IN ITE ................................................................................................. 2
   1.1 Monitoring research and developments in ITE ...................................................................................... 2
       1.1.1 Monitoring report 2017 .................................................................................................................. 2
       1.1.2 ITE Monitoring report 2018 .......................................................................................................... 3
       1.1.3 Research and developments in ITE in 2019 .................................................................................... 5
   1.2 Case studies ............................................................................................................................................. 7
       1.2.1 2017 case studies: integrating ICT across ITE courses and curricula ............................................... 7
       1.2.2 2018 case studies: university-school collaboration ........................................................................ 9
       1.2.3 2019 case studies: industry and ITE collaboration; teacher educators and digital competence ........ 11

2 STAKEHOLDER VIEWS .............................................................................................................................. 17
   2.1 2017 survey ........................................................................................................................................... 17
   2.2 2018 survey ........................................................................................................................................... 18
   2.3 2019 survey ........................................................................................................................................... 19
   2.4 Voice of student teachers: 2019 survey ................................................................................................. 21

3 CHALLENGES AND RECOMMENDATIONS ............................................................................................. 23
   3.1 Challenge 1: Integrating ICT in ITE curricula ...................................................................................... 23
   3.2 Challenge 2: Preparing student teachers for their careers ...................................................................... 23
   3.3 Challenge 3: Developing teacher educators’ ICT competences ............................................................ 24
   3.4 Challenge 4: Overcoming isolation ....................................................................................................... 25

4 ANNEX ......................................................................................................................................................... 26
   4.1 Research and developments in 2019: details ......................................................................................... 26
       4.1.1 ITE Policy ....................................................................................................................................... 26
       Teacher recruitment and retention strategy (UK) .................................................................................... 31
       4.1.2 Professional digital competence ...................................................................................................... 32
       4.1.3 Digital Technologies in ITE .......................................................................................................... 38
       4.1.4 Innovation in higher education and ITE .......................................................................................... 40
   4.2 2019 survey detail .................................................................................................................................. 48
INTRODUCTION

Three ITELab1 Monitoring Reports form part of work package 2 (WP2) ‘Case Studies and Monitoring of ICT within Initial Teacher Education (ITE)’. The objective of WP2 is to ‘stimulate the flow and exchange of knowledge between higher education and enterprises’ as required by the Call for Proposals by:

- Improving the knowledge and research base on which this Knowledge Alliance project will carry out its work;
- Identifying evidence on the current integration of ICT within ITE and student teacher preparedness;
- Providing case studies on successful implementation of ICT within ITE curricula;
- Providing recommendation on the competences required of teacher educators involved in ITE based on experiences gained within the projects and recommendations on how ITE institutions can ensure these competences.

The annual monitoring reports therefore comprise a knowledge base of key developments in ITE policy and practice, compiled by partners scanning reports, projects, research, emerging technologies and news articles related to the project themes, supplemented by case studies of innovative practices and stakeholder surveys.

This third and final ITE Monitoring Report comprises:

- Recent studies, research and reports of national/ regional initiatives in ITE, as well as summaries of previous reports
- Summaries of all the case studies produced in the project
- Stakeholder views of ICT in ITE, with summaries of previous surveys of policymakers, ITE providers and industry and of student teacher voice activity
- Challenges and recommendations in innovating ITE curricula including recommendations for ITE institutions on how to ensure ICT competences for teacher educators.

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1 ITELab (Initial Teacher Education) Lab is a project coordinated by European Schoolnet and co-funded under the European Commission’s (EC) Erasmus+ Programme from January 2017 to December 2019. It is a three-year Knowledge Alliance project between higher education institutions and industry to foster innovation and knowledge exchange in initial teacher education. The ITELab Consortium includes 10 partners from eight countries (BE, FR, DE, IE, IT, NO, PT, UK) and is in line with the strategy of the European Commission which, for some time, has recognised the need for European cooperation related to ITE and that the modernisation of education requires close links between higher education, business, research and policy development.
1 RESEARCH AND DEVELOPMENTS IN ITE

1.1 MONITORING RESEARCH AND DEVELOPMENTS IN ITE

Over three years the monitoring reports tracked developments in ITE, with particular reference to integrating ICT in ITE and developing tutor and student teacher competences, taking into account wider policy developments (for example on routes into teaching) and changes in higher education (for example trends towards greater accountability).

1.1.1 Monitoring report 2017

The first ITE Monitoring Report (D2.2.1) published in June 2017, available on the itelab project website, provides:

- An analysis of the main institutional frameworks for the integration of ICT in teacher curricula;
- The main areas of ICT in the curricula of the respective ITE providers;
- Challenges for the integration of ICT in training programmes in ITE;
- Details of CPD resources for qualified teachers that could be adapted for use in the project.

The first report brought together the key findings published in D2.1 Literature Review Report (March 2017), coupled with early information gathered through surveys and interviews with project partners and wider stakeholders. The monitoring report covered institutional frameworks for the integration of ICT in initial teacher education curricula, including European policy, competence frameworks, a literature review, ITE providers’ use of frameworks, ICT in curricula, challenges in integrating ICT in training programmes and existing resources.

The report concluded that training of student teachers in the pedagogical use of ICT is highly variable and develops on an ad hoc basis in most countries:

- Few research studies focus on ICT in the ITE curriculum (70 research studies were analysed);


3 Full report: http://itelab.eun.org/documents/452109/4263479/ITE+Literature+Review+Report+2017/43cad58a-1359-4366-b32a-1e80a316a4b4
• There is little evidence of wide-spread follow-through from government policy to implementation in ITE;
• ICT may be implicit within broader ambitions (e.g. digital competence for all citizens, teacher as a researcher);
• ITE providers (usually universities) set their own curricula for ITE.

The information gathering activity revealed that ITE providers tend to work independently of each other:

• Ministries of education and regional education authorities are mainly responsible for schools and therefore focus on continuous professional development (CPD) rather than ITE, with a range of different resources for in-service teacher education;
• Universities are largely autonomous, under separate departments and funding and ITE programmes rarely provide comprehensive pedagogical digital competence training, contributing to an on-going and continuing high demand in schools for ICT-related CPD;
• ITELab university partners have a diversity of innovative approaches including, for example, use of Teachmeets, development in media education labs and virtual classrooms, increasing use of video for self-reflection and observation while out on placement, interdisciplinary collaboration on projects which could be introduced into the Modules and/or MOOC;
• ITELab industry partners offer a range of solutions to education, with training materials and communities primarily for serving teachers: self-paced educational courses, content, platforms and educator communities, certification.

The monitoring confirmed the need for work in the project on defining competences for teacher educators. The DigCompEdu framework has been used in the design and development of the ITELab modules and student MOOC as a ‘north star’ reference point, viewed alongside the existing TPACK and national frameworks in use by universities.

1.1.2 ITE Monitoring report 2018

The aim of the second ITELab Monitoring Report 2 (D2.2.2) was to update information covered in the first report: national strategies regarding integration of ICT in ITE courses; main areas of ICT in the curricula of respective ITE providers; and challenges to integrating ICT in training programmes. It covered the period June 2017 to June 2018. Information sources were ongoing literature monitoring by all partners and an information gathering survey sent to partners and associate partners (universities, industry and education ministries).
The report assessed recent developments and research in ICT in initial teacher education, examining European policy on ICT in ITE, competence frameworks and self-assessment tools, recent studies on digital competence and ITE, case study summaries and a summary of the 2018 survey of ICT in ITE institutions.

At a policy level, the European Commission’s May 2017 communication ‘School development and excellent teaching for a great start in life’ was a seminal paper, highlighting the importance of “exchange of best practice among providers of Initial Teacher Education” and supporting student teachers to become “career-long learners”. This priority heavily influenced the direction of the new teaching modules and student teacher MOOC developed within the ITELab project, both of which encourage collaboration and emphasise the importance of lifelong learning.

The ongoing development of the competence frameworks and tools support this career-long or lifelong learning, supporting analysis and self-reflection, at an institutional level (e.g. SELFIE) and at an individual level (e.g. The Digital Competence Framework for Educators - DIGCOMPEDU and the diagnostic tool TET-SAT).

This focus on digital competencies was echoed in academic research which provides in-depth analysis and case studies (e.g. Gudmundsdottir, G.B., Hatlevik, O.E., Newly qualified teachers’ professional digital competence: implications for teacher education, European Journal of Teacher Education, vol. 41, 2018, issue 2, 2017). A further study in Norway, on the integration of professional digital competence in initial teacher education programmes, analyses data from three national questionnaire surveys conducted among teacher educators, mentor teachers and pre-service teachers in Norway (Instefjord, E.J., Munthe, E., Educating digitally competent teachers: A study of integration of professional digital competence in teacher education, Teaching and Teacher Education, vol. 67, 2017). Going forward, research in the ITELab project led by the University of Agder investigated teacher trainer competences with a view to comparing them across partner countries, institutions and with data collected on student teacher digital competencies from the evaluation work led by the University of Würzburg.

Other insights from recent research chime with work in the ITELab project. For example, trialling of ‘Live to Air’ sessions in the ITELab module pilots builds on O’Dowd (2017), Exploring the Impact of Telecollaboration in Initial Teacher Education: The EVALUATE project. In addition, one of the conclusions from the research strongly echoed the findings from the piloting underway in ITELab, which suggests that ‘instead of considering pre-service teachers as one homogenous group, we need to understand

the variations among their abilities and knowledge in order to be able to provide them with support they need within teacher education’ (Valtonen T. et al, Differences in pre-service teachers' knowledge and readiness to use ICT in education, Journal of Computer Assisted Learning, 2018).

The report concluded that much remains to be done at all levels from government, to institution, to individual, if the ambition of new entrants to the teaching profession having high levels of pedagogical digital competency is to be achieved. The report showed an increasing focus, first on initial teacher education in education policy and practice, and second on the importance of developing student teachers’ digital pedagogy skills.

1.1.3 Research and developments in ITE in 2019

As in previous years, project partners identified recently published documents (articles, studies, research, policy documents) relevant to the ITELab project themes. The 39 publications identified and summarised in the Annex are of course only a small proportion of the total published in 2019 and were selected as being particularly germane to the project’s themes: policy, competencies, technology and innovation. Some publications cover more than ITE, for example teacher education in general and innovation in higher education.

Some 14 papers relating to international, European and national ITE policy were identified by partners in 2019. One of the key documents is OECD’s A Flying Start: Improving Initial Teacher Preparation Systems. Drawing on a previous study covering seven countries (including, in Europe, the Netherlands, Norway and Wales (UK)), it proposes strategies for different levels of the system (policy, teacher education institutions and schools). Promising Practices is a related online resource enabling readers to search for good practices and inspiration, by theme, stakeholder and country. Also published by OECD in 2019 is the Teaching and Learning International Survey (TALIS). Among the many findings is that only 56% of teachers reported that they had had training in ICT for teaching in ITE and that only 43% felt well or very well prepared to use ICT when they completed their initial education or training. Among a number of goals and policy pointers, the authors propose providing high-quality initial education or training and linking ITE with continual professional development. A key task when considering teachers as lifelong learners is to ensure adequate linkages between the content of teachers’ initial training and that of their continuous professional development.

Topics covered in other studies relate to the purpose, value and relevance of ITE, looking critically at the content, quality and impact of ITE, alternative routes into teaching, closer links between ITE institutions and schools and transition between sectors, ICT teaching in ITE, and ITE reform.
Developing the **digital competence** of citizens is a major concern in Europe; recent work has addressed the particular competences of young people, and more recently, teachers, and now those who teach teachers. The topic continues to generate discussion: at least ten recently published studies and papers address competences in general and digital competence in particular as it relates to teachers and teacher educators. Studies and projects have attempted to define and categorise those competences and to assess them, and attention has focused on the professional development of teacher educators, whether as teachers or researchers, and ways to identify training needs and support them through, for example, professional networks. At the same time, **moves in policy circles to define competences of teacher educators have raised questions about the balance in teacher educators’ role** (and career path) between teacher and researcher, as well as the autonomy of higher education institutions.

The European Framework for the Digital Competence of Educators (DigCompEdu) continues to underpin many discussions and 2019 saw a number of studies related to it. Studies and projects explored digital competences (with however little documented evidence of impact), aiming variously to analyse, develop and support digital creativity in ITE contexts, technology-enhanced learning design, online intercultural collaboration, mobile technologies, and provide resources and inspiration to develop teacher educators’ practice. Finally, two studies on eTwinning report its positive impact on teachers’ attitudes, practices and competences.

Compared to the overall numbers of publications selected by ITELab partners, there were relatively few (five) on **digital technologies in ITE per se** compared to those dealing with ITE policy (in particular), professional digital competence and innovation in ITE. A focus in the media in 2019 has without doubt been the promise or threat of artificial intelligence and many reports have been produced on how it might impact on education. The Education 2030 report is a useful aggregation of trends and issues leading to five scenarios for education in the coming decade. Meanwhile MOOCs and the technology behind them have matured and the range of courses continues to expand, for example a short taster for prospective teachers, with new possibilities afforded by streamed video in supporting student teachers’ reflection of their practice. Still to be resolved – and experienced in the ITELab project – is the relationship between self-access MOOCs and formal, taught and accredited courses.

Ten recently published studies and papers on **innovation in ITE and higher education** in general address a range of topics, from student voice to new routes into teaching. Several studies and initiatives investigate innovation in higher education and the HEInnovate tool helps institutions evaluate and develop their innovation potential. The phrase ‘student voice’ has been bandied about increasingly, in parallel perhaps – as some argue – with the rise of a view of higher education as a consumer product.
Recent studies, confirmed by experiences in the ITELab project, have shown its value in ITE if well implemented. Mentoring continues to be studied as an effective means of supporting beginning teachers, linked to closer partnerships between ITE providers and schools and a shift towards considering teachers’ learning as career-long, a continuum from ITE through continuing professional development. In certain quarters questions about the cost and value of ITE in its current form continue to be posed.

Looking at the collection of projects, studies and reports analysed in 2019, there seems to be a continuing focus on policy measures to support ITE and, behind them, implied concerns that ITE could be improved to address teachers’ criticisms of their initial training (as reported in TALIS). There are signs of pressure better to align more closely initial with continuing teacher education to provide career-long learning and competence development. This is linked to moves to ensure closer collaboration between ITE providers and schools. Pedagogical digital competences, of both student teachers and tutors, are also in the spotlight, with more attempts to define competences and assess needs. Meanwhile digital technologies continue to evolve, and the possibly profound and disruptive implications of artificial intelligence for education are only just beginning to be addressed.

1.2 Case studies

The aim of the case studies is to illustrate concretely innovation in higher education institutions providing initial teacher education. Over three years partners decided on an annual theme related to the project’s objectives and produced case studies showing scalable examples of innovative approaches to the theme.

1.2.1 2017 Case studies: integrating ICT across ITE courses and curricula

Three case studies were produced about how the universities of Agder (NO), Perugia (IT) and Würzburg (DE) are successfully developing students teachers’ digital competence in their courses.

Agder, working with The Norwegian Centre for ICT in Education’s Framework for Teachers’ Professional Digital Competence (PfDK) of May 2017, is embedding a shared understanding of teachers’ professional digital competence across the university and all its initial teacher education programmes.

- The university’s new strategic plan recognises that digital competence needs to be integrated as a specific competence area that is important for the work

5 The full case studies are at http://itelab.eun.org/documents/452109/4263479/Case+studies+-+Universities+2017/bf3f1dcd-0267-4434-b3de-ab480cd9bbf5
of all teachers. They plan that every subject will have its own learning outcomes connected to ICT.

- Teacher educators and student teachers will receive practical training in pedagogic digital competence through the university’s new ProDig Programme.

- ProDig online modules are being developed in cooperation with teacher educators, classroom teachers, subject discipline specialists and university staff to ensure that content is relevant and current to the integration of ICT and pedagogical ICT competence for the future classroom.

The **Italian Digital School National Plan provides for digital competence in schools and in initial teacher education.** Having a national vision on the integration of ICT and the training of student teachers is an important factor for promoting digitally competent and confident future teachers.

Perugia employs the TPACK Model as a framework for student teacher knowledge of technological, pedagogical and content knowledge. As an ITE primary education provider, the university offers teacher training in inclusive education and student teachers are given an understanding of digital resources and tools that can support the participation and learning of pupils with disability and special educational needs.

- In Perugia digital technology is seen as a tool for facilitating teaching and learning throughout the primary curriculum and is integrated across all subject disciplines.

- All student teachers undertake Education Technologies Courses, which integrate the pedagogical use of ICT in all ITE subject disciplines. All students are required to create a professional ePortfolio, which is submitted for evaluation and assessment.

- Student teachers also have practical workshops and courses in The Educational Technology Lab. All courses are ECTS (European Credit Transfer and Accumulation System) accredited.

At Würzburg, the **new national digital competence framework for student teachers Pedagogical Media Competencies of Student Teachers (M3K) is applied in all ITE programmes.** The M3K framework has three competence areas in which competency and learning outcomes are clearly defined: Teaching with media; Teaching about media and Developing concepts for school development.

It is in School Pedagogy at Würzburg that the most specific and innovative uses of ICT and the development of pedagogical digital competence skills are to be seen. Lectures with 600 multi-disciplinary students in a traditional lecture hall have been ‘flipped’ with technology, collaborative learning and digital aids employed to
demonstrate to future teachers how they also can implement new pedagogical models in their future classrooms.

- In ‘flipped lectures’ students watch video exemplars or read digital texts in preparation for the ‘lecture’. The lecturer/teacher educator discusses topics and invites students to respond to questions through the use of digital tools. Small group discussions then take place while the lecturer moves through the hall to collect exemplary answers with a microphone for further discussion.

- Active learning methods are emphasised in ‘flipped seminars’ to groups of 30 students. Fun and playful courses such as the classroom management skills course, which used the virtual reality system of the Breaking Bad Behaviours project were offered as three parallel courses in 2017 to cope with the demand from students. Students work cooperatively in small groups in the School Pedagogy’s flexible well-equipped workspace ‘The Media and Educational Technology Lab @JMU’.

1.2.2 2018 case studies: university- school collaboration

The ITELab case studies show the national policy initiatives in schools that are feeding through and having an impact on initial teacher education. In Portugal, the ‘National School of Promotion for School Success’ challenge from the Ministry of Education strongly supports the methodology of digital pedagogy and collaborative teaching in the classroom which is reflected within initial teacher education. In Ireland and Italy, national digital strategy plans have been published and in Norway the recent publication of the new ‘Framework for Teachers’ Digital Competence’ takes such plans even further.

Five case studies were produced, describing innovative activities relating to working with schools in Norway, Ireland, UK (England), Italy and Portugal.

Themes emerging from the case studies include:

- Policies highlighting university-school approaches, with examples from Italy, Norway and Portugal;
- Future classrooms in universities, innovative learning spaces created by universities and schools in Italy, Norway and Portugal, members of the Future Classroom Lab network;
- Digital inclusion, reflected in initial teacher education in Italy and Portugal;

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6 Full report: [http://itelab.eun.org/documents/452109/4263479/Case+studies+-+Universities-Schools+2018/2ac91ab6-20bf-4df8-9d59-d19c2afffd7e](http://itelab.eun.org/documents/452109/4263479/Case+studies+-+Universities-Schools+2018/2ac91ab6-20bf-4df8-9d59-d19c2afffd7e)
• Development of the digital competences of teacher educators, as well as of student teachers, features in all universities. The DigCompEdu framework underpins the design and evaluation of the ITELab course modules and MOOC. The University of Agder is leading further survey work in 2018/19 to support the development of policy recommendations in this important area;

• School-industry links, taking place between Newcastle University (UK) and University College Dublin (Ireland) and local schools and businesses.

Concluding, the report states that all five case studies show how university teacher education faculties are responding to the drive – backed by explicit government policies in Norway – for more school-based initial teacher education, to ensure that new teachers are not only theoretically but also practically ready for tomorrow’s classrooms.

In Norway there is a long history of collaboration between schools and universities and, continuing this tradition, the University of Agder is supporting the development of teacher education schools, online training modules jointly developed by specially-appointed teachers and university staff, a future classroom lab, and a remarkable scheme in which student teachers ‘take over’ the running of schools for three weeks. This experience delivers “mutually beneficial cooperation” between ITE providers and schools.

University College Dublin also employs teachers, in this case as methods lecturers, and student teachers spend 50% of their time in schools. The university trains and supports placement supervisor teachers in 56 partner schools, runs annual symposia for school principals and offers fellowships for teachers on computational thinking courses. Partnership with industry, in this case, Microsoft, features strongly in UCD’s activities.

Much ITE in the United Kingdom is now school-based rather than university-based, and the case study from the University of Newcastle shows how higher education providers are adapting to new circumstances. Student teachers spend up to two-thirds of their time in schools, leaving little time to developing skills and approaches not found in some schools such as meta-cognition and different digital pedagogies. A survey revealed that student teachers’ experience of ICT in schools tended to be its use to improve efficiency and effectiveness rather than to innovate and transform. During project weeks in partnership with schools, doctoral students introduce teachers and student teachers to educational technologies under research e.g. wearable activity monitors.

In Italy the drive for change focuses on the digital competence in schools and ITE. The University of Perugia case study shows how higher education is responding, by developing online courses open to both student and serving teachers emphasising how ICT can support inclusion and enable all students to develop digital competence. As this is an under-graduate degree to become a primary teacher, student teachers
spend more time at university in the first year’s of their studies, than in the three previous countries, giving them time to learn in depth about, for example, assistive technologies in a Special Technology Lab. Teachers are seconded from local schools to prepare and support student teachers on placement. As in Norway, the university is involved in designing new learning spaces, this time both at the university and in schools, and encouraging teachers to become action researchers.

In Portugal, collaboration and innovation is encouraged on a large-scale, both in primary and secondary schools, and the Polytechnic Institute of Santarém is one of a network of government-funded regional ICT Competence Centres developing the digital competences of both, in-service and future teachers. They have organised seminars on collaboration and flexible learning spaces open to both student and in-service teachers. As in Norway and Italy, the university has set up future classroom labs in which student teachers develop their digital pedagogical skills and serving teachers can use specialised equipment for projects, and a special needs space where students learn about supporting learners with special educational needs and disabilities.

What emerges from these case studies is a blurring of the boundaries between universities and schools, between university staff and teachers, and between student teachers and in-service teachers, for the benefit of all. Imaginative new learning spaces and joint projects help cement these new relationships and ensure that tomorrow’s teachers are well prepared for tomorrow’s schools.

1.2.3 2019 case studies: industry and ITE collaboration; teacher educators and digital competence

Two topics were chosen for case studies in 2019.

1.2.3.1 University-industry collaboration

The three case studies featuring IRIS Connect, Microsoft and SMART demonstrate that collaborations between ITE institutions and private EdTech companies can be meaningful, bring benefits and yield positive outcomes. They show that the collaborations positively impacted all the involved parties, but a number of issues were revealed that can impede the level of cooperation and its effectiveness.

Through long-term partnerships and collaborations with universities, the EdTech companies gain a reputation and visibility as a trusted and credible private sector partner, as well as being able to present their products to both ITE institutions and future teachers. They are able to invest in the partnership and also able to obtain valuable

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7 Case studies 2019: Industry – University collaboration: IRIS Connect, Microsoft, SMART Technologies
http://itelab.eun.org/research
end-user feedback used to improve products to be more closely adapted to needs. Examples cited showed the benefits from the partnerships extending into working together on new research and initiatives (e.g. IRIS-JAMK online MOOC, Microsoft STEPS programme, SMART-Lancaster University educational research).

ITE institutions for their part benefit from gaining an understanding of emerging technology and new products to support teaching and learning which they might not have known about otherwise. The educational consultancy and training provided by the EdTech companies helps tutors reflect on teaching programmes and students’ digital pedagogy skills and adjust study programmes accordingly. This helps student teachers gain new skills and a confidence to use technology in the classroom and the opportunity to experiment. The companies’ certification programmes (e.g. Microsoft Innovative Educator, SMART Exemplary Educator), help develop skills and can give them an advantage in the competition for jobs.

All three case studies show how companies influenced ITE programmes of study and activities. This ranged from incorporating their products (software and hardware) at ITE institutions, supporting them with educational consultancy and training, introducing them to the support from their respective large, teaching communities, to co-developing and designing new MOOCs and online training content supporting the move to new active learning spaces for student teachers.

However, even though these collaborations were considered successful and beneficial, numerous challenges were identified. All the companies agreed that they often face a lack of trust among ITE institutions. This can be either caused by other EdTech companies that develop products of poor quality and damage the name of others on the market, or it can stem from the slow pace of technological adoption in ITE institutions. Many institutions, according to the companies consulted, are either constrained or unwilling to adapt their curricula to bring more digital pedagogy into their teaching. In some cases, policies can hinder the use of technology in the classroom, such as highlighted in the IRIS Connect case study above, where Bavarian teachers are permitted to record their classes only if recording is essential to improve pupils’ skills, such as during sport or recitation classes. Any other use of recordings is considered a breach of students’ privacy.

In summary, success factors in working with ITE, from the companies’ point of view, are the following:

- Supportive national policies, including devolving a degree of financial and curriculum autonomy to higher education institutions;

- Building trust, dialogue and a partnership approach over the long term, essential to produce the range of benefits that can result from collaborative partnerships;
• A flexible approach, tailored to the institutional context and needs, based on understanding of the institutional culture, motivation and engagement of the institution, including the digital competence of tutors and technical infrastructure;

• Long term collaboration, in order to achieve a common and meaningful result benefiting both parties, demonstrating the evidence of effectiveness of the product and the value of cooperation, with a clear message and needs-driven aims when working in partnership with ITE. This also includes offering products on a trial basis to ITE institutions, enabling them to assess their quality and added value a partnership brings;

• Participation in collaborative research and projects to build mutual cooperation between the private and public sectors in the education field and gain mutual understanding and trust.

Recommendations arising from the case studies are addressed at specific stakeholders.

At European and national policy level, ITE providers should be encouraged to adopt more flexible approaches to working with industry; there should be more participation by industry and ITE in EU collaborative research and projects; and policies should prioritise and encourage innovation in ITE programmes of study, harnessing the contribution that suppliers of digital products and services can make.

Industry should share best practices with each other to help avoid common mistakes and misunderstandings about how education works; seek to understand the context, culture and needs of ITE, tailored to each institution, rather than pushing a sales agenda; and aim to build trust so that both sides benefit from collaboration.

ITE institutions should value collaboration between ITE providers and private sector companies (success comes from good personal relations sustained over time) and participate in peer learning study visits to similar institutions where there are partnerships with suppliers.

1.2.3.2 ITE tutors’ pedagogical digital competence

The University of Agder conducted a series of interviews with tutors in Østfold University College in Norway and The Polytechnic Institute of Santarém in Portugal about the development of teacher educators’ pedagogical digital competence. The case studies are part of work aiming to identify key competences required from a teacher educator to ensure adequate ICT training for student teachers. This research question was addressed through a mixed-method design including a survey published on the ITELab website and distributed to ITELab partners in November 2018. The aim of the
case studies was to go deeper into some of the findings from the survey first to investigate how institutions work and, second, listen to the teacher educators’ voice.

**In both cases, national initiatives and plans are an important driving force for the institutions’ work**, and institutional leaders prioritize and follow-up the development of pedagogical digital competence in the staff. Neither institution works with a framework developed at the institution or developed for teacher educators; both use national frameworks developed for student teachers or pupils.

Each institution reports that some of teacher educators are not interested in developing their digital competence, and others do not feel enough confidence in their abilities.

Three overarching issues emerged from the case studies: factors contributing to competence development; definition of teacher educators’ competence and changes in the role of the teacher educator.

Three factors contribute to competence development: funding for an initiative on this issue; having dedicated time in teacher educators’ schedules for professional development; and having a resource centre, a space for support and help.

The programme at Østfold University College is led by the head of studies and if someone is falling behind, he or she will be followed up by his or her line manager. The individual teacher educator has time and support to develop their skills, but as competence development is time consuming, other measures such as a system for accreditation may be necessary for motivation, as mentioned by the teacher educator interviewed in the case study.

At Polytechnic Institute of Santarém, developing and using innovative learning spaces to help with teacher educators’ professional development is a key success factor. Using these spaces can encourage teacher educators to reflect on their practice and experiment with different approaches and techniques. The Polytechnic has also ensured that teacher educators have support to make those changes. And, like UC Østfold, a support centre for teacher educators has been created.

The challenges with having enough time for their own competence development is influenced by all the other pressures the teacher educators face as academics. They are expected to do research and publish articles etc., which is time consuming. Being published is a qualifying measure more than teaching merits and having digital competence. Teacher educators are also expected to be experts and continue to develop their competence and knowledge in their subject field, which often is not teacher education.

The institutions in the case studies use different competence definitions and frameworks, none of which is specifically made for teacher educators, but for teachers
and students in schools and educators in general. This suggests that the aim of competence development for teacher educators in the case studies is related to giving them the competence they need to keep up with developments in schools. So, instead of being the driving forces for change in teacher education, the focus is on developing necessary competences to use the technology already implemented in schools. This raises the question about the role of teacher education and teacher educators.

When considering the frameworks used and the skills developed, the teacher educators’ from University College Østfold emphasised that they need to have both theoretical and practical skills and competences. There is a need for technical skills, but they should be combined with knowledge about how technology influences schools and society as well.

As seen, Østfold University College has decided to use funding to establish a compulsory competence development programme for all teacher educators. The programme is structured and includes specific competence aims, and Teacher Educators are followed up if they need support. The programme builds on what is regarded as important competences for student teachers, and do not address specifically the role and competence needed for teacher educators. The aim of the programme is to give all teacher educators a basic knowledge about how technology works, as well as practical competence they can use with their students.

The Polytechnic Institute of Santarém has a strong focus on developing teacher educators’ key competences through the development of new learning spaces and support from special units in charge of supporting the development of pedagogical digital competence.

At the same time, engagement in this development depends on each individual teacher educator. They are encouraged to try out new practices and develop new competences, but they can choose not to participate. Further, competence development is not systematized through the use of a framework to define specific competences or through a planned competence development of all teacher educators.

When responsibility for their own competence development is left to the individual teacher educator, as in the case of Santarém, the teacher educators with less interest in developing pedagogical digital competence are less likely to devote time to their own development, and in turn are more likely to lack the competences required. At UC Østfold the teacher educator interviewed also raised the question about what will happen when the programme is finished. At one point, teacher educators will have a certain level of competence, but then it will be up to each individual if he or she wants to continue to develop his or her competence.
The director of Polytechnic Institute of Santarém talked about teacher educators co-teaching and helping to support each other in their professional development. Traditionally, teaching staff at higher education Institutions, including teacher educators, are seen as experts in their field. There may not have been a widespread tradition for collaborating when it comes to teaching, but when developing their own pedagogical digital competence and the use of technology in their own teaching, the teacher educators in these cases all agreed on the importance of close collegial collaboration. The teacher educator from UC Østfold even suggested using a buddy system.

The same teacher educator pointed out the importance of experimenting in their own teaching, so that the student teachers see that it’s acceptable to try new things. This also challenges the expert role that traditionally associated with higher education teaching staff. Perhaps there is a need for a shift or a change in how we view the teacher educator’s role in educating future teachers? Perhaps there’s less need of an expert role and more need for an experimental or innovative approach to teaching in teacher education, with and without technology? Two important questions then are how this aligns with other demands teacher educators face in their academic field, and how to ensure that the development of teacher educators’ pedagogical digital competence is made a priority.

The two case studies outline a number of good ideas for how higher education can make pedagogical digital competence a priority and underline the importance of leaders in prioritizing funding and other facilitators, such as dedicated time, in the competence development of their teacher educators.

Questions to follow up in further work are:

- How can teacher educators be expected to prioritize developing their pedagogical digital competence, in competition with so many other expectations?
- Shouldn’t teacher education be a place for innovation and critical use of technology? With teacher educators being exemplary role models?
- Is it possible to define what professional competence teacher educators must have that is different from other educators?
- Is it a problem that in the end competence development depends on the individual teacher educator’s interest and engagement?
2 STAKEHOLDER VIEWS

To provide a different perspective on the project’s theme of ICT in ITE, a number of surveys were conducted.

2.1 2017 SURVEY

The 2017 survey\(^8\) focused initially on core industry and university project partners to obtain baseline information on national ICT in ITE policies and institutional approaches to integrating ICT in the curriculum and programmes of study.

The survey found that in the national education policies of the ITELab providers (covering Germany, Ireland, Italy, Norway, Portugal and UK) there is a wide range of approaches to defining the role of ICT in teacher training or the pedagogical digital competences of teachers. It ranges from a ‘light touch’ approach to detailed complex descriptions.

On ICT in ITE curricula, each of the six ITE providers represented in ITELab work to integrate ICT across their institutions in innovative ways. At the University of Würzburg, the School of Education coordinates ITE but the responsibility of planning and conducting the ITE programme lies within the seven different faculties which are responsible for the different subject disciplines. At the University of Perugia, the pedagogical use of ICT is framed by the TPACK model and is emphasised across all ITE subject disciplines and in addition to Education Technologies courses student teachers have practical hands-on courses in the Educational Technology Lab over the course of their five years of ITE training. Both the Education Technologies and the Educational Technologies Lab courses are ECTS accredited. At the University of Agder, digital skills are integrated in each subject discipline. As part of the development of the university’s new master’s degree they are developing a structured progressive five-year programme. At University College Dublin, the Professional Master of Education is a two-year, full-time programme. As well as their Education Studies students undertake study in Subject Pedagogy, their curriculum subject discipline. Pedagogical digital competence and digital literacy, while not formally part of the ITE programme is dispersed throughout courses and programmes delivered by the teacher educators who teach the various elements of the ITE programme. The Polytechnic Institute of Santarém integrates ICT into and across its initial teacher primary education programmes. All providers of pre-service teaching training in Portugal are obliged by law to provide four components which include ICT. In the University of Newcastle’s

Postgraduate Certificate in Education Programme, digital technology is embedded in all subject disciplines. Its ITE courses are based on collaborative inquiry and action research models. They promote problem-based learning with a strong technology component.

2.2 2018 SURVEY

In 2018, the 2017 survey was codified and expanded to include all the associate partners/wider stakeholders now engaged in the project.

The 2018 survey throws light on some of the challenges of integration of ICT in training programmes in ITE, two in particular: the critical role played by top-down, ‘joined up’ policy initiatives in sponsoring, validating and prioritising change; and school placements (the most frequently chosen challenges are ‘a lack of suitable teaching placements to practise digital pedagogy skills’ and ‘the wide variety of school environments makes it difficult to prioritise digital skills’). They are major factors in successfully developing and using digital pedagogy skills, from both the education ministry and the initial teacher education institution perspective. A further challenge identified is that ‘student teachers tend to be more concerned with managing learners than with digital pedagogy competencies’.

The main strands of individual recommendations suggested by respondents from universities, industry and education ministries are as follows (free text responses):

- “Work on teacher educators’ competences, both on campus and in the schools.
- Develop programmes that demonstrate through practice the impact of ICT and pedagogy skills through-out the full ITE programme; i.e. a focus on digital skills, digital assessment, building digital content and engaging with peers and programme digitally.
- Direct links with mentor teachers who utilise ICT and pedagogy skills in their own work.
- A more coherent institutional-level policy in support of opportunity for ITE students to deliberate and practice imaginative ICT usages in real-class / school-based settings as part of their programmes but without high-status marking / grading being attached.

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● Create think tanks with colleagues who are interested in the topic - collaborations with industry to develop infrastructure - information exchange with ministries - involve stakeholders within your institution - involve professional school of education - create highlight examples to involve others - cooperation with international partners

● Regarding ICT skills development there should be a continuum in terms of national policy from primary to secondary and then higher education, taking into account new goals like STEM and computational thinking. Student teacher in most of the cases lack of basic ICT skills while entering the university which makes it really hard to cope with the advances of new technologies and their affordances.

● A more collaborative approach between the institutions involved (Ministry of Education, universities, schools, stakeholders). Try to Improve coordination among institutions (HEI & Education & Schools). Establish a certificate for initial teachers to enter schools

● Lecturers should really notice the necessity of ICT skills in higher education. There must be a pressure on the student teachers on getting the necessary ICT skills to survive in the classroom. It should not be optional.

● For our institution: integrate ICT content into the syllabus, continue to encourage MOOC attendance and other workshops and projects such as ITELAB.

2.3 2019 SURVEY
The full report is in Annex 2.

Survey questions were unchanged from the previous year and it was open during September 2019. Contacts in ITELab’s network were invited to take part by email and newsletter to explore any changes to add further input to the monitoring activities. Despite encouragements, there were only 11 responses to the survey, nine from higher education, two from industry and none from ministries of education. Respondents were based in UK (3), Italy (2), Norway (2), and one from France, Germany, Ireland and Malta.

The nine respondents working in higher education rated their students' confidence in English language (sufficient for participation in a MOOC in English) at 5 on a 1-6 scale. Digital pedagogy skills are taught in one or more separate modules in five cases and integrated in just one case. Pressure to innovate the curriculum comes from government (4 responses), institution or individual tutors (both one response).

The top challenges to integrating ICT are, as in 2018, that 'student teachers are more concerned about managing learners than with digital pedagogy skills', 'the wide
variety of school environments makes it difficult to prioritise digital skills’, and, in similar vein, ‘a lack of suitable teaching placements to practise digital pedagogy skills’.

Teacher trainers’ own ICT skills tend to be the responsibility of tutors themselves (4 responses); otherwise the institution offers one-off ICT skills training or it has a coordinated approach and plan for their professional development (2 responses each). If separate ICT skills modules are taught, they are through blended learning (3 cases) or face to face (two cases).

Three respondents stated that their institution worked with teaching schools on change to encourage the development of ICT and digital pedagogy skills in student teachers, two said schools had no role in this and one that schools work with their institution. Four respondents said their institution works collaboratively with student teachers on change to encourage the development of ICT and digital pedagogy skills and two said there was no student involvement in this.

On co-operation with the ICT industry and business, four said there was little or none, two said that there was collaboration. Five different frameworks were used to develop pedagogical digital competence. Examples of innovative practices in developing students’ digital competence were given by six respondents.

The respondents from industry work with national ministry of education/high level education authorities to encourage change in HEI and the development of ICT and digital pedagogy skills to a considerable extent (3 on a four-point scale). The companies work with teacher educators on the topic by jointly producing content and working with them on for example the future classroom.

Industry respondents rated the biggest challenge in integrating ICT into the ITE curriculum is teacher trainers’ own ICT skills, followed by lack of suitable placements to practise them and a lack of pressure to change the existing curriculum. Two other challenges were mentioned: bureaucracy and the fact that digitisation is more of administration and communication in the institution, not the teaching process.

All respondents were asked to describe significant changes seen in higher education at policy level relating to digital skills in the past 12 months. Four said there have been none; other responses were policy moves, higher public attention, a new curriculum, the emergence of competence frameworks, and discussions on digitising the education sector.

Changes at institution level reported include more professional development, opening a future classroom lab, and more partnerships to span the continuum from ITE to school.

Among recommendations related to ICT in ITE were implement change management processes at HE institutions; focus on the development of teacher educators’
professional competences in both pedagogy and ICT; recognise knowledge and competence in using ICT in education at the same level as doing research; work more with the schools where the students do training; and Implement evidence-informed practices and remove departmental silos.

2.4 **VOICE OF STUDENT TEACHERS: 2019 SURVEY**

Student teachers have become an integral part of the ITELab project, participating in surveys, notably on the modules and the MOOC, and a core group of a dozen student teachers have been involved in the co-design and review of the project’s content, participating in nine different activities, ranging from attending workshops and conferences, to being part of the ITELab Pedagogical Board. By working alongside the student teachers, the project team has gained a unique perspective on their opinions, worries and desires.

Work included a survey which found that *although the student teachers themselves, possess good ICT skills, their digital pedagogy skills - implementing ICT skills in their teaching – are not as advanced.* The vast majority of the student teachers would like to learn more about digital pedagogy and widen their knowledge in terms of new tools and devices that can be used in the classroom. Even when provided with training on digital pedagogy by their ITE institutions, most student teachers do not feel well prepared and often develop their digital pedagogy skills in their free time. Student teachers wish to learn about technology during their ITE training more practically, with opportunities to experiment in active learning spaces and try the technology themselves before going on their teaching practice.

Strengthening the links between schools and initial teacher education institutions can help the student teachers and provide them with practical tips and let them face real classroom situations. However, it is recognised that the technology in schools, and the digital pedagogical approaches used by schools, varies considerably.

Student teachers appreciate being part of wider student teacher and teacher communities and networks, regional, national or Europe-wide, as they feel they can exchange practices and learn from their peers.

A feedback culture is already present in most of the ITE institutions in Europe, however it is usually limited to end of course surveys, not allowing the student teachers to fully express their opinions. Many student teachers see providing feedback as something

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not valued or acted on by the institution. Student teachers would like to be actively involved in course design but might not have the necessary experience and skills to provide constructive feedback.

Work on student voice in ITELab found that only a small body of academic research has been written on the use of student voice.

The student teacher team formulated the following recommendations to improve outcomes from their ITE institutions, improve their digital pedagogy skills and use the student teachers voice to improve ITE curricula and their satisfaction with the courses they attend:

1. More emphasis should be put on developing student teachers’ digital pedagogy skills. Despite possessing good ICT skills, student teachers often lack the confidence to implement technology in teaching.

2. Digital pedagogy skills should be taught more practically, ideally in new active learning spaces for student teachers to try digital tools prior to starting their teaching practice.

3. Initial teacher education institutions need to develop closer links with schools. This is beneficial for both the student teachers and their educators as it helps them stay updated with current developments in the classroom.

4. Engagement of student teachers in wider teacher communities should be encouraged as part of their training.

5. Involving student teachers in providing feedback and the co-design of their curricula can be beneficial to everyone involved in the process. They need to be given help to develop their skills in providing feedback.

These recommendations have been drafted into a ‘Student Teacher Charter’.
3 CHALLENGES AND RECOMMENDATIONS

The three monitoring reports, and the desktop research, case studies and surveys in them, present a range of challenges facing ITE, all requiring innovative and complex solutions. Yet, in every case, there are examples of how the challenges have been overcome successfully, some documented in the ITELab reports and studies, making it possible to make recommendations for future – achievable – actions.

3.1 CHALLENGE 1: INTEGRATING ICT IN ITE CURRICULA

Programmes of study in ITE institutions cover a wide range of topics often in a short period of time (reducing even more as placement time in schools increases). The ITELab case studies show how different universities manage to integrate ICT, but success calls for action on several fronts at once to overcome obstacles, relating to leadership, infrastructure, time, and competences – in other words some of the challenges outlined below.

Recommendation 1: As a first step, ITE providers should accord the use of digital technologies and pedagogical digital competence an explicit and evidence-based place in ITE, embedded in the curriculum, assessed and accredited; the whole process owned by both institutional leaders and teacher educators. Examples in ITELab case studies illustrate possible ways of doing this. The curriculum should allow for flexibility, encouraging and recognising formal and informal self-regulated learning outside the institution.

Recommendation 2: Policy-makers in government should support embedding ICT in ITE, recognising the critical role played by top-down, ‘joined up’ policy initiatives in sponsoring, validating and prioritising innovation. This move implies associated policy actions related to institutional leadership, resourcing and capacity building aligned with European and national digital strategies.

These two steps should be followed by actions to meet the other challenges below, which, if not met, are likely to lead to unfulfilled ambitions.

3.2 CHALLENGE 2: PREPARING STUDENT TEACHERS FOR THEIR CAREERS

The primary role of ITE providers is of course to prepare teachers for their future career, and they can never be fully prepared before entering the classroom because the conditions as you enter your first classroom as a qualified teacher cannot be replicated. Moreover, the challenge is not only to prepare students for the classroom of today but also the learning space of tomorrow, digital or otherwise, meeting both student teachers’ needs (not least to be able to maintain order in the classroom) and longer-term perspectives (including technological affordances).
Recommendation 3: ITE providers should intensify efforts to develop student teachers’ pedagogical digital competence. TALIS 2019 found that only 56% of teachers reported that they had had training in ICT for teaching in ITE and that only 43% felt well or very well prepared to use ICT when they completed their initial education or training. This is confirmed in ITELab’s surveys, and several case studies show how it can be done. Competence frameworks, tools to self-assess levels of pedagogical digital competence, and tools to help develop diagnosed weaknesses are increasingly available, and a consensus is emerging on the digital competences of teachers, including those entering the profession. In the area of ICT, levels of understanding and competence vary widely between student teachers; therefore instead of considering pre-service teachers as one homogenous group, it is important to understand the variations among their abilities and knowledge in order to be able to provide them with support they need within teacher education.

Recommendation 4: Policy-makers, ITE providers, schools and continuing professional development providers should support career-long learning. ITE should be seen as the beginning of a learning journey for teachers, not discrete or an end in itself, and teachers (and their trainers and mentors) should be role models of lifelong learners for their students. This implies that the continuum between ITE and continuing professional development should be strengthened and calls for ever closer links between ITE providers and schools. Schools however, may be unprepared for this role for various reasons (finance, priorities), one of which they may not offer opportunities for student teachers to practise digital pedagogy skills and the wide variety of school environments makes it difficult to prioritise digital skills. There is a place for creating future classroom labs in ITE institutions; these both offer an opportunity to explore different learning configurations, to use digital tools and to observe others teaching.

3.3 CHALLENGE 3: DEVELOPING TEACHER EDUCATORS’ ICT COMPETENCES

Student teachers tend to view their tutors as role models. If students are expected to use ICT confidently and appropriately their teachers should demonstrate the same skills and expertise. Although teacher educators responding to ITELab surveys considered they were competent in ICT, this may not be true for others. In many institutions training to develop tutors’ digital competence, even if it exists, is not a priority and may be optional, resulting in inconsistent provision and some students having little or no ICT in their training. A further challenge is that research is often more valued than expertise in teaching; career progression depends more on published research than on excellence in preparing future teachers.

Recommendation 5: ITE providers and policy-makers should define the core pedagogical competences of teacher educators. As for student teachers there is a need to consider to what extent the pedagogical digital competences of teacher...
educators are the same as those of practising teachers and whether there are any that are specific to teacher educators. Work in ITELab by the University of Agder has contributed to this somewhat neglected area.

**Recommendation 6:** ITE providers should develop the pedagogical digital competences of teacher educators. ITELab case studies offer a number of examples of how this can be done successfully, in particular buddy systems and innovative learning spaces in which to tinker. In some countries, teacher educators – and, more controversially, their university – are subject to performance review (in itself contentious and seen as a threat to academic freedom by some) and, if pedagogical digital competence is one element, this can act as a stimulus to develop skills.

### 3.4 Challenge 4: Overcoming Isolation

As in other sectors of the economy and human activity, a 'silo mentality' often prevents the spread of innovation in ITE, where institutions are in competition with each other or unaware of other organisations (not only universities) facing and solving similar challenges. For example, good practices seen in schools are rarely seen in ITE providing institutions, such as whole school development plans, the leadership of senior management, appointing a ‘digital czar’, buddy systems to support teachers, using self-evaluation tools (e.g. SELFIE, the Future Classroom Lab’s Toolkit, TET-SAT). In ITELab a strong demand from the student teachers was for more networking opportunities outside their university, and project partners, including those from industry, found that working to a shared objective increased mutual understanding and brought fresh ideas to bear on problems.

**Recommendation 7:** All stakeholders should increase networking and cooperation within and across sectors. ITE providers and schools should increase partnerships, despite the difficulties in doing so evidenced in the case studies and surveys. Digital technologies enable more sustainable, intense and sustained exchange of best practice among providers of ITE, schools and industry. Student teachers too can benefit from networking, as seen in the ITELab MOOCs and eTwinning projects, and continue these ad hoc support communities throughout their career.

**Recommendation 8:** ITE institutions and industry should increase efforts to work together. There are benefits to both ITE institutions and the suppliers of digital technologies and services on which ITE and schools increasingly depend: better understanding of product (by ITE, anxious to be vendor-neutral), customer (by industry, often focused on sales), the needs of the education system, and of developments in technology that are likely to impact significantly on education. Collaboration on joint projects, preferably international and funded by the European Commission, gives a purpose and value to working across different types of organisation.
4 ANNEX

4.1 RESEARCH AND DEVELOPMENTS IN 2019: DETAILS

Documents in this annex are grouped under four categories:

- ITE policy
- Professional digital competence
- Digital technologies in ITE
- Innovation in ITE

4.1.1 ITE Policy

Recently published international and national studies and papers address the following topics:

- Governance of school education systems
- Transition between sectors
- Partnerships between teacher education institutes and schools, school-based teacher training
- Teacher education as a policy lever for improving teaching and school performance
- ‘Reform’ efforts centred around instrumental and managerialist practices
- Challenges of designing and sustaining initial teacher preparation systems
- Strategies for different levels of the system (policy, teacher education institutions and schools)
- Practices and trends in the integration of media-related studies and competencies into initial teacher education
- ICT teaching in ITE
- Continuum between ITE and CPD
- The importance of teacher educators, yet their lack of support
- Need to define clearly what those who teach teachers should be expected to know, and be able to do
- models, strategies, approaches and policies related to teacher education
- ITE core content framework
- Measuring quality in ITE
- Impact of teacher education policy initiatives

4.1.1.1 International

- The governance of school education systems

insights into governance of school education systems from the European Commission. Ideas on better transitions between levels of education, quality assurance, learning processes, schools as learning organizations and networks for innovation.


• Partnerships between Schools and Teacher Education Institutes

Christopher Bezzina, University of Malta Peter Lorist, Hogeschool Utrecht Corinne van Velzen, Vrije Universiteit Amsterdam http://www.pef.uni-lj.si/atee/978-961-6637-06-0/747-758.pdf

Teaching is formative in nature and one grows within the profession and hence through daily experiences. As a result of this, various countries have over the years developed different modes of school-based teacher training. In this paper we elaborate on three examples of partnerships between teacher education institutes and schools. We draw conclusions from these examples, the experiences of participants and from international literature.

• International Policy Perspectives on Change in Teacher Education


In schools, results from PISA and other international attainment indicators have often driven high senses of government anxieties about educational – and hence economic – competitiveness and sometimes result in attempts to reform schooling, change teaching methods and/or introduce austere testing regimes. As part of the agenda for reforming schools, many governments across the world now see teacher education as a policy lever for improving teaching and school performance at national levels and for reforming teacher professionalism.

• International Research, Policy and Practice in Teacher Education

Swennen, A., & Volman, M., 2019, International Research, Policy and Practice in Teacher Education. Springer International Publishing Switzerland, p. 107-121

The effects of the many recent policy changes on teacher education have been considerable, as the various chapters of this book and many other analyses of the field indicate. These effects have been compounded because such policies often involve ‘reform’ efforts centred around instrumental and managerialist practices.
• **OECD, A Flying Start: Improving Initial Teacher Preparation Systems**

This report provides insight into key features of selected teacher preparation systems by analysing the information collected in the OECD Initial Teacher Preparation (ITP) study. The ITP study investigated the policy environments of the first phase of continuous teacher learning in seven countries to identify challenges, strengths and innovations: Australia, Japan, Korea, the Netherlands, Norway, the United States and Wales (United Kingdom). A Flying Start: Improving Initial Teacher Preparation Systems describes the challenges of designing and sustaining initial teacher preparation systems and proposes strategies for different levels of the system (policy, teacher education institutions and schools), based on both international evidence and practices identified in the study.

See also: **A Flying start: Promising Practices**
  http://www.oecdteacherready.org/promising-practices-landing/

These practices may not be widespread or representative, but seen in the context of other challenges, they represent a strength or opportunity to improve the country’s initial teacher preparation system – and for other countries to learn from them

• **The Integration of Media-Related Studies and Competencies into US and German Initial Teacher Education. A Cross-National Analysis of Contemporary Practices and Trends.**

  Jennifer Tiede, Silke Grafe Chair of School Pedagogy, University of Würzburg Germany jennifer.tiede@uni-wuerzburg.de silke.grafe@uni-wuerzburg.de

Many institutions of initial teacher education have realized the necessity to integrate media-related studies into their curricula. However, there are no binding regulations for these processes. As a result, the shape and extent of respective activities varies considerably, not only between different countries, but also within countries with decentralized educational structures such as Germany and the USA. The following paper will present the results of 11 interviews with experts from Germany and the USA which explored current practices and trends in the integration of media-related studies and competencies into initial teacher education. The data collected focus on models of media-related educational competencies, on possibilities and varieties of integrating media-related studies into teacher education curricula, on the outcomes of such efforts and on stakeholders who influence these processes. The cross-national comparative perspective will help contextualize the findings and draw conclusions on the status quo.

• **OECD (2019) Teaching and Learning International Survey (TALIS)**

Highlights related to ITE (and ICT):

P. 14: ICT for teaching in ITE was reported by only 56% of teachers, 38% have some form of mentoring once they start teaching and only 22% have an assigned mentor on average across OECD countries in TALIS.

P. 14: Teachers said they need more training in advanced ICT skills

P. 29: 50% of teachers use ICT for projects or classwork frequently or always. Only 43% of teachers felt well or very well prepared to use ICT when they completed their initial education or training. 18% of teachers express a high need for PD in ICT skills for teaching. 25% of school leaders report a shortage and inadequacy of digital technology as a hindrance to providing high quality instruction. “TALIS data suggest that teachers may be limited in their use of ICT.”

P. 31: Value of professional learning communities to disseminate innovative practices.

P. 35: SEN students

P. 42 Goal: Link ITE with CPD. A key task when considering teachers as lifelong learners is to ensure adequate linkages between the content of teachers’ initial training and that of their continuous professional development.

P. 121ff. Chapter 4: Attracting and effectively preparing candidates

P. 129: Content of ITE and preparedness

Deals with the following aspects:

- the importance of the profession and the roles it plays
- policy challenges facing Member States
- issues of professional competences and quality
- teacher educators’ professional learning and development
- research for a better understanding of teacher education and teacher educators
- the importance of professional communities and associations
- roles and responsibilities of stakeholders

Teacher educators are crucial players for maintaining - and improving - the high quality of the teaching workforce. They can have a significant impact upon the quality of teaching and learning in our schools. Yet they are often neglected in policy-making, meaning that some Member States do not always benefit fully from the knowledge and experience of this key profession. It also means that teacher educators do not always get the support and challenge they need, for example in terms of their education and professional development.

Member States increasingly acknowledge the need to define clearly what those who teach teachers should be expected to know, and be able to do; they acknowledge that great care needs to be taken in recruiting and selecting teacher educators, and in facilitating their career-long professional development. By stimulating and supporting the development of explicit frameworks and policies, national and regional education authorities can assist teacher educators to be as effective as possible.

- **Digital Education at School in Europe**, Eurydice, 2019

  See p46ff. in particular.

In about half of the European education systems, teacher-specific digital competences are subject to the regulations or recommendations for ITE issued by top-level authorities.

- **Rethinking Teacher Education for the 21st Century, Trends, Challenges and New Directions**
  Edited by Marta Kowalczuk-Wałędziak, Alicja Korzeniecka-Bondar, Wioleta Danilewicz, Graciennne Lauwers

Focuses on current trends, potential challenges and further developments of teacher education and professional development from a theoretical, empirical and practical point of view. It intends to provide valuable and fresh insights from research studies and examples of best practices from Europe and all over the world. The authors deal
with the strengths and limitations of different models, strategies, approaches and policies related to teacher education and professional development in and for changing times (digitization, multiculturalism, pressure to perform).

- **International perspectives on policy and practice in teacher education: The insider perspective**
  
  http://10.0.3.239/978-3-030-01612-8

This book draws on original research studies, conducted across eight countries in North America, Europe and Australia to analyse the impact of teacher education policy initiatives on ‘insiders’ in the fields, including education students, teacher educators and mentors in schools. In achieving this, the various chapters in the book analyse the commonalities and differentiations in the many policy reforms in teacher education currently being implemented by national governments. The book reveals some of the hidden consequences of these recent ‘reform’ efforts. It is also of use for leaders and policy makers in teacher education, providing them with insider perspectives from both theory and practice and making it possible for them to develop research-informed decisions that take into account the voices of insiders. Few texts have considered international policy trends alongside the impact they have had on significant stakeholder groups ‘inside’ teacher education. In redressing this omission, the book contributes to a better understanding of and improved practice of work in teacher education, both pre- and in-service."

4.1.1.2 National

- **The Development of the Identity of Teacher Educators in the Changing Context of Teacher Education in the Netherlands**
  

Springer, 2019

The study presented in this chapter is about the development of the professional identity of Dutch primary teacher educators from different generations. The focus is on how teacher educators develop individually during their professional career and how this individual development relates to changes in their profession. Data were collected and analysed using a biographical research methodology. Analysis of the results shows how participants constructed their identity as teacher educators influenced by their personal history in relation to the (historical) context of teacher education.

**Teacher recruitment and retention strategy (UK)**

The process to become a teacher is too complicated and burdensome. We will radically simplify the process for becoming a teacher, introducing new digital systems designed to make application much easier and more user-friendly. In particular:

- We will introduce a new one-stop application service for ITT, which will be easier to use and designed to better meet the needs of potential trainees;
- We will review the ITT market to support it to work more efficiently and effectively.

See also

**Initial teacher training (ITT): core content framework**
DFE, November 2019 [https://t.co/GjXBJaJ6kV?amp=1](https://t.co/GjXBJaJ6kV?amp=1)

**Presentation and questions** at the November 2019 Universities’ Council for the Education of Teachers conference:
[https://www.youtube.com/watch?v=bUoMrVOD3C4](https://www.youtube.com/watch?v=bUoMrVOD3C4).

- **Scotland: measuring quality in ITE**

The MQuiTE project seeks to involve all stakeholders in the development of a contextually appropriate means of measuring quality in initial teacher education in Scotland. It engages with both literature and practice to inform this process. The project runs for six years (tracking graduates over five years) and involves all ITE universities in Scotland. It is designed to be developmental in nature, securing, as it does, a sound base for the study of quality in ITE in its initial phases and then testing this in subsequent years. An ongoing feature of the project is the way in which markers of quality are returned to and modified in light of accrued data. In this way the project does not seek to maintain a static representation of quality but rather a dynamic interpretation that is modified in light of progression both of students as they become teachers and the various routes into teaching that now exist in Scotland. This work will contribute significantly to the development of quality teacher education in Scotland, and will also offer a useful perspective to the international debate on measuring quality in ITE.

**Related publications:**


MQuiTE Project Team (2018). *MQuiTE Framework Feb2018*

**4.1.2 Professional digital competence**

Recently published studies and papers address the following topics:

- Competences of teacher educators
• Assessing the level and progress of pre-service teachers’ ICT competencies
• European Framework for the Digital Competence of Educators (DigCompEdu)
• Novice teachers as designers of TEL interventions
• Online intercultural collaboration
• Resources and inspiration for teacher educators to develop their practice
• Newer teacher educators’ professional learning as researchers
• Needs and activities of teacher educators across six national jurisdictions
• Teacher Educators professional development network.

4.1.2.1 Student teachers

• DoCENT – Digital Creativity ENhanced in Teacher Education

The overall goal of the project is to enhance digital creativity in ITE contexts. We will develop, implement, validate and disseminate an innovative model to guide teacher educators in applying digital creative teaching practices. In this context, the DoCENT seeks to provide new models for promoting teachers’ and learners’ creativity.

The first output of the project (Framework of digital creative teaching competences) aims to define the key-components of competences needed by teacher educators for effectively integrating digital creativity in teaching contexts, as well as to provide and validate a EU reference framework for developing and evaluating digital creative teaching competences. The framework of competences targets teacher educators, educational policy makers, as well as EdTech research centres and companies, and indirectly pre-service / in-service teachers. Output 1 provides a foundation to develop the DoCENT MOOC and Serious Game.

• Novice teacher technology-enhanced learning design practices: The case of the silent pedagogy
  Giang N. H. Nguyen, Matt Bower
  https://bera.us9.list-manage.com/track/click?u=b8740e3b8965b5fbdccd439462&id=62f8d801af&e=f0cd7648c1 [Pay to view]

There is increasing social and political pressure to prepare teachers of the future with strong technology-enhanced learning design capabilities, yet little is known about how teachers in training actually go about technology-enhanced learning design processes. This study involved an in-depth analysis of three groups of three pre-service teachers as they completed a five-week collaborative technology-enhanced learning design project. Recordings of all in-class group discussions and out-of-class use of social media were analysed in order to understand the focus of the novice teachers’ technology-enhanced learning design processes. Post-project interviews
were also conducted to determine the reasons for the novice teachers’ design approaches, and to better understand what constrained and supported their design efforts. A key finding of the study was that, despite the intentions of the pre-service teacher education program, participants rarely mentioned or thought about pedagogy during their collaborative design activities. In addition, tutor support, technological capabilities and group collaboration were identified as strongly influencing the technology-enhanced learning design process. The implications of the study are discussed in terms of furthering the capabilities of novice teachers as designers of TEL interventions.

- **Developing a validated instrument to measure preservice teachers’ ICT competencies: Meeting the demands of the 21st century**

The main objective of this study is to develop a self-report instrument to measure pre-service teachers’ ICT competencies in education. The questionnaire items of this instrument are based on an existing comprehensive framework and were created with input from experts in the field. The data were collected from a sample of 931 final-year preservice teachers in Flanders (Belgium). A first subsample was used for an exploratory factor analysis, and a second one to verify the identified factor structure via confirmatory factor analysis. A two-factor structure of ICT competencies was identified: (1) competencies to support pupils for ICT use in class and (2) competencies to use ICT for instructional design. This two-factor structure was confirmed in the confirmatory factor analysis. Recommendations are made on how this reliable instrument can help assess the level and progress of preservice teachers’ ICT competencies.

- **Evaluate project**
  [https://www.evaluateproject.eu](https://www.evaluateproject.eu)

The study found that engaging student teachers in structured online intercultural collaboration as part of their formal learning can contribute to the development of their digital-pedagogical, intercultural, and foreign language competences. It can also lead to innovation and international learning in the education of future teachers.

- **Aligning teacher competence frameworks to 21st century challenges: The case for the European Digital Competence Framework for Educators (Digcompedu)**
  (2019). Francesca Caena, Christine Redecker, [https://doi.org/10.1111/ejed.12345](https://doi.org/10.1111/ejed.12345)

Teachers need to update their competence profiles for 21st century challenges. Teaching strategies need to change and so do the competences teachers need to develop so as to empower 21st-century learners. The European Framework for the Digital Competence of Educators (DigCompEdu) represents a paradigmatic example
of this endeavour, taking stock of these needs. Defining the requirements of education professionals by teacher competence frameworks can serve multiple purposes at different levels in education systems. At the micro level, it can support and guide teachers’ practice and continuous professional development. At the meso level of local education governance, it can support the development of school institutions as learning organisations, providing common ground for dialogue, collaboration and reflection in professional communities of practice. At the macro level of quality assurance, it can provide reference standards for initial teacher education, and for education professionals’ quality along the career continuum. The European Framework for the Digital Competence of Educators was designed to align with institutional and contextual requirements in different countries, whilst remaining open to adaptation and updating. It links teachers’ and students’ digital competence development, and can be linked to institutional capacity building. At the same time, the framework is generic enough to apply to different educational settings and to allow for adaptation as technological possibilities and constraints evolve.

The use of a self-reflection tool that translates framework indicators into professional activities to which teachers can relate, accompanied by detailed feedback on possible avenues for enhancing their competences, can contribute to transforming an overarching framework which could otherwise be perceived as externally imposed in a bottom-up, participatory movement. Through the availability of an anonymous self-assessment tool, teachers can experience their self-assessment process as self-determined and individually-owned. Its frequent use in training courses or other collective development exercises and the ensuing discussion among participants further underscore the framework’s role in inciting professional dialogue, engagement and activity rather than measuring or stratifying existing competence levels. This has a transformative power for pedagogies to promote learning partnerships of teachers and learners within and across education contexts. It has the potential for promoting teacher motivation, agency and voice, effectively harnessing the potential of digital technologies to empower 21st-century learners as resilient, reflective and responsible global citizens.

- University of Hull project DEIMP
  [http://www.deimpeu.com](http://www.deimpeu.com)

The project aims to demonstrate how the professional profile of educators across this spectrum can be strengthened to ensure that learning is responsive to the benefits and opportunities afforded by mobile technologies. It seeks to define what transformational learning with mobile technologies looks like and to help stakeholders design and evaluate transformative mobile learning episodes using a bespoke mobile app developed iteratively over three design cycles.

- Measuring the impact of eTwinning activities on teachers’ practice and competence development- Monitoring eTwinning Practice Framework
The study found that using a self-review survey, Monitoring eTwinning Practice (MeTP https://metp.etwinning.net), based on competence frameworks developed in Norway and in the MENTEP project, triggered a positive change in teachers’ practice and led to improvement in their competences as a whole. The study found that if teachers felt initially more secure and confident in their area of expertise (pedagogy), they were still open and willing to improve with the help of eTwinning activities.

- **eTwinning in an era of change - Impact on teachers’ practice, skills, and professional development opportunities, as reported by eTwinners**


The 2019 edition of the biannual monitoring report on eTwinning, based on survey responses from over 10,000 teachers, reported that eTwinning has a positive effect not only in the educational areas of teaching and learning, but also at more profound levels in areas such as the development of a sense of identity, a growth in confidence in one’s own abilities, the fostering of a sense of citizenship at both national and European level. The report shows how eTwinning can meet at least three of the goals in TALIS.

4.1.2.1 Teacher Educators

- **FLiTE**
  
  https://www.herts.ac.uk/study/schools-of-study/education/research/FLiTE.
  
  Contact Dr Elizabeth White: e.j.white@herts.ac.uk

FLiTE is a platform where those involved in initial teacher education can find resources and inspiration to develop their practice. It is designed by teacher educators, for teacher educators to:

- inspire critical reflection on school-based practice in teacher education
- deepen the professional learning and development of teacher educators
- develop collaborative working in initial teacher education partnerships
- enhance the quality of learning opportunities for student teachers

These resources, insightful stories of teacher educators working in schools and HEIs, can support the professional learning of teacher educators in both settings, enabling their different contributions to be better understood and valued. They are designed to support teacher educators to find ways to discuss and develop collaborative working practices, explore new possibilities, and enhance the quality of school-based teacher education. They also provide a tool for teacher educators to grow and work on their
own professional development. They could be used within schools, HEIs and partnerships, with teacher educators from both settings, and with others involved in initial teacher education including those supervising initial teacher education in their schools; mentors; student-teachers; school leaders and managers of initial teacher education.

The resources can be used during a CPD session with groups of teacher educators from schools and HEIs who are working in partnership, or across partnerships. They are particularly helpful to use with a mix of school-based and institute-based teacher educators, to explore challenges from different perspectives. The resources are also suitable for teacher educators to use when working alone or in pairs.

Each story comes with some questions and ideas of how they can be used. For some there are also links to educational theory and research which could be used to extend the learning associated with the story.

- **Researching mentoring, developing researchers: a parallel approach to research and development in teacher education**

  Karen Vincent, Penny Webb, Canterbury Christ Church University, England,

  This paper takes an interpretive approach in examining how institutional support has facilitated newer teacher educators’ professional learning as researchers whilst undertaking a research project about mentoring in teacher education. The research project took place within a faculty of education in England and asked; what supports mentors’ professional development? Acknowledging that mentoring is a social practice and can be seen as ‘doings, sayings and relatings’ (Kemmis et al, 2014), the team adopted a thematic approach to the analysis of data (Strauss and Corbin, 2009) and discovered that what supports the professional learning of mentors also supported their own professional learning: These include knowledge of one’s own educational aims and principles, support and resourcing, taking advantage of diverse opportunities, opportunities to practice and understand how to undertake research and developing strong relationships and reflecting on these in order to develop pedagogically excellent practice. This paper demonstrates that including novice teacher educator researchers in faculty projects builds capacity and expertise and can help to improve and maintain quality within the challenging context of English teacher education.

- **The professional development of higher education-based teacher educators: needs and realities**

Current literature suggests that while teacher educators perform a multitude of complex roles, they receive minimal preparation or possibilities for professional development to fulfil these roles. As a result, they need to acquire relevant knowledge and skills after taking on the position of teacher educators. Therefore, it is important to learn what skills and knowledge teacher educators need and how they acquire such skills and knowledge throughout their career. The purpose of this study is to describe the professional development needs and activities of 61 teacher educators across six national jurisdictions (England, Ireland, Israel, Norway, Scotland and The Netherlands) and to reveal influencing factors and affordances conducive to professional development. Semi-structured interviews constituted questions on professional learning opportunities and teacher education and research. Results from the interviews convey themes around the areas of (i) self-initiated professional development, (ii) the importance of experiencing professional development through collaboration with peers and colleagues, (iii) accessing opportunities to improve teacher education teaching practices, and (iv) the inextricable link between teaching and research and, consequently, the need to upskill in research skills. Discussion points that arise include the induction period, frustration and tension in navigation, haphazard professional learning and learning with, and from, each other.

- **Info-ted Teacher Educators professional development network project**
  - [https://info-ted.eu/publications/](https://info-ted.eu/publications/)

The International Forum for Teacher Educator Development is funded by Erasmus+ and is led by six universities. Nine studies on teacher educator development have been published by project partners, for example:


### 4.1.3 Digital Technologies in ITE

Recently published studies and papers address the following topics:

- Education futures
- Online taster course for prospective teachers
- Developing and running MOOCs as cross institutional initiatives
- Case studies of video-supported ITE
- Innovation, robots and Artificial Intelligence in ITE
- Creating a learning community
• **Education 2030**

Five scenarios on global education in the future, described in a lengthy presentation, with many statistics and useful facts and figures. According to Stephen Downes: “This report has some flaws but it is overall a far better snapshot of the future of learning than many of its contemporaries. It draws from both the ‘top down’ - looking at data and research from sources like the World Bank and OECD - and the ‘bottom up’ - analyzing hundreds of news articles, blog posts and commentaries from a wide array of sources. This leads to a picture where five scenarios dominate - education as usual, global giants, regional rising, peer-to-peer, and robo revolution. These aren’t depicted as alternatives per se - they’re all at play in our complex environment, influenced by (and influencing) governments, markets, research, etc., each to a different degree.”

• **Online course for prospective teachers, Manchester Metropolitan University, UK**
  [https://www.futurelearn.com/courses/preparing-for-teaching](https://www.futurelearn.com/courses/preparing-for-teaching)

This free course from Manchester Metropolitan will help you learn about what’s involved in teacher training. On the course you will reflect on your own experience of education and discover what being a teacher actually involves. You’ll learn about all the different things that make a great teacher and what knowledge and skills you might need when you enter the classroom. This course is an ideal starting point, or warm up, before beginning a formal teacher training course. It will give you a sense of teaching and help you explore your own preconceptions of what teaching is.

**Topics:**

- What makes a good teacher and can teaching be ‘measured’?
- How teachers manage behaviour in classrooms.
- Use own experiences and further research to gain an understanding of different school structures.
- Develop an action plan to take the first steps into a career in teaching.

This course is for anyone who is interested in teaching and want to become a teacher in the future. It’s suitable for learners of any age and from anywhere, as it takes a global perspective on teaching.

• **MOOCs in teacher education: institutional and pedagogical change?**

Abstract: We study the implementation of a MOOC initiative which involved two distinct teacher education institutions at HEIs, and where the implementation was led
by a governmental body. Our aim was to see in what ways this initiative changed the teacher education involved, in terms of institutional organisation and pedagogics. Based on interviews with stakeholders from the government and from the two HEIs, we found that the process of implementing and piloting the MOOC faced various sorts of resistance. Our study might serve as a contribution to researchers and practitioners involved in development and running MOOCs as cross institutional initiatives, in that it addresses the diversity of challenges new study models are facing within HEIs. It may also be of interest to teacher education departments responsible for continuing education programs, since it demonstrates the opportunities that comes with a MOOC to provide larger groups of in-service teachers with new educational possibilities.

- **IRIS Connect : Three case studies**


  University of Twente, the Netherlands:  [https://www.irisconnect.com/uk/impact/case-studies/enhanced-teacher-training/](https://www.irisconnect.com/uk/impact/case-studies/enhanced-teacher-training/)

  JAMK University of Applied Sciences, Finland:  [https://www.irisconnect.com/uk/impact/case-studies/support-student-teachers-practical-expertise/](https://www.irisconnect.com/uk/impact/case-studies/support-student-teachers-practical-expertise/)

### 4.1.4 Innovation in higher education and ITE

Recently published studies and papers address the following topics:

- A learning community in which students actually experience what they are being taught
- The meaning of innovation in the ITE field
- Student voice: enhanced student participation in higher education curriculum development
- School-university partnership in an increasingly school-based context
- Peer mentoring
- Lesson study
- Transforming the professional education of teachers
- Becoming a teacher as person-centred, relational practices
- Prospective teachers skip university and gain in-classroom experience as paid employees
- Encouraging and supporting new researchers and writers in teacher education
- Lesson study: learning from teaching
- Mentor teachers’ value added
- Why teaching is not a research-based profession

- **HEI Innovate**  [https://heinnovate.eu/en](https://heinnovate.eu/en)
HEInnovate is a self-assessment tool for Higher Education Institutions to explore their innovative potential. It guides users through a process of identification, prioritisation and action planning in eight key areas:

- Leadership and Governance
- Organisational Capacity: Funding, People and Incentives
- Entrepreneurial Teaching and Learning
- Preparing and Supporting Entrepreneurs
- Digital Transformation and Capability
- Knowledge Exchange and Collaboration
- The Internationalised Institution
- Measuring Impact

HEInnovate diagnoses areas of strengths and weaknesses, opens up discussion and debate on the entrepreneurial / innovative nature of their institution and it allows users to compare and contrast evolution over time. There is instant access to results, learning materials and a pool of experts.

HEInnovate is an initiative of the European Commission, DG Education and Culture and the OECD LEED Forum. It is free, confidential and open to anyone to use. HEInnovate can be used by all types of higher education institutions. This website also contains case studies, user stories and supporting material to help users design solutions tailored to their needs.

- **Robot-proof: higher education in the age of artificial intelligence**
  

Patrick Camilleri. Faculty of Education, University of Malta: “a must read to all educators who, metaphorically speaking, do not want to go the way of the dodo.”

- **Innovating Professional Development in Compulsory Education - Examples and cases of emerging practices for teacher PD.**


Includes examples of pre-service innovation, e.g.

24. **Teach Live (CZ): Degree programme for future teachers**

“Teach Live” is a newly established teacher education programme in Czech Republic for future teachers. It is promoted with the tagline “Gain the confidence to teach through extensive placements, vocational training, and sharing experiences within a
community of enthusiasts”. The programme recently received accreditation by the Ministry of Education. In 2017, the model was first tested with 15 students who graduated from the course. According to the pilot report, the organisers found that creating a learning community in which students actually experience what they are being taught is rudimental (Nadace Depositum Bonum, 2017). This is also reflected in how the syllabus is organised; it includes 750 hours of instruction comprised of “vocational training” (370h) and 380h of placements in two schools where candidates work alongside selected educators. The list of placement schools includes top innovative schools in the country.

- **The student voice in higher education curriculum design: is there value in listening?**
  https://doi.org/10.1080/14703297.2014.910128

This article presents a case study illustrating the potential value of enhanced student participation in higher education curriculum development, in response to an absence of research in this area. Lecturers and students had divergent views of the effectiveness of a staff-led redesign of a module curriculum. Focus groups were used to investigate reasons for the opposing views informing a second, more successful, redesign evidenced by improved feedback, attendance and marks. We discuss how a closer alignment with the ‘student voice’ facilitated the emergence of perceptions not revealed by usual feedback routes. We suggest potential reasons why this occurred including how student views challenged staff assumptions about the learning and teaching process and our initial interpretation of literature. We discuss how our findings might enhance the development of the student voice in HE, and their relevance to continuing debate about the purpose of HE curricula.

- **Professional Development in Education**, vol. 45, 2019
  Issue 1 https://www.tandfonline.com/doi/full/10.1080/19415257.2018.1441172

Contributions include:
- Implicit and informal professional development: what it ‘looks like’, how it occurs, and why we need to research it
- Coaching in education: a professional development process in formation
- Learning to teach in the era of test-based accountability: a review of research
- New directions for teacher education: investigating school/university partnership in an increasingly school-based context

Issue 2 https://www.tandfonline.com/toc/rije20/45/2?nav=tocList
Contributions include:
  o ‘You have to prove yourself, initiate projects, be active’: the role of novice teachers in their own induction process
  o Peer mentoring as a support for beginning preschool teachers
  o Lesson Study: professional development (PD) for beginning and experienced teachers
  o Meeting agenda matters: promoting reflective dialogue in teacher communities

• Teacher Development 3.0: How we can transform the professional education of teachers

Four design principles that we believe are essential in transforming the professional education of teachers, both at the beginning and throughout their careers. We propose: 1. A long-life teaching profession; 2. Schools, universities and teachers at the heart of their communities; 3. Education as cultural and societal development as well as individual advantage; 4. A continuum of professional learning. We believe we need to take a long-term view about the future of schools and teaching as a profession, responding to the significant societal challenges we face. We also offer 4 key design questions for teacher educators that might help them to enact the principles of Teacher Development 3.0.”

• Innovation in teacher education: towards a critical re-examination

Themed issue of the journal on “Innovation in Teacher Education”: an argument for re-examining the meaning of innovation in the field, shifting it away from the dominance of the economistic and technological. Acknowledging its status as a ‘buzzword’, we distinguish between purposes for innovation and, in particular, between changes driven by arguments for social mobility and those driven by social justice and equity. Two imperatives for innovation underpinned by arguments for social justice and equity are identified: the concept of a ‘teacher education debt’, built on Ladson-Billings’ more general notion of ‘education debt’; and the humanization of learning, teaching and becoming a teacher as person-centred, relational practices. The final section of the article introduces each of the six papers in the context of the discussion in previous sections about these imperatives for change.”
• **Teaching students are being employed in the classroom rather than heading to university**
  
  [https://buff.ly/2FQRG1F](https://buff.ly/2FQRG1F) Natasha Robinson

Some Australian schools have started using a new tertiary training model that allows prospective teachers to skip attending a university, instead giving them “hands-on” in-classroom experience as paid employees.

**Key points**

- Program employs teaching students as classroom assistants and a private provider delivers lectures at school, completely bypassing universities
- Universities warns similar model in UK was not successful and said it is not an efficient program
- System aims to have better retention than other alternative teaching program Teach for Australia
- Known as the "clinical teaching" model, the tertiary program sees schools employ students as paid assistant teachers for 1-2 days a week throughout the duration of their four-year course.
- Lectures are conducted on-site at the school once a week, meaning the students bypass a university campus entirely.

• **Teacher Education Advancement Network Journal**
  
  [https://ojs.cumbria.ac.uk/index.php/TEAN/index](https://ojs.cumbria.ac.uk/index.php/TEAN/index)

Teacher Education Advancement Network Journal is an online journal specifically aimed at teacher educators, with the intention of advancing research and scholarly activity in teacher education. The journal is published by the Teacher Education Advancement Network (TEAN) and is designed to be a journal whose contributors will offer example and inspiration from their own practice and activity. The journal seeks to offer papers which have academic rigour, and, particularly, have the intention to impact on practice. The journal aims to encourage and support new researchers and writers in teacher education as well as drawing on the expertise, research and insights from experienced colleagues. Contributions for the journal from all countries of the UK and from international colleagues are welcomed. Full details can be found at [www.tean.ac.uk](http://www.tean.ac.uk).

• **Learning from teaching: pre-service primary teachers’ perceived learning from engaging in formal Lesson Study**
  

While there is abundant research reporting the impact of Lesson Study as a professional development framework for qualified teachers, its potential within initial teacher education remains relatively unexplored. We present a particular model of
formal Lesson Study which has been experienced annually for a decade by Irish pre-service primary teachers. This study examines the perceived effects on learning of this Lesson Study model on a large sample of pre-service primary teachers (N = 225) who worked in 45 different lesson study groups over a 10 year period (2008–2017). Data analysis reveals that participants’ perceptions of learning fell within two distinct themes namely ‘An awakening regarding teacher content knowledge’ and ‘Cornerstones of learner-centred practice’, each of which consisted of rich inter-connected sub-themes. As a result of engaging in Lesson Study, participants report an increased awareness of the importance of deep content knowledge in addition to adopting a learner-centred approach to their practice. Participants also believed that Lesson Study enhanced their professional knowledge and skills in the curricular area of focus (mathematics, in this case). While this study focuses on self-report data, these opinions are fundamental given research which proposes that interventions will fail if participants judge them to be ineffective.

• Leveraging the student-teaching experience to train tomorrow’s great teachers
  https://www.brookings.edu/blog/brown-center-chalkboard/2019/05/20/leveraging-the-student-teaching-experience-to-train-tomorrows-great-teachers/
  Dan Goldhaber, John Krieg, and Roddy Theobald

The aggregate annual investment in the development of teacher candidates—i.e., an investment before individuals are even hired as teachers—is around $7 billion, or about $38,000 per teacher who enters the workforce. This figure, which is based on estimates of average college tuition costs, is quite significant. To put it in perspective, estimates suggest that annual per-teacher professional development costs are about $4,500, and teachers on average spend 14 years in the workforce, meaning that the investment in building teachers before they are hired is about half of the overall investment in professional development over the course of an average teacher’s career.

Several studies have now confirmed the importance of being assigned to a mentor who is highly effective (in value-added terms) with his or her own students. One of these is a study that we did in Washington state that followed more than 1,000 student teachers into the workforce, where we observed the later test performance of their students. We matched student teachers with their mentor teachers and identified the mentor teacher’s value added in the years before they supervised their student teacher (to avoid any confounding influence between the mentor and student teacher). It turns out that when former student teachers began teaching their own classes, their students performed better on standardized tests when their teachers had had a highly effective mentor teacher. Specifically, being assigned to a mentor that has value added that is two standard deviations above average (implying that the mentor raises the achievement of his or her own students by about 0.4 standard deviations more than the average teacher) is estimated to lead that teacher candidate to eventually, as a teacher, have students who do about 0.08 standard deviations better than average on standardized tests, all else equal.
Although this gain in performance may seem small, it is about the average difference in test score gains between students in a novice teacher’s classroom and students who have a third-year teacher. As we describe in more detail in companion brief, this effect is larger than the effect of placing student teachers in highly effective schools or matching the classroom characteristics of the student teaching experience with those in student teachers’ first job. It is also larger than the perceived effect of a high congruence between the focal topics in a teacher preparation program and the skills needed on the job.

- Why teaching is not a research-based profession

  Dylan Williams (Emeritus Professor of Educational Assessment at UCL Institute of Education).


Very few teachers are involved in academic research, and the vast bulk of published research in education is produced by academics in universities who are rarely involved in teaching the students that are the focus of their research. In other professions, much of the published research is done by those who are still practising.

In my view, teaching appears to be less "professional" than other professions because the problems that teachers need to solve are just much harder. Physics works because protons and electrons don’t have good days and bad days; they behave consistently, and predictably. As soon as humans are part of the picture, things get a lot more complicated.

And that is why I do not think that teaching will ever be a research-based profession. Classrooms are just too complicated for research ever to tell teachers what to do.

First, I think, is that rather than treating teachers as technicians, where we have researchers figuring out how best to teach, and then telling what teachers to do in Lawrence Stenhouse’s memorable phrase, treating each teacher as a kind of “intellectual navvy”[3] who is told where to dig, but not why – instead we have to recognise that teacher expertise cannot be put into words. The kind of knowledge that expert teachers have is more like the knowledge of how to ride a bicycle than it is the knowledge of how to solve quadratic equations. I can explain to someone how to solve quadratic equations, but I cannot explain to someone how to ride a bicycle. Each person has to figure it out for themselves. There may be guidance I can give, but there is no set of instructions that will be guaranteed to work.

Second, while there are certainly differences in how good teachers are in their first year of teaching – there is such a thing as natural talent for teaching – what matters far more is the improvement that teachers make, and this is why I think we have failed to make the best of the work of Carol Dweck on mindset. She has shown that some students believe that ability at something like mathematics is more or less fixed – you are either good at mathematics or you are not. This “fixed mindset” as she calls it leads students to believe that when you fail, this must mean you have reached your highest
level of achievement, and you might as well give up trying to get better. Other students think that ability is more of a malleable quantity – captured nearly by Jeffrey Howard in the phrase, “Smart is not something that you just are, smart is something you can get.”[4] For these students, when they fail, it just means they need to try harder. More importantly, challenging work is not a threat to your self-image – a chance to getshown up – but rather a chance to get smarter.

My point is we have been applying Carol Dweck’s work to students, and I think we should be applying it just as much to teachers. First, a belief that you can get better as a teacher is the key to staying positive about the job. Second, and much more powerful, a focus on improvement can transform the teaching force, because it detoxifies professional development.
4.2 2019 SURVEY DETAIL

The survey questions (50 items) were unchanged from the previous year and it was online, open during September 2019. Contacts in ITELab’s network were invited to take part by email and newsletter. There were 11 responses to the survey, nine from higher education, two from industry and none from ministries of education. Respondents were based in UK (3), Italy (2), Norway (2), and one from France, Germany, Ireland and Malta.

Of those working in higher education, three worked in primary education, two in secondary and one in primary, secondary and special needs education. Three worked with more than 500 students, two with 251 to 500 and one 101-250. Others skipped the question. They rated their students’ confidence in English language (sufficient for participation in a MOOC in English) at 5 on a 1-6 scale. Digital pedagogy skills are taught in one or more separate modules in five cases and integrated in just one case. Pressure to innovate the curriculum comes from government (4 responses), institution or individual tutors (both one response).

The top challenges to integrating ICT are ‘student teachers are more concerned about managing learners than with digital pedagogy skills’, ‘the wide variety of school environments makes it difficult to prioritise digital skills’, and, in similar vein, ‘a lack of suitable teaching placements to practise digital pedagogy skills’. Others attracting some votes were ‘there is no high-level pressure to change the existing curriculum’, ‘student teachers are more interested in learning theory’, and ‘teacher trainers’ own ICT and digital pedagogy skills’. Challenges mentioned under Other were:

- Teacher educators’ lack of time to invest in developing own competences
- Lack of awareness of the importance of teacher educators’ role in implementing ICT
- We only run a 9 month highly concentrated programme, some resistance from other tutors
- it’s difficult to transform learning environment for integrating ICT
- Over-crowded course load
- Silo approach to teacher training
- Lack of resources available in schools

Teacher trainers’ own ICT skills tend to be the responsibility of tutors themselves (4 responses); otherwise the institution offers one-off ICT skills training or it has a coordinated approach and plan for their professional development (2 responses each). If separate ICT skills modules are taught, they are through blended learning (3 cases) or face to face (two cases).
Asked what role their ministry of education plays in working with their institution on change to encourage the development of ICT and digital pedagogy skills in student teachers, equal numbers (2) said none, there is a top-down approach and there are frameworks and guidance. Three respondents stated that their institution worked with teaching schools on change to encourage the development of ICT and digital pedagogy skills in student teachers, two said schools had no role in this and one that schools work with their institution. Four respondents said their institution works collaboratively with student teachers on change to encourage the development of ICT and digital pedagogy skills and two said there was no student involvement in this.

On co-operation with the ICT industry and business, four said there was little or none, two said that there was collaboration.

Frameworks used to develop pedagogical digital competence were:

- Orientierungsrahmen der Sektion Medienpädagogik (DGfE)  
- Professional Digital Competence Framework for Teachers:  
  [https://www.udir.no/contentassets/081d3aef2e4747b096387aba163691e4/pfdk-framework.pdf](https://www.udir.no/contentassets/081d3aef2e4747b096387aba163691e4/pfdk-framework.pdf)
- Digital Competence Framework for Educators (DigCompEdu) [two respondents]:  
- English National Curriculum expectations

Examples of innovative practices in developing students' digital competence were given by six respondents (4 being OER, one a mixture of OER and copyright, and one an industry initiative):

- [https://vilearn.hci.uni-wuerzburg.de/de/](https://vilearn.hci.uni-wuerzburg.de/de/); [https://varyfast.de/](https://varyfast.de/); [http://www.schulpaedagogik.uni-wuerzburg.de/forschung/](http://www.schulpaedagogik.uni-wuerzburg.de/forschung/)
- VEO - [https://veo-group.com/](https://veo-group.com/); OurPlace app GIS
- Build coding learning units in a cooperative way; Practical workshop on the interactive multimedia whiteboard
- Screencasting - key skills, knowledge and understanding and uploading to social media e.g. YouTube; Use of online instant feedback using various apps (e.g. Classkick) to reduce teacher workload; use of cold and hot tasking using apps such as Socrative, Kahoot! to support effective and efficient use of formative assessment
The respondents from industry worked with up to 50 higher education institutions, at department or module leader level, sometimes at senior management level.

These organisations work with national ministry of education/high level education authorities to encourage change in HEI and the development of ICT and digital pedagogy skills to a considerable extent (3 on a four-point scale). To a slightly higher extent (3.5) they agreed that they work with HEI institutions on this. The companies work with teacher educators on the topic by jointly producing content and working with them on for example the future classroom. They work with student teachers by surveying needs and working with them on the future classroom for example. Of the two responding to the question whether the company trains teachers educators and/or student teachers on ICT skills, one did not, and one provides blended learning training.

Industry respondents rated the biggest challenge in integrating ICT into the ITE curriculum is teacher trainers’ own ICT skills, followed by lack of suitable placements to practise them and a lack of pressure to change the existing curriculum. Two other challenges were mentioned:

- Digitalisation is mostly of the administrative and communications aspect within the schools, not the content or the process of teaching
- Bureaucracy

Two industry respondents stated that they used their own competence frameworks. They provided the following examples of innovation in their work with ITE, both OERs:

- Regular meetings with the industry, students taking internships in edtech companies, research driven innovation

Finally, all respondents were asked to describe some significant changes seen in higher education at policy level relating to digital skills in the past 12 months. Four said there have been none; other responses were:

- Due to Digitalpakt in Germany, the topic received higher public attention.
- New curriculum for primary and secondary education that includes knowledge and use of ICT
- Initial discussions/documenting of emergence of competence frameworks
- Change of impetus at policy level
- the industry is invited to debates regarding the digitalization of the sector

Changes at institution level reported were:

- Staff increased, budgets were extended, professional development intensified.
• Future classroom lab opened, development of a new unit for support on development of skills and competences for staff and students.
• We have equipped a Future Classroom Lab in the Department.
• Increased focus on professional development. Development of partnerships/projects that span the continuum.
• Push to engage in all material online using our VLE, CANVAS: assessments, marking, Panopto video of taught sessions.
• HEIs are becoming members of the edtech cluster.

Finally, respondents were invited to suggest recommendations related to ICT in ITE:

• Change management processes have to be implemented at HE institutions to achieve change on a curricular level, qualification and infrastructure.
• Focus on the development of teacher educators’ professional competences in both pedagogy and ICT. Knowledge and competence in using ICT in education must be recognized at the same level as doing research.
• Changing government policy and ensure schools are resourced and committed to a greater use of ICT.
• It is necessary to work more with the schools where the students do training.
• More integrated pedagogical approach across the curriculum/continuum.
• A prioritization of content and process driven digital tools in the teacher education.
• Implement evidence-informed practices and remove departmental silos for integrated approach to providing effective teaching & learning.
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