D3.3 Final recommendations and resources to support innovation within Initial Teacher Education: an ITELab FINAL REPORT

Conor GALVIN, PhD, University College Dublin
December 2019
# TABLE OF CONTENTS

1  DESIGNING THE ITELAB MODULE FRAMEWORK AND DEVELOPING THE PROJECT MODULE MATERIALS .......................................................... 1

1.1  Background and Conceptual Basis ................................................................................................................................. 1

1.1.1  Introduction to D3.3 .................................................................................................................................................. 1

1.1.2  Design Concept; summary ........................................................................................................................................... 2

1.1.3  Approach & Direction; summary .................................................................................................................................. 3

1.1.4  Design challenges; summary ......................................................................................................................................... 3

1.2  Devising the ITELab Module Architecture; the underpinning ontology & design ......................................................... 5

1.2.1  Approach, purpose, and intention .................................................................................................................................... 5

1.2.2  Authoritative / Defining sources; content, pedagogy and design ................................................................................... 5

1.2.3  From ontology to design process ................................................................................................................................... 10

1.2.4  Summary comment .......................................................................................................................................................... 13

1.3  ITE Lab Module Framework Development ....................................................................................................................... 16

1.3.1  Introduction .................................................................................................................................................................... 16

1.3.2  The emergence of an ITE Lab Work Ethic; towards Co-design and Full-test ................................................................. 16

1.3.3  ITE Lab Module framework design work process ........................................................................................................... 17

1.3.4  ITE Lab Module framework design work schedule ........................................................................................................ 19

Focus of Activity and Input by Project Partners; May2017-Dec2017 [M5-M12] ............................................................... 22


Focus of Activity and input by Project Partners; Sept2018-Dec2018 [M21-M24] .............................................................. 24


Focus of Activity and input by Project Partners; July 2019-Dec 2019 [M31-M36] ........................................................... 27

1.3.5  Resources to Support Local Usage of ITE Lab materials ............................................................................................... 28

1.3.6  The ITE Lab Student Learning Hub and Facebook Page .............................................................................................. 30

2  OBSERVATIONS & RECOMMENDATIONS .............................................................................................................................. 32

2.1  Working with Industry Partners CPD Resources and Teacher Communities ................................................................. 32

2.1.1  RECOMMENDATIONS FOR ITE PROVIDERS ............................................................................................................ 34

Partnering well to support change and innovation in ITE ................................................................................................. 34

Understanding and leveraging more of the breadth of what companies have to offer .................................................. 35

Actively helping to shape product and services development in companies ................................................................. 36

2.2  ITE CURRICULA: Readying for 21st Century Classrooms ............................................................................................... 37

2.2.1  RECOMMENDATIONS IN RELATION TO ITE CURRICULA ...................................................................................... 37

Support Student-teacher Learning for and from Practice ................................................................................................. 38

Support Student-teachers to become Lifelong-Learners ................................................................................................. 38
Support Student-teachers in building open, creative and innovative practices.............. 39

2.3 Closing Commentary........................................................................................................... 41

3 BIBLIOGRAPHY .................................................................................................................. 43

4 ANNEXES TO REPORT ....................................................................................................... 1

ANNEX 1: ITE Forum Webinar Series – outline schedule .......................................................... 1

ANNEX 2: Teaching, Learning, & Professional Development in the Digital World; (MODULE FRAMEWORK A) v1 [Draft version pre-pilot and beta-pilot] ...................................................... 4

ANNEX 3: Teaching, Learning, & Professional Development for Beginning / Student Teachers. (Module Framework A; Teaching Guidance & Resources. Final Version,) ........ 10

ANNEX 4: Designing for Learning (MODULE FRAMEWORK B; Teaching Guidance & Resources. Final Version) ...................................................................................................... 23

ANNEX 5: Working with Learners. (Module Framework C; Teaching Guidance & Resources. Final Version.) .............................................................................................................. 36
1 DESIGNING THE ITELAB MODULE FRAMEWORK AND DEVELOPING THE PROJECT MODULE MATERIALS

1.1 BACKGROUND AND CONCEPTUAL BASIS

1.1.1 Introduction

As part of the ITELab project, University College Dublin (UCD) has taken on the role of leading and guiding in the development of a number of introductory-level modules on ICT and technology for use with students in initial teacher education settings. In total, we developed 3 connected but self-contained module frameworks over the life of the project, covering ideas and activities that will be useful to student teachers in the early stages of their career. These cover thinking about and working in school-settings on topics connecting to digital citizenship, digital literacy and fluency. The focus throughout has been on capacity building for meaningful digital pedagogy.

The underpinning purpose of the work was not simply the making of modules: it was to develop and trial through these modules a generative, flexible, and transferable methodology to support the systemic design and development of digitally-strengthened frameworks for initial teacher education students’ learning that embodies an innovative and creative approach to enhancing learning & pedagogy. We worked to ensure that these frameworks are infused with a strong digital ontology, drawing from leading-edge literature on learning design and recent policy-experimentation in EU level projects which address the nature of digital capability in instructional settings. Taken together, the literature and emerging results from such policy-experimentation offered a basis on which to identify sets of concepts and categories that exhibit properties and relations which we used to define and then develop a novel learning & teaching architecture to underpin the ITELab module materials.

Essentially, we built and tested, then rebuild and retested on the basis of ongoing project evaluations and continuous formative monitoring. This process is described in depth below, at Section 1.2. The outcome of the work both provides a robust set of starting materials and also a well-tested design model for other ITE centres to use in developing similar frameworks, activities, and materials. We term this the ITELab Module Architecture.

Section 1.3 and 1.4 of this Report presents in detail ITELab project work relating to WP3 whose core objective was “boosting innovation in Higher Education” by enabling ITE providers and ICT companies to work together in order to:

- develop course modules for student teachers that prepare them as new entrants to the profession to make innovative pedagogical use of ICT; including by
adapting existing continuing professional development (CPD) resources from companies; and

- rethink the way that the pedagogical use of ICT is covered in ITE and provide recommendations and innovative start-out materials and guidance for how higher education institutions beyond the project should adapt their curricula.

In summary: The purpose of this Report is to comment on the learning that resulted from planning and progressing the ITELab Framework Modules and present the overall outcomes of WP3 of the ITELab Project. Specifically, to:

- discuss the learning resulting from the piloting of ITELab modules at beta and full-pilot stages and note how this impacted the design and practices embedded in the frameworks;
- offer recommendations for how ITE providers can better exploit ICT resources from industry partners and access their teacher communities; and
- offer recommendations based on lessons emerging from the Project for how ITE curricula can be improved to better reflect the needs of newly qualified teachers who will be entering classrooms and schools where ICT is increasingly pervasive.

[ITELab D3.2 Specification; 575828-EPP-1-2016-1-BE-EPPKA2-KA]

1.1.2 Design Concept; summary

The UCD ITELab team presented to the first partnership design workshop (May 2017) a design approach drawing from ongoing work at UCD and on earlier work on Open Educational Resource (OER) repositories, and Massive Open Online Courses (MOOCs) by Conole (2015) and others¹.

This approach was based on the following principles: well-integrated pedagogical approaches; design principles relating to open access; the provision of guidance & support to ITELab colleagues running a pilot module; content and activities that are customized from existing resources within the project partnership rather than developed from scratch; inbuilt participant opportunity for reflection & demonstration; an approach that fosters communication & collaboration opportunities within and across ITELab partner universities.

Starting from the approach outlined immediately above – and the responses harvested at the initial meeting – we developed a set of qualities and practices that we proposed should characterise an ITELab module. This development is now explored. Section 1.2 of this document then discusses those principles and the practices they gave rise to in more detail.

¹ https://opennetworkedlearning.files.wordpress.com/2015/05/the-7cs-of-learning-design.pdf
1.1.3 Approach & Direction; summary

For the beta pilot stage in Q1/2018, the UCD ITELab team worked-up and trialled an initial module framework\(^2\) - *Teaching, Learning, & Professional Development in the Digital World* - in order to get participant student and partner feedback that would inform the subsequent design and development of the other ITELab module frameworks ahead of a full trial in Q1/2019. These module frameworks were envisioned as holistic and designed in a form that was ECTS accreditable but self-contained enough to retain the possibility of being used as standalone offerings.

The principal planning challenge faced initially involved all Project Partners agreeing on a design architecture and shared approach to module development to include; headers / themes for modules; layout and specifications for module wireframes; early decision on platform for beta test; and ways of documenting our progress in order to facilitate lessons from the experience of designing this first module.

A proposed line of approach and design architecture was put to the project partners at the design workshop meeting by the UCD team (May 2017). This was accepted. We then began work on the module frameworks. This was guided by reference to Conole (2013) whose OLDS-MOOC\(^3\) project provided a clear, seven-step design pathway to inform key decisions in relation to the content and pedagogical development, and to assist in scoping the stages and steps required to bring the modules to test. This process is explained in detail in Section 2.

1.1.4 Design challenges; summary

Even with the agreed direction of travel resulting from the initial design workshop, ensuring coherence and fit within the draft module materials proved challenging. Over the initial design stages, the UCD team worked with the project coordinator and our industry partners to first identify and then match the emerging materials and pedagogy to two reference frames; the well-established TPACK framework (http://www.tpack.org/) already in use among several of the project partners and the DigCompEdu Framework, the emerging product of an ongoing project of the EC ERC at IPTS Seville (https://ec.europa.eu/jrc/en/digcompedu).

The first provides us with a framework that combined three knowledge areas: technological knowledge, content knowledge, and pedagogical knowledge. This offered a useful way of gauging how the content and activity elements of an ITELab module might work together to increase learner motivation and make the content more accessible to the student mix the partnership presents.

---

\(^2\) The term ‘module framework’ is used throughout the ITELab as opposed to terms such as ‘module’ or ‘module delivery’. We use the term to capture not only the idea of content but also the integral approach we take to teaching it; i.e. module framework captures more accurately our sense of content coupled with appropriate pedagogy and enhanced through appropriate usages of technology.

\(^3\) http://www2.le.ac.uk/projects/oer/oers/beyond-distance-research-alliance/7Cs-toolkit
The second – the **DigCompEdu** – offered a robust, well-considered, and still evolving⁴, methodology to describe and place in relation to each other a range of digital competences and capabilities specific to an educational context and with an underpinning sets of descriptors and levels that could be used to inform the development of our module frameworks.

Together, these models offered the UCD team a comprehensive reference set against which to identify and describe, and then build into prototype module format, a considerable number of core components of educators’ digital capability. Constant reference to the DigCompEdu and TPACK frameworks ensured the focus stayed centred on the pedagogical value of developing modules. This process of seeking coherence and fit became a defining feature of our module framework activity throughout the life-cycle of the project.

A further dimension to the work of comprehensively identifying teachers’ needs was approached by building an element of self-assessment into the reflective aspects of the prototype modules. The **TET-SAT** (Technology-Enhanced Teaching Self-Assessment Tool) developed as part of the work of the MENTEP (http://mentep.eun.org/) policy experiment was found to offer possibilities here. In particular, it provided some insight into how self-assessment could be directed at digital pedagogy, digital content use & production, digital communication & collaboration, and the more generic concerns of digital citizenship.

---

⁴ The results from a recent consultation on the Framework are currently being evaluated by the ERC- IPTS in Seville. cf https://ec.europa.eu/eusurvey/runner/DigCompEduConsultation
1.2 Devising the ITELab Module Architecture; The Underpinning Ontology & Design

1.2.1 Approach, purpose, and intention
As noted briefly above, the deeper purpose underlying the work on ITELab modules is not simply about the making of modules: it is to develop and trial a generative, flexible, learning architecture that embodies an innovative and creative approach to enhancing learning & pedagogy, and that does so in a way that embodies more meaningful learning experiences for our student-teachers.

Much of the work of the ITELab project in general and particularly at UCD because of our lead on the module framework aspects of the project has been to identify and examine sources in the literature and in the practice-world of teacher education that can contribute to building this novel, module framework infused with a strong digital ontology and with pedagogical principles that reflect both the challenges and opportunities of being student-teachers exploring more meaningful and effective technology enhanced classroom practice.

1.2.2 Authoritative / Defining sources; content, pedagogy and design
We have drawn over the life of the ITELab project on a number of sources that have proved definitional for the shape and direction of the emerging module framework.

The UCD team started with the ITELab Task 2.1: LITERATURE REVIEW. This early scanning exercise provided the team with a valuable, widely-cast summary of published reports and case studies which document how training in the pedagogical use of ICT is currently covered within ITE curricula in Europe; and / or provide evidence of how student-teachers are currently introduced to using ICT.

The Review highlighted a number of useful outcomes and findings from a wide range of reports and studies that address the issue of education ICT and its relations to initial teacher education. In particular we found an early use for the Review’s observations on the research outcomes reported in an OECD working paper by Rizza (2011) who noted – among much else – that while many OECD countries have undergone major curriculum reforms hoping to incorporate digital competencies as well as a wider set of 21st century skills, ‘there is sometimes a mismatch between curricular reforms and what is going on in initial teacher education’. She goes on to observe that ‘requirements regarding curriculum reform implementation have not always been complemented by dialogue and collaboration with teacher education institutions’ (p.40). The line closes with the observation: ‘Teacher competencies are not always well-defined and, even when they are, it is often the case that they do not endorse a

http://itelab.eun.org/research
D3.3 Recommendations & Resources to support innovation within ITE

clear vision of what teaching and learning in a knowledge society should be and what supporting role technology can play' (ibid.).

Another issue brought into focus by the ITELab Literature Review concerned the professional digital competence of teacher educators themselves, across the EU. For instance, a recent research report on the situation in Norway, Ottestad, Kelentric, & Guðmundsdóttir (2014) found that the development of professional digital competence is not well supported institutionally within many Norwegian teacher education programmes, and that programmes often lack a comprehensive approach to the development of such skills. Consequently, the expertise of the individual academic staff involved is highly variable. Again, we found ourselves in broad agreement with this observation which raised a significant issue for the module design; the need to make sure that there was a good fit in terms of expertise and expectation between all of us in the project partnership where the modules were concerned. Additionally, it raised the prospect of needing to provide guidance and support to project partners beyond the module materials themselves, to allow for variable degrees of expertise and engagement by project partner when teaching the modules pilots.

A second authoritative source that informed early thinking at UCD on the deeper nature and the shape of an ITELab module was the work of the ShareTEC project.

ShareTEC was established originally to explore the construction of an advanced, brokerage service that might provide ‘personalised access’ for teacher educators to a wide range of digital contents for teacher education drawn into a single meta-data indexed repository from resources available locally to the consortium partners. As part of its work programme ShareTEC developed an interesting protocol to allow indexing of other repositories in the field and, optionally, to add resources generated by practitioners outside the consortium.

Essentially, this core – which the ShareTEC project termed the Teacher Education Ontology (TEO) – represented a comprehensive, collaboratively-developed matrix that integrated a number of existing knowledge taxonomies but reoriented these to the specifics of the teacher education field (ShareTEC 2011, p18).

The ontology comprised five separate but related ‘branches’ that are self-consistent in nature:

- Digital Content (educational resources, communities, expertise, etc.). This branch represents the characteristics of artefacts closely related to the concept of “learning object” and offers a top-level discrimination technique for pedagogically related resources.

---


D3.3 Recommendations & Resources to support innovation within ITE

- Actors & Roles (people in the TE context and in the project system). This branch is aimed at capturing those characteristics of users (individual and groups) that support system adaptivity and in the ShareTEC context was seen as a possible source of recommendation around functionality.

- Competencies (both at subject matter and at general levels [socio-affective, metacognitive, etc.]). This branch tried to combine two independent yet related hierarchies: competency and generic skill.

- Context (various contexts of action within the domain of teacher education). This branch represents the various contexts of action within the domain of Teacher Education, including in particular the teacher-practice context, which is aimed at capturing those organizational peculiarities in the various partners’ school systems as these impact on teacher education practices.

- Knowledge Domain. This branch of the ontology was developed to offer a vocabulary useful to represent the topics a given digital resource addresses, and the subject matter involved in any given competency act.

We used this TEO matrix, specifically the branch headings noted above, as a guide when making our initial selections of teaching and learning materials relating to ICT in early stage teacher education – both as a way of rough-gauging content appropriateness and of identifying possible novel usage for the project, given that we were looking to move beyond the mundane and ordinary in terms of focus. This matrix – with its origin in work relating to a semantic core for teacher education – proved useful also in identifying several major gaps in the materials base available to us in our thinking on the ITELab module framework. Specifically, we were able to observe and respond to the importance of factoring actor & role into the design from the outset, so that partners across the project could decide on aspects to include and/or enhance according to local needs. Finally, the integration of ShareTEC matrix into the initial work on ITELab modules allowed us to define more clearly the ontology that provides our basis for describing, exchanging and reusing digital resources within the project setting. Essentially, the ShareTEC semantic core powered a protocol which proved most valuable to the UCD team in terms of targeting content for inclusion in our prototype module framework.

The third, and increasingly the defining source for the UCD work on ITELab module architecture was, has been the **DigCompEdu frame** which emerged over the life of our project from the European Commission Joint Research Centre (JRC) Human Capital and Employment Unit in Seville⁸. We drew initially on a series of draft and discussion documents published by the JRC as the work of this policy-experimentation progressed. However, with the publication of the *DigCompEdu* in its final form⁹ in the spring of 2017, we were able to settle on the

---


framework as the principal underlying source of both the ITELab module framework ontology and design process.

Essentially, DigCompEdu offers a scientifically sound foundation which can be adapted to implement regional and national tools and training programmes that will “help the dialogue and exchange of best practices”\(^\text{10}\). The value of this claim has yet to be fully tested but the UCD team found that DigCompEdu proved extremely useful in helping us position the ITELab module frameworks in terms of potential learning outcomes and learner benefits.

An overview of the DigCompEdu main areas of focus and attention is included below at Figure 1.

---

**FIGURE 1: DigCompEdu Arenas of Action**

The DigCompEdu frame (DCE) is built around these six arenas of capability each of which is expressed in terms of specific competence and applications – with a total of 22 competences making up the full frame. These areas focus on different aspects of educators’ professional capability and activity. These are\(^\text{11}\):

1. **Professional Engagement**: using digital technologies for communication, collaboration and professional development.
2. **Digital Resources**: sourcing, sharing and creating digital resources.
3. **Teaching & Learning**: Managing and orchestrating the use of digital technologies in teaching and learning.

---


\(^\text{11}\) From the final report of the DigCompEdu Project: European Framework for the Digital Competence of Educators; DigCompEdu, Redecker, C and Punie, Y (eds) EUR28775 EN.
4. **Assessment**: using digital technologies and strategies to enhance assessment.

5. **Empowering Learning**: using digital technologies to enhance inclusion, personalisation and learners’ active engagement.

6. **Facilitating Learners Digital Competence**: enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing, and problem solving.

The authors of the frame suggest that Areas 2-5 capture the competencies that educators need for effective, inclusive and innovative teaching. Together, these detail how digital technologies may be used effectively and innovatively in planning (Area 2), implementing (Area 3) and assessing (Area 4) technology enhanced learning and teaching. Area 5 addresses the idea of learner-centred teaching. Area 1 concerns the broader professional environment in which teachers work and learn; it is seen to address the use of digital technologies for professional interaction and development. Area 6 is seen to detail the specific pedagogical competences used by educators to facilitate students’ digital competence.

The frame is seen as holistic and with strong transversal lines interconnecting the areas (several of which are indicated in Figure 1).

The DCE in its various iterations has been profoundly useful to the UCD team as a reference point when designing for pedagogical validity & realistic use within the module architecture and subsequently in relation to the validation of content and activities to include in the draft module itself. Decisions around module materials that address planning and implementation, inquiry, critical reflection, and collaboration were all enhanced by reference to the DCE frame. Additionally, use of the DCE allowed us to integrate IRIS Connect and Microsoft STEP materials into module activities; identifying optimum context and role opportunities for this to take place.

In summary; the UCD team found the three sources discussed above persuasive and useful. They offered sound and reasonable departure points for articulating our ITELab module framework and the pedagogical architecture that we wanted to embed in the modules as they developed. The ITELab Review and ShareTEC TEO matrix were particularly useful in this regard. All three sources also assisted in decision making around the task of framing an ITELab module framework; over time the DigCompEdu work proved especially definitive here.

We decided to focus much of our early work directly on the concerns foregrounded by the ShareTEC matrix and the initial DCE frame. Consequently, module-framework decisions came to be characterised by systematic and ongoing engagement with our ITELab partners in a spirit of dialogue and collaboration – to the point that we built in mechanisms that allowed both academic industry partners to co-construct with us the later iterations of the ITELab module frameworks. Increasingly, as the project progressed this became a defining element of the WP3 work. .

The DigCompEdu allowed to hardwire into design activity concerns for both the both the content and the pedagogy proposed for the module frameworks. We were also facilitated by the DigCompEdu in setting out lucidly the competencies / capability we were targeting, and so assisted in our vision of generating module frameworks rooted
D3.3 Recommendations & Resources to support innovation within ITE

firmly in the intersectionality of technology and knowledge-building in a 21st century school setting. It also provided a robust and well-articulated way to assist partners in their decision-making around which elements of the proposed module frameworks would fit best with their own institutional practices and the local needs of their students. This assisted greatly in defined the ITELab proposition.

1.2.3 From ontology to design process

The discussion above outlines the project decisions around content and activities that came to constitute the initial ITELab module framework and our ontological concerns for a pedagogical architecture that would allow us to generate the initial beta ITELab module and further modules in the series based on sound, consistent and validated protocols and approaches. Taken together, our initial scoping-out of this possible module architecture (based on the issues and challenges noted earlier) and the subsequent conversations we had with the project partners offered a sound basis on which to identify sets of concepts and categories that exhibit properties and relations which we need to define a novel, learning & teaching architecture to underpin the ITELab modules.

It did not, however, provide a fully-articulated, principled and replicable design-pathway that would take us from these inception / departure points around pockets of content and activity to something like a finished module package, ready for field-trialling. We needed to bring a second and more rigorous dimension to the work to achieve this; in short, we needed to bring a rigorous and well-tested design thinking model to the activity of the project.

Design thinking, and learning design in particular, is increasingly seen as a central element in addressing variables such as fixation, creativity, and process strategy when assembling or devising a technology-enhanced programme (Koh et al 2015). Essentially, a well-determined design approach can help clarify expectations and so establish more realistic project deliverables and deadlines as well as a method of communicating these among the partners. In this way it can bring clarity and concision to a project, most importantly however it can facilitate better decisions around usability and the success parameters of a development project (cf Dalziel, J. et al., 2016; Scheer, Noweski and Meinel, 2012).

For guidance in the process of moving systematically and in a quality-informed way from the departure point into challenges of module design and development, we turned to the work of Conole (2013, 2015).

Today’s society is heavily reliant on digital technologies and platforms in almost every facet of everyday life. Education is no exception and the past decade has seen a number of significant EU policy and practice developments in relation to the intermeshing of teacher education and the use of technology to enhance learning and teaching on a spectrum of levels. This is a growing sense among the ITE practice base of need to shift towards the 21st century with more active and engaging types of university teaching being put to the forefront (eg Heaney et al, 2014; Bain and, Zundans-Fraser, 2016, inter alia). In addition there is an exponentially increasing
D3.3 Recommendations & Resources to support innovation within ITE

amount of information online that can be accessed to help devise and create engaging educational resources. This presents its own challenges.

Part of any effective response to this challenge has to be to consider how these vast resource bases can better be approached and harvested in a more systematic, effective and meaningful way. Some of the most promising recent work in this regard has come out of the application of design thinking to the processes of course and programme development. Research carried out at the Open University UK as part of the OU Learning Initiative and the University of Leicester’s Carpe Diem work proved especially useful to the UCD team (cf. Conole 2013, 2015; Armellini et al 2009). Much of this has been brought together in Conole’s 7C’s framework which is essentially a Learning Design Conceptual Map (LD-CM) that helps to identify contextual components (such as content materials, pedagogical activity and so on) and their interactions in design decisions. This provides a system or pathway that educators can use to make learning design decisions that reflect what have been termed the Larnaca Principles of guidance, representation and sharing, and encapsulate the necessity to make good decisions around how learners can interact with rich (multi)media, communicate and collaborate, and be appraised as they engage in technology enhance learning experiences (Dalziel et al 2016).

We found particular value in the Conole’s concept of design acts – Vision, Activities, Synthesis and Implementation; brought together in the stages as the 7C’s: Conceptualise, Create, Communicate, Collaborate, Consider, Combine and Consolidate – and used these to underpin all work on ITELab module development. In addition we found strong reference value in the related work by Dalziel et al (2016) which offers a way of setting a learning design framework against the context of the broader learning landscape. See Figure 2.
In short, UCD-led work within WP3 on the ITELab module frameworks specifically the prototyping and testing of the ITELab module frameworks has been informed by ongoing reference to both Conole’s 7C’s and Dalziel et al.’s Learning Design Conceptualising Map as shown above.

When we addressed the challenge of the first stage – Conceptualisation – we worked particularly closely with our ITELab partners on creating a vision for the modules that would reflect the nature of the learners who were likely to take the modules, their university level, diversity, characteristics as learners, likely existing skills, perceptions and aspirations about learning and especially their understandings of teaching with technologies. This drew in large measure on the ongoing work of the ITELab project – particularly the in-project information gathering activities taking place within WP2 and the resulting case study materials. It also drew on a selection of ITE TEL syllabi and module outlines from within the partnership and beyond.

On a very practical level, our early attempts at developing a shared project position / vision surfaced a number of issues and challenges concerning the range of teacher education programmes offered within the partnership – everything from pre-primary to Further Education – and the diversity of learners’ technical backgrounds and practice contexts the project participants represented.

This was seen to offer an exciting opportunity to innovate across a range of ITE settings and levels.

In developing the ITELab module framework, we have therefore concentrated on activities and contents that are likely to reflect both primary and secondary stage ITE programme needs, and to focus on building opportunities for participants from the range of project partner settings, to develop learning design understandings and practices in and through the project module frameworks.

Design efforts at the second stage, which Conole (2013) describes as the Activity Stage, saw an intensive focus on designating the resources and activities that the learners will engage within the module frameworks. At this point in the work we also drew on the ShareTEC (2011) ontological frame, and on the DigCompEdu rubric emerging from the EC JRC at Seville (as discussed above). These provided useful guidance on the selection of content and for pedagogical decisions to do with the specific areas of learning being addressed by units within the module frameworks to place as the core focus of the ITElab module – both in general and more granular terms.

This stage of the learning design was characterised by work on Creating /Collating, Communicating, Collaborating, and Considering in the context of the ITELab mission. Creating /Collating is about articulating the main learning materials that need to be sourced, whether through the partners or by developing. In addition, it covers the identification and where necessary repurposing of Open Educational Resources (OERs) from wider repositories. Communicating is concerned with methods to facilitate interaction and peer-learning, between the learner and tutor, the learner and their peers, and the learner with a broader professional community, mostly through social
media. All of these were built into the emerging prototype module (see Section 3). This also includes preliminary work on the ITELab Student Hub and initial input into the University-Industry Forum. Similarly, work on the construction of opportunities for Collaborating is about fostering mechanisms to enable collaboration and group activity within and across the partner sites once the module is in operation. Finally, our work around the idea of Considering has been concerned with ways in which reflection and demonstration of learning achievements can be promoted within the modules and incorporated into the more general work on developing the ITELab design frame/module architecture. Part of this concerns activities and the generation of ‘artefacts’, which require the learners to create their own content and apply this in learning setting under their control – most likely practice classrooms.

Our next step, once prototyping for the Activity Stage was concluded, was to begin work on Combining and then Consolidating the full module framework. Combining involves taking advantage of opportunities for the partners to step back and reflect formatively on the design process and to look at the emergent module framework and underpinning architecture from different perspectives. We designated the ITELab project partner and pedagogical board meeting (November 15th 2017) as the principal opportunity to do this. The meeting was co-located with the capacity design workshop at EMINENT 2017 (November 16th 2017). This allowed for both intensive project partner-level dialogue and discussion, and also the opportunity to integrate into the developing frameworks suggestions and directions drawn from the ITELab Associate Partners’ session. Finally, the Consolidate stage will be about implementing our design in a real-life context and evaluating its effectiveness. The Q1/2018 piloting will provide this opportunity.

1.2.4 Summary comment

The design and development process leading to the ITELab module architecture has been outlined and discussed above. This discussion covered the ontological and design logic sources of the ITELab design & testing process and presented the authoritative models used to inform this work. It outlines the process through which the ITELab Project module framework emerged and the defining characteristics of the approach. How these shaping the prototype module frameworks and its underpinning pedagogical architecture is outlined in Section 1.3 below.

It should be noted that while the discussion in this section of the Report addresses in particular the early stages of the project’s work, the crafting and refining of the ITELab Module architecture and the connected generation of the project module frameworks remained a work in progress across the life of the project. Our activities continued, iteratively, to incorporate concerns for the following key characteristics of the frameworks, as they develop:

12 Growing an interactive platform of partners and associate partners has been a central interest of ITELab from the outset. This was primarily done through our University Industry Forum activities but associate partners were encouraged to take and test aspects of the module framework also and to feedback to the core partnership on this in a variety of ways.
• well-integrated pedagogical approaches;
• principles of learning design;
• active concern for open access;
• the provision of guidance & support to ITELab colleagues testing out the modules;
• curation and customisation from existing resources within the project partnership of content and activities rather than only developed from scratch;
• inbuilt opportunity for reflection & demonstration as a defining feature of module assessment;
• a co-design and co-development approach that fosters communication & collaboration opportunities within and across the full ITELab partnership including to associate partner universities offering elements or aspects of the module framework, across the full run of the project and not just in an initial pilot.

Figure 3 below presents a schematic representation of the ITELab module framework design process and indicates how the three principal design sources/models interrelate. It is organised into three sections to show where the influences of each contribute to building our novel module framework, infusing it with a strong digital ontology and with pedagogical principles that reflect both the challenges and opportunities of being student-teachers exploring more meaningful and effective technology enhanced classroom practice.
Figure 3 Sources of ITELab design: a consolidated illustration

How we proceeded with the ITELab module framework design and development is next outlined.
1.3 **ITELab Module Framework Development**

1.3.1 Introduction

Under a general working theme of *Wisdom, Literacy & Citizenship in a Digital World* we designed, developed and fully resourced three (3) ITELab module frameworks over the course of the project, each embodying structures and arrangements that both facilitate immediate deployment within ITE programmes and also allow academic partners to apply to their home institutions for recognition of the modules for credit purposes, should they so decide. Two of these modules were set at 3 ECTS, Level 3, under the *European Credit Transfer and Accumulation System (ECTS)*, to accommodate primary partners working at undergraduate level. One was set at 5 ECTS, Level 4, to suit partners who offer graduate-level initial teacher education.

This section of the Report provides a full account of the emergence and systematic development of the ITELab modules frameworks and their underpinning learning architecture over the course of the ITELab project. It also charts the emergence of a unique ITELab project work-ethic that defined what became possible.

1.3.2 The emergence of an ITELab Work Ethic; towards Co-design and Full-test

The development of ITELab module materials and practices as specified in **WP3 T3.1 and T3.2** was to be staged over the life of the project, with blocks of preliminary work and provisional materials being collated and brought by the UCD ITELab team to the full project community for discussion and calibration at a series of planned meetings and events. While these meetings and events took place as scheduled and UCD retained the lead in relation to the work-packages, an interesting and important work ethic emerged across the life of the project that came to define both how the project community engaged the module framework challenges and how we validated the emerging project outputs.

Essentially, from the outset it became evident that the partnership represented a unique set of interests and capabilities. Our industry partners brought to the project a considerable range of technical ability, digital capability, and a strong interest in sharing this openly and in ways that benefitted all parties to ITELab. This included access to the SMART Technologies and IRIS Connect platforms and the Microsoft Learning Innovation Centre – the DreamSpace – at its European Offices in Dublin. Additionally each industry partner also made available to the project access to its professional / pedagogical learning community. ITELab academic partners between them represented in-depth professional grasp of a broad range of initial teacher education and teacher formation models and contexts. All had an openness to innovation demonstrated by willingness to share technology usages and practices from within their expertise and equally to embrace those from elsewhere in the partnership. Additionally, the academic partners shared an openness to contribute actively to shaping and sharing new amalgams of practice made possible by the collaboration and cooperation of all partners – academic and industry. Harnessing
D3.3 Recommendations & Resources to support innovation within ITE

this and turning it to the purposes of producing better ITELab modules frameworks and with a stronger learning architecture became a defining feature of our work.

The UCD ITELab team continued and deepened this process of leading open and responsive conversation with all partners throughout the development and subsequent refining of the three model frameworks and module related materials and activities. This dialogical co-development became one of the real strengths of the project over time. An outline of the event-series that anchored the project’s co-development work practice can be found at Table 1 below.

Essentially, the original project timeline intended that one full-pilot in the spring 2018 would be adequate to capture and document the learning resulting from the tasks, and that D3.2 would report comprehensively on this [M20]. This proved too optimistic. The beta and full-pilot raised many interesting and unforeseen possibilities and challenges. Following discussion with the full partnership, the UCD team recommended a further cycle of work on the frameworks in order to capitalise on the advances made in the early work and on what was learnt from both the ITELab Development Workshop in June 2018 [M18] and from the initial evaluations of the modules presented in Course Module Evaluation Report 1 [D5.2] provided by the University of Würzburg – ITELab evaluation partner. This additional cycle ran through the autumn of 2018 and the spring of 2109 [M20-M30] with a final validation exercise in autumn 2019 [M31-36] addressing aspects of co-teaching that the project team remained curious about even after the pilot runs. Expanding the design and test process proved extremely beneficial although it delayed the reporting process by a number of months.

Once the ITELab University-Industry Forum started its work, the development conversations became even more layered and sharper in focus as the partnership worked in detail through a number of issues relating to expectations and possibilities for cooperation and collaboration specified in the forum work [D3.7/ T3.3]. This included issues to do with open-access to project materials, sources from which to collate and curate appropriate ideas and materials, competence and capability building at local levels for project partners, and most tellingly a deliberate openness to the voice of student teachers across the partnership. An outline of the ITELab Forum activity can be found at Annex 1 below; a full version can be accessed at: http://itelab.eun.org/ite-forum.

The value of this was decision to foreground co-design and dialogical co-development was considerable and its impact was regularly noted at partnership meetings and events. It was also commended in the ITELab project-Independent Evaluation Reports 2018 and 2019 (MDM Consultancy bvba, 2019, 2020).

1.3.3 ITELab Module framework design work process

The first of our formative discussions on the nature and detail of the ITELab module frameworks took place at an online project meeting in Sept 2017 at which three ideas for modules in basic /outline form were presented for consideration. (These are included at Figure 2 below.)
We fully expected that these initial areas would evolve to include new possibilities as the design process continued and we as partners became more familiar with possibilities of the modules. The meeting accepted the tone and direction of the modules but added very considerably – both on the day and in subsequent bilateral and group discussions – to the range of activities proposed and the learning outcomes that we should be seeking. Crucially, following these discussions with partners and members of the original project design team, pedagogical value (in terms of easy & immediate deployment of learning from the module in the practice setting) was added to the design approach as a guiding element of the vision for ITELab modules.

The working-titles given to these modules were: A. Teaching, Learning, & Professional Development in the Digital World; B. Designing for Learning in a digital world; and, C. Effective Use of Space & Technology in digital learning settings. These are outlined in Figure 4 below.

![Figure 4: Initial Areas and Partner Involvement in ITELab Module development.](image)

For the Q1/2018 beta-pilot we focused on Teaching, Learning, & Professional Development in the Digital World (Module Framework A above) to bring it to pilot as a 5 ECTS Level 3 offering. This was aligned with the DigCompEDU and mapped to CEFR A2 Explorer capabilities, as recommended by that framework. As agreed with the
project partners this was a ‘closed’ trial – i.e. involving the core ITELab university partners only (UCD, UoA, UoN, UoP, PolyIS).

Work on the other frameworks – *Designing for Learning in a digital world* and *Effective Use of Space & Technology in digital learning settings* (Module Frameworks B and C) – took a slightly different direction. These were designed and resourced as 3 ECTS offerings, and mapped to the more demanding CEFR B1 Integrator capabilities. Most of the work on these modules followed a defining ITELab Partners Workshop in June 2018. They were consequently different in form and approach to the earlier materials and benefitted considerably from the beta-/cycle 1 test stage.

In line with the decisions made at this workshop, draft materials for Module frameworks B and C and a significantly revised version of the Module Framework A were completed over the summer months of 2018 [M18-M20]. This was possible for two reasons; firstly, the project partners had now built a comfortable and trusting model of co-design and co-development and because ITELab’s industry partners now had the infrastructure and people in place to contribute significantly to the framework development. The UCD team was able to work effectively within this arrangement and the quality of the emerging frameworks and related materials benefitted greatly from the relationship that developed with the industry partners.

Although not in the original trials scheme, a second cycle of testing was completed in autumn 2018 for the *Teaching, Learning, & Professional Development in the Digital World* framework and a preliminary test of *Designing for Learning in a digital world* (Module Framework B) [M21-M24]. This proved extremely valuable and informed the finalisation of all module frameworks for the full-pilot stage in Q1/Q2 2019 [M25-M30]. This is discussed further below.

A full suite of ITELab collated materials, pedagogical ideas, and other relevant resources was published out of this development and testing process. Over the life of the project this came to include consolidated reference handbooks for the frameworks in three languages and week-on-week guidance for leading learning through the ITELab module framework materials. These remain curated and can be accessed at the [ITELab Staff Hub](itetlab.wordpress.com) – a freely available on-line ‘home’ and repository for ITELab material and resources that was made available to all core and associate partners to the ITELab project; see here: itelab.wordpress.com

### 1.3.4 ITELab Module framework design work schedule

The Module framework design and development schedule adhered to during the ITELab Project may be summarised as follows:

- **October 2017** – preliminary development of generic module framework & Module A prototype; including briefing of Pedagogical Advisory Board.
- **November 2017** – review and refine module in close liaison with project partners; stress-test at EMINENT 2017.
D3.3 Recommendations & Resources to support innovation within ITE

- January 2018 – Finalise module, liaise with piloting universities re timeframe and mode ahead of late January launch (w/b 22 January 2018).
- June 2018 – Formal Review of beta pilot including student teacher focus groups (Brussels) and project partner meeting – evaluation, feedback, commence module redevelopment for Q1/2019 full-pilot.

Following the ITELab Workshop and Project Partner Meetings of June 2018, the subsequent stages of development and resourcing were laid out as follows:

- July-September 2018 – intensive co-development work on module B and C prototype frameworks & remodelling of module A in light of workshop discussions, independent evaluator’s suggestions, and input from the ITELab Pedagogical Advisory Board. This includes a renaming and realigning of the individual module frameworks to more succinctly and accurately indicate their focus: Teaching, Learning, & Professional Development for Beginning & Student Teachers (Module Framework A), Designing for Learning (Module Framework B) and Working with Learners (Module framework C).
- October–November 2018 – systematic incorporation into the frameworks of student teacher voiced suggestions and recommendations, from the June Workshop [M18] and from the two student-teacher focused sessions of the ITELab University-Industry Forum.
- December 2018 – full project community review and finalisation of all framework module materials at EMINENT 2018.
- January-May 2019 – full-pilot of ITELab module frameworks involving project university partners and a number of associate partners:
  - April-May 2019 – Working with Learners (Module framework C). [UCD, Microsoft IRL, IRIS Connect; Marino Institute of Education Dublin; Kazan Federal University.]
- June 2019 – Formal Review of full-pilot to include student teacher focus group (Brussels) and full Project Partner Meeting – evaluation, feedback, planning for validation exercise, lesson-learning, and sustainability.
- Autumn / winter 2019 – validation exercise on all framework materials including a final, in-project run of Working with Learners (Module framework C) involving UCD and Microsoft IRL, consolidation of Pedagogical Guidance and Support.
aspects of ITELab Staff Hub. Translation of reference handbooks into partner languages. Dissemination of outcomes and learning begins; first ITELab Project academic conference papers at ECER 2019, 6 Sept 2019; EMEM Italia, 10 Sept 2019; and TU Dresden IMPRESS, 12 Dec 2019.

A number of observations on the evolution of the Module Design Work schedule need to be made at this point: First, as noted previously, the schedule was always intended to be a flexible guidance mechanism rather than a prescriptive set of dates and deadlines. In this it proved a valuable way of giving focus to the work of the partnership when taken in conjunction with the regular Project Partner meetings and the various project related events that helped regulate the activities of the ITELab. The flexibility of the schedule was particularly useful in that it allowed us to respond to the issues and concerns raised across the partnership in regard the timing, intentions and underpinning assumptions of the work. For example, when it became evident that despite our initial conversations and agreement around the classroom-focused nature of the module activities and level of competence that could be expected of participating student teachers, we needed to re-thing and reposition parts of the test materials, the design work schedule readily facilitated this. Second, the design leadership initially provided by the UCD ITELab team gradually and seamlessly evolved into a distributed co-design / co-development model – particularly after the June 2018 discussions – which allowed ITELab industry partners to become more active in this area of the project. This offered considerable benefit to the work and resulted in some valuable learning about collaboration at this level. This is discussed further at Sec 2.1 Recommendations below.

A full chronology of major /key-moments in the co-design, development and testing of the ITELab module frameworks is offered in the table below. Following this, each stage of the project work is then described further:

<table>
<thead>
<tr>
<th>Co-design</th>
<th>Testing</th>
<th>Feedback/ Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring/Autumn 2017</td>
<td>Cycle 1: Spring 2018</td>
<td>Key learning points: Working well: inter-active, task-based nature of work; shared handbook; value of DCE framework; international collaboration; student input to redesign. Need to Rethink: level of pitch; practicalities of synchronous sessions; constraints amongst different partners; assessment time to plan in. Reposition: Module A CEFR A2 Explorer; Modules B &amp; C, B1 Integrator. Ref UWU Evaluation Report: student focus group, partner focus group, survey feedback.</td>
</tr>
<tr>
<td>Design /Co-design with all partners: module framework A, Training, Learning, &amp; Professional Development in the Digital Age.</td>
<td>All partner universities: UCD, UoP, UoN, IPS, UoA</td>
<td></td>
</tr>
<tr>
<td>Summer/Autumn 2018</td>
<td>Cycle 1a: Autumn 2018</td>
<td>Key Learning Points: Module A working as baseline. Module B learning scenarios leveraging good industry examples. University institutional and implementation constraints mean shift towards more flexible module frameworks to review and absorb parts in existing university courses linking to local assessment and credits.</td>
</tr>
<tr>
<td>Update: module framework A</td>
<td>UCD trial update module A and initial test module B, Implementation planning and briefings with partner universities and new associate partner universities.</td>
<td>Supporting Staff Hub, with handbooks and briefings, valued by universities. Resonance with research by UoA on teacher educator competences.</td>
</tr>
<tr>
<td>Co-design with academic partners IRIS Connect and SMART Technologies: module B, Designing for Learning in a Digital World.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autumn/Spring 2019</td>
<td>Cycle 2: Spring 2019</td>
<td>Different implementation models emerging: module selection (all, parts); module progression with student</td>
</tr>
</tbody>
</table>
Focus of Activity and Input by Project Partners; May2017-Dec2017 [M5-M12]

Work on module content and development benefited greatly from the discussions and interactions that took place at the ITELab Project Partner Workshop –29-30 May 2017 in Brussels and through a follow-up meeting in Dublin on 13 June 2017 involving the Project Director and Project Leads on the ITELab Modules and ITELab MOOC. This was further developed through the ITELab Project Partner Online Meeting –26 Sept, and the Project Partner Workshop at EMINENT 2017 – 16 Nov 2017.

A number of key parameters established by the partners in the initial discussion were affirmed at these various project partner meetings. These reflect the core values and underpinning vision of the ITELab module, as envisaged by the partnership. They comprise: the need to build and retain a vision for meaningful use at the heart of all that we do in this project; the need to keep the use of digital tools to enhance & innovate learning at the centre of the project; the centrality of opportunities for active-learning and self-efficacy in the development of competence and digital capability building, and the centrality of this to the learning architecture of any proposed module. In addition, the systemic scale of the challenge faced by the Project was reaffirmed, as was the need for closer coordination of the project partners and the involvement of the Pedagogical Board and the growing number of Project Associates in the progressing of project content & vision, generally.

Annex 2 of this Report provides a copy of the first draft/ beta-pilot run version of Teaching, Learning, & Professional Development in the Digital World (MODULE FRAMEWORK A).

Focus of Activity and input by Project Partners; Jan2018-Aug2018 [M13-M20]

The beta-test of the initial module materials took place in the spring of 2018. During this, frequent conversations and interactions around coordination took place between the UCD team and the university partners as well as with the MOOC lead and the project coordinator. These focussed on both content and logistical issues: for instance, the timings of offerings, the readiness and suitability of proposed materials
and activities, aligning for shared-teaching activities, and clarification of the proposed assignment process and structures.

Learning from the beta test was subsequently built into both the Module Framework A and into design work on the other modules. As noted earlier in this Report, this came primarily from the ITELab Development Workshop in June 2018 [M18] and from the initial evaluations of the modules presented in Course Module Evaluation Report 1 D5.2 provided by the University of Würzburg – ITELab evaluation partner. Commentary from the Independent Evaluator also helped with this, in due course - ITELab project-Independent Evaluation Report 2018 (MDM Consultancy bvba, 2019).

A number of specific features of the module required rethinking in light of the beta-test. Two in particular required considerable re-tracking: the intention to included extensive live-to-air interaction across the partnership as an integral element of the work, and the undifferentiated nature of the initial offering along teaching-phase related lines. Live-to-air activities were scaled-back considerably for the next round of testing and a primary / secondary differential was introduced at the specific request of a number of university partners.

The live-to-air aspect of the work, while enjoyable, was found to be unexpectedly problematic to schedule in part because the timing of the beta-test run proved less than ideal. Institutionally, most of the partners were already locked into teaching locations and schedules for the semester / term and had little if any flexibility around additional programming. Finding locations / facilities to participate in the exchanges was difficult. In addition, most student participants in the partner institutions were already well advanced into their courses of study and / or practice placements and found it challenging to free-up voluntary time to participate in testing the module materials. Indeed, many were reluctant to do so.

Similarly, the projects intentions around providing module activities that fitted to both primary and secondary teacher education contexts proved too optimistic. The difficulty that emerged was not around quality and focus, interestingly, it was around opportunity to practice and use module content in a teaching placement setting – which formed an integral part of the module assessment structures, as originally devised. At the online meeting of the partnership in Dec2018, it was decided therefore to offer Module A along two streams – one predominantly primary in focus and the other predominantly secondary. This was to facilitate two features of the partnership’s practice more effectively; as noted immediately above, primary colleagues found they had considerably less (or no) opportunity to site-test the activities and materials being explored through the module – their placement structures for practice did not match those of secondary colleagues; nor would they in the full-pilot stage. This meant that while the broad base of materials and activities worked for both types of institutional group, there was less opportunity to ‘road-test’ on the primary side. In contrast, live-to-air sessions were easier to execute on the primary side as they had considerably more ‘university time’ than secondary side colleagues.

The additional module frameworks were altered also to reflect these concerns but in internal ways rather than along streams. More opportunities for asynchronous connections were built into the revisions to Module A and from the outset into one of
the new modules – the partnership decided to test, in principle, a more intense but differently scheduled form of co-teaching and shared activity as part of the other.

The idea and nature of ITELab Course Handbooks was also revised as part of the learning from the beta pilot. Module A materials and activities were repackaged to better reflect the primary / secondary concerns of the partners and work on handbooks for the other module frameworks was prioritised, ahead of the proposed full-pilot in Q1/2019.

Focus of Activity and input by Project Partners; Sept2018-Dec2018 [M21-M24]

During this semester the UCD ITELab team continued to consolidate the materials and activity base for the full-pilot of the module frameworks. Working closely with the three industry partners, we identified and curated extensively – to the point that we had more than sufficient to resource all three modules in their ‘final’ pre-pilot form.

Module Framework A was retitled: Teaching, Learning and Professional Development for Student & Beginning Teachers, and resourced along two tracks – primary student teacher and secondary student teacher. Activities based on the IRIS Connect ‘Film Club’ approach to competency development were built into each as a block of two / three session engagement. Additionally, the IRIS partners developed a short on-line induction to support this and a mini-webinar was designed to introduce and support the student activity in this area. Additionally, the linkages to specific DigCompEdu statements were revised to ensure more clarity and visibility to the partner leading framework activities at each partner ITE institution – a point reflected in the reviewing of all statements and a more readable inclusion of these at the end of each guidance note.

Specifically, all DigCompEdu competency listings such as DigCompEdu 1:1, 2:1 etc were replaced by readable alternatives such as Capability building /DigCompEdu focus: 1:2 Professional Collaboration, 2:1 Selecting Digital Resources, and so on. Framework A Live-to-air sessions were scheduled separately for primary and secondary university partners so that these were more in line with semester schemes of work / teaching placements. Once again, however, the seemingly simple act of aligning synchronous spaces that allowed the partnership to collaborate in real time proved challenging. The UCD Team also decided to recommend a slightly shorter run-time of ten weeks for the Teaching, Learning and Professional Development for Student & Beginning Teachers framework for the full-pilot in the spring and so tested this idea in an additional test-run in Q3/2018. It held up well. A finalised version of the Teaching, Learning and Professional Development for Student & Beginning Teachers; Module Framework A, Teaching Guidance & Resources is provided at ANNEX 3.

Module Framework B materials were brought together under the revised title of Designing for Learning. On the basis of the workshop discussions in June, this framework was set to 3ECTS Level 4 equivalency and with the help of content and concepts from SMART Technologies professional community suites, it proved possible to design a resource that could be taken and used by either primary teacher educators or secondary. The run-time for this framework was set at 6 weeks. Like the more extensive module A resources, this was tested in an additional run in Q3/2018. A finalised version
of the **Designing for Learning**: Module Framework B, Teaching Guidance & Resources is provided at **ANNEX 4**.

Module Framework C resources were finalised for full-pilot under the title of **Working with Learners**. In a number of ways, the collation and compilation of this framework brought to the fore the strengths of the ITELab partnership and our growing ability to work together in an open and constructive manner that could be said to validate the entire ITELab concept. All three industry partners fed ideas and materials into the framework with Microsoft and UCD taking a lead role in the identification of blocks of materials that could be taken from behind paywalls by both IRIS and Microsoft to produce the third ITELab module framework, and characterise it differently from the other two module frameworks.

Two elements that were designed into **Working with Learners** contributed to this: the manner in which the materials would be used over a series of evening and weekend ‘blocks’ – intensive, linked, longer sessions of up to three hours duration – rather than in the more typical academic week-on-week format that underpinned the other ITELab modules; and secondly the deliberate association of framework activities with possible badges and certification provided by the industry partners – specifically, an IRIS Connect Participation Certificate and a set of Microsoft Innovative Educator (MIE) badges associated with progress towards MIE Expert. In combination, these defined a very different set of learning possibilities in terms of the learning journey. However, by constantly checking and referencing against the DigCompEdu listings we were able to ensure comparable quality and standards across all three. Additionally, by taking into consideration the rich detail emerging from the ongoing casestudy element of the ITElab work (which opened up valuable insights into previously poorly understood elements of the technical and pedagogical practices of the university ITE partners) we were able to build into **Working with Learners** a series of possibilities for co-teaching and collaboration closer to the original vision of the ITELab project. This work was completed in time for the planned full-pilot of Q1/2019. A finalised version of the **Working with Learners**: Module Framework C Teaching Guidance is provided at **ANNEX 5**.

**Focus of Activity and input by Project Partners; Jan2019-Jun2019 [M25-M30]**

The ITELab module full-pilot for frameworks and resources for Module A, Module B and Module C took place in Q1/Q2 2019 [M25-M29]. All of the ITELab university partners participated in this on a scale reflecting availability and interest among their students. Additionally, a number of associate partners tested-out discrete elements of the project materials when the opportunity was made available to them. Among these, Marino Institute of Education, Dublin, Ireland, and Kazan Federal University Pedagogical Institute, Kazan were notable and engaged widely.

**Teaching, Learning and Professional Development for Beginning Teachers** (the Module Framework A) ran in both primary and secondary streams over the full semester, with a break for Easter towards the later stages of the run. It involved all ITELab academic partners and a number of associates. **Designing for Learning** (Module Framework B) was piloted locally at UCD but without any other academic partners. The full-pilot of
the block-based version of Working with Learners (Module Framework C) took place in May 2019. This involved all partners – academic and industry – to a considerable degree.

As mentioned earlier a number of innovations marked the Working with Learners pilot; these included the ‘block’ nature of the timings and the deliberate association of framework activities with badges and certification from the industry partners. The activity was also hosted in a non-academic setting. Microsoft Ireland kindly made its DreamSpace facility available for the activities; UCD student teachers travelled to the Microsoft facility for two two Monday highly intensive evening sessions and two full Saturdays. Teaching was shared by UCD ITELab team members, IRIS Connect and Microsoft education staff. A number of the ITELab local coordinators along with the Project Coordinator and the MOOC lead travelled to Dublin to participate in Working with Learners activity on the last Saturday in the block. Colleagues from IRIS Connect and Microsoft as well as UCD Team taught into the day.

A short video capturing typical block-day activity for Working with Learners can be accessed here: https://bit.ly/2LkD8Jq

At the end of this Working with Learners series, all the participants qualified for MIE awards and for the IRIS Connect certificate. On the technical side, we were also able to test out the possibilities of Microsoft Teams as a medium for sharing opportunities for ‘real-time’ participation in framework activities. This raised some fascinating possibilities for future work.

Formal evaluation and monitoring of the full-pilot was lead by the project’s evaluation partner – University of Wurzburg – and supplemented by internal evaluations and student feedback to individual partners at the local level. Additionally, project partner meeting over the spring served as opportunities to update all involved and respond to individual and group observations.

The extended Second ITELab Workshop and Project Partners Meeting over three days in Brussels, 19-21 June 2019, provided the perfect opportunity to bring all of this learning together and to fundamentally reappraise both our original assumptions and the present direction of travel of the project. It also allowed for a deep engagement with student participants, project academic and project industry staff involved in the beta and full-pilot. These deliberations form the basis of Section 2 below, but a number of significant insights emerging from this event may be summarised as follows:

- The ITE students participating in the workshop – drawn from across the partnership – affirmed the value of ITELab activities. They argued persuasively for broad continuity in our direction of travel but also for some change in relation to the more theorised aspects of the work. In short, they agreed with the need to engage the deeper questions the project raised about the ownership and usage of technology in education settings but also felt strongly that there needed to be a recognition across the modules that there is often a broader scale of technical and pedagogical ability present among participants than the project often seemed to expect and that the technical and practice expectations at practice sites – the placement schools – were the greater challenge.
Although the ITELab industry partners were active in the partnership meetings and contributed significantly and in a sustained way to the design activity in Year 2, more opportunities were needed to bring industry partner expertise and materials to the fore in regard to the module content and activities. Additionally, a number of industry partners wanted to deepen their personal and organisational involvement in the instructional side of the project and ways needed to be found to facilitate this.

The assumptions behind the thematic focus of the ‘module frameworks’ and even the nature of these as a meaningful basis for institutional partners (both main and associate) to work from needed further thought. The early evaluations and discussion at the workshop indicated that much more loosely-coupled sets of materials and shorter, supporting activities could provide better options for the partners. This would allow for considerably more flexibility in selecting from ITELab’s suites of content, suggested activities and possible assessment structures than the more rigid and interlocked type of module the project partners initially assumed we would need to develop.

Focus of Activity and input by Project Partners; July 2019-Dec 2019 [M31-M36]

The final semester of the ITELab project work on our module frameworks and resources was given to a validation exercise. Following the beta- and full-test-run of the ITELab module frameworks, UCD and Microsoft IRL decided to offer one final iteration of Working with Learners in ‘block’ mode. The schedule is included in the annexes. However, in brief, UCD, Microsoft IRL and SMART Technologies collaborated to run a final, ‘intensive’ version of the module framework over a series of Mondays and Saturdays in November 2019 (Q4 2019, [M35]).

This allowed the addition of work on computational thinking and using robotics in the teaching and learning setting to the module content, which proved popular with the student teachers who were able to incorporate this into work for an MIE badge, as previously in the full-pilot.

This added two additional and valuable insights to the outcomes of the project:

- The understandings and capabilities of teachers in formation can be developed well through the more active, hands-on activities made possible by extended sessions that allow time and space for such learning; the block sessions in the validation exercise were sequenced carefully to encourage engagement and reflection in learning over 2h to 2.5h sessions.

- The motivational aspect of the MIE badge and the IRIS /SMART Technologies certificates was helpful in attracting voluntary participation in the project activities who may otherwise not have participated. This is something that all of the academic partners had concerns about at various stages of the ITELab project. While not in any sense definitive, this final, block-run of Working with Learners validate the point that micro-credentialing was worth considering as part of the design process.
1.3.5 Resources to Support Local Usage of ITELab materials

Over the life of the ITELab project, UCD led on the developed by the partners of a number of resources to support effective usage at the local level of the emerging ITELab module framework materials. This started as a technical exercise in line with the obligations entered into under WP3 T3.1 and T3.2, but quickly outgrew this to become a key infrastructure to support the work of the project.

These centred mainly around:

- **Initial Guidance Notes** later compiled and edited as ITELab Handbooks for each of the ITELab Framework Modules. (A discussion of the evolution of this idea follows immediately below.)

- **Pre-module webinars** these took place in advance of each materials test and served as an effective platform to share suggestions and advice immediately ahead of each pilot action. These were initially confined to core project partners but were subsequently opened to project associates as they became more actively involved in testing and training ITELab materials. These webinars covered topics such as: digital self-assessment and helping student-teacher to identify their technical and pedagogical competence and needs, setting up live-to-air project / bilateral sessions within modules; using SMART Technology and Microsoft Educator Community resources within modules; and getting value from the IRIS Connect platform access and resource base, as part of local ITELab activity.

- **ITELab Staff Hub**. This grew into a freely available, on-line ‘home’ or repository for ITELab material and resources as these became available to all core and associate partners of the ITELab project. The hub functioned as a simple, easily accessed way of providing all of us who are working with ITELab module frameworks – or some aspects of these – with a frequently undated set of resources and ideas to use in support of our teaching. It also offered a public window into the project’s work – including an overview of its underpinning philosophy and an outline of its structures, activities, and suggested learning assessment arrangements. Essentially, the hub provided a shared reference point for ITELab activities across the partnership and built on our collective piloting experience and proved effective as a focal point and guide for local activity. See here: itelab.wordpress.com

- **Focused, industry-provided resources** from ITELab industry partners came to power the emerging module frameworks in a substantive way as we worked through the main-pilot and subsequent additional cycle in 2018 and 2019. In many ways, this redefined what was possible for ITELab activity at the local level. (This is discussed towards the end of the present subsection, and returned to in the Recommendations.)

The initial idea of developing Module Handbooks was proposed as part of a UCD Team presentation to the project partners at the May 2017 meeting. As originally conceived, these were intended as a light-touch, pedagogical frame for each
module that would be populated locally using selections of materials proposed jointly by ITELab’s academic and industry partners.

However, the potential to do more and go further than this quickly became apparent. Initial versions were developed at UCD to support the teaching of ITELab content for the beta-test in Q2/2018 and full-pilot in Q1/2019. These were sent to institutional leads in digital form ahead of the launch webinars for the spring run. The materials and underpinning pedagogy was rigorously field-tested through the planned pilots and the project partnership decided that we needed to do more.

As mentioned earlier, the original ITELab project timeline intended that one full-pilot in the spring 2018 would be adequate to capture and document the learning resulting from the tasks, and that D3.2 would report on this [M20]. This proved too optimistic. The beta and full-pilot raised many interesting and unforeseen possibilities and challenges. Following discussion with the full partnership, the UCD team recommended a further cycle of work on the frameworks in order to capitalise on the advances made in the early work and on what was learnt from both the ITELab Development Workshop in June 2018 [M18] and from the initial evaluations of the modules presented in Course Module Evaluation Report 1 D5.2 provided by the University of Würzburg – ITELab evaluation partner.

This additional cycle ran through the autumn of 2018 and the spring of 2109 [M20-M30]. It culminated with the validation exercise in the autumn of 2019 [M35]. As they developed and became more substantive through this testing & retesting, the updated ITELab module framework materials were published in open access form at the ITELab Staff Hub with translations being added in other partner languages, as these become available.

Handbooks is not, however, a fully adequate description of these documentations in their later form. Over the course of the summer and autumn of 2018 [M18-23], extensive design and resourcing activity by UCD and the three ITELab industry partners went into bringing industry expertise and materials more to the fore in regard to the module content and activities. Following this extensive reworking and retesting it is more accurate to describe the ITELab as resourced module frameworks that allow participants to select confidently from suites of materials and activities assembled to address specific thematic areas of better ICT usage among student teachers. Examples of this type of material include the ITELab portal and certification line developed by IRIS Connect, the SMART Technologies Learning Pathways resources, and the Microsoft IRL ITELab specific Microsoft Innovative Educator package made available through the Working with Learners framework. The iterative nature of web publication meant also that the materials could be adjusted, supplemented, and/or replaced, as necessary to offer better support for local leads, both core project and associate.

A marked feature of the manner in which ITELab industry partners worked together closely and productively can be seen in the way that Microsoft IRL and SMART Technologies led in Q3/Q4 2018 on collating materials from across the partnership with particular relevance to the theme and content areas of the now-titled Designing for Learning Module Framework B. Approximately sixty individual learning resources and
related items were collated on a Microsoft OneNote site. These came from all of the industry partners and while some needed work to reconfigure in line with ITELab structures and expectations, on the whole the materials provided a very valuable backbone for the module.

IRIS Connect similarly assembled a bank of materials to support aspects of Module Framework A – retitled for the full-pilot as *Teaching, Learning, and Professional Development for Student/Beginning Teachers* and for the proposed video component of the refocussed and retitled *Working with Learners* (Module Framework C). Usual IRIS Connect restrictions on these resources were removed to allow full and open access to ITELab participants. This built on learning from the beta-test of ITELab Module Framework A, which included both IRIS Connect Film Club materials and access to the IRIS Connect On-line Collaborative Environment. The revised materials streamlined the access side of this and opened up possibilities around using the materials in a less context dependent way in order to facilitate primary ITELab partners who were unable to do so in the beta-pilot to work with the materials at the full-pilot stage. Materials and resources relating to using video in professional learning from SMART Technologies14 were also made available to this collection.

Work on collating and ‘tagging’ these materials and suggested supporting activities took place primarily in the summer of 2018 and the outcomes were in place for both the second run of *Teaching, Learning, and Professional Development for Student/Beginning Teachers* (Module Framework A) in Q4/2018 and the subsequent full-pilot in Q1/2019 of both *Teaching, Learning, and Professional Development for Student/Beginning Teachers* and *Designing for Learning* (Module Framework B).

### 1.3.6 The ITELab Student Learning Hub and Facebook Page

In parallel with work on the ITELab Staff Hub we also designed and built an ITELab Student Hub over the duration of the beta and full-pilots. Some initial difficulty arose regarding student contact and privacy emanating from the introduction of the 2018 European General Data Protection Regulation (GDPR). This delayed the initial launch of the portal until each institutional partner had been satisfied that it was not in breach of the Regulation. However, the project also encountered an unexpected degree of hesitancy on the part of student participants to share their emerging learning publicly on the hub. Systematic attention was paid to this in the Q3/2018 additional pilot, with some success.

Essentially, while operational during the beta- and later pilots, the student hub acted as a virtual community where student participants in on-going ITELab module activity could potentially interact with each other in an open and welcoming setting. Our intention was that the hub would offer an on-line space which could meet learners’ needs for a project-wide platform. We saw it functioning both as a social and a professional learning community with the potential to offer a mix of resources, and interaction spaces. Initially, we also envisioned the ITELab Student Hub playing an important function in capturing the student voice in an unobtrusive and authentic

---

manner. However, on an initiative which had its origin among the student participants themselves, an **ITELab Student Facebook Page** started to fill this role and to take on to a considerable degree the role originally ascribed to the Student Hub.

Over the later stages of the project, the **ITELab Student Facebook Page** proved a valuable if informal source of insights into our student participants’ ITELab activities and opinions. On reflection, we concluded that going with the students’ own initiative – rather than trying to drive them to your Hub – was the better option. Nonetheless, there is considerable work needed to better understand and maximise the learning value of social presence web portals such as these. The ITELab project was not, unfortunately, resourced to pursue this.
2 OBSERVATIONS & RECOMMENDATIONS

In this final section of the report, a number of observations are first offered on the powerful affordances of working in generative university-industry partnership when it comes to pursuing the scale of transformation required in how student and beginning teachers use ICT and other technology, along with how they can develop the professional capability and technical capability to do so.

Recommendations are then offered for how colleagues involved in Initial Teacher Education and Teacher Formation can better access and use the digital resources, technical expertise, and access to the teacher communities supported by partner companies on the industry side. These are built on the basis of lessons learnt from devising the ITElab module architecture and the work then completed in the design, development, resourcing, and testing of the ITElab module frameworks.

Each of the specific recommendations offered is firmly anchored in the project tasks at UCD and draw on lessons learnt through working with all ITElab partners and on the experience of we have gained as a partnership bringing together industry, ITE universities, and student teacher participants.

2.1 WORKING WITH INDUSTRY PARTNERS’ CPD RESOURCES AND TEACHER COMMUNITIES

Of the three ITElab industry partners, Microsoft and IRIS Connect have the most developed and extensive ranges of materials targeted on initial and early stage teacher education. Much of this relates to the provision of online training within programmes specific to these groups.

In 2017 Microsoft launched the Student Teacher Education Programme (STEP) for initial teacher education drawing together multiple MIE components such as the 21st century Learning Design course (https://education.microsoft.com/en-us/course/8220d07e/overview). This was essentially a pilot but is important because it represents the first time that Microsoft has made a direct distinction for a programme in support of Initial Teacher Education. The material base is rich and STEP was trialled intensively in a number of ITE locations in the UK – especially at Leeds Beckett University. Elements of the programme offered interesting possibilities for ITElab – in particular its focus on students developing a rationale for the need to develop 21st century skills. STEP materials and activities address key 21st century skills such as collaboration, knowledge construction, self-regulation, problem-solving and innovation, information and communications technology (ICT) for learning, skilled communication. Within ITElab we saw very considerable potential here in relation to the second of our planned beta modules – Working with Learners.15 In time this was transformed into a functioning and effective co-teaching experience centred around ITElab student teachers working collaboratively for a Microsoft Innovative Education Badge within

---

15 UCD explored with Microsoft the best ways of incorporating this into our project as part of the 2019 field-test of ITElab materials and practices.
the activities associated with the Working with Learners, block mode in Q3 and Q4 2019 [M30 – 35]. A marked feature of this pilot was that the teaching as well as design and resourcing was shared by university and industry partners; UCD, Microsoft, IRIS Connect and SMART Technologies all taught into the module at times.

IRIS Connect also recognise student teachers as a distinctive group in terms of the stage they are in in their professional development, and therefore see their training needs as specific. Within the ITELab project, we view the IRIS Connect platform as particularly promising as an arena for supporting sustainable and secure collaboration between student teachers in the partner universities, their lecturers, and – where relevant – their mentors at the schools where they go for work experience / placement.

Within the ITELab module framework beta- and full-pilots ITELab we working to include both IRIS Connect Film Club materials and access to Look Who’s Talking Too (the IRIS Connect On-line Collaborative Environment) where student teachers and their educators can share and critique specifically video-captured lesson segments.

The project provided the partnership with opportunity to explore with IRIS the possibilities for ITELab modules of working with elements of their ready-made professional learning programme that may help our student teachers to develop as self-regulating, independent learners.

SMART Technologies offer less distinction in relation to their content for student teachers, but have a strong teacher community with an interesting underpinning of strategies principles as equally relevant to education professionals working at various levels. The SMART Educator Community can be accessed online at: https://www.smarttech.com/en/education/smart-exemplary-programs.resources. Through this community SMART Technologies has developed a formidable set of teaching resources leveraging in particular the SMART Learning Suite16 – made available to ITELab for the duration of the project as part of the SMART Technologies contribution. We found particular value in particular in the training resources specific to their university teacher training client needs e.g.: around future classroom and the use of flexible learning spaces supported by technology, and delivering ‘hard skills’ training in problem areas through their network of locally based educators and online.

In short, we on the university side found each of the ITELab industry partners to have considerable expertise and knowledge to bring to the co-design and co-development of the ITELab module frameworks. And they shared this generously. ITELab relations started from a basis of trust and mutual interest in better and more capable uses of technology by student teachers across the partnership. As the project progressed this relationship became what can only be described as deeply generative – that is, highly effective and productive of learning for all concerned.

This work took place, in the main, across Q2-Q4 2018 [M16-23] and was a significant contribution to readying the modules for full-pilot field test in Q1/2019, as per the ITELab

D3.3 Recommendations & Resources to support innovation within ITE

Project Schedule. Indeed, as noted earlier, the design and resourcing of the ITELab module frameworks in year two of the project provided superb opportunities for the full project partnership to work closely together, to leverage both academic and industry repositories of content and activities, and to develop ways of supporting ITELab activities that added considerably to the value of module frameworks and also enhanced the quality of the overall ITELab offering.

2.1.1 RECOMMENDATIONS FOR ITE PROVIDERS

For ITE Providers, the relationship with companies such as the ITELab industry partners is, typically, one of supplier and ultimately a commercial one covering products and services. However, in this EC-funded Knowledge Alliance project where ITE providers and companies worked side by side, the value of developing a relationship which goes beyond this became apparent through our work on developing an ITELab module architecture and actualizing this in the module frameworks. The ITELab recommendations for ITE Providers which follow are based on this extended partnership.

Drawing from the practical, technological, and pedagogical experiences of co-designing and co-developing the three ITELab module frameworks, from which all ITELab partners greatly benefited, we suggest ITE institutions can work usefully with such companies in the following ways:

Partnering well to support change and Innovation in ITE

We recommend that teacher education institutions can and should partner with elements of the technology industry to support efforts to change and energise student teacher usages of education technologies and ICT; but that they should do so carefully.

Much of what we achieved as ITELab is due to being able to work with companies that have a particular focus on the education market, but are not wholly sales and profit driven. In the ITELab case, all three industry partners - IRIS Connect, SMART Technologies, and Microsoft IRL – have pedagogical experts on staff who track the changing nature of education practice across the EU and translate what is happening there into the development process for the company’s products and services. We have found that working with these in-company education experts provides a unique insight into the possibilities of their various products and platforms that might otherwise elude us in the ITE sector.

Additionally, as a result of their ongoing conversations with multiple ITE organisations and policy actors across many different countries, a well-chosen, educationally disposed industry partner can bring to a partnership valuable insights and ideas for useful comparison, as well as provide networking opportunities and timely access to international research and resources. In the ITELab case we have been able to translate many of these ideas and insights –as well as more practical contribution in the form of resources and materials – into aspects for our module frameworks which then field tested more successfully.
Understanding and leveraging more of the breadth of what companies have to offer

We recommend that HEIs with an interest in instantiating better technology usage in initial teacher education programmes need to consider the advantages of working closely with industry, schools, and the student teachers themselves to identify more precisely the nature and range of usages that student teachers will require in their early years as teachers, and then work together to address these.

The experience of the ITELab project in relation to this is that the context of present and near-future student teacher practice is essentially determined by a mix of local and personal factors. While HEIs can provide education in valuable pedagogical guidance and mindset and industry can offer a considerable range of technical and developmental insights and competencies, it is when these are adequately and appropriately combined within the lived context of a school that innovative practice can result. Much of the learning that characterises what we have been able to achieve in ITELab depends fundamentally on addressing this mix of factors with partners bringing different but complementary capabilities and interests to the problem, and doing so collaboratively.

Similarly, working closely with our partner companies has allowed all involved in the ITELab module framework development to gain a greater understanding of our industry partners’ wider offerings in the teacher education and professional development area. In the case of work on Teaching, Learning and Professional Development for Student & Beginning Teachers (Module Framework A), this allowed us to include involvement in both IRIS Connect and Microsoft teacher communities in our design, access to high-quality resources curated by these communities, and valuable opportunities to offer feedback through our beta field trials, so that both the mission of the teacher communities and the resources on offer can align more effectively with the needs of ITE institutions within the partnership and beyond. Future work with our industry partners extended these conversations to include the possibilities of using the learning / training design processes and facilities championed by Microsoft at their Microsoft DreamSpace, Dublin and leveraging SMART Technologies Teacher Community expertise in delivering ‘hard skills’ training in problem areas – such as structured progression towards competence and confident in deep-learning pedagogies for student teachers across the ITELab partnership.

Additionally, we suggest that universities and colleges would benefit from engaging more with industry on the range of ways that industry partners can add value to and supplement the work of HEI staff in helping student teachers make better use of stock technology.

One of the most valuable insights emerging from the ITELab project is the range of ways in which the industry partners can and are willing to contribute to the process of educating new / student teachers. While acknowledging that the three ITELab industry partners are field-leaders and pioneers in their own arenas, it has been heartening and instructional to experience the generosity with which they gave access to their resource bases, offered pathways to customised certification, and opened access to their specific communities of teachers. As academic / university partners we have seen
the benefits of this throughout the second year of the project particularly as trust grew across the partnership and we moved forward with the project agenda.

**Actively helping to shape product and services development in companies**

We recommend that university and other ITE providers actively seek out opportunities to contribute formatively to efforts by technology industry companies and groups to develop products and services that can benefit student teachers as they find their way into a world where technological competence needs increasingly to be a core component of their pedagogical and didactic repertoire.

All good partnerships are two-way. Working with our industry partners has allowed ITELab universities to contribute to the understanding our industry partners have of the lived-realities of working to promote better digital literacy and pedagogical strength in our various ITE institutional settings. This has been particularly evident at the project Professional Development Workshops where detailed conversations took place on both the possibilities of the project and the visions and assumptions all parties brought to the work. Part of the unique challenge faced by ITELab was the range of ITE interests and practices brought to the project by the academic partners; it was also, we believe, one of our strengths.

Each of our ITE settings presents very different possibilities and constraints – from the timing of work practice placement to the great variety of training and support opportunities for developing strong, well-considered digital pedagogy. The non-linear, episodic nature of much of this was clearly something that our industry partners may have heard of but in reality failed fully to understand. The diversity of student learning needs this presents was not expected by our industry partners. By contrast, their embedded models of learning and development were comparatively time-hungry and surprisingly inflexible in ways – allowing only limited scope for personalised work that is needs-based rather than prescribed in programme terms. Educating each other in all of this was an unexpected but necessary task – one well accomplished by the partnership.

By developing deeper, longer term, dialogical relationship such characterising ITELab – especially towards the end of the project - ITE institutions can shape the type bridging activities that are necessary to bring these visions and practices more closely into line – so that ITE interests benefit from better understandings of the power of more systematised programming for skills-development, and industry partners in turn appreciate more fully the operational and time constraints faced by ITE programmes, as well as their highly contextualised nature.

From developing the ITELab modules we see considerable value in these conversations and how they can, in time, shape product and services. All in the partnership are benefiting from access to the module development and trials. Early and increasingly deepening involvement in the process helped shape both industry partners’ understandings and the ITE organisation’s own implementation plan, as we all benefit from identifying and building on lessons learned.
2.2 ITE CURRICULA: READYING FOR 21ST CENTURY CLASSROOMS

The same complex factors that make achieving 21st century learning in EU classrooms a challenging goal are also faced by ITE institutions. There is considerable discussion in the literature on the need to move towards more innovative models of teaching and learning and the difficulty of doing so (e.g., Fullan and Langworthy, 2014). Creativity and collaboration are often set as central to such innovations and much of the on-going debate about educational reform is positioned within a rhetoric of failure to provide such 21st century learning (cf. Dede 2010; Voogt and Roblin, 2012). Of course, the 21st century learning agenda is not without its criticisms and from a practitioner perspective it is often argued to lack exemplars of how it can be implemented within mainstream schools (e.g., Brecko, Kampylis & Punie, 2014).

One of the great drivers of the ITElab project has been the possibility to contribute to policy thinking by generating precisely such practitioner perspective and exemplars that address complex, contemporary practice and policy problems.

In ITE settings, the complexities range from lack of institutional vision and leadership to support the scale of change that is required to the interests and capabilities of the existing teacher training staff, to financial constraints for developing new technology-rich learning cultures, and the breadth of curricula that initial teacher education is expected to provide (cf. Caena 2014; ETUCE 2008; Rizza 2011). Much of the agenda here has been set by EC policy action on teachers and teaching for contemporary times (Stéger 2014) and is framed in terms of competences required for effective teaching in the 21st century – which are posited as knowledge/understandings, skills, and dispositions (EC 2012). Arguably, EC policy action has still much to do to catch up with the new realities of Europe as a transnational society (Rosser-Limiñana and de Juana-Espinosa, 2019; Kraal and Vertovec, 2017). Nonetheless, a characteristic of the contemporary context is an increased willingness and rising confidence on the part of the Commission to lead on policy-work that addresses this emerging reality – in regards to education and training at the level of the school, and increasingly in relation to teacher education and preparation; see for example EC (2019) and DG-EAC (2019). This is one factor influencing EU actions for a European Education Area.17 ITElab has been privileged to play a part in this.

2.2.1 RECOMMENDATIONS IN RELATION TO ITE CURRICULA

Designing and validating the ITElab module architecture, the underpinning design processes, and the assembling of the three ITElab project module frameworks over the life of the project, has been challenging and at times frustrating but always rewarding.

We believe the outcomes of ITElab represents valuable headway in terms of articulating important differences between our propositions for more meaningful learning in 21st century classrooms.18

---

technology informed and enhanced practice – as embodied in the module frameworks – and what may be termed more usual / conventional ITE curriculum practices. The distributed co-design / co-development model we devised fed directly into the informing principles of the ITELab design framework and – more importantly here – into the identification of sets of capabilities and related experiences that were then embedded in the modules. Broadly, these consist of clusters of competences relating to using ICT within well-integrated pedagogical approaches, in-built opportunities for reflection & demonstration, and – centrally – incorporate approaches to early professional learning that foster and utilise peer-to-peer as well as student-lecturer communication & collaboration opportunities. More importantly they represented a tack and direction powered by the hybrid nature of our university – industry partnership. In short; they combined elements and aspects of both worlds in ways that we believe are potentially transformative, when taken, localised and honed to the specific requirements of given student teacher groups by teacher educators.

The initial ITELab recommendations for ITE Providers which follow are based on our understanding of how the practice-directed embedding of such knowledge-work, skill-building and dispositional development can considerably enhance the student experience. We suggest ITE institutions can usefully reimagine the scope and nature of their teaching concerning technology enhanced pedagogy, in the following ways:

Support Student-teacher Learning for and from Practice

Both the broader literature on this topic and insights from practice across the partnership suggest that more needs to be done for student-teachers in regard to both their technical and pedagogical preparation for work experience / placement, and supporting them to learn more from those practice settings while in situ.

We suggest that practical, ICT-related pedagogical skills are difficult to address adequately in ITE. Where ITE curriculum modules about ICT exist, they often concern subject specific training and have a strong technical focus. This is not sufficient in itself. Our work on the ITELab modules suggests that there is much to be gained from also working on transversal and ‘soft’ skills that relate to technology-enhanced new pedagogies (such as using ICT for active learning, collaboration, etc.) in such a way that repertoire of practice – along with the knowledge to know when to use different strategies for different purposes (Darling-Hammond 2006) – are built up on a needs-led basis over the course of an ITE programme. It also suggests that student-teachers must be prepared to recognize and address problems in a complex classroom, which juggling the learning needs of their own students and all the while continuing to learn themselves as adaptive experts (Caena 2014). This requires opportunities for engaging in reflective discussions with experienced teachers and with their teacher educators and also requires having the skills and understandings to do so in a meaningful and self-educative manner.

Support Student-teachers to become Lifelong-Learners

One of the challenges facing initial teacher educators is to lead their students to an understanding that teachers are lifelong learners and that their initial teacher
education is just that; initial. Current practice in the various ITELab university settings represents different stances on the idea of the continuum perspective linking initial teacher education, induction and CPD. Nevertheless, we were all agree that the lifelong-learner mindset is a valuable one for our student teachers to acquire and one that ITE in general should do much more to foster and develop. Consequently, we set out to place reflexive, inquiry-based learning opportunities at the centre of the ITELab module architecture and to encourage deeper engagement with this learning process through the suggested assessment arrangements we designed-in.

Aspects of each unit within the ITELab module frameworks were designed to encourage the participants to work with the complex and unpredictable problems of technology enhanced practice in teaching and learning settings. There is a singular dimension to this that sees the student-teachers participate at a level of that requires deep, critical engagement (Benade 2015) with the values, beliefs and assumptions of teaching with and through technology. There is also a peer-dimension expected which requires aspects of their learning to be collaborative and to occur in a technology-enhanced community setting (cf Freidhoff, 2008). This is seen to involve partnering with student-teacher peers at other partnership universities, where appropriate, as part of the learning process facilitated by the ITELab modules. The expectation here is that this will both show the student-teacher the power of blended communities of learners in addressing professional learning tasks and lay the foundations of engagement in communities of practice and inquiry that will endure long beyond the ITE experience.

Support Student-teachers in building open, creative and innovative practices

One of the aspects of initial teacher education that the ITELab project identified early and chose to explore through the module development process relates to what has been termed the ‘practical wisdom’ (Biesta 2012) needed to shape ICT usage as an enabler/pre-condition of open educational practice. There were two reasons behind this; a decision to explore ways that students taking ITELab module could be encouraged and supported in building practices that include the creation, use, and reuse of open resources, through technology; and a sense that with the sheer quantity of learning resources now available on the web, it was essential that the ITELab module frameworks provided both the opportunity and the skill-base for those students to develop high levels of competent in identifying, selecting and retrieving reliable digital resources, on-line.

We are strongly of the view that ITE is the crucial first stage in a teacher’s professional journey. As Caena (2014) argues, it lays the foundations of a professional mindset and provides the entrant with a basic capability to make meaningful learning happen in a classroom. A comprehensive introduction to the value and power of open practices should be part of that experience so that student-teachers have every opportunity to develop strong personal capacity for the meaning-making and decision-making that will be required when considering whether, why and how to use open educational resources and practices (Cronin 2017) within their teaching.
We are also strongly of the view that a powerful educative balance can be struck when academic and industry partners work collaboratively to co-design learning frameworks for student teachers but that there is nothing automatic or guaranteed in this arrangement – all parties need to work constantly on the character of the partnership, with the university partner bringing the necessary moral, pedagogical and educational perspective to this conversation. These are necessarily embedded in curricula if the student experience is to be an appropriately valuable and educative one.

Being a part of the ITELab Project has more than confirmed for all of us involved that industry and companies in the education service area have considerable strengths to bring to a learning partnership; these include particular understandings of the potentials and possibilities of appropriate learning-related products, tools, and technologies. When mediated by concerns for what is feasible and reasonable to expect of a young teacher in formation – as understood and presented by academic partners in a project – this can be a powerful thing. However, it is important that this line is always held as student teachers are otherwise open to unreasonable demands about ‘necessary’ usage and the unassailable possibilities of technology. In a strong reading of this Zuboff (2019) suggests simple acquiescence to new digital technologies is detrimental to all our futures and forecloses rather than fosters future possibilities.
2.3 CLOSING STATEMENT

At the conclusion of the D3.1 Report (December 2018) it was noted that recommendations and observations presented were tentative and offered in anticipation of the completion of the development and testing of the ITELab modules. That process is now complete and we are pleased to note at this point that both beta-test and full-pilot have been productive and generative learning experiences.

What ITELab has achieved in relation to the quality, impacts and relevance of the module framework aspect of its work is not in doubt – the experience has been challenging but beneficial and early reactions has been critically positive to the three module frameworks and the design processes the partnership embraced in order to deliver on this aspect of our work. This was evident when we presented at the Teacher Education Strand of the European Education Research Conference in Hamburg, Sept 2019; at the EMINENT Conference in Warsaw in Nov 2019 also; and again at the IMPRESS Conference in Dresden, Dec 2019. Each conference represented a sizable gathering of teacher educators and teacher education policy actors.

A number of factors combine to make this a journey of unexpected and profoundly formative iterations while staying true to the contract obligations and broad directions entered into originally. Principal among these was the full-partnership decision early in the work to test and retest our materials far more extensively than was originally envisaged. Instead of a beta- and one full-pilot cycle, we found it feasible and advantageous to test through three full cycles in all, and to focus on differing constructions and schedules, almost as variations on a theme, while doing this. We also added a validation exercise in the final months of ITELab which allowed for the closest university-industry actions of the project. (See Section 1.3.4, p 27 [M31-M36].) The net result of this extra activity has been a considerably greater volume of assessment data, and a much richer learning experience for us all. We believe that the module frameworks are exponentially more robust and more effectively related to the lived-realities of student teachers across the partnership universities because we engaged these extra cycles.

The work ethic of the ITElab-partnership collaboration also evolved markedly over the life of the project. This has been discussed in some depth at Section 1.3.2 above. But to recap briefly, what started as a standard, centrally-led, design-and-test brief evolved into an unexpectedly intensive experimentation in the praxis of co-design and distributed leadership for learning across the full ITELab partnership. This included fully embracing the challenges of providing full and open-access to project materials, identifying and accessing sources from which to collate and curate appropriate ideas and materials, framing all our work around DigCompEdu competence and professional capability building at local levels for project partners, and - most tellingly – a deliberate and enduring openness to the voice of student teachers across the partnership.

There is a considerable amount of work still to do over the coming months. Our emphasis at this point is on sustaining the work of the partnership and on the disseminating and initial exploitation of the learning that has taken place and making use of this to bring value to the way education technologies are used, taught, and
integrated into the work of initial teacher education, in ITELab partner institutions and beyond. The ANNEXES to this Report contain text versions of all three ITELab module frameworks:

- **Teaching, Learning, and Professional Development for Student/ Beginning Teachers** (ITELab Module Framework A)
- **Designing for Learning** (ITELab Module Framework B)
- **Working with Learners** (ITELab Module Framework C)

Additionally, the ITELab online presences at [ITElab.eun.org](http://ITElab.eun.org) and [itelab.wordpress.com](http://itelab.wordpress.com) will remain live and curated for the foreseeable future. These sites provide ready access to all outputs of the project – including partner language versions of the module frameworks and related resources.

On that forward-looking note, this Report will close with the following observation: Europe as a society and a union is arguably open, in ways unmatched since the early post-war years, to a social and cultural realignment and to persuasion that the type of innovative, inclusive and values-based education as proposed by DG-EAC Commissioner Navracsics at the Inaugural ERA European Education Summit in Brussels on 25 January 2018. A significant enabler in this grand challenge will be teacher education. But not as widely practised currently. We advocate a teacher education that embraces the opportunities offered by partnerships such as ITELab to stimulate meaningful, well thought-out usages of ICT and other learning technologies, in ways that reflect the professional capability we were targeting for our student teacher participants, and so generate a novel praxis rooted firmly in the intersection of technology and knowledge-building in a 21st century school setting.
3 BIBLIOGRAPHY


ETUCE (2008) Teacher Education in Europe; an ETUCE policy paper. Brussels: European Trade Union Committee For Education.


### 4 ANNEXES TO REPORT

#### ANNEX 1: ITE Forum Webinar Series – outline schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 21 June  | 15.00 - 16.30 | Knowledge exchange – briefing webinar  
ITELab project introduction and the role of Associate Partners  
Dorothy Cassells, ITELab Project Manager, EUN  
Design of new training for student teachers (Modules, student teacher MOOC)  
Dr Conor Galvin, Director of University College Dublin's MA Education Programme, Ireland  
Bart Verswijvel, Future Classroom Lab Pedagogical Advisor, EUN |
| 19 October | 15.00 - 16.30 | Knowledge exchange webinar 1  
Initial case studies: ITELab university and industry partners.  
Dr Conor Galvin, Director of University College Dublin’s MA Education Programme, Ireland  
Bart Verswijvel, Future Classroom Lab Pedagogical Advisor, EUN  
Martin Gaustad, Adviser at the IT-departments Media Centre, University of Agder, Norway  
Prof Floriana Falcinelli, Professor of Education and ICT, University of Perugia, Italy  
Prof Dr Silke Grafe, Professor of School Pedagogy, University of Würzburg, Germany |
| 16 November | 16.00 - 17.30 | Capacity Development Workshop @ EMINENT: innovating ITE curricula  
ITELab modules and MOOC, survey results, early recommendations  
Attendance at the EMINENT conference is by invitation only. Click [here](#) for the presentations. |
| 19 December | 15.00 - 16.30 | Knowledge exchange webinar 2  
Initial case studies: ITELab university and industry partners  
Feedback from workshop, ITELab Forum Programme for 2018 |
| **2018** |            |                    |
| 15 February | 15.00 - 17.30 | Spotlight - associate partners discussion forum: innovation, change, implementation  
Dr Conor Galvin, Director of University College Dublin’s MA Education Programme, Ireland  
Maïté Debry, European Schoolnet, Belgium  
Prof Roza Valeeva, KFU, Kazan |
| 22 March, 15.00 - 17.30 | Digital safety and judgement  
Focusing on: approaches and support being provided in education, and networks to add value to teachers and student teachers.  
Presenters: Sabrina Vorbau (Digital Citizenship Team, EUN). Rui Gonçalo Espadeiro (University of Evora, Portugal)  
ITE Forum Chair: Dr. Conor Galvin, University College Dublin  
Check the presentation [here](#). |
| 19 April, 15.00 - 17.30 | Extending international collaboration.  
ITE Forum Co-Chairs: Dr. Conor Galvin, University College Dublin and Peter Claxton, Smart Technologies  
Focusing on: approaches and ideas for collaborative projects and student teachers within ITELab arrangements.  
Check the presentation [here](#). |
| 16 May, 15.00 - 17.30 | Including innovative STEM teaching practices in Initial Teacher Education.  
ITE Forum Co-Chairs: Dr. Conor Galvin, University College Dublin and Peter Claxton, Smart Technologies  
Focusing on: STEM and STE(A)M related student teachers activity across ITELab projects partners.  
Check the presentation [here](#). |
| 21 June, 15.00 - 17.30 | Engagement in future pilots; opportunities for ITELab partners and associates  
ITE Forum Chair: Dr. Conor Galvin, University College Dublin  
Focusing on: Full-pilot opportunities and spin-off activity among ITELab project partners and associates.  
Check the presentation [here](#). |
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Sept.</td>
<td>15.00</td>
<td><strong>Teaching, Learning and Professional Development for Student &amp; Beginner Teachers</strong></td>
<td>A briefing by Dr Conor Galvin on the trial running in Autumn 2018 with students from University College Dublin, in preparation for the launch of the full-pilot. Open to all universities teaching primary or secondary student teachers, in Spring 2019. In this session, we walk through the module and the supporting structures at ITELab Staff Hub, which includes a strong dimension of practical classroom activities for each week. Check the presentation here.</td>
</tr>
<tr>
<td></td>
<td>18.00</td>
<td><strong>Returns to Innovative Teaching (1) – Tools &amp; Models for more innovative teaching</strong></td>
<td>Focusing on: The returns / rewards that accrue for student teachers and others from innovative teaching in a positive and properly supported context. Check the presentation here. Supporting teachers designing their own teaching resources - read more Additional resources Linked for the theme: Project 'DEIMP' <a href="http://www.deimpeu.com/">http://www.deimpeu.com/</a> on mobile learning. Topics include Tools and models like iPAC developed in the MTTEP project <a href="http://mttep.weebly.com/">http://mttep.weebly.com/</a> What is the secret of better EdTech Outcomes: <a href="https://youtu.be/Ojiixgrx54S0">https://youtu.be/Ojiixgrx54S0</a> How to support independent Learning: <a href="https://youtu.be/x0ouT7AgqY2Q">https://youtu.be/x0ouT7AgqY2Q</a> ITEC (Innovative Technologies for Engaging Classrooms, 2010-2014) piloted educational tools and resources in over 2,500 classrooms across 20 European countries, with the goal of providing a sustainable model for fundamentally redesigning teaching and learning. The Future Classroom Toolkit, based on the ITEC methodology is available on the FCL website. Read more here FlipGrid: <a href="https://youtu.be/v3-84G7qb_Y">https://youtu.be/v3-84G7qb_Y</a></td>
</tr>
</tbody>
</table>
### Reflection video: Flipped Classroom

**17 October**
**Returns to Innovative Teaching (2) – A focus on Artificial Intelligence**
ITE Forum Co-Chairs: Dr Conor Galvin, University College Dublin and Peter Claxton, Smart Technologies

Focusing on: A panel discussion of the challenges and advantages of using leading-edge technology in teaching & learning settings

**Set Reading:** A Smörgåsbord of Artificial Intelligence; [here](#)

**Panel:**
- ITE Forum Co-chairs: Dr Conor Galvin (University College Dublin) and Peter Claxton (SMART Technologies);
- Dr Patrick Camilleri, University of Malta, member of eSkills Committee involved in the design of an AI policy for HE;
- Marco Neves, expert for DGE Portugal, responsible for developing the MOOC "Is IA going to change the School?"
- Dr. Kamakshi Rajagopal, Independent Scholar in Educational Technology, LinkedIn author "A review of the state-of-art of the use of Machine-Learning and Artificial Intelligence by educational portals and OER repositories"
- Vicky Charisi, Research Scientist EC JRC, Centre for Advanced Studies – impact of AI on Human Behaviour. [https://vickycharisi.wordpress.com/](https://vickycharisi.wordpress.com/)

Check the presentation [slides](#) and [recording](#)

Additional resources linked for the theme:
1. LRE Sub-Committee White Paper #2
2. Robot-proof: higher education in the age of artificial intelligence. [HERE](#)

---

### Learning by Doing – a focus on virtual reality and video

**12 Dec**
**Learning by Doing – a focus on virtual reality and video**
ITE Forum Co-Chairs: Dr Conor Galvin, University College Dublin and Peter Claxton, Smart Technologies

Focusing on: The challenges and advantages of using leading-edge technology in teaching and learning settings.

**Expert discussants:**
- Prof. Dr Silke Grafe, and Dr Gabriela Ripka, ITELab and University of Würzburg D, look at the use of VR in teacher education and on the pedagogical implications of using VR to prepare student teachers for their future jobs. They share their experiences from the project "Vilearn-Virtual Reality in Teacher Education". Find out more about that project [here](#) along with this short video. [https://www.youtube.com/watch?v=7FjhETLM95k](https://www.youtube.com/watch?v=7FjhETLM95k)
- Dr. Shawn Edmondson, CEO IRIS Connect USA. Shawn has been researching and developing technology to improve teacher professional learning for more than a decade, beginning with his doctoral dissertation research in 2006, which contributed to the inspiration for creating IRIS Connect. Shawn’s theme for discussion in the forum is “Video for deliberate practice: Learning by doing, observing, and focusing on change.” [Here](#) you can watch a short video for reflection prior to the session [https://youtu.be/Y1n_-GHh8hU](https://youtu.be/Y1n_-GHh8hU)

Check the presentation [here](#).  
Check the recording [here](#).

Additional resources:
1. 3D and language learning: Guinevere [http://guinevereproject.eu](http://guinevereproject.eu/)
2. Overview of an example from earlier Camelot project on uses of Machinima for language education [https://www.youtube.com/watch?v=iI9IPux3K2Q](https://www.youtube.com/watch?v=iI9IPux3K2Q)
ANNEX 2: Teaching, Learning, & Professional Development in the Digital World; (MODULE FRAMEWORK A) v1 [Draft version pre-pilot and beta-pilot]

[5ECTS Level 3; hours of direct input & hours of related project work/ self-directed learning to be decided locally; 75 hrs total engagement]

<table>
<thead>
<tr>
<th>Focus</th>
<th>Concept</th>
<th>Competence Areas</th>
<th>Assessment</th>
</tr>
</thead>
</table>
| Teaching, Learning and personal PD | Designed to: introduce & develop understanding, confidence and good practice relating to digital, online resources and networks that connect to people and sources of pedagogical ideas / materials and personalised CPD. | • Finding, evaluating and using CPD Resources.  
• Exploring materials and contexts that embody Innovative teaching / learning strategies  
• Participating in learning networks.  
• Professional engagement; communication, collaboration and development. | Portfolio relating to digital pedagogy; PLN-prototype; Demonstration piece from within the module work. |

Objectives / Intended Learning Outcomes

At the conclusion of this module participants will be able to:

• meet the challenges of sourcing, (re)purposing, and developing a range of rich-digital instructional and learning materials for use in ITE contexts;  
• plan, teach and evaluate digitally enhanced lessons in a confident and capable way, demonstrating strong levels of understanding and competence in relation to both technical and pedagogical principles & practices  
• identify opportunities and plan effectively for on-line activities which relate specifically to digital learning design and innovative ICT usages, in both professional and pedagogical modes.

Unit 1

UNIT FOCUS: Being a teacher in a digital world.

Wks 1-3

21st century teaching – continuity and change;  
21st century learning – what it is and how to help it happen;  
Parents’ and Societal Expectations around ICT / Education Technology

Unit 1 is about building understanding of the changing nature of teaching and learning in contemporary society. Each week focuses on ‘starter-pack’ case-materials and involves a challenge that requires thinking about how (and if) technology can be used to make their classes more active and engaging for all students. The underlying model here is that the ITE students experience and then practice aspects of using ICT more capably.

Wk1. Teaching Today

Start-up: watch and critically engage with a short video such as Singapore’s 21st Century Teaching Strategies – Education Everywhere Series; [https://www.youtube.com/watch?v=M_pIK7ghGw4](https://www.youtube.com/watch?v=M_pIK7ghGw4)

Or Janet Looney of the European Institute of Education and Social Policy;

[https://youtu.be/-wvfIrHgugA](https://youtu.be/-wvfIrHgugA)
**Development:** Working in small groups students search out details on this and other ‘models’ of modern teaching – eg UNESCO, OECD, ETUCE etc. Discuss and describe (elements of) any other innovative models they have come across.

Generate a 2-slide Presentation / Report on findings to share with the class.

**Consolidation:** Discuss how aspects of the session could be ‘mirrored’ or built-on in their own teaching setting. Use a Padlet (or similar) to gather class-wide reflections.

**Follow-out:** Portfolio piece later in week on what was learnt and how it was ported through into personal teaching setting.

**Capability building /DigCompEdu focus:** 1:2, 2:1, 2:2, 3:3, 4:2, 5:1.

---

**Wk2. Reimagining the Learning Space**

**Start-up:** Taking the FCL site as a point of departure, come up with arguments for a radical design of learning space for a ‘classroom of the future’; [http://fcl.eun.org/](http://fcl.eun.org/)


**Consolidation:** Plenary on ‘realistic’ / unrealistic versions of future learning spaces. And how these make ‘different’ learning possible. Use SoundCloud (or similar) to gather class-wide reflections. Identify as series of One Change suggestions.

**Follow-out:** Portfolio piece later in week on outcome of One Change action in classroom / laboratory setting.

**Capability building /DigCompEdu focus:** 1:2, 1:3, 2:1, 2:2, 3:3, 4:2, 5:1.

---

**Wk3. Technology and Social Media in Learning**


**Development:** Self-select as teams of ‘blog-posters’ and generate a series of strongly anti-Tech posts based on the type of ideas expressed in this and similar media sources. ‘Post’ perhaps to a shared surface in the classroom using stick-notes , not necessarily digitally.

**Consolidation:** Discussion of ‘Points of View’ and the possible effect of social media on ‘normal’ manners and interactions. Consider how this topic might be approached in a classroom setting.
Follow-out: Portfolio piece later in week on an action taken in teaching setting to improve students’ understanding of issues like trolling, rudeness on line, cyberbullying etc. This could explore social media/connectedness or safety, perhaps.


Unit 2 UNIT FOCUS: Technologies that Widen the Teaching World.

Wks 4-8

Teachers’ professional learning spaces; Personal Learning Networks (PLNs);
Teachers’ professional learning spaces; MOOCs;
Seeing Things; IRIS Connect;
etTwinning – a community and a learning resource

Unit 2 is about learning how personal technologies and platforms can be used to open up teachers’ professional learning in new and interesting ways. The underlying model here is that the development of a PLN and insights into the possibilities offered by leveraging technologies that open-up the classroom and so widen the teaching world.

Wk4 Personal & Professional Learning Networks

Start-up: Share thoughts and experiences on using ‘network’ contacts in day to day life; then view as a class; [https://www.youtube.com/watch?v=hLLpWwp-owo](https://www.youtube.com/watch?v=hLLpWwp-owo)

Development: In small teams investigate the types, nature of interaction and uses of PLNs. Report the outcome to the classgroup. Consider: what model(s) of professional learning do different PLNs facilitate? Which professional learning interactions are supported (access to theory, modelling, practice, feedback, coaching)? What will a particular platform enable you to do more efficiently or that you otherwise would not be able to do? How safe & secure does it seem to be?

Consolidation: Investigate in your teams the affordances of Twitter as a node in a strong PLN. Consider issues such as ‘following’ and # conversations like #edchatnz.

Follow-out: Sign up for Twitter and / or participate in and write up your experiences around a #chat.


Wk5 MOOCs and Professional Development

Start-up: Explore as a classgroup the concept of a MOOC and the differing nature of on-line courses; [https://www.youtube.com/watch?v=rYwTA5RA9eU](https://www.youtube.com/watch?v=rYwTA5RA9eU)

Development: Briefly discuss Agarwal’s claims; are they fair and reasonable? Now visit the EUN Academy, here [http://www.europeanschoolnetacademy.eu/](http://www.europeanschoolnetacademy.eu/)

Consider how MOOCs have changed even in the short time between the Agarwal and Academy MOOCs. Briefly discuss what a teacher-specific MOOC might look like / contain – what would YOU look for in one. Visit the ITELab MOOC.

Consolidation: Explore the ITELab MOOC offering and participate in at least one Chapter. Or alternatively, take on the personal challenge of to compare and contrast a couple of different types
of MOOCs such as xMOOCs, cMOOC and others. 75 MOOCs listed here, (US): https://www.teachthought.com/archived/list-75-moocs-teachers-students/

Follow-out: Write up or podcast your experiences in the MOOC using Spreaker (or similar).

Capability building /DigCompEdu focus: 1:1, 1:2, 1:3, 2:1, 2:2, 3:1, 3:2, 3:3, 3:4, 4:2, 4:3, 5:1.

Wk6 Video for Learning & Professional Development

Start-up: In pairs, visit IRIS Connect site and explore what it is and does; https://www.irisconnect.com/uk/

Development: Using your individual IRIS Connect user accounts, log in to the secure platform, navigate to the ITELab Group and complete the activities in the IRIS Connect Induction section there. Engage in a flipped learning activity within (Task 1 of the Film Club 1) and engage with other students within the online forum.

Consolidation: Engage in the Film Club Webinar and participate in the collaborative discussion. Explore the opportunities for relevant ICTs to transform the instructional activity in the video. Launch your IRIS Connect portfolio and discuss the reflection task.

Follow-out: Plan and make arrangements for creating and uploading a lesson on to the IRIS Connect platform. Reflect upon the lesson in light of the previous research, examples and discussion. Within your portfolio, plan your implementation of an enhancing ICT.

Capability building /DigCompEdu focus: 1:1, 1:2, 1:3, 2:2, 2:3, 3:1, 3:2, 3:3, 3:4, 4:1, 4:2, 4:3, 5:1, 5:2, 5:3.

Wk7 Video as a formative assessment support

Start-up: Continue working on the IRIS Connect platform; https://www.irisconnect.com/uk/. Record your planned follow-up lesson and share your video with a critical friend for developmental feedback.

Development: Provide your critical friend with feedback on their practice using the “Comments” tool on the IRIS Connect platform.

Consolidation: Share your videos to your portfolio on the platform and complete the embedded questionnaires / discussion forum. Visit and consider also the this video from the EUN interactive classroom working group: http://fcl.eun.org/icwg-pedagogical-videos

And, time allowing, this one relating to the Norwegian setting:

https://youtu.be/IYsnvwM3zDc Discuss how students in each of these settings are using video based assessment to support professional learning.

Follow-out: Within your portfolio complete the learning log - provide a detailed overview of how your practice has shifted as a result of the feedback you have received.

Capability building /DigCompEdu focus: 1:1, 1:2, 1:3, 2:2, 2:3, 3:1, 3:2, 3:3, 3:4, 4:1, 4:2, 4:3, 5:1, 5:2, 5:3.
Wk8 Technology for international collaboration

Start-up: Read / download the brief information sheet on eTwinning from here [https://ec.europa.eu/programmes/erasmus-plus/sites/erasmusplus/files/factsheet-etwinning_en.pdf](https://ec.europa.eu/programmes/erasmus-plus/sites/erasmusplus/files/factsheet-etwinning_en.pdf). Then visit the UK eTwinning site and watch ; [https://www.youtube.com/watch?v=m4JiWnnp3E](https://www.youtube.com/watch?v=m4JiWnnp3E)

Development 1: Deep search for information on this programme and then generate a quick ‘talking–head’ type promotional video (use mobile phone or tablet, perhaps) to explain why teachers should become involved in activities like this. Consider in particular how involvement affects learning in their classes. Access and discuss examples of different practices from some of the EUN case study material on teacher education in Norway, Spain, Italy, and UK that are available from the EUN.net site.


Consolidation: In small teams, discuss and make a short report in plenary to the class on one of the Case Study publications associated with eTwinning. Or explore one of the project packs accessible on the main EUN eTwinning site and do similarly. Alternatively, explore the TET-SAT tool and report on its nature and affordances to the class group.

Follow-out: Sketch out a possible project and if feasible discuss with your school running a short-term project on a topic of your choice.

Capability building /DigCompEdu focus: 1:1, 1:2, 1:3, 2:2, 2:3, 3:1, 3:2, 3:3, 3:4, 4:1, 4:2, 4:3, 5:1, 5:2, 5:3.

Unit 3

Wks 9-10

Wks 9 and 10 Drawing the Learning Together and Module Assessment

Module Consolidation: Individual or group presentation of a module demonstration piece - an item produced through ‘Follow-out’ activities associated that the student(s) is prepared to share with the class group.

Assessment: As decided by the local organiser of the module

Capability building /DigCompEdu focus:

- Professional Engagement; 1:1, 1:2, 1:3
- Digital Resources; 2:2, 2:3
- Teaching & Learning; 3:1, 3:2, 3:3, 3:4
- Assessment; 4:1, 4:2, 4:3,
- Empowerment as Learners; 5:1, 5:2, 5:3.
ANNEX 3: Teaching, Learning, & Professional Development for Beginning / Student Teachers. (Module Framework A; Teaching Guidance & Resources. Final Version.)

Content & Activity Summary; Taught Units

MODULE OVERVIEW:

<table>
<thead>
<tr>
<th>UNIT /WEEK</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNIT 1: Being a beginning teacher in a digital world.</strong></td>
<td></td>
</tr>
<tr>
<td>Wk 1</td>
<td>Teaching Today</td>
</tr>
<tr>
<td></td>
<td>• The challenge of change</td>
</tr>
<tr>
<td></td>
<td>• Models of contemporary teaching</td>
</tr>
<tr>
<td></td>
<td>• The digital edge.</td>
</tr>
<tr>
<td>Wk 2</td>
<td>Extending the Learning Space</td>
</tr>
<tr>
<td></td>
<td>• SKYPE in the Classroom</td>
</tr>
<tr>
<td></td>
<td>• Virtual Field Trips.</td>
</tr>
<tr>
<td>Wk 3</td>
<td>Technology &amp; Social Media in Learning</td>
</tr>
<tr>
<td></td>
<td>• MOOCs and other disruptive sources of teacher learning and PD</td>
</tr>
</tbody>
</table>

| UNIT 2: Widening the Teaching & Learning World | |
| Wk 4 | Video for 21st century Learning & Teaching [1] |
| | • IRIS Connect micro-webinar (40mins) |
| | • Short video reflection task and online discussion |
| Wk 5 | Video for 21st century Learning & Teaching [2] |
| | • Try-out of IC recording & upload tools |
| | • Video Analysis & time-stamped commentary as dialogue theory |
| Wk 6 | Technology for international collaboration |
| | • eTwinning as a learning vehicle and a sharing platform |
| | • EUN / ePw case studies in IC |
| Wk 7 | Technology for in-school & inter-school collaboration |
| | • Tools for sharing, presenting and communicating learning |
| | • Assessing digital-learning |
| Wk 8 | Personal & Professional Learning Networks |
| | • Day-to-day Learning with TWITTER |
| | • Models of PLNs and the learning they support |

| UNIT 3: Sharing the Gains and Formalising Module-Learning | |
| Wk 9 | Drawing the Learning Together; sharing the gains |
| | • Group presentations in online TeachMeet format |
| Wk 10 | Drawing the Learning Together; module assessment |
| | • Individual / group demonstration pieces for assessment |
| | • Peer and Lead assessment courts |
MODULE A: Teaching, Learning, & Professional Development for Beginning Teachers; detailed specification of materials & activities

[75 hrs equiv. total; 5 ECTS Level 3 or 4; hours of direct input & hours of related project work/ self-directed learning to be decided locally]

<table>
<thead>
<tr>
<th>Focus</th>
<th>Concept</th>
<th>Competence Areas</th>
<th>Assessment</th>
</tr>
</thead>
</table>
| Teaching, Learning and personal PD | Designed to: introduce & develop understanding, confidence and good practice relating to digital, online resources and networks that connect to people and sources of pedagogical ideas / materials and personalised CPD. | • Finding, evaluating and using CPD Resources.  
• Exploring materials and contexts that embody Innovative teaching / learning strategies  
• Participating in learning networks.  
• Professional engagement; communication, collaboration and development. | Portfolio relating to digital pedagogy; PLN-prototype; Demonstration piece from within the module work. |

Objectives / Intended Learning Outcomes

At the conclusion of this module participants will be able to:

• meet the challenges of sourcing, (re)purposing, and developing a range of rich-digital instructional and learning materials for use in ITE contexts;

• plan, teach and evaluate digitally enhanced lessons in a confident and capable way, demonstrating strong levels of understanding and competence in relation to both technical and pedagogical principles & practices

• identify opportunities and plan effectively for on-line activities which relate specifically to digital learning design and innovative ICT usages, in both professional and pedagogical modes.

The Module is framed around the DigCompEdu areas of capability each of which is expressed in terms of specific competence and applications – with a total of 22 competences making up the full frame. These areas focus on different aspects of educators’ professional capability and activity. [See Annex 1] These are:18

1. Professional Engagement; using digital technologies for communication, collaboration and professional development.
2. Digital Resources; sourcing, sharing and creating digital resources.
3. Teaching & Learning; Managing and orchestrating the use of digital technologies in teaching and learning.
4. Assessment; using digital technologies and strategies to enhance assessment.
5. Empowering Learning; using digital technologies to enhance inclusion, personalisation and learners’ active engagement.

---

6. Facilitating Learners Digital Competence; enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing, and problem solving.

Unit 1  
**UNIT FOCUS:** Being a beginning teacher in a digital world.

**Wks 1-3**
- Teaching Today – continuity and change;
- Extending the learning space;
- MOOCs and Social Media as learning resources.

Unit 1 is about building understanding of the changing nature of teaching and learning in contemporary society. Each week focuses on ‘starter-pack’ case-materials and involves a challenge that requires thinking about how (and if) technology can be used to make their classes more active and engaging for all students. The underlying model is that the ITE students experience and then practice aspects of using ICT more capably.

**Wk1. Teaching Today**

**Start-up:** Ask the students to watch and critically engage with a short video on the concept of the contemporary teacher. Two possible starter-sites are: [1] Singapore’s 21st Century Teaching Strategies – Education Everywhere Series; https://www.youtube.com/watch?v=M_plK7ghGw4 and [2] Janet Looney of the European Institute of Education and Social Policy; https://youtu.be/-wvfIrHguA

**Development:** 1: Set them up to work in groups of three or four. Working in their groups, ask the students to decide on what they think are the key characteristics expected of modern teachers in the video(s). 2: Challenge them to follow up on the detail of either of the above ‘models’ of modern teaching and then investigate also through a web-search other models of the teacher and teaching – eg UNESCO, OECD, ETUCE etc. 3: Have them discuss and describe (elements of) these and any other innovative models they have come across. 4: To close out this part of the session ask them to generate in their groups a 2-slide Presentation / Report on findings to share with the class.

**Consolidation:** Discuss as a whole-group how aspects of the session they have just completed could be ‘mirrored’ or built-on in their own teaching setting. Use a Padlet (or similar) to gather class-wide reflections.

**Follow-out:** Portfolio piece on what was learnt and how it was ported through into personal teaching setting.

Week 2. Extending the Learning Space

Start-up: Plenary discussion on use of video-call applications in personal lives and possible challenges relating to moving this practice into classrooms and other learning settings. Taking the short presentation on Microsoft Skype as a starting point, review with the class the arguments made for the pedagogical possibilities involved in using this type of technology to ‘spark’ learning: https://sway.office.com/QZ9HtqCyQsow7AHe?ref=Link&loc=play

Development: 1: Have the students work in pairs/small groups to search out details on the various types of Skype usage presented on the main Skype for Education site: Skype Lesson, Mystery Skype, Guest Speakers, Virtual Field Trips, and Skype Collaboration. Link: https://education.microsoft.com/GetTrained/skype

2: Generate a Strengths / Possible Drawbacks listing on a class Padlet or whiteboard. Have students add (+) and / or (-) as they work their way through the various short videos and information links

Consolidation: Using the Strengths & Drawbacks List as prompts, hold a class discussion on ‘realistic’ / ‘unrealistic’ visions of expanded classrooms using Skype (or similar) platforms for video-based teaching and learning activities. Have the students identify a series of One Change suggestions that they think would strengthen the possibilities of working with video-call applications in their schools. This may encourage a growth mind-set towards local / school-site possible challenges to implementing video-call based lessons.

Follow-out:
Challenge Question: How can the types of activities explored in session today be used in learning to be a better teacher?
Prompt them to consider planning and teaching a short, Skype/video-call based lesson. Ask them to be write a short personal blog / account of what is involved and what they feel they and their students learnt from the activity.

Wk3 MOOCs and Social Media as sources of Professional Learning

Start-up: Explore as a class group the concept of a MOOC and the differing nature of on-line courses. Watch Agarwal’s 2013 TED talk on this ‘new’ development; https://www.youtube.com/watch?v=rYwTA5RA9eU

Development: 1: Briefly discuss Agarwal’s claims; are they fair and reasonable? Now visit the EUN Academy, here http://www.europeanschoolnetacademy.eu/ and consider if these MOOCs are in the vein Agarwal describes.

2: Watch Bart Verswijvel’s introduction to the ITELab MOOC that ran last Spring; https://www.youtube.com/watch?v=D4egP8DSCel . What is ‘different’ about the tone and direction this mook is taking? Consider how MOOCs have changed in the time between Agarwal’s talk and the ITELab MOOC.

3: Discuss what you think about the idea of a teacher-specific MOOC and what it might look like / contain – what would YOU look for in one. Visit the ITELab MOOC.

Consolidation: Explore the ITELab MOOC offering and review one of the Chapters. Or alternatively, take on the personal challenge to compare and contrast a couple of different types of MOOCs such as xMOOCs, cMOOC and others. 75 MOOCs listed here, (US): https://www.teachthought.com/archived/list-75-moocs-teachers-students/

Follow-up: Write up a response to our Challenge Question: Do you see practical value in MOOCs for your personal professional learning? Prompts can include: If possible, visit / take part in a MOOC or online learning activity and write a short portfolio entry describing the experience. And /or podcast your thoughts/experiences using Spreaker (or similar).

Unit 2  UNIT FOCUS:  Widening the Teaching & Learning World

Wks 4-8

- Video for 21st century Learning & Teaching
- Teachers’ professional learning spaces; Personal Learning Networks (PLNs);
- eTwinning – a community and a learning resource

Unit 2 is about learning how personal technologies and platforms can be used to open up student and beginning teachers’ professional learning in new and interesting ways. The underlying model here is that the development of a PLN and insights into the possibilities offered by leveraging technologies that open-up individual practice to inter-teacher, inter- institutional and international possibilities and so widen the teaching world.

Wk4 Video for Learning & Professional Development [1]

Start-up: Complete registration to the IRIS connect video-based platform via this link: https://www.irisconnect.com/uk/itelab-registration/ in order to create your individual user account. Once you have activated your account, log in, click the ‘Groups’ tab at the top and select the ITELab Module A group. Complete the Wk4 “start up” activity by registering for the Webinar.

Development: 1: Watch the video clip that opens the workshop. Note in particular the approach to off-topic questions and ‘misunderstandings’ that the teacher displays. 2: Discuss in small groups the pedagogical strategies used. How relevant are these to the day-to-day settings you teach in? What lessons can we take from the method used? Engage in the guided discussion within the online discussion board.

Consolidation: Much of what we do when we use video- analysis in this way involves collaboration. For deeper insights into this type of activity, have a look at this site: Connecting beyond the Classroom - Move from local to global learning modes; https://bit.ly/2yjO8AS

Follow-out: Create a short recorded response to our work today. Ideally, upload this to the IRIS Connect platform (follow the guides in the “Preparing to record yourself” section). Use this as an opportunity to reflect on the workshop in light of the previous research, examples and discussion.

Wk5  Video for Learning & Professional Development [2]

**Start-up:** Continue working on the IRIS Connect platform: https://europe.irisconnect.com/sign_in 1. Review two or three clips that were shared with you or to ITElab group. Practice providing contextualised feedback using the time-stamped video comments tool. Consider how this tool could be used to capture practice, aid self- and peer-reflection, and support coaching and mentoring. 2. Engage with the research overview of effective professional learning

**Development:** 1. Bridging the gap between research and the realities of classroom implementation is a key challenge for 21st-century professional learning. Use this task in the IRIS Connect platform to begin to draw links between theory and practice, starting with a focus on classroom dialogue, communication and collaboration. 2. Review the carefully chosen video clip of classroom practice and respond to the questions and prompts provided. Look at and respond to the comments made by other teachers. Think about how relevant are these to the day-to-day settings you teach in? What links can you draw with 21st-century skills? What lessons can we take from using video in this way to develop our practice? 3. Complete the short questionnaire on the IRIS site and receive your ‘research-led practitioner certificate’

**Consolidation:** 1. Review also this clip relating to the Norwegian setting: https://youtu.be/IYsnvwM3zDc Discuss via a think, pair, share activity how students in each of these settings are using video-based assessment to support professional learning. What do you see as the main takeaways for how video is / may be used as a pedagogical learning tool locally? 2. Complete the End Point survey on the IRIS site.

**Follow-out:** 1. Consider organising a time/date so that you can engage in a face-to-face ‘film club’ session, using the materials, video clips and guidance provided to discuss specific aspects of teaching and learning with your colleagues. This will give you a better understanding of how video aids professional learning and development. 2. Complete the questionnaire linked to in the Wk5 “Follow-out” section on the IRIS Connect site in order to receive your ‘collaborative practitioner certificate’.

Wk6 Technology for international collaboration

Start-up: Read / download the brief information sheet on eTwinning from here https://ec.europa.eu/programmes/erasmus-plus/sites/erasmusplus/files/factsheet-etwinning_en.pdf: Then visit the UK eTwinning site and watch ; https://www.youtube.com/watch?v=m4jJiWNmpSE

Development 1: Deep search for information on this programme and then generate a quick ‘talking–head’ type promotional video (use mobile phone or tablet, perhaps) to explain why teachers should become involved in activities like this. Consider in particular how involvement affects learning in their classes. Access and discuss examples of different practices from some of the EUN casestudy material on teacher education in Norway, Spain, Italy, and UK that are available from the EUN.net site. 2: Visit the MENTEP Project site (http://mentep.eun.org/) and investigate the nature and use of the TET-SAT tool.

Consolidation: In small teams, discuss and make a short report in plenary to the class on one of the CaseStudy publications associated with eTwinning. Or explore one of the project packs accessible on the main EUN eTwinning site and do similarly. Alternatively, explore the TET-SAT tool and report on its nature and affordances to the classgroup.

Follow-out: Sketch out a possible project and if feasible discuss with your school running a short-term project on a topic of your choice. Spend some time considering the possibilities offered by the following sites which have been suggested by our SMART Technologies partner: Online Collaborative Projects https://www.educationworld.com/a_tech/sites/sites021.shtml and Creative Classroom Labs: COLLABORATION & ASSESEMENT: THEORY AND PRACTICE http://colab.eun.org/c/document_library/get_file?uuid=064abaf2-8713-447a-9a19-bac26ca1749f&groupId=5897016

Wk7 Technology for in-school & inter-school collaborations in learning

Start-up: Have the class discuss their thoughts and experiences on ways of sharing and communicating learning in their subject area; get them to consider in particular what is the value of ‘making public’ the learning of a classgroup and of individual students?

Development: 1: Watch as a class the eTwinning Kits video here: https://www.youtube.com/watch?time_continue=23&v=RhVqPoCQxk 2: Guide them to watch in particular for: the idea behind ‘kits’; the type of projects involved, the ‘headings’ that are seen as important to address when planning and thinking about designing a kit-based project, and in particular what is meant by each of these headings and what activities relate to each. [Introduction of partners, Orientation, Communication, Collaboration, Evaluation & Assessment, Follow-up.] 3: Ask them in subject teams to investigate the Kits site and to identify one project that they think would be practical and feasible for them – as one of a team of two or three – to work with in their current placement school. Arrange for them to discuss the learning possibilities involved, and any potential ‘barriers’ – and then to decide as a group how to tackle those barriers. 4: Challenge them, in twos or threes, to ‘Framework’ (plan in rough outline) a project that draws on / uses some elements of the kits they have just been discussing. This will be the focus of their first major ITELab Participation Challenge. 5: Direct them to consider, in general terms, the Timeframe, Learning Moment(s), and Learning destination they want for their project. Suggest they use the ITELab design prompts sheet to assist with this discussion.

Consolidation: Over the coming week, each team should plan to finalisation & develop a project based around the eTwinning Kit materials and the ITELab design frame. Individually or collectively, they will need to write up a ‘progress note’ (describing what they did and what they decided) on the ITELab Student Hub under the appropriate Challenge Question.

Follow-up: Each student is asked to sign-up for a personal eTwinning account on the EUN Schoolnet platform here: https://www.etwinning.net/en/pub/index.htm

**Wk8  Personal & Professional Learning Networks**

**Start-up:** Share thoughts and experiences on using ‘network’ contacts in day to day life; then view as a class; [https://www.youtube.com/watch?v=hLLpWqp-owo](https://www.youtube.com/watch?v=hLLpWqp-owo)

**Development:** 1: In small teams investigate the types, nature of interaction and uses of PLNs. Report the outcome to the class group. Consider: what model(s) of professional learning do different PLNs facilitate? Which professional learning interactions are supported (access to theory, modelling, practice, feedback, coaching)? What will a particular platform enable you to do more efficiently or that you otherwise would not be able to do? How safe & secure does it seem to be? 2: Consider the idea of a personal digital portfolio; if your institution does not use one, look at these sites: [https://speckyboy.com/creative-portfolios-of-50-designers/](https://speckyboy.com/creative-portfolios-of-50-designers/) and [http://www.eportfolio.eu/community/projects/epos-eportfolio-system-self-directed-learning](http://www.eportfolio.eu/community/projects/epos-eportfolio-system-self-directed-learning). Discuss with your group what ‘message’ these sites try to convey about portfolios.

**Consolidation:** Investigate in your teams the affordances of Twitter as a node in a strong PLN. Consider issues such as ‘following’ and # conversations like #edchatnz.

**Follow-out:** Sign up for Twitter and / or participate in and write up your experiences around a #chat.

Unit 3

MODULE FOCUS: Close-out & Future Directions

Wks 9-10

Wks 9 and 10 Drawing the Learning Together and Module Assessment

Module Consolidation: Individual or group presentation of a module 
demonstration piece - an item produced through 'Follow-out' activities associated 
that the student(s) is prepared to share with the class group.

Assessment: As decided by the local organiser of the module

Capability building /DigCompEdu focus:

Professional Engagement; 1:1, 1:2, 1:3

Digital Resources; 2:2, 2:3

Teaching & Learning; 3:1, 3:2, 3:3, 3:4

Assessment; 4:1, 4:2, 4:3,

Empowerment as Learners; 5:1, 5:2, 5:3.

Module Review: Individual and collective review and evaluation of the Module A 
framework content and activities based on the ITELab Monitoring & Review 
Questionnaire.

v. OCT2019
## HANDBOOK ANNEX 2

### ITELab Challenge Questions/Portfolio Tasks

#### UNIT /WEEK

<table>
<thead>
<tr>
<th>UNIT 1 Being a beginning teacher in a digital world.</th>
<th></th>
</tr>
</thead>
</table>
| **Wk 1** What forces are shaping the nature of teaching & learning in the modern world? | • Look in more detail at the models we covered in class  
• Write a brief note on how your teaching is affected by these forces. |
| **Wk 2** How can the types of activities explored in session today be used in your personal teaching? | • Plan and if possible teach a Skype-assisted class.  
• Consider what you have learnt from this activity. |
| **Wk 3** Do you see practical value in MOOCs or #EdChats for your personal professional development? | • If possible, visit / take part in a MOOC or online learning activity such as an #EdChat and write a short portfolio entry describing the experience. |

<table>
<thead>
<tr>
<th>UNIT 2: Widening the Teaching &amp; Learning World</th>
<th></th>
</tr>
</thead>
</table>
| • **Wk 4** Can you see practical value and use for the type of video-enhanced learning explored in today’s session? | • Visit the IRIS Connect Film Club and complete the activities connected with one of the Observation Tasks.  
• Write a brief portfolio entry describing the experience. |
| • **Wk 5** What are your thoughts on using classroom dialogue theory to help you as a teacher, as explored in today’s session? | • If possible, complete the activities required to gain a Participation Certificate from IRIS Connect. |
| • **Wk 6** Do you see any learning advantages relating to your subject(s) emerging from the type of international collaboration we explored today | • Read at least two of the Case Studies published on the EUN site and then write a short portfolio reflection on the opportunities and challenges you see relating to international collaboration for learning. |
| • **Wk 7** What are your reactions to the idea of small-scale, interclass / interschool, on-line projects along the lines explored today? | • Plan and if possible carry out a once-off collaborative activity involving two ‘remote’ classes.  
• Write a portfolio note on what you did & learnt. |
| • **Wk 8** What are your reactions to the idea that every teacher should build their own PLN? | • Research the potential of microblogging and Twitter as sites of professional learning.  
• Write a short portfolio note on what you discover. |
| • **Ahead of Wk 9** PREPARE and present as part of your Team, a short, TeachMeet type group presentation on an aspect of the module you found particularly interesting and/or challenging. | • Meet & Agree a Focus; assign roles & responsibilities for components of the task; devise and develop your presentation; make your pitch.  
• Write a short, individual portfolio note reflecting on the experience. |
ANNEX 4: Designing for Learning (MODULE FRAMEWORK B; Teaching Guidance & Resources. Final Version)

MODULE OVERVIEW:

Designing for Learning. Content & Activity Summary

<table>
<thead>
<tr>
<th>UNIT /WEEK</th>
<th>TIMINGS [PROVISIONAL]</th>
<th>TOPIC</th>
</tr>
</thead>
</table>


<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Time</th>
<th>Event Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 1</td>
<td>Monday, 28 Oct.</td>
<td>1800-2000 CET</td>
<td>What is Learning Design and why does it concern us?</td>
<td>- An exploration of the nature and value of learning design</td>
</tr>
<tr>
<td>Wk 2</td>
<td>Monday, 4 Nov.</td>
<td>1800-2000 CET</td>
<td>c21 Learning: capability, innovative teaching &amp; learning</td>
<td>- What is “innovative teaching practice”? - What are the characteristics of a “21st century educator” and a “21st century learner”? - How might capabilities help us understand this conceptualisation of (new) learning? - What school and system factors better support innovative teaching practices?</td>
</tr>
<tr>
<td>Wk 3</td>
<td>Monday, 11 Nov.</td>
<td>1800-2000 CET</td>
<td>Deeper Learning: the use of technology to enhance learning</td>
<td>- ‘Reverse engineer’ one of the examples provided of a highly rated lesson plan. - Test your findings against an authoritative model of technology usage such as TPACK. - Focus especially on issues of when, how and how much?</td>
</tr>
<tr>
<td>Wk 4</td>
<td>Monday, 18 Nov.</td>
<td>1800-2000 CET</td>
<td>Building Better; using newly-acquired design knowledge</td>
<td>- Design and develop a lesson drawing on relevant materials from a selected EUN eTwinning Kit. - Test the product through a critical peer review process – such as reflective practice</td>
</tr>
<tr>
<td>Wk 5</td>
<td>Monday, 25 Nov.</td>
<td>1800-2000 CET</td>
<td>Problem Based Learning: getting a technical edge</td>
<td>- Exploring PBL &amp; essential elements to develop learning experiences - Working on the five PBL design principles in your planning - The characteristics of authentic assessment &amp; authentic learning</td>
</tr>
<tr>
<td>Wk 6</td>
<td>Monday, 2 Dec.</td>
<td>1800-2000 CET</td>
<td>Collaborative On-line Projects; issues and practices</td>
<td>- Identify the key pedagogical approaches/teaching and learning styles that have been used in this project. - What issues of cultural awareness and ethics does this project raise? - Identify the elements that have come together to make this project successful.</td>
</tr>
</tbody>
</table>
## Designing for Learning; Assessment

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Assessment Description</th>
<th>% of final grade</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• Lesson Scenario Development.</strong></td>
<td>The design, production, resourcing, and quality-testing of a set of Learning Scenarios suitable for use with a designated learner group and in a specified setting. [SUGGESTED]</td>
<td>100%</td>
<td>End of Module</td>
</tr>
<tr>
<td><strong>• [Locally assigned &amp; Graded]</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### MODULE B: Designing for Learning

[3ECTS Level 3; configuration of hours of direct input & hours of related project work/ self-directed learning to be decided locally]

<table>
<thead>
<tr>
<th>Focus</th>
<th>Concept</th>
<th>Competence Areas</th>
<th>Assessment</th>
</tr>
</thead>
</table>
| Learning Design for Beginning Teachers | Designed to: develop understanding, confidence, and good practice among beginning teachers relating to designing and teaching digitally-enhanced classes. | • Develop practical capability relating to principled learning design  
• Explore the value of learning scenarios to the beginning teacher / teachers in programmes of formation  
• Professional engagement; communication, collaboration, and co-development. | The design, production, resourcing, and quality-testing of a set of Learning Scenarios suitable to a designated learner group and setting |

**Objectives / Intended Learning Outcomes**

At the conclusion of this module participants will be able to:

- meet the challenges of sourcing, (re)purposing, and developing a range of rich-digital instructional / learning materials for use in teaching contexts;

- plan, teach and evaluate digitally enhanced lessons based on learning scenarios that demonstrate strong levels of understanding and competence in relation learning design principles & practices

- identify opportunities and plan effectively for classroom and other learning activities that demonstrate innovative ICT usages.

ITELab Modules are framed around the DigCompEdu areas of capability each of which is expressed in terms of specific competence and applications – with a total of 22 competences making up the full frame. These areas focus on different aspects of educators’ professional capability and activity. [See Annex 1] These are:19

- Professional Engagement; using digital technologies for communication, collaboration and professional development.
- Digital Resources; sourcing, sharing and creating digital resources.
- Teaching & Learning; Managing and orchestrating the use of digital technologies in teaching and learning.
- Assessment; using digital technologies and strategies to enhance assessment.
- Empowering Learning; using digital technologies to enhance inclusion, personalisation and learners’ active engagement.
- Facilitating Learners Digital Competence; enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing, and problem solving.

**Unit 1 UNIT FOCUS: What is Learning Design?**

**Wks 1-2**
- The nature & potential of Learning Design;
- Learning Scenario thinking;
- c21 Learning: capabilities for innovative teaching & learning.

Unit 1 is about building understanding of the key principles and practices of learning design & translating these into practical classroom/learning focused activity in Learning Scenario format. The underlying model is that the beginning teacher/student teacher experiences and practice aspects of using ICT more capably with their developing practice.

**Wk1. What is Learning Design?**

**Start-up:** watch and critically engage with a short video on Learning Design recorded a while back by Prof Grainne Conole: [https://www.youtube.com/watch?v=FaJrSwLL8Vg](https://www.youtube.com/watch?v=FaJrSwLL8Vg)

Ask students to listen out for: the underpinning philosophy, the intended uses of the framework, and its seven elements.

**Development:** Working in small groups students first discuss the nature of the module and the ‘new’ thinking involved. They then visit the Co-Lab site and explore the idea of a Learning Scenario. ([http://colab.eun.org/learning-scenarios](http://colab.eun.org/learning-scenarios)).

Discuss the possible value of this approach and this format to developing teaching plans for class activity. Generate a 2-slide Presentation/Report on findings to share with the class.

**Consolidation:** Visit either the TPACK site ([http://tpack.org/](http://tpack.org/)) or the EU DigCompEdu site ([https://bit.ly/2zrfyb8](https://bit.ly/2zrfyb8)). Discuss how one or other this might be used to add an extra layer of value to your scenario development.

Use a SMART Technologies Online Learning Suite page to share each group’s enhanced Learning Scenarios plan.


**Capability building /DigCompEdu focus:** 2:1 Selecting Digital Resources, 2:2 Creating & Modifying Digital Resources, 3:3 Collaborative learning.
**Week 2. c21 Learning: innovative teaching & learning**

**Start-up:** Plenary discussion on the question what is ‘innovative teaching’? Taking the short presentation by Abd Karim Alias as a starting point, review as a class the ‘commandments’ listed: https://www.youtube.com/watch?v=z_smSLnPLL

Decide if all / some/ none of these seem to have relevance to their situation.

**Development:**
2: Have the students work in pairs/small groups to develop a short presentation for sharing on the idea of education technology capability. Suggest the SMART Technologies White paper on as a useful source: https://bit.ly/2tNz3pb
3: Suggest a think, pair, share activity where they first think about the data offered on p4 of the Report individually and then collaborate with their group members to discuss and refine a group statement. 4: Share outcomes to a Padlet or similar.

**Consolidation:** Using the Padlet List as prompt, hold a class discussion on ‘realistic’ / ‘unrealistic’ visions of capabilities as an anchor for 21 century classrooms. Ask the students to identify a series of One Change suggestions that they think would improve the possibility of providing this type of learning setting for learners.

**Follow-out:**
Set a Challenge Question such as: What school and system factors better support innovative teaching practices? Refer the students to a research report such as McMorrough et al (2016) at https://bit.ly/2QMcYkk Ask them to be write a short personal blog / account of what they think school should do to encourage 21st century engagement.

**Capability building /DigCompEdu focus:** 1:2 Professional Collaboration, 1:3 Reflective Practice, 2:1 Selecting Digital Resources, 4:2 Analysing evidence.
Unit 2  UNIT FOCUS: Meeting the Digital Design Challenge; personally and with learners.

**Wks 3-4**
- Deeper Learning: the use of technology to enhance learning;
- Using newly-acquired design knowledge.

Unit 2 takes the discussion deeper in terms of how design can deepen learning experiences and translate into useful practical classroom/learning activity. The underlying intention in this block is to encourage and support the beginning teacher/student teacher experiences to engage more pedagogically with technology.

**Wk3. Deeper Learning: the use of technology to enhance learning**

**Start-up:** Watch and then deconstruct the video: *How are ocean currents formed?* [https://bit.ly/2wFBe6N](https://bit.ly/2wFBe6N)

Ask students to consider in particular: the way the imagery and the brief, online messages carry the purpose of the lesson/video and other aspects such as music, length etc.

**Development:** 1: Ask them to consider in groups how this video might be built into a learning activity. Use the Lesson Scenario headings to guide this discussion. 2: Set them to work in groups to ‘reverse engineer’ one of the example provided at the site of well-developed lesson-plans. Ask each group to pursue a different element/stage of the lesson design. 2: Share findings from the activity and outline the value of this approach and this format to developing teaching plans for class activity.

**Consolidation:** Visit the TPACK site ([http://tpack.org/](http://tpack.org/)) Ask the students to consider how the TPACK headings might be used to better understand a design task like the lesson planning they have just reviewed.

Use a Padlet (or similar) to gather class-wide reflections.

**Follow-out:** Set a post-class Challenge such as: *Design a learning scenario that makes use of a short media clip such as those considered during the session to anchor a learning activity for a group of your learners*. Ask them to share the outcome on a class website/blog & and to comment constructively on one other entry they find there before their next session.

**Capability building /DigCompEdu focus:** 2:1 Selecting Digital Resources, 2:2 Creating & Modifying Digital Resources, 3:3 Collaborative learning.
Week 4. Building Better; using newly-acquired design knowledge

Start-up: Plenary discussion on the idea that it is often better to take and customise than to design from scratch; particularly when using digital elements to support learning.

Decide if this concept is relevance without exception to their situation. Bring up the issue of ‘pre-designed’ / ‘packaged’ lessons and the dangers these can present.

Development: 1: Direct the students to the eTwinning Project Kits site. (https://bit.ly/2MK4HiA ) Allow time for them to explore the site. Lead a discussion on the possible value of this and similar ‘repositories’ of teaching materials & suggested activities. 2: Suggest that they work in subject / interest groups to identify a possible kit that they might use in the near future in a learning setting. Ask them to discuss and decide on what to include / exclude form the range of suggestions offered; and to be able to explain and justify their decisions. 3: Share outcomes in a plenary way.

Consolidation: Discuss as a class the value of having a quality mechanism to help guide inclusion / exclusion activities such as the one they have just completed. Suggest that they visit and explore the work of Pollard on reflexive judgement; Pollard (2014) https://bit.ly/2wDjh1t . This is a critical peer review process based on seven key characteristics of reflective practice. Ask the students to identify ways that using such a framework could aid in their planning and design for learning.

Follow-out:
Set a Challenge Question such as: What are the advantages and more problematic aspects of using ‘pre-designed’ lesson materials?

**Unit 3**  
**UNIT FOCUS:** Problems and Projects; design types for better learning.

**Wks 5-6**  
- **Problem Based Learning:** getting a technical edge;  
- **Collaborative On-line Projects:** issues and practices.

Unit 3 moves the focus to how problem-based and task-based learning activities can be enhanced through the careful use of media and technologies and how this can be designed into learning and teaching so as to add value to the learning experience, and how accessing online project activities – such as those associated with the idea of ‘collaborative on-line’ learning can be used to improve learner experiences.

**Wk5. Problem-based Learning: getting a technical edge**

**Start-up:** Watch the video used at a leading European university to introduce their students to the concept and practice of problem-based learning (PBL): [https://bit.ly/1MS80YC](https://bit.ly/1MS80YC)

Ask students to consider if this approach may be relevant to their teaching settings: challenge them to find the positive as well as the problematic in the model.

**Development:** 1: Introduce the class to the five PBL principles advocated for in this Microsoft Document: [https://goo.gl/19eRoF](https://goo.gl/19eRoF)  2: Have them consider in groups how these principles may be used to guide decisions in relation to the activity stages of the learning scenario design. Use Lesson Scenario headings - such as Explore, Map, Make and Remake to direct the work of certain groups. 3: Share outcomes from the activity to the whole-group.

**Consolidation:** Returning to their earlier work on Pollard and reflexive judgement; Pollard (2014) [https://bit.ly/2wDjh1t](https://bit.ly/2wDjh1t). Ask the class to offer an interest group / subject group critical review of the idea of PBL.

**Follow-out:** Set a post-class Challenge to post a personal FlipGrid Report on the topic: *What do you see as the two or three key characteristics of ‘authentic learning’ and how does PBL seek to support these?* Ask them to share their FlipGrid response to an agreed class forum.

**Capability building/DigCompEdu focus:** 2:1 Selecting Digital Resources, 2:2 Creating & Modifying Digital Resources, 3:3 Collaborative learning.
Week 6. Collaborative On-line Projects; issues and practices

Start-up: Ask the class to review the SMART Technologies video here: https://youtu.be/90ZRMvdn_ZQ and to then make individual reaction notes before doing a think, pair, share activity on the viewing, commenting on what they see as the key pedagogical approaches/teaching and learning activities that have been used in this project.

Development: 1: Direct the students to the SMART Technologies site. (http://bit.ly/1RRgDpr) Ask them to consider in particular the arguments made for the power of the Learning Suite ecosystem. 2: Suggest that look closely at SMART Technologies well-articulated approach to using a live/remote learning environment in support of PBL type activity in engineering classes. 3: Generate a short report in pdf or pptx format on the group's findings. 4: Share the outcomes to a class SMART Learning Suite on Line, here: https://suite.smarttech.com.

Consolidation: Discuss as a class the elements that have come together to make this project successful. Discuss also as a class the challenge of designing access for all learners to activities such as those. Direct the class to a site such as https://www.itu.int/en/ITU-D/Digital-Inclusion/Pages/default.aspx which articulates well the need and the possible ways to begin working on more inclusive design and materials.

Follow-out: Set a Challenge Question such as: Are there any issues of cultural awareness and ethics that projects like this raise and which need to be addressed in ways that add value to the learning? [Mention equity and access as needing considerable thought.]

<table>
<thead>
<tr>
<th>Module Assessment</th>
<th>Locally Arranged and Locally Framed</th>
</tr>
</thead>
</table>
| Lesson Scenario Development; Pedagogically strong & Technology Enhanced Learning | The design, production, resourcing, and quality-testing of a set of Learning Scenarios suitable for use with a designated learner group and in a specified setting. [SUGGESTED]  
[Locally framed and parametered as appropriate to a 3credit ECTS offering.] |
Handbook ANNEX 1

Figure 1: Overview of the DigCompEdu framework

Handbook ANNEX 2

Link to the Learning Scenarios Template:

http://colab.eun.org/c/document_library/get_file?uuid=3a379a60-ef14-43d6-89f2-d454c4b5004c&groupid=5897016
ANNEX 5: Working with Learners. (Module Framework C; Teaching Guidance & Resources. Final Version.)

Working with Learners

MODULE OVERVIEW:

Content & Activity Summary

<table>
<thead>
<tr>
<th>WEEK ON WEEK</th>
<th>UNIT /WEEK</th>
<th>TIMINGS [PROVISIONAL]</th>
<th>TOPIC</th>
</tr>
</thead>
</table>
**Wk 1**

**Situational Awareness in Teaching & Learning**: What it means to 'read' a learning environment and why it is important.
- Addressing the information gap.
- Identifying needs – perception, comprehension, and projection.

**Wk 2**

**Building Learning from Where They Are**: What is self-directed learning? Guiding and Encouraging self-directed work.
- Exploring Video-Mediated Opportunities for student Self-Directed Learning

**Wk 3**

**Deeper Reflection and Teaching [1]; Reflection for classroom action**.
- Needs identification & analysis, planning an intervention / lesson including integrating technology into planning.
- Writing and using learning outcomes. Testing your planning against models.

**Wk 4**

**Deeper Reflection and Teaching [2]; Reflection on classroom action**
- Reflecting on practice in the classroom using the Queensland Approach
- Reflecting on outcomes to learning using the Co-Lab Framework Assessment Guidance.

**Wk 5**

**Using a video-based professional learning platform**;
- Exploring the possibilities of a platform like IRIS Connect & ethics involved.
- Working with IRIS Connect Platform; exploring IC recording & upload tools.
- Video Analysis & time-stamped commentary as classroom dialogue theory.

**Wk 6**

**Collaborative, online, video-based Professional Learning**.
- Working with the IRIS Connect Platform; recording and sharing mini-classes and clips.
- Reflecting critically with the aid of video; using Catapano’s Taxonomy and Interrogative Frame.
MODULE C: Working with Learners

[3ECTS Level 3; configuration of hours of direct input & hours of related project work/ self-directed learning to be decided locally]

<table>
<thead>
<tr>
<th>Focus</th>
<th>Concept</th>
<th>Competence Areas</th>
<th>Assessment</th>
</tr>
</thead>
</table>
| Working with Learners | Designed to: introduce and explore principles and practical issues relating to working with learners and its value to the beginning teacher / teachers in programmes of formation and education. Technology is referenced throughout and is used as an aid to the participants’ learning. | • Develop capability relating to reflective practice and professional self-efficacy  
• Explore the value of personal learning planning to the beginning teacher / teachers in programmes of formation | The design, production, resourcing, and critical reflection on a personal learning plan, covering a three to five lessons on a topic of concern to the beginning teacher. |

Objectives / Intended Learning Outcomes

At the conclusion of this module participants will be able to:

• Draw meaningful professional learning from planning for teaching activities and events in a systematic way;

• plan, teach and reflect on learning activities /opportunities provided for student groups;

• identify opportunities and plan effectively for learning activities that make use of ICT and other technology.

ITELab Modules are framed around the DigCompEdu areas of capability each of which is expressed in terms of specific competence and applications – with a total of 22 competences making up the full frame. These areas focus on different aspects of educators’ professional capability and activity. [See Annex 1] These are:

• Professional Engagement; using digital technologies for communication, collaboration and professional development.

• Digital Resources; sourcing, sharing and creating digital resources.

• Teaching & Learning; Managing and orchestrating the use of digital technologies in teaching and learning.

• Assessment; using digital technologies and strategies to enhance assessment.

• Empowering Learning; using digital technologies to enhance inclusion, personalisation and learners’ active engagement.

• Facilitating Learners Digital Competence; enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing, and problem solving.

---

# Unit 1  
**UNIT FOCUS:** Developing Awareness in teaching & learning settings

## Wks 1-2
- The nature of self-directed, professional learning;
- Using technology to open up teacher learning;
- Identifying and responding to early professional learning needs.

Unit 1 is about understanding situational awareness in teaching & learning settings and learning how to start developing this. The underlying idea is that through this growing awareness the beginning teacher/student teacher experiences and practices using ICT to assist in their own professional learning.

**Wk1. Situational Awareness in Teaching & Learning:** What it means to 'read' a learning environment and why it is important.

**Start-up:** Opening class discussion on what 'situation awareness / classroom awareness' might mean for the teacher? Use a Padlet to gather individual further responses and then synthesise these.

**Development:**
1. Have the students work in pairs read and annotate the short piece by Nikki Davies that can be found here: https://bit.ly/2Q5BDDe
2. Ask for plenary comments relating to her claims around reflective self-practice and the difficulties of forging positive student-teacher relations in the classroom setting.
   Draw out responses as to who the video is directed towards and relating to the way video-gaming is used in the video. Are they uneasy about anything? Are they persuaded by the line takes?

**Consolidation:** Direct students to the short piece on philosophical perspectives on inclusion and awareness here: https://bit.ly/2Q70HK0. Ask them to consider the main points made in the piece and to decide if these are relevant to them, in their present situation. And if so, how and why?

**Follow-out:**
Set a Challenge Question such as: *What is situation awareness and how can we factor it into a learning experience to our students’ benefit?* Refer the students to the paper by Holgersson on noticing/ and Cognitively-Guided-Instruction here: https://bit.ly/2R3P8Ak. Ask them to write a short response to the paper via the challenge question.

**Capability building /DigCompEdu focus:**
Week 2. Building Learning from Where They Are.

**Start-up:** watch and critically engage with a short video which considers the nature and challenges of self-directed learning: https://bit.ly/2DNUqNB

Ask the students to consider in particular: the overall ideas being pursued by Pierson on the nature of human connection in education, and the idea of being born to make a difference.

**Development:** Working in small groups students, have the students visit the Howard-Suamico website and explore designated sections of it. [https://hssd-tlc.weebly.com/building-culture.html ] Structure a think, pair, share activity around the ideas the site presents on personalised learning.

Discuss the possible value of this approach to developing plans for class activity. Ask each student group to generate a 3 slide Presentation / Report on what you discussed, to share with the class.

**Consolidation:** Read quickly through the methods section of Bourdeau et al 2017 paper for what they term their 'video-work approach': https://eric.ed.gov/?id=EJ1167307. Discuss how some of these points might be used to add an extra layer of value to lesson planning / development & how it might also be used as a way to guide reflection on the planning for learning process.

Hold a class plenary to bring ideas forward on this.

**Follow-out:** Individually, read the full text of the Bourdeau et al 2017 paper.

**Capability building /DigCompEdu focus:** 2:1 Selecting Digital Resources, 2:2 Creating & Modifying Digital Resources, 3:3 Collaborative learning, 6:2 Facilitating Learners Digital Competence.
Unit 2  UNIT FOCUS: Reflection; on, in, and for classroom action.

Wks 3-4  
- Thinking about using learning outcomes to focus work;
- Using the Queensland approach to improve reflective practice.
- Preparing for the use of video-based reflective practice

Unit 2 considers the area of teacher reflection in more detail. The intention in this unit is to encourage and support the beginning teacher/student teacher in engaging more reflectively with planning and thinking about teaching.

Wk3. Reflection and Teaching [1]: Reflection for classroom action.

Start-up: Watch and then discuss the short CIPD UK video on reflective practice in the business world: https://www.youtube.com/watch?v=M9hyWVEG2x0 Is this view relevant to schools and educational settings? In what ways? What are the main divergences between these settings and schools?

Development: 1: Ask the students to consider how we can go about the identification & analysis of learning needs in classrooms. Direct them to the EUN Co-Lab Learning Scenarios Framework here: http://colab.eun.org/learning-scenarios . Ask them to agree on how using this might improve learning needs analysis. 2: Share findings from the initial discussion then direct them to the concept of learning outcomes. 3: in Subject groups ask students to outline learning objective for a given learning situation. Discuss the results in plenary.

Consolidation: Visit the CORA UCC site and consider the claims made by Kennedy regarding the power of outcomes – planning as opposed to working only with objectives. The nature of learning outcomes: Kennedy Chapter 2 of https://bit.ly/216Ndse . Use a Padlet (or similar) to gather class-wide reflections.

Follow-out: [1] Set a post-class reading on reflection on action, such as Munby here: https://bit.ly/2DzhhLJ . Given the dated nature of this piece, do they think much has changed? In preparation for week 4, register for an IRIS Connect video platform user account and complete the short Module C induction activity on the platform.

[2] IRIS CONNECT PLATFORM REGISTRATION. Complete registration to the IRIS connect video-based platform via this link: https://www.irisconnect.com/uk/itelab-registration/. Each student will need to create an individual user account. Once they have activated these account, then can log in and select the ITELab Module C Group from the drop-down menu, to begin participating and exploring.

Week 4. Reflection and Teaching [2]; reflecting on and in practice.

Start-up: Plenary discussion based on the previous week’s reading by Munby; gauge their understandings of reflecting on and reflection in practice in the classroom. Discuss the iterative, life-long nature of this activity for teachers.

Development: 1: Direct the students to the Queensland Approach to teacher reflexivity; https://bit.ly/1bTAZIM. Divide out the document among the group and ask each ‘team’ to annotate a section, according to teaching interests or subject specialism, for example. 2: Ask each group to produce a sharable summary of their deliberations – perhaps using FlipGrid or another video-clip site. 3: Share outcomes in a plenary way; view and discuss each contribution. 4: Ask the students to consider how reflection of this nature might connect to assessment practices. Discuss as a class the value of having a consistent mechanism of reflecting on outcomes to learning. 5. Direct the class to the section in the Learning Scenarios frame that considers assessment of learning, here: http://colab.eun.org/assessment-guidelines

Consolidation:
Direct the class to the Reflective Video Activity in the Module C group on IRIS Connect platform. Using elements of the Queensland approach to reflective practice as outlined, ask the students to reflect upon the video clip, comment online and then discuss in groups and/or as a class.

Follow-out: Ask students to engage with the following questions using the discussion forums on the IRIS Connect platform:

- What are the advantages and more problematic aspects of using ‘reflection’ as a constant aspect of your teaching and preparation?
- To what extent do you see a role for video in supporting reflective practice and professional learning communities?

In preparation for week 5, download the IRIS Connect application onto a personal mobile device and do a test recording.

**Unit 3**

**UNIT FOCUS:** Working on practice; using video technologies as an aid to practice development.

| **Wks 5-6** | **Using video-based professional learning platforms:** TIMSSVIDEO and IRIS Connect  
**Collaborative on-line video-based Professional Learning:** issues and practices. |

Unit 3 focuses on how video technology can be used to assist in building self-awareness of teaching practice and systematically working on improving our practice over time.

### Wk5. Using video-based professional learning platforms

**Start-up:** Watch the first six minutes of the TimssVideo Science lesson from a Czech school here: http://www.timssvideo.com/cz1-spines  
Ask the students to discuss what they have just seen and what they notice that is similar and what is different to their own settings.

**Development:** 1: Direct the class to the splash-page for the TIMSSVIDEO Project here: http://www.timssvideo.com/: Ask them to read and then think, pair, share their findings focussing on the possibilities of this kind of ‘window’ on teaching work for professional learning. 2: Lead the students to explore the possibilities of IRIS Connect and the research which underpins this approach; start here; overview page in the IRIS Connect Module C group 3. Divide the class into groups and ask them to explore the IRIS Connect video analysis & time-stamped commentary tools using the Czech video clip they will have previously viewed. 4. Discuss the possibilities and advantages of these for professional learning.

**Consolidation:** Have the students consider the idea of a classroom dialogue theory. Mercer’s introduction to the core elements of the theory is a good way into this: https://bit.ly/2OSQpZe . Ask the class to offer an interest group / subject group response to the ideas expressed using the discussion forum on the IRIS Connect platform. Ask the students to compare and contrast the two video clips they have now seen in relation to classroom dialogue theory and the Queensland approach. Discuss online in a forum and in class groups.

**Follow-out:** Set a Challenge Question along the lines: What do you now see as advantages of video as a professional learning tool that you may not have previously?  
Discuss in the forum on the IRIS Connect platform and in class groups.

**Capability building /DigCompEdu focus:** 1:2 Professional Collaboration, 1:3 Reflective Practice, 3:3 Collaborative learning.
Week 6. Collaborative, online, video-based Professional Learning; issues and practices

Start-up: Ask the class to review the outcomes to the Challenge Question from the previous week; *What do you now see as advantages of video as a professional learning tool that you may not have previously?* Draw out any positives and discuss resolutions to any negatives that emerge.

Development: 1: Direct the students to the Iris Connect Platform Film Club activity. 2: In pairs, plan a talking point statement or a question. 3: Set up a mobile device to record using the IRIS connect app. Then, in groups, conduct and record a role play classroom activity using the talking point statements, focusing on the use of questioning and facilitation of classroom dialogue. 4: Share the recording to the Module C group on the platform.

Consolidation: 1: Review and comment on the role play clip in relation to classroom dialogue prompt questions 2: Repeat, using a clip from another group 3: Discuss as a class the possibilities of structured reflection using frames and taxonomies.

Follow-out: Ask the students to investigate school policies on the recording and uploading of learning event videos with the intention of writing a personal practice protocol, incorporating both that policy and the relevant advice from the IRIS and TeachHub sites. Consider the concept of reflective criticism on digital resources using Catapano’s Interrogative Frame from TeachHub: [http://www.teachhub.com/technique-self-reflection-video-recording](http://www.teachhub.com/technique-self-reflection-video-recording) . [See ANNEX.]

<table>
<thead>
<tr>
<th>Module Assessment</th>
<th>Locally Arranged and Locally Framed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Learning Plan; Pedagogically strong &amp; Technology Enhanced Learning</strong></td>
<td>An account of the design, production, resourcing, and a critical reflection on a personal learning plan for three to five lessons, covering a topic of concern to the beginning teacher. (Approx. 3000 words.) [SUGGESTED] [Locally framed and parametered as appropriate to a 3credit ECTS offering.] Aligned against points and coverage requirements for Microsoft Innovative Educator certification.</td>
</tr>
</tbody>
</table>
HANDBOOK ANNEX 2

Direct Link to the Learning Scenarios Template:

http://colab.eun.org/c/document_library/get_file?uuid=3a379a60-ef14-43d6-89f2-d454cddb5004c&groupId=5897016
Handbook ANNEX 3

Catapano’s Interrogative Frame from TeachHub:

- How loudly do I speak?
- Do I get off track at all? How often?
- Do I do anything annoying or distracting with my voice, gestures, posture, etc.?
- How clear are my instructions for activities?
- How clearly do I communicate the big ideas in a lesson?
- Am I interacting with students effectively?
- What are students doing as I’m speaking?
- Does my method of instruction seem appropriate for the content and goal I have in mind?
- How much time do I spend talking about things that don’t need to be talked about?
ITELab (Initial Teachers Education Lab) is a Knowledge Alliance project between higher education institutions and industry to foster innovation and knowledge exchange in initial teacher education (ITE). Project number: 575828-EPP-1-2016-1-BE-EPPKA2-KA. It is co-funded under the European Commission’s Erasmus+ Programme from January 2017 to December 2019.

This publication was created with the financial support of the Erasmus+ Programme of the European Union. This publication reflects the views only of the authors and the European Commission cannot be held responsible for any use that may be made of the information contained herein.