# Creating a Teacher Educators Digital Hub (TEDH): A case study of digital transformation in two teacher training universities in Viet Nam

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## Section 1: Project Context and Rationale

*The TEDH project is helping to shape the professional development of teacher educators in Viet Nam and the way that digital technologies are used for teaching in the future.*

When the Covid-19 pandemic took hold in early 2020, education providers worldwide had to rapidly adapt to new ways of teaching and working that embraced digital technologies. Whilst educators did their best to meet the challenges, it was evident that more training and support was needed in how to use these technologies effectively in education. This situation, together with Viet Nam's revised Higher Education Law (2018), created the impetus for developing a Teacher Educators' Digital Hub (TEDH), an on-line repository of information and training materials to support teacher educators in the effective use of digital tools and pedagogies.

The creation of TEDH was funded by the British Council as one of their *Going Global Partnerships* (https://www.britishcouncil.vn/en/programmes/education/going-global-partnerships). The British Council has a long history of working with the Ministry of Education and Training (MOET) and the Viet Nam Higher Education Department to meet the changing needs of societies, economies and students.

The TEDH project brought together colleagues from three universities, from the UK and Viet Nam, to work collaboratively: Birmingham City University; Vinh University and Hue University of Education. The project leads are **Jane O'Connor**, Reader in Education at BCU – Jane has previously led research on educational technology and also leads several digital technology projects, including the Digi-doc Project (British Council funded); and **Le Quang Vuong**, Vice Director of the project management board at Vinh University – Vuong has contributed to the improvement of the Learning Management System (LMS) designed for CPD. The lead at Hue University of Education is **Minh Tran Kiem**. The fourth partner is Viettel – a major provider of telecommunication services in Viet Nam, with **Steve Hoang Tran** leading on developing the TEDH digital platform.

The key aims of the project were to design and create a digital hub of training and teaching materials and resources, across a range of disciplines, for teacher educators in Viet Nam. The hub includes a bespoke training 'how to' course on core digital skills, and prototype digital resources that can be downloaded and/or adapted by teacher educators. TEDH is also developing a 'community support area' so that resources and teaching ideas can be shared, or educators can ask questions and seek peer support. In addition, teacher educators have access to a coaching and mentoring programme to support them using the hub. The development of the hub and the resources have been informed by evaluations with teacher educators.

The following sections outline the key stages of the TEDH project and are intended as a guide or 'roadmap' for use by other universities who may be embarking on a journey of digital transformation in a specific discipline or pedagogical area.

## Section 2: HEI Digital Transformation Policies

The first step in the process was to ascertain and review the policies on digital teaching and learning at the two case study universities in Viet Nam:  Vinh University (VU) and Hue University of Education (HUE). This information is below:

*Review of Policy of Vinh University  on Digital Teaching and Learning*


Vinh University, Associate Member of the AUN-QA Network under ASEAN University Network, is one of Viet Nam's oldest tertiary institutions with a rich history and proud tradition of excellence in teacher education. The University has over 1000 full-time equivalent staff and over 700 of those are involved in teaching and research. Striving to be ranked among the top 500 universities in Asia, the University has recently reinforced digitalization transformation, which is manifested in the following aspects:

- Teaching and research: Since the University joined the CDIO network in 2015, their faculties have played a pioneering role in curriculum development, designing CDIO-based programmes for 41 majors and sharing knowledge of the CDIO framework in higher education with other institutions. Blended learning (combining traditional teaching techniques with digital teaching methods) and project-based learning have been implemented extensively for both pre-service and in-service teacher education at undergraduate, as well as post-graduate, levels. This is enabled by the Learning Management System (LMS), which has been effectively used for on-line learning, blended learning, and distance learning. The University has promulgated regulations on

entrepreneurship and reform to promote digitalization transformation. The University Journal has also been digitalized.

- Management and administration: These have now been implemented through an Electronic Information Portal. The ISO quality assurance has been improved.
- Community service: The University's partnership with organizations, enterprises and schools has been enhanced thanks to digitalization. Many activities have been carried out on-line, such as conferences, seminars, and enrolment consultations.
- Digital infrastructure enhancement: A centre for digital learning material production has been established, aiding the digitalization transformation process. There is a cyber banking practice centre, where students majoring in accounting, finance and banking can practice professional skills. The Laboratories for Analytical Chemistry and Optics are connected by data with key national laboratories. The e-learning system, which utilizes cloud computing, has been effectively utilized for teaching.

In general, the University has invested extensively in facility improvement and digital infrastructure enhancement to promote digitalization transformation, which is believed to be the key to sustainable development.


In 2020, Hue University issued Decision 459/QĐ-ĐHH regarding the organization and management of on-line training. This Regulation has been applied to all member universities of Hue University (including Hue University of Education). The first part of this Regulation provides explanations for terms such as on-line learning, e-learning, blended learning, course-ware, LMS, LCMS (Learning Content Management System) and e-Course. The second part of the Regulation proposes the structure of an e-Course (including course information and course sections), blocks (additional sections around the home page), methods of interaction used in an e-Course, and the steps of building an e-Course. This Regulation also suggests using open-source software that can be used for on-line teaching and learning, such as Moodle, eFront, Google Classroom ... and other supporting tools such as Facebook, Zoom, MS Teams and Skype.

Next, Hue University issued Official Letter 828/HD-ĐHH to provide more detailed instructions on designing and organizing an e-learning course. Regarding the design of an e-learning course, this document suggests a four-step design process: (1) planning, (2) content development, (3) content appraisal and (4) evaluation and adjustment. To convert a face-to-face course into an e-learning course, this Official Letter suggests the tasks that need to be carried out, such as defining course objectives, developing detailed outlines, designing the structure of the e-learning course, preparing digital resources, building a scenario for the e-lecture and determining the infrastructure conditions. Regarding the organization of an e-learning course, Official Letter 828/HD-ĐHH proposes four steps for a higher education institution: (1) prepare conditions for facilities and register for the course, (2) training for lecturers, (3) course supervision, (4) end-of-course survey on learner feedback. This document also sets out the criteria to assess an e-learning course, including the design of course layout and organization, design of instruction and delivery, student participation opportunities, and learning resources provided for learners.

At the national level, the Ministry of Education and Training recently issued Decision 4740/QĐ-BGDĐT on the criteria for assessing the digital transformation of a higher education institution.

The aim is to promote digital transformation at universities and assess the degree of digital transformation of universities. The set of criteria for evaluating digital transformation includes two groups of component criteria: a group of criteria for digital transformation in training (teaching and learning) and a group of criteria for digital transformation in university administration. Digital transformation in training is assessed through the following indicators:

- Having an on-line training plan
- Having a regulation on on-line training
- Having deployed on-line software such as MS Teams, Zoom, and Google Meet...
- Having implemented an on-line LMS, in which learners can self-study, self-assess their learning progress and results, and have forums and other tools for learners to communicate with teachers.
- Having implemented a digital library system
- Having provided training for lecturers on digital transformation in teaching and learning
- Having a studio to produce e-learning resources.

At HUE, digital transformation is now considered a central direction of university innovation. HUE has established an information technology and digital transformation centre, serving all of its digital transformation-related activities. Currently, some courses at HUE are entirely on-line or provided via blended learning through an LMS system that HUE built (https://sph-e.dhsphue.edu.vn/). However, this system does not run as well as a complete LMS system. Therefore, teachers mainly upload learning materials on this site and use other software, such as Zoom and Google Meet, to implement the teaching.

*BCU Expertise and Experience/JISC Input and Support*

Understanding the institutional policies on digital teaching and learning at VU and HUE allowed educational design experts at BCU to identify the requirements and parameters of the digital frameworks at the two universities and enabled them to co-create teaching and learning materials which worked within the existing LMS and virtual learning environments (VLE). BCU were supported in this by JISC, a UK not-for-profit organisation that provides network and IT services, and digital resources in support of further and higher education and research.


The next stage was to design a Theory of Change framework to map out the aims of the project and the steps involved in achieving them.

## Section 3: TEDH and the Theory of Change

*The Theoretical Framework for TEDH*

Theory of Change is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. It is a practical way of creating a "roadmap" of transformation (Mslila and Setlhako, 2013, p. 324). It is focused in particular on mapping out or "filling in" what has been described as the "missing middle" between what a programme or change initiative does (its activities or interventions) and how these lead to desired goals being achieved (The Center for Theory of Change, 2023). It does this by first identifying the desired long-term goals and then works back from these to identify all the conditions (outcomes) that must be in place (and how these related to one another causally) for the goals to occur.

The following diagram illustrates the Theory of Change model for the TEDH project, specifying the pathway through the problem, the "missing middle" actions to bring about change and the projected positve outcome.

| **Problem Statement** | **Contributing Factors** | | **Enabling Factors** | **Outcome** |
|---|---|---|---|---|
| Teacher educators in Viet Nam lack skills and knowledge of effective digital teaching and learning tools and pedagogies. | This is a problem because: | Therefore … | If we bring about a change in teacher educators' skills and knowledge of effective digital teaching and learning tools and pedagogies: | The Teacher Educators' Digital Hub provides resources to support present and future teacher educators in Viet Nam to build skills and knowledge of effective digital teaching and learning tools and pedagogies. This positive change in practice will cascade to student teachers and their pupils in classrooms across Viet Nam. |
| | 1. Much teaching has moved on-line at Viet Namese universities post pandemic and TEs lack the skills, confidence and knowledge to do this effectively; | | 1. Teacher educators will increase their skills and knowledge and improve their digital teaching and learning; | |
| | 2. MOET has designated the digital transformation of education a national priority; | | 2. Teacher educators and their associated pedagogical universities will be working in line with MOET's digital transformation policy; | |
| | 3. Student teachers need effective digital skills to be modelled by teacher educators so they can use in their own practice. | | 3. Student teachers will be more satisfied with the on-line teaching and learning on their courses and will feel more confident about using digital tools and pedagogies in their future practice | |

It was important that before creating the training materials for TEDH we had a clear picture of the ways in which teacher educators (TEs) at the two universities were using digital tools and pedagogies in their teaching of trainee teachers (TTs) and also how TTs experienced this teaching. The following section reports on these baseline evaluations with TEs and TTs.

## Section 4: Baseline Evaluations at VU and HUE

*Establishing the Digital Needs of Teacher Educators*

In order to establish a firm starting point for developing the TEDH hub and on-line training programme, baseline surveys of the digital needs and experiences of TEs and TTs were carried out by VU and HUE, in collaboration with BCU. The surveys aimed to capture a clear and detailed picture of TEs' use of digital technology (DT) for teaching, and TTs' experiences of DT on their courses. Surveys were sent out to 150 TEs and 2111 TTs at VU and HUE. There was a very high response rate, with 69% TEs and 98% of TTs completing surveys across the two universities. Most TEs had been in role for over 5 years and had a range of subject specialisms including maths, sciences, psychology, geography, and education. The majority of TTs were training in three main areas: primary education, early childhood, and mathematics, with others specializing in various subjects including chemistry, language/literature and biology.

*The Surveys*

It was found that many TEs already felt confident and very proficient in using key software especially Microsoft Office and video conferencing tools (e.g., Zoom, Google Meet, MS Teams). They also used other tools such as Facebook, YouTube and Kahoot, and some specialised tools (e.g., video-editing and SPSS for statistical analysis) but felt less confident with these. LMS systems (including Moodle) were used by 46% of TEs. TEs had mainly developed their skills for both creating digital resources and delivering teaching using technology from self-study, training courses, or by seeking support from colleagues and other professionals. However, a significant number of respondents (40%) felt there was room for improvement, particularly in identifying the most appropriate technology to use, and knowing how to apply DT effectively to suit various pedagogical situations.

TEs' responses largely corresponded with TTs' experiences of DT in lectures. While the majority of comments were positive - for example TTs said DT usage was "very good," "proficient,"

"used effectively" - others were less positive saying that TEs were "not proficient" and used DT "for presentation only," suggesting that there were limitations, and improvements could be made. TTs reported that TEs used a range of digital resources in sessions, although, interestingly, this appeared to be a smaller range than those self-reported by TEs. It was evident from responses that TTs wanted more and better support in using DT themselves. They felt DT should be used more often, more flexibly, and that there should be more technology used to supplement traditional teaching.

It is significant that TEs particularly identified needing more support from technology specialists and more experienced colleagues. Most wanted training in blended learning and training on how to transfer paper-based resources into digital formats.

These surveys provided invaluable data for shaping the TEDH hub and training programme, which was the next stage of the project.

## Section 5: Creating and Developing TEDH Training Materials for Teacher Educators

The TEDH training materials and bespoke training course for TEs were created and developed by the BCU Educational Design Systems (EDS) team in collaboration with VU and HUE and a UK based educational consultant who is an expert in supporting HEIs with digital transformation. It was identified that the TEDH training course needed to include sessions on pedagogy and lesson planning using digital tools, and practical usage of digital features on the LMS platform using an H5P plug-in (LMS platforms were used at VU and HUE as well as BCU).

The first iteration of the TEDH learning platform and training course for TEs entitled: 'Effective digital teaching and learning for Teacher Educators' consisted of 3 one-hour asynchronous sessions on LMS. It was piloted and trialled with a group of TEs from VU and HUE.

Details of the pilot participants and findings are below:

Participants:

| | | |
|---|---|---|
| HUE | 8 | 6 subject areas |
| VU | 4 | 3 subject areas |

In terms of how confident TEs felt in designing and creating digital resources for their teaching before participating in the course, only 25% felt very confident and no-one knew all the course content beforehand. The table below shows what participants expected and hoped to gain from the TEDH training course:

In terms of whether or not the course met the participants' expectations, 10 reported that it met some of their expectations while 2 reported that it met all of their expectations. All 12 pilot participants found the course helpful, or very helpful, in enabling them to learn how to create digital learning content. The following aspects were identified as being particularly useful:

- Learning the theory: Participants appreciated the clear presentation of on-line pedagogy theories and the ABC Learning Design Model (ABC-LD) (Young and Perović, 2016).
- Practical skills development: The course was helpful in acquiring digital tools and skills, exploiting digital features for on-line learning, and creating interactive learning materials (like with H5P).
- Clear instructions and resources: Participants found the instructions and reference resources easy to understand and follow.
- Digital tools: The course presented participants with diverse and user-friendly digital tools for creating digital content.

However, some felt that while the basics were covered, they would have appreciated specific examples and guidance on applying the learned skills to their actual teaching situations.

All the participants found the TEDH course useful, or very useful, in helping them learn how to conduct effective on-line teaching and learning, due to the following elements:

- Variety of learning resources: The course effectively catered to diverse learning styles.
- Activity-based learning: The learning activities throughout the course helped participants see its effectiveness firsthand.
- Practical skills development: Participants valued learning to create digital resources and use H5P for interactive materials.
- Theoretical foundation: Participants really valued the ABC-LD and knowledge of different learning styles.
- Formative assessment: Participants appreciated the ongoing assessment that kept them engaged in the learning process.

Participants would have also liked the course to include more diverse practice exercises so they could apply their learned skills in different on-line teaching scenarios.

Regarding the user experience, participants provided helpful feedback on the various elements of the course using a multiple-choice rating (clear, somewhat clear, not clear, not applicable):

| **Course Element** | ***Clear*** | ***Somewhat clear*** |
|---|---|---|
| Intended learning outcomes of the programme | *9* | *3* |
| What participants can expect from participating in the programme | *9* | *3* |
| What is expected from participants | *8* | *4* |
| Overall structure of the programme | *8* | *4* |
| Individual module's structure | *8* | *4* |
| The learning content | *9* | *3* |

| | | |
|---|---|---|
| The language used | *7* | *5* |
| The instructions for learning activities | *8* | *4* |

All participants stated they will apply what they have learned on the TEDH course to their teaching practice, including:

- Practical skills: such as applying the knowledge of H5P to create interactive materials.
- Pedagogical knowledge: such as applying the ABC-LD and TPACK model (Mishra and Koehler, 2006) into their teaching practice.
- Specific learning materials: such as interactive video and hot spots on the picture.

All but one participant felt the TEDH programme would be useful to teacher educators in Viet Nam. Some examples of intended applications in practice of the learning from the TEDH training course as expressed by TEs included:

> '*I will apply the knowledge of H5P to create interactive digital learning materials, making the teaching session more lively and interesting for learners. I apply my knowledge of the ABC learning design model and learning style to adjust lesson plans in a more appropriate direction'* (TE, HUE)
>
> *'I find the interactive video and the hot spots on the picture quite good, so I will research and learn more about this item to apply it to my lectures. In addition, I think that I will be able to apply many types of learning to a lesson to make the lesson more effective and interesting than before'* (TE, HUE)
>
> *'The content of Interactive Books and Interactive Videos is an issue that I am interested in, so this course gives me a lot of motivation to implement in the teaching and research process in the future'* (TE, HUE)

In terms of the potential impact of TEDH on individual universities, the comments included:

> *'Improving teaching and research capacity'* (TE, VU)
>
> *'Improving the capacity to use digital technology in teaching, Raising awareness and ability to update digital technology in teaching, Encouraging teachers to explore and be creative to enrich teaching, Saving time, effort and money when using digital resources in teaching instead of traditional resources'* (TE, HUE)

## Section 6: The Bespoke TEDH Training Course for TEs

Findings from the pilot study evaluations informed the development of the final TEDH platform materials and training resources, which was then launched for all TEs across VU and HUE.

The final training course consisted of 3 one-hour asynchronous sessions with additional optional learning activities in a reflective journal. The course was designed on LMS with a H5P plug in, which was compatible with IT systems at VU where the server is held. After much discussion it was decided not to include a formal assessment and accreditation for TEs completing the course at this stage as there were concerns as to how this would be facilitated after the official end of the project.

The TEDH 'Effective use of digital tools and pedagogies for Teacher Educator' course sessions are as follows:

| Session | Learning outcomes | Session content/activities |
|---|---|---|
| 1<br><br>Understanding pedagogy for on-line learning | To understand the theoretical underpinnings of effective on-line learning and teaching.<br><br>To understand the ABC-LD approach to lesson planning. | Introduction to TPACK (Technological pedagogical content knowledge).<br>Theory and the principles of on-line teaching and learning.<br><br>Introduction to the 6 principles of the ABC-LD pedagogical approach to organising learning and how these can be achieved digitally.<br><br>Formative quiz to test knowledge of TPACK and ABC-LD.<br><br>Associated self-study activities in self-reflection journal. |
| 2<br><br>Digital tools and features available to use on LMS | To know what digital tools and features are available to use on LMS, using H5P plug-in, and how to use them | Presentation and demonstration of H5P digital tools/features including: quizzes, flip cards, interactive videos, image hotspots, flashcards.<br><br>Instructions on how to produce each feature (or links to instructions).<br><br>Worked examples of how each feature can be incorporated into on-line learning sessions.<br><br>Associated self-study activities in self-reflection journal. |

| | | |
|---|---|---|
| 3<br><br>Effective lesson planning using digital tools and pedagogies | To know how to make informed choices about using digital technology in teaching and learning.<br><br>To be able to plan for effective learning incorporating digital tools and pedagogies. | Guidance on how to select digital tools and pedagogies for effective learning.<br><br>Guidance on how to structure and manage on-line learning and teaching.<br><br>Quiz to test knowledge of application of ABC-LD in on-line lesson planning.<br><br>Associated self-study activities in self-reflection journal. |

The complete course and all supplementary materials and information can be found on the TEDH website (https://tedh.csdl.edu.vn/landing).

## Section 7: Developing a TEDH Coaching and Mentoring Programme for TEs

In order to ensure the sustainability of the TEDH initiative a key element of the project was the inclusion of a mentoring and coaching scheme for TEs at VU and HUE. Led by Professor Matt O'Leary at BCU and supported by Minh Tran Kiem at HUE and Le Quang Vuong at VU, the project's mentoring and coaching scheme consisted of four stages as outlined below. The participants were 12 TEs from HUE and 11 TEs from VU.

*Stage 1 – On-line Support for Using the TEDH Hub*

Mentors created an on-line asynchronous introductory session to support new users in their engagement with the TEDH hub. This included a demonstration of the TEDH hub to allow users to gain an insight into how the digital resources could best be used to support their teaching, along with guidance as to how to upload their own digital teaching resources to the hub.

*Stage 2 – On-line Mentor Training in the Cycle of Peer Observation (CoPO)*

Mentors received on-line training in using the cycle of peer observation (CoPO) as the tool for evaluating the application of the TEDH resources in their mentees' teaching. Those mentors who completed the training were awarded a certificate of accreditation, which acts as recognition of their capacity to cascade the CoPO training to others.

*Stage 3 – Completion of Cycle of Peer Observation (CoPO)*

Each mentee was assigned a mentor. Mentors were paired with their designated mentees to undertake a cycle of peer observation (CoPO) to evaluate their mentees' use of chosen digital resources from the TEDH hub.

*Stage 4 – On-line Evaluation Focus Groups of Mentees*

A sample of mentees across the two universities participated in a series of on-line focus groups to evaluate their experience of the mentoring and coaching scheme.

The mentoring and coaching scheme is a vital part of TEDH as it works to ensure the sustainability of the project. Those TEs at VU and HUE who participated in the scheme are then able to act as mentors for other TEs at their institutions and support their use of the TEDH resources and training course, as well as the implementation of their learning about effective use of digital tools and pedagogies, in their teaching practice with TTs. TTs will then be able to use the digital tools and pedagogies they see modelled by their TEs with their own students in classrooms across the country as they embark on their own teaching careers.

## Section 8: End of Project Evaluations of TEDH

The final evaluations of the TEDH project took place at HUE at the end of the project in the form of focus group discussions with TEs and TTs led by members of the research team.

A sample of TEs from the case study universities who participated in the mentoring and coaching scheme were asked about their experiences using digital tools and pedagogies, and the benefits of the scheme. A sample of TTs from different disciplines from the case study universities were asked about their experiences and expectations with the digital tools and pedagogies used by their TEs.

In addition, an on-line evaluation survey was inserted into the end of the TEDH training course so that TEs could provide feedback on the extent to which the hub met their practical and training needs for learning about the effective use of digital tools and pedagogies in their teaching.

The findings from these final evaluations will be posted on the TEDH website later in 2025.

## Section 9: The Future Impact of TEDH

Due to the sustainability features built into the TEDH project including the mentoring and coaching scheme, the durability of the digital resources, and the modelling of effective use of digital tools and pedagogies from TEs to TTs and then into classrooms around the country, TEDH has the potential to impact positively on teacher education and teaching more generally in Viet Nam for years to come.

From the on-going evaluations of TEDH, the following ways in which it can maximise potential impact across teacher educator programmes/teams have been identified:

- The TEDH training course for TEs brings new knowledge and skills necessary for pedagogical lecturers, including digital learning material design skills with H5P, understanding of learning design and learning styles and distinguishing between active learning and passive learning.
- The TEDH training course creates ideas and inspirations to use digital technology in teaching and learning.
- The TEDH training course can help lecturers have a general and diverse perspective, provide methods and content (TPACK, ABC-LD, support for more games, quizzes, interactive videos, etc.) to form ideas when designing electronic lectures.
- The TEDH training course promotes the application of modern and innovative teaching methods, helps pedagogical lecturers to access the latest educational trends and creates a dynamic learning environment.

- The TEDH training course provides more resources for reference, enables users to create resources themselves to contribute to teaching practice and supports the design of on-line courses to help learners be proactive in terms of time and space.
- TEDH also provides specific guidance on creating an interactive learning environment with the support of digital technology. This is a reference source to help pedagogical lecturers diversify teaching resources and styles, contributing to teaching effectiveness.
- TEDH provides useful digital knowledge and tools as well as how to plan sessions using appropriate digital tools. This not only improves the skills of using digital tools for lecturers but also helps them choose the right digital tools in their teaching process, to achieve the highest efficiency for teaching.

*Project Outcomes and the Theory of Change*

In relation to the outcomes identified in the Theory of Change (Section 3) the Teacher Educators' Digital Hub has achieved the aim of providing resources to support present and future teacher educators in Viet Nam to build skills and knowledge of effective digital teaching and learning tools and pedagogies. In time this positive change in practice has the potential to cascade to trainee teachers and their pupils in classrooms across Viet Nam.

Through sharing this report and associated project dissemination activities the learning from TEDH contributes to the on-going process of digital transformation of education in Viet Nam.

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# Appendix

## (i) Creating a bespoke digital training course for university staff using the TEDH model – a roadmap guide