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A word to the wise (gair i gall): university teacher educators' experiences of emergency response pedagogy in Wales

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ABSTRACT

This study investigates the impact of COVID-19 on Initial Teacher Education (ITE) in Wales by examining university teacher educators' experiences during lockdown. The pandemic significantly disrupted teacher-education partnerships, prompting rapid adaptation and changing delivery modes. Data were collected from semi-structured interviews with university teachers from eight HEIs offering teacher education in Wales in early 2022 to understand these rapid pedagogical adjustments and the transition to online teaching. Thirteen educators with varying expertise in online learning provided insights into institutional emergency pedagogy approaches. The transcribed interviews underwent a hybrid thematic analysis, initially guided by the Community of Inquiry framework and later using an open coding approach. Seven themes were identified: digital equity, assurance of professional learning, online etiquette, online teaching philosophy, design principles, meeting teaching standards, and belonging and making online connections. While the shift to online learning was transformative for Welsh academia, it highlighted a lack of digital preparedness. Cultural, linguistic and geographical factors, usually associated with fostering belonging, became obstacles during lockdown. The findings suggest that the Welsh ITE sector should adopt an outward-looking approach, leveraging existing research and proven pedagogical models to enhance professional development for university teachers and reimagining digital pedagogies to prepare for classroom realities effectively.

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Introduction

In late March 2020, during the early stages of the COVID-19 pandemic, lockdown measures were initiated in the UK, and the normal pattern of teacher education was uniquely disrupted as universities across its four nations closed their doors. Unlike strictly campus-based degree courses, university-led models of initial teacher education normally recruit schools to provide placements for students' school experience. Whilst many university-led initial teacher education programmes are promoted as a partnership between ITE providers and schools, they retain elements of a training model that reinforces a dichotomy of academic and professional placement learning. There has been widespread criticism of such models (Carter, 2015; Furlong, 2015; Whitty, 2019) for creating a divide in ITE between theory and research about teaching and the knowledge that develops from practice (Tillin, 2023). This has led to reorientating some ITE programmes in England to school-led teacher training models (Hill, 2023). In Wales, teacher education has adopted its model in response to the recommendations of Furlong (2015), who emphasises the need to develop strong links between theory and practice in teacher education programmes.

Since then, considerable ground has been gained in Welsh universities in designing teacher education programmes to strengthen the connections between research, including theory and practice, through

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engaging students in systematic enquiry (Glover & Hutchinson, 2023; The Open University Partnership in Wales, 2021). There has been a rethinking of pedagogy in the ITE-led partnership model. This model normally starts each term with a period of university residence and campus-based study followed by a school-based professional learning placement experience. The design of the model aims to build students' knowledge and understanding of the theoretical aspects of teaching and learning, and policy and regulatory requirements, followed by a practicum experience that enables them to apply and develop their knowledge and understanding, and skills. New and augmented designs have focused on bridging the practice theory divide by developing connected sequences of learning activities that foster students' interests, which they formalise as research questions, leading to investigative lines of enquiry. With the forced migration of university teaching to online platforms in Wales during COVID-19, this sequence was disrupted most profoundly, firstly in terms of the learning model for teacher education and schooling, which relies on teacher and student being present in the classroom as a primary way of building relationships (Barnes et al., 2021; Kim et al., 2023); and secondly, through creating a barrier to professional enquiry and teacher collaboration.

Furthermore, university teacher educators faced significant challenges in ensuring the continuity of student learning as the time required to design a new teacher education delivery model from scratch was reduced. Equally, the challenge of adapting educational provision was intensified by the curtailment of teaching practice (la Velle et al., 2020). The requirement for online teaching and virtual learning provision necessitated rapid adjustments in teacher educators' understanding of teaching (Barnes et al., 2021; Kidd & Murray, 2020), which were steered by leaders in teacher education who held responsibility for making the correct operational decisions and lecturers who took responsibility for creating new learning designs. This shift occurred alongside the onset of lockdown, altering the normal routines experienced by both teacher and student. Indeed, the forced transition of teaching from the face-to-face delivery mode to the online distance learning mode and digitally supported teaching and learning, and more latterly, blended learning, was a watershed moment as teacher education in Wales had entered a new phase. Initially, universities responded with versions of an emergency online pedagogy that would meet the unique delivery of teacher education. It quickly became apparent that there was a need for a different pedagogy in ITE (Barnes et al., 2021), one that was digitally enhanced.

The research sets out to capture the impact of the COVID-19 pandemic on the Initial Teacher Education (ITE) sector in Wales through the experiences of university teacher educators during the first and subsequent lockdowns. The core purpose was to understand how the March 2020 and subsequent COVID-19 imposed lockdowns had affected the pedagogy of ITE across Higher Education Institutions (HEIs) in Wales. Further, there is a focus on the implications for the development of fit-for-purpose online learning programmes and digital pedagogy in ITE as a way of preparing teachers for the real-life experience of teaching in schools in Wales. Despite the wealth of literature describing how teacher education in other countries migrated successfully to an online teaching format during the COVID-19 pandemic (Darling-Hammond & Hyler, 2020), there is no detailed understanding of how university teacher educators in Wales experienced this shift in teaching online during the COVID-19 pandemic.

Hence, this study explores the experiences of 13 university teacher educators from eight providers of ITE in Wales during their rapid shift to online and blended learning during the initial and subsequent lockdown period in Wales. It explores the pedagogical principles that drove leaders' decision-making and lecturers' re-design of teaching and learning activities. These experiences lead us to consider whether and how blended and online learning design can support student teachers' enquiry and professional learning and the enablers of and barriers to blended and online learning provision. The main research questions for the study were:

1. How did university teacher educators experience the transition to online and blended learning during the COVID-19 lockdowns?
2. To what extent were initial teacher education responses to the shift to online learning effective?
3. What pedagogical adjustments and rationale were made in the initial teacher education programme design, first during online learning and then later during blended learning?

The context of initial teacher education in Wales

Understanding the context of ITE in Wales and education policy pre-pandemic is important. The independent reviews of the curriculum and assessment arrangements (Donaldson, 2015) and ITE (Furlong, 2015), as well as the Welsh Government's national mission for education, which included strengthening the ITE sector and professional learning (Welsh Government, 2017a), are key drivers for all ITE providers and ITE reform. The bilingual nature of Wales and the Welsh Government's commitment to increasing the number of Welsh speakers to a million by 2050 (Welsh Government, 2017b) are also important priorities in the delivery of teacher training provision across Wales. Building capacity within the teaching workforce with competent teaching methods (Welsh Government, 2019), and Welsh language skills are key elements of ITE providers' programmes (Welsh Government, 2018).

Prior to the pandemic, evidence indicated that certain institutions incorporated blended learning into their ITE programmes, which were traditionally centered on face-to-face and campus-based academic content delivery across Wales. Engagement and use of educational technology such as Virtual Learning Environments (VLEs) are commonplace with many ITE providers, with these more often used to support face-to-face learning (Walker et al., 2021). This is similar to many other countries where face-to-face delivery was the dominant form of delivery in ITE. For ITE in other parts of the world, such as Australia (Pelliccione et al., 2019), New Zealand (Davis et al., 2011) and the US (Ralph, 2020), there has been a shift to online delivery. Within Wales, the Open University which has a long-established history of distance learning (Jeong, 2018), was also providing ITE through remote learning from 2020 onwards.

Literature review

Before the pandemic, a range of educational establishments in the UK and internationally used online teaching and learning. This review discusses the core elements of various international programmes that delivered online education before COVID-19 and provides insights from these establishments on supporting student learning through distance mediums. These perspectives are then examined in relation to the experiences in Wales during the pandemic.

In Dymont and Downing's (2018) study of online ITE in Australia, it was observed that there was a significant increase in students opting for external online modes of study over traditional on-campus settings. The number of ITE students choosing online learning doubled from 5412 in 2005 to 12,212 in 2015 (Dymont & Downing, 2018, p. 399). The benefits of this approach, as identified in Downing et al. (2019) follow-up study on ITE in Australia, include the transcendence of geographical, physical, visual, and temporal barriers to learning. This has proven particularly advantageous in programmes like the Remote Area Teacher Education Programme (RATEP), which historically faced challenges in staffing schools in rural communities (Pelliccione et al., 2019).

Shelton Mayes and Burgess (2010) also note the adoption of online delivery for ITE. They refer to similar international programmes in China, Eritrea, and Pakistan, where the demand for teachers exceeds the availability of qualified educators. In each case, online delivery was seen as resource-efficient, increasing the supply of qualified staff while providing opportunities for unqualified personnel to obtain qualifications without leaving their current settings. Moreover, it ensured consistency in quality across different locations through standardised curriculum and training.

The benefits of online teacher education were also recognised in the case study by Duesbery et al. (2019) of three teacher education programmes across the United States: a master's degree in teaching in California, a reading endorsement programme in Oregon, and a teacher education programme for inclusive special education in Washington State. They described online education as an 'open border classroom', allowing flexibility in studying regardless of location, family, or work commitments, similar to the international programmes previously discussed (Duesbery et al., 2019, p. 2).

Despite the advantages, these pre-COVID online ITE programmes faced specific barriers to success, including the need for training in technology use for both staff and students (Duesbery et al., 2019), inadequate access to suitable digital tools (Pelliccione et al., 2019), and challenges in international settings where English-dominated IT systems limited opportunities for non-English speakers (Shelton Mayes & Burgess, 2010).

Moving to online teaching

Even though the pandemic caused a sudden change to online delivery for teacher education, positive impacts have been reported (Glietenberg et al., 2022; McGarr et al., 2022; Rushton et al., 2023). The loss of familiar teaching formats and spaces came with new expectations and rules, yet the professional values and responsibilities of the university teacher educator remained the same (Kidd & Murray, 2022). In some cases, programmes that had been entirely delivered face-to-face prior to the pandemic have since altered their mode of delivery. For example, a teacher education programme in Israel moved to a blended pattern of three weeks of face-to-face and one-week remote teaching (Biberman-Shalev et al., 2023). In England, remote placement visits/meetings were similarly reported to offer logistical flexibility, and the value of the blended approach was recognised (Rushton et al., 2023). Another English study also reported on the opportunities afforded to create ‘diverse and innovative pedagogies and practice’ because of the shift to online delivery (Towers et al., 2023, p. 1). In contrast, early research on the impact of the COVID-19 pandemic on the Welsh education system identified a need to emphasise and enhance current provision in ITE in the areas of blended and distance learning (Thomas et al., 2021).

It has also been proposed that the distance learning element offers an opportunity for negotiation of pedagogies by the university teacher educators and student teachers, with learners’ needs at the centre (Biberman-Shalev et al., 2023, p. 11). Burn et al. (2022) offer similar reflections, commenting that a positive impact can result from such changes in the learning environment in teacher education, which can lead to sustained professional growth and effective partnership. Yet such an impact requires technical support and a collaborative culture to move towards a more transformative change, with the evaluation of the process key for sustainability (Burn et al., 2022). A study in Ireland drew similar conclusions with upskilling required for staff reported and some pressure placed on the university-school partnerships, altering the role of those supporting student teachers (Young et al., 2022).

Others have also highlighted how to balance the change effectively when shifting to online delivery during the pandemic. Well-being is concluded in an Australian study as being critical for all those involved, with the increased workload, students’ disengagement and institutional processes all having an impact (Pendergast & O’Brien, 2023). Flexibility in work structures, learning design and ensuring space to innovate are important. Canadian research also reported that although there was initial excitement regarding moving online, by the second year of the pandemic, this had become ‘exhausting’ (Rosehart et al., 2022, p. 481). Nevertheless, it was also noted that online delivery has continued in some rural areas with other new online programmes being introduced, increased collaboration across the province’s teacher education programmes, and well-being underpinning the decision-making when transforming the programmes (Rosehart et al., 2022). However, for others, face-to-face communication is reported to enable better modelling of effective approaches, and the informal social interactions that occur can build more of a sense of community (Rushton et al., 2023).

Cronin (2022) reports on the significance of confidence in and support for the technology required in a study within an English teacher education provider. In Cronin’s study, university lecturers in teacher education reported that although they would prefer to return to face-to-face teaching, they acknowledged the merits of the blended approach, and improved confidence to use virtual platforms resulted in increased usage. However, student teachers’ ‘digital capabilities and capital’ can be a significant barrier, and universities need to demonstrate their ‘digital determination with greater investment and support’ (Cronin, 2022, p. 735). It has also been proposed that the greater significance of professional creativity needs to be recognised in this area, as reimagining is needed at times of crisis. Yet this is at odds with what professional standards in teaching require – being based on known practices (McLean Davies, 2024).

Theoretical framework for online learning

In this study, the Community of Inquiry framework provides the theoretical assumptions for the larger context of this research and a lens by which the study is developed. It is used to guide the analysis and to help understand and explain the findings, providing recommendations for future practice.

The community of inquiry

The Community of Inquiry framework has provided a structure for online learning communities (Garrison et al., 2010). The conception of the framework was in response to the authors' need to deliver a new online graduate programme, which provided the spark to develop a framework that could be applied to researching online learning (Garrison et al., 2010). Central to the theory and the individuals in the community are the concepts of learning and understanding, as well as collaborative engagement in critical discourse and reflection. The Community of Inquiry represents the process part of the educational experience, which involves three interdependent elements – social presence, cognitive presence and teaching presence. The inquiry process is shared as a collaborative endeavour and discourse amongst the inquiry participants.

The importance of social presence in the online community was established early in the model's inception (Garrison, 2019). Social presence is manifested through effective communication, open communication, and group cohesion. In developing communities where learners are reluctant or fearful of the inquiry process of communicating their ideas, this can be encouraged through different strategies focusing on affective expression and group cohesion (Lambert & Fisher, 2013). Social presence and communicative efficacy have evolved considerably in the last decade with the advent of new ways to express presence, such as emojis and similar ideograms (Dalle Nogare et al., 2023), which can benefit academic performance (Guo et al., 2021). Perhaps the most critical and valued element of the Community of Inquiry is cognitive presence, which involves higher-order thinking (Martin et al., 2022). In the practical inquiry process, cognitive presence is operationalised in the learning process by exploring educational phenomena and issues, reasoning leading to the construction and integration of new understandings and applications (Garrison, 2019). As defined by Garrison (2019), teaching presence has three categories: design, facilitation, and direct instruction. A confluence of research points to the importance of teaching presence for successful online learning (Aslan & Turgut, 2021), with its impact on helping students develop an understanding of collaborative inquiry and its educational value (Mutezo & Maré, 2023). Teaching presence emphasises the orchestration of appropriate instructional methods underpinning the course design and provides a platform for combining the social and cognitive presences in a meaningful educational discourse. Xue et al. (2023) report that students' perceptions of teaching presence are central to maintaining a good online teaching atmosphere.

The Community of Inquiry has a tangible presence, which relies on the input of all three presences to generate meaningful collaboration effectively. If online learning is to be successful, online instructors must be aware of these presences and be able to formulate teaching strategies that integrate the three effectively.

Methodology

This study used data collected from semi-structured interviews with a cross-section of university teacher educators from eight HEIs in Wales during early 2022. The qualitative focus of this study was the past and present experiences of university teacher educators during the COVID-19 pandemic. Our approach was justified based on our objective to understand the impact of the enactment of the emergency COVID-19 pedagogy on the practice of university teacher educators working in different universities in different geographical locations, which shaped teacher education in Wales. The study was approved by the School of Education Ethics Committee (Approval Number: 06012022-1255) at Bangor University.

Participants were identified using a non-probability sampling approach. First, eight HEIs were identified using criterion sampling, the criteria being HEIs which provided ITE in Wales and could award qualified teacher status. An initial sample of 18 university teacher educators was identified and selected according to two sub-groups: (1) university teacher educators with specialist or expert knowledge of online learning design and (2) university teacher educators with limited experience in online learning design. These participants were identified from their university website profiles. The justification for a sample representing university teacher educators with a mix of experience was to gather data representing the range of decisions, practices and experiences involved in online teacher education during the

COVID-19 pandemic. Thus, the sample was purposively selected and included ITE course directors and lecturers representing different responsibilities and at various career stages.

The interview sample size was influenced by the number of HIEs in Wales that met the inclusion criteria for the quantitative element of the study reported by Jones et al. (2024). The researchers identified a minimum of two participants and, in some cases, three from each of the eight HEIs and invited them to participate in the research. Of the 18 university teacher educators identified and invited to contribute, 13 agreed to be contacted. They were provided with further information and consented to participate in individual interviews.

Table 1 presents an overview of the sample characteristics.

A pilot interview was conducted to improve the validity of the interview, which informed slight modifications to the interview questions. The interview schedule and questions (Appendix A) were designed to be used with the qualitative conventional content analysis approach (Kleinheksel et al., 2020) to gain a thorough insight into the institutional approaches to emergency pedagogy for ITE programmes. These insights were gathered from the university educators' experiences of teaching and learning during the first and subsequent lockdowns, which aimed to capture how blended and online learning had evolved across the ITE sector in Wales during the first year of the COVID-19 pandemic. The interview protocol included seven semi-structured open questions with further descriptive prompts to gain a complete awareness of what happened in teacher education during the pandemic (Appendix A). Participants were interviewed using MS Teams with the transcription function enabled when interviews were conducted in English. Interviews conducted in Welsh were audio-recorded and directly translated during transcription. The interviews ranged from 30 to 60 minutes. The fact that not all those invited chose to participate did not affect the trustworthiness of the study findings, as data saturation was recognised during the analysis of the data. The researchers conducting the interviews agreed that the interviewees' responses were rich (Fusch & Ness, 2015), with the initial analysis revealing the depth of the data and data saturation manifesting in the recurrence of codes and meanings, alongside a failure to identify new codes, and leading to the solidification of themes (Hennink & Kaiser, 2022).

Data analysis

The transcribed interviews were saved in a .docx format and imported into Atlas.ti. The text was then analysed and coded using a blend of directed and conventional content analysis and thematic analysis (Colorafi & Evans, 2016). Data analysis was completed using a hybrid coding approach (Swain, 2018) involving deductive and inductive coding and reasoning to identify similar meanings and responses (Colorafi & Evans, 2016; Hsieh & Shannon, 2005). The hybrid thematic analysis combined two contrasting approaches to coding: in the first instance, a top-down deductive process directed by the application of *a priori* codes to the data, which naturally evolved to a second phase, a bottom-up inductive, data-driven approach to developing the open and final codes (Swain, 2018), giving rise to a set of unique themes.

The first phase of coding used a directed content analysis and deductive coding approach. The Community of Inquiry Framework (Garrison et al., 2010) was identified as the theoretical framework guiding deductive coding, as online learning was already an established practice in higher education, and a wealth of research existed in this field. The three elements of the framework, social presence, teaching presence, and cognitive presence (Garrison & Arbaugh, 2007), provided the overarching

Table 1. Sample composition.

Characteristic	Description	Value (%)
Participant distribution	Welsh speaking – first language	31% (<i>n</i> = 4)
	English speaking – first language	69% (<i>n</i> = 9)
Gender distribution	Male	38% (<i>n</i> = 5)
	Female	62% (<i>n</i> = 8)
University teaching experience	Length of teaching experience	Range: 1-18 years Mode: 10 years
Role	ITE course director	31% (<i>n</i> = 4)
	Senior Lecturers / Lecturer	69% (<i>n</i> = 9)

Table 2. The mapping of the predetermined or *a priori* codes to the three interdependent elements of the community of inquiry framework.

Community of inquiry elements	Predetermined or <i>a priori</i>
Social presence	Study Environment
Social presence	Online Communities
Cognitive presence	Attitudes towards learning
Cognitive presence	Preparedness for teaching
Teaching presence	Access and connectivity
Teaching presence	Design and organization
Teaching presence	Teaching and learning

Table 3. Themes, *a priori* and open codes at the end of Stage 3.

Theme 1 Digital equity	Theme 2 Assuring professional learning	Theme 3 Online etiquette	Theme 4 Online teaching philosophy	Theme 5 Design principles	Theme 6 Meeting the teaching standards	Theme 7 Belonging and making online connections
Predetermined code: Access and connectivity (teaching presence)	Predetermined code: Design and organisation (teaching presence)	Predetermined code: Attitudes towards learning (cognitive presence) Study environment (social presence)	Predetermined code: Teaching and learning (teaching presence)	Predetermined code: Design and organization (presence)	Predetermined code: Preparedness for teaching (presence)	Predetermined code: Online communities (social presence)
Open codes Geographical challenges with connectivity Student support Access to academic support Tools to support digital pedagogy Being equipped to support change	Open codes Digital expertise Learning design Research-informed design Guidance and strategy	Open codes Suitability of students' study environment Student environment (lecturer perspective)	Open codes Teaching philosophy Appropriate delivery method Teaching presence Meaningful application of knowledge	Open codes Interaction Engagement Pedagogy led Collaboration Academic content Reflective practice	Open codes Digital competence Developing professional standards Suitability of digital delivery Achieving teacher standards	Open codes Building relationships Role of the online learner Student-teacher ratio Barriers to learning

concepts as a basis for a set of predetermined or *a priori* codes for online educational practice (Garrison & Arbaugh, 2007) (Table 2).

Table 2 presents the mapping of the predetermined or *a priori* codes to the three interdependent elements of the community of inquiry framework.

During the initial coding process, the *a priori* codes were applied to the data using the directed content analysis approach. At the same time, the researchers opened a conceptual space to blend the directed approach with a conventional content analysis inductive coding approach. This allowed for the emergence of *a posteriori* or open codes and the identification of meaning units as part of the researchers' familiarisation with the data.

This process was iterative, identifying new codes and refining previous codes until a final coding scheme was developed (Table 3). The resultant themes are the socio-constructive framework of experience, representing the organisation and eliciting meaning from the data. Each theme makes connections between the participants' experiences, meanings, and the reality that was emergency online teaching (Bengtsson, 2016).

From the homogenous groupings created, broad categories were identified by grouping the connected meaning units, representing the overall concept of the underlying meaning. The hybridisation meant extending the coding beyond the three conceptual elements of the Community of Inquiry to arrive at a conceptual framework for representing the experience of online teaching and teacher education in Wales during the pandemic. The themes, containing categories, represented the underlying concepts in the framework. Within the themes, homogeneous groups were identified with a broad surface structure within a theme. They were related through the community of inquiry framework but qualitatively distinct from other themes, expressed in the external heterogeneity of the themes. Each theme is

structurally distinct from the other themes, but each theme can be considered in relation to the other themes.

Table 3 presents themes, sub-themes, *a priori*, and open codes at the end of Stage 3

The data from the university teacher educators led to seven themes being identified from the qualitative data analysis. The university teacher is a fundamental part of the Community of Inquiry conceptual model to ensure the facilitation of all three components, with the teaching presence being the glue between all three elements to create a Community of Inquiry (Cronin, 2022; Garrison et al., 2010). The seven themes that emerged from the deductive thematic analysis present many considerations for the online provision within ITE. These themes are explored in the next section, first at the semantic and explicit level, moving from description to interpretation and then at the latent level to identify underlying assumptions and ideology (Byrne, 2022). The Community of Inquiry conceptual framework is used to theorise the significance of the thematic patterns and their broader meaning and implications (Braun & Clarke, 2006).

Discussion of findings

Each theme exhibited internal consistency and homogeneity with heterogeneity across themes. The themes of belonging making online connections, and online etiquette illustrate limited social presence in ITE online communities. This limitation stems from university teacher educators' unfamiliarity with forming online relationships (Barnes et al., 2021), exacerbated by the scarcity of Welsh-speaking educators. Cognitive presence was perceived primarily through online etiquette, as tutors attempted to engage students academically and professionally to meet the teaching standards. This challenge reflects the interdependence of cognitive and social presence, with the latter diminishing in the online community. This reduction adversely affects student-tutor relationships (Xue et al., 2023) and constrains tutors' ability to engage students intellectually (Figure 1).

Furthermore, student engagement is contingent upon online etiquette and teacher educators' endeavours to exercise cognitive presence and create a learning environment that fosters student autonomy, which is essential for intrinsic engagement. The teaching presence was most evident in the themes of digital equity, assurance of professional learning, online teaching philosophy, and design principles. This presence in pedagogical design, facilitation, and construction is crucial as it is considered the glue that integrates all three elements of the Community of Inquiry. However, the heterogeneity of the themes and varying degrees of the three presences denote an imbalance in the manifestation of Communities of Inquiry that emerged during lockdown teaching. This notably diminished cognitive presence suggests that student teachers' online learning was compromised, posing a significant barrier to academic and professional learning and preparation for entry into the teaching profession.

Figure 1 summarises the above, with the outer circle reflecting the hybrid coding drawn from the Community of Inquiry and the imbalance in the three presences in the enacted Communities of Inquiry in ITE in Wales during lockdown, as reported in this study.

Digital equity

During the initial stages of the pandemic lockdown, when the emergency provision of ITE was necessary, university teacher educators were observant of the hurdles linked to students' accessibility and connectivity problems. The perception of digital equity is a complicated, multilayered concept. It includes multiple perspectives for consideration that go beyond the idea of connectivity and access alone (Willems et al., 2019), as illustrated in the following.

'And the equipment we'd given was quite broad because I knew that some schools could join their online lessons straight away; others perhaps thought, no, because of policies, because of GDPR, they couldn't join.' University teacher educator

University teacher educators noted that some students encountered hardware difficulties and experienced inconsistencies in institutional assistance, leading to disparities in provision. Resta et al. (2018) identified five dimensions for digital equity in education, with most of these dimensions being regarded

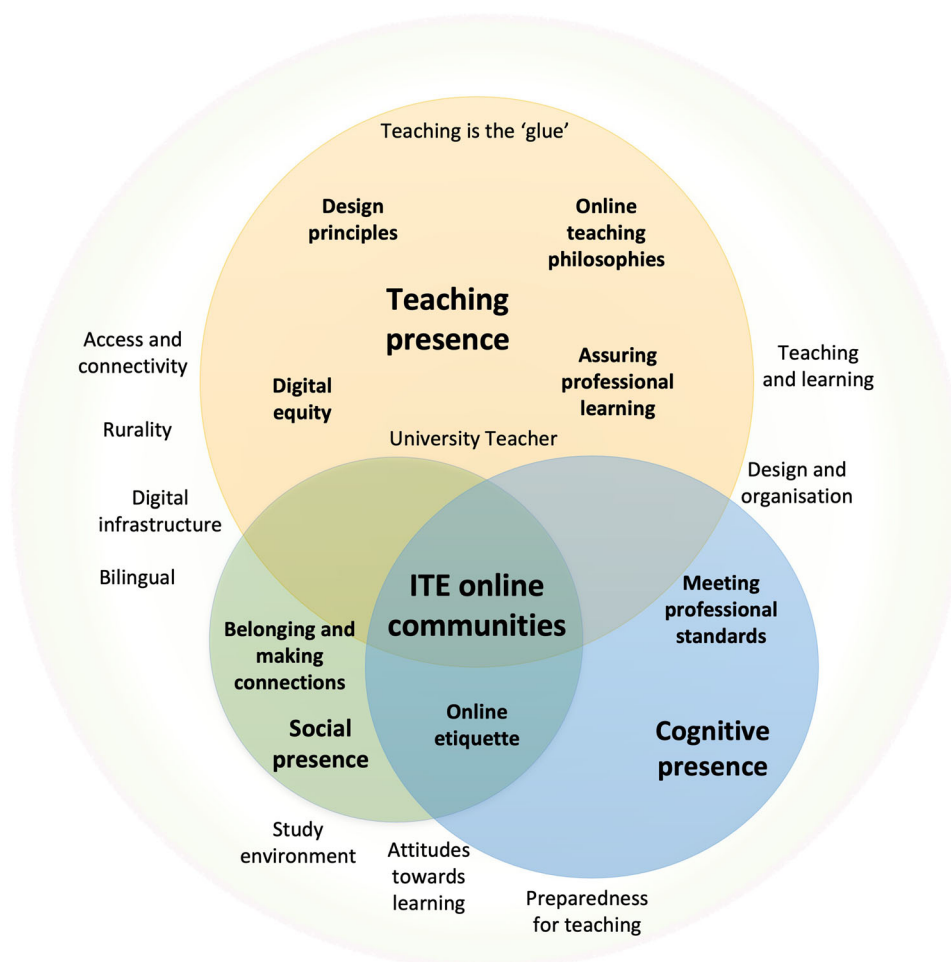


Figure 1. An overview of this study illustrating the relationship between the themes and the three presences in the Community of Inquiry framework.

as challenges for university teacher educators in this study. These challenges encompassed inadequate digital infrastructure in certain regions, especially rural areas, resulting in students being unable to fully engage in online learning. These challenges meant university teacher educators could not fully develop their online teaching presence.

Applying the concept of teaching presence, this was overshadowed as many university teacher educators highlighted their paucity of supporting student teachers with digital issues. This often led to them feeling powerless to support individual students and limited in their ability to exercise the teaching presence needed to bind the online community. The overall lack of readiness among institutions for remote instruction resulted in certain students not receiving adequate support for their academic pursuits.

'My priority was more about students and engagement. It was making sure that not only did they have access to the stuff. But they had access to us as individuals to make sure that they could understand that content.'
University teacher educator

Whilst university teacher educators were aware of the emergency that digital equity presented, they were powerless to resolve this issue, which subsequently impacted their ability to assert the teaching presence required to nurture an interactive online learning space (Garrison et al., 2010), and fully develop important aspects such as student engagement, focused discussions, and other key aspects within the Community of Inquiry.

Furthermore, in Wales enacting teaching presence requires linguistic equity within the digital context too, as many student teachers are studying through the medium of Welsh. Access to Welsh-speaking

teaching educators, and digital materials in the language of choice, such as digital content, resources, and digital tools, is significant in ensuring social inclusion and digital equity (Resta et al., 2018). This was highlighted as a particular challenge by university teacher educators, as Welsh is a minority language. Exchanging information and connecting ideas in the language of choice is an important factor to consider for Welsh first-language students to be able to develop critical and deep-thinking skills and gain valid educational experience. The limited number of Welsh-speaking university teacher educators meant a lack of teaching presence required to support cognitive and social presence. This lack of support for Welsh-speaking students' learning was notable during the transition to the online environment and lockdown.

Assuring professional learning

During the interviews, university teacher educators demonstrated a varied understanding of the design of online learning and instructional approaches for digital pedagogy, both are aspects of teaching presence. This led to discussions about professional learning and upskilling, which echoes the challenges around upskilling staff discussed by Duesbery et al. (2019). To create a teaching presence, it is crucial for educators to possess advanced technological proficiency to effectively fulfil their roles. Given the complexities of integrating educational technology in practice, teachers must adeptly merge pedagogical and technological expertise to meet the demands of their profession (Fernández-Batanero et al., 2022). This was especially true for university teacher educators during COVID-19 when teaching presence was essential to establishing critical communities of inquiry. Digital expertise varied substantially within universities and between individuals, which mirrored differences in strategy and guidance given by different HEIs.

'There is a gap in our understanding of learning design through virtual learning environments and that's very ad hoc, relying on people's personal experience or how much they're keen or interested to do it.' University teacher educator

Both students and university teacher educators alike lacked extensive familiarity with the online learning environment. The variation in university teacher educators' technological skills meant that the ability to establish a teaching presence within the online environment varied. There was a reliance on synchronous teaching to reassure some tutors that students were engaging with the content provided, which was misplaced as teaching presence and recognises that learners need to be provided with time to reflect on focused amounts of material (Garrison et al., 2010). In contrast, university teacher educators recognised the necessity of enhancing their technological skills to provide comprehensive support for both online teaching and learning and assisting students who were also navigating unfamiliar technology. Certain models in technology and education, such as TPACK (Mishra & Koehler, 2006), offer insights into effectively merging this knowledge. University teacher educators wanted to be provided with a clear professional learning route to develop their digital skills and ensure teaching and learning standards and expectations were maintained.

Online etiquette

University teacher educators expressed concern about the limited opportunities for student autonomy in online delivery, which negatively affected students' self-determination and intrinsic motivation. It suggests that the cognitive presence that might have been generated through communication and offering the intellectual challenge needed to stimulate deep learning failed to be sufficiently established. This deficiency manifested in various ways, including low levels of student engagement indicative of extrinsic motivation to learn, attendance problems, issues with personal conduct, and a lack of preparedness and professionalism. The concept of online etiquette or 'netiquette' (Hambridge, 1995) has been widely discussed. Still, the shift towards online teaching and learning during the COVID-19 pandemic brought the topic back to the forefront of digital discussions (Mistretta, 2021). Being present online was often confused with online engagement or vice versa, as tutors perceived student attendance as an indicator of those present being cognitively engaged and learning. University teacher educators felt that it was

difficult to ensure full engagement and interaction from students when there was no way of tracking or observing their online presence.

'One of the biggest challenges I found with online learning was that students weren't keen on having their cameras on..., every screen was black, not a lot of collaboration, no responding. I was talking to the screen for an hour and that's it. And it was quite challenging from my point of view when lecturing.' University teacher educator

In the academic realm, cognitive presence within the learning environment plays a pivotal role in shaping student autonomy, a factor deeply intertwined with intrinsic motivation and student engagement (Marton & Säljö, 1976). Instead of merely delivering information, university teacher educators should aim to cultivate learning environments where students actively participate in constructing knowledge through engagement with the university teacher, their peers, and the course material (Vaughan, 2010). This does not necessarily mean verbal discussion, as text-based media in discussion forums can be as effective in areas such as linking ideas to solutions (Garrison et al., 2010). The technology should be used as a toolset where students can actively engage in constructing their own meaning and information.

When the environment fails to sustain cognitive presence, it can have a detrimental effect on student autonomy, consequently yielding diminished levels of engagement. This phenomenon often manifests in the passive reception of knowledge, indicating a lack of active learning, participation and contribution from students, which in turn reflects low motivation levels. A significant contributing factor to this lack of engagement may stem from students' limited awareness of the expectations associated with online learning platforms or 'netiquette'. Moore and Miller (2022) suggest that clear participation requirements are communicated to foster cognitive presence in online learning. Consequently, the interplay between environmental factors, student autonomy, and engagement underscores the fundamental complexities in fostering effective educational experiences, especially the cognitive presence where students should be engaging in the learning material to construct meaning and understanding (Garrison & Anderson, 2003).

In reaction to synchronous delivery, students assumed a passive role in their learning, lacking adequate intrinsic motivation to engender engagement. According to university teacher educators, there appeared to be a lack of awareness among students regarding expectations for synchronous online learning, posing challenges in managing these expectations effectively. Many students refrained from activating their cameras during in-person discussions, and most did not participate in discussions via online chat.

'We talk about a lack of engagement from students because they've got the cameras off or lack of engagement because they haven't watched the video. Actually, to me, that's probably more of an attendance issue that you're looking at - they haven't turned up. And the students that have turned up, it doesn't mean they're necessarily engaged.' University teacher educator

Online teaching philosophy

Leading cultural change for online delivery was a key focus in discussions about teaching philosophy and is apparent in the literature looking at leadership and online provision before, during and after the COVID-19 pandemic (Edge et al., 2022; Lalani et al., 2021). Strategies for leading this cultural transformation emerged, specifically, how this influences the discourse surrounding pedagogical philosophies for online provision. In this way, the teaching presence required to bind and generate a community of inquiry can be established.

Facilitating this shift in culture through online pedagogy encompasses various aspects of teaching presence clustering around an advanced architecture and instructional design for online learning to ensure optimal levels of student engagement and interaction, articulate explicit student expectations by sharing principles underpinning online etiquette, and strengthen and supporting university lecturers with the infrastructure for online interaction. Lastly, meaningful online communities and relationships should be created, leading to formative learning experiences that fully support students in their school placements.

University teacher educators asserted that the online approach should be simple, flexible, and driven by beliefs and values about teaching. This feature aligns with creating the teaching presence needed to establish a cognitive presence.

'A teaching philosophy of making sure that you actually engage with all students, that all students have to contribute, that you direct questions to individuals in order to ensure that they respond verbally to the seminar and in some cases, turn their cameras on. I think that's really important. I think you've got to be more active as a teacher to do that.' University teacher educator

Synchronous teaching presence was asserted as pivotal in ensuring face-to-face real-time engagement. Although it requires significant resources and time, university teachers perceived that online communities and relationships are created through synchronous interaction. There was an emphasis on being energetic and outgoing in synchronous online teaching.

'We weren't static in our approach. I think you've got to be a lot more energetic and outgoing when you're presenting on screen.' University teacher educator

Although university teacher educators could be creative with their teaching approaches, the digital delivery mode presented a barrier to sustaining dialogue and building professional relationships.

Design principles

Teaching presence was perceived in the strong narrative focused on the need to develop learning designs that engaged students in online learning, which was vital for educators to foster reflective conversations and professional dialogues essential for student teachers' academic and professional growth (Machost & Stains, 2023). The following quote illustrates this:

'Learning is a social process and teaching is a social process. Dialogue is so important. And I think one of the biggest things for me is looking at how we can complement each with the new digital pedagogies that we've got and looking at how actually we can integrate the two together.' University teacher educator

The narratives illustrated variations in university teacher educators' ability to enact strong teaching presence. Whilst respondents collectively raised engaging students in a discursive environment, different individuals portrayed the development of online learning materials and the design principles behind that process differently; this reflected the previous theme, assuring professional learning.

A few respondents accurately perceived the association between teaching presence and cognitive presence, stressing that course material needed to be knowledge-rich and, at the same time, allow for critical discourse, a feature of cognitive presence. Similarly, some lecturers discussed the importance of developing online learning materials based on social constructivist principles. Exercising teaching presence in this way could lead to cognitive presence and students developing important connections with each other. A few went further, explaining that there needed to be rigour within the content development process to achieve suitable academic content that could support online learning synchronously and asynchronously, as illustrated in the following.

'the preparation of the materials that students are having and the asynchronous engagement with a majority of their academic study is a key part of of what happens within the institution. So that goes through a very specific process and there's quite a rigorous process for that to occur.' University teacher educator

In this theme, sophisticated perceptions of teaching presence were illustrated in descriptions of effective digital course design that requires a balance between rich content and opportunities to support critical discourse in synchronous and asynchronous learning modes (Hew et al., 2020). Further, respondents identified how their teaching presence plays a crucial role in offering scaffolding and facilitating critical reflection within these learning communities (Goldie, 2016).

Meeting the teaching standards

The role of the university teacher educator within ITE is complex (Cochran-Smith, 2005; Gray & Colucci-Gray, 2010). They have various roles, including being research practitioners, mentors, and professional role models. They also constantly need to collaborate with stakeholders and external partners. All these

roles involve critical thinking or inquiry, which Garrison et al. (2010) assert is a general model for thinking about cognitive presence. Each role is characterised by its iterative and changing relationship with the social context based on the individual's experience. Developing professional knowledge of teaching through these roles is experiential and authentic. Considering this, university teacher educators questioned the suitability of online delivery for important aspects of an ITE programme, such as sessions on professional conduct and teaching standards, which are primarily developed through experiential learning. They felt this later affected students' preparedness for teaching during the COVID-19 pandemic, illustrated as follows.

'what we've noticed with our with our first years particularly is because they didn't attend any face to face lectures those professional behaviors. You know of attention and the way that they present themselves and the language that they use, they weren't as finally developed' University teacher educator

The suitability of digital delivery for ITE was questioned at times considering that courses rely on its practical nature to offer critical inquiry. This was especially true when considering all aspects that need to be developed as part of the programme, such as variations in phase and subject pedagogies (ESTYN, 2022), the need to develop personalised learning experiences, and developing teaching and learning practice to meet the teaching standards, (Welsh Government, 2019). Furthermore, although the online delivery mode allowed for forms of flexibility in delivery at a challenging time, it was limited in its ability to afford the creation of effective professional relationships. Developing that trust to critically reflect on professional standards was difficult when computer screens were seen as barriers to student engagement.

Student teachers exhibited a perceived deficiency in preparedness for the classroom due to the absence of first-hand experience that would potentially engage them in critical incidents triggering critical reflection, which would typically help them establish internal benchmarks for established professional codes and standards. Fundamental principles within the profession prioritises a return to conventional face-to-face teaching, as this aligns with the instructional paradigm that student teachers need to develop.

'We felt they (student teachers) weren't really equipped in the same way because those professional codes hadn't been established. We recognise the flexibility, but with the principle that we'd rather go back to face-to-face teaching because of when it comes to it face-to-face teaching is what we're trying to teach them to do.' University teacher educator

ITE has aspects that can be delivered effectively online. Still, individual aspects such as subject pedagogies, preparedness for teaching and professional practice need to be thoroughly considered when planning online delivery that supports critical inquiry and thinking. The prospect of desisting from the live discussion in the synchronous mode and considering using the asynchronous mode and online forums to provide a space for students to engage students in collaborative inquiry and critical reflection on the professional values and attributes needed to be a teacher was not considered.

Belonging and making online connections

The need for belonging is paramount for all students to thrive in diverse learning environments; in the Community of Inquiry, it is associated with the tutor's ability to create a social presence. The universal human characteristic of desiring connection and positive regard from others significantly shapes behaviours and perceptions (Baumeister & Leary, 2017). As Hopwood et al. (2023) state, establishing a strong connection between students and the teacher, in this case, the university teacher educator, is pivotal and serves as a fundamental element for successful online learning.

The COVID-19 pandemic presented university teacher educators and students alike with a period of undetermined changes and a transition to the traditional delivery mode of teacher education. Strayhorn (2018) accentuates that at times of stress and change, there is a mutual need for the feeling of belonging. Creating these online connections and a sense of community felt challenging to university teacher educators. While university teacher educators could employ new ideas and, at times, innovative methods to facilitate online teaching and learning, establishing the social presence needed to foster these authentic connections and form genuine relationships proved to be burdensome.

'Even though we can be very creative about the pedagogical approaches there's something about being in person and building those relationships, that seems very important.' University teacher educator

A concern among university teacher educators was the passivity and reduction in student engagement, particularly in synchronous online learning contexts, as they felt unable to develop social presence, particularly when students switched off their cameras. This led to a disconnect between the students and the learning material, leading to a lack of emotional connection and a reduced feeling of belonging towards the online community; creating this feeling of belonging is crucial for online learners to feel part of the new, alienating environment (Peacock et al., 2020). University teacher educators observed that students did not fully engage with the learning material due to these online relationships not forming as quickly as in the face-to-face context. The online setting presented obstacles for university teacher educators to recognise the idea of social presence (Garrison, 2019), a fundamental aspect for advancing coherence and capable communication, resulting in difficulties in enacting the concept during teaching. A lack of unity in one online community is illustrated in the following.

'And we did have we did have a couple of incidences of unpleasanties as part of this of a part of the online, uhm ... Conversations going on between individuals on a big zoom call or a big teams call, and some either some texting conversations, Even, some private, you know and some laughing or some you know. I caught wind of it and I thought surely not, if I'm honest, I may naively thought they wouldn't. They wouldn't, would they? They wouldn't be so rude. They wouldn't be so disrespectful. They wouldn't. They just wouldn't. They are trainee teachers, they are training professionals. And then it so happened that talking to colleagues later in that day, this seemed to have escalated, that they, you know, that they, there were some obvious, some texting that's going on in, you know, in the background. And you know that they were.' University teacher educator

University teacher educators also acknowledged factors beyond their control hindering their ability to establish authentic relationships and make meaningful connections in the online learning environment. Not only did geographical obstacles, such as connectivity issues, hinder learning, but Welsh language students were also given an extra challenge to engage in the online community because of the lack of resources, including tutors, in their language of choice. Shelton Mayes and Burgess (2010) discussed challenges from a linguistic perspective in an international context, where the English language traditionally dominates IT systems. In Wales, the challenge was supporting online delivery in the minority language. The initial negative effect of moving to emergency online education during the COVID-19 pandemic was the variation in educational content available for minority languages and cultures such as Welsh. This could lead to a reduced provision and social presence in that minority language, leading to individuals from the minority receiving education materials that are more aligned with promoting learning within the dominant culture (Mahon & Mahon, 2023).

'There was a lot of responsibility on everyone who spoke Welsh to help translate and so on, recording, PowerPoints.' University teacher educator

University teacher educators indicated that there was an absence of guidance from an institutional level at times and a lack of transparency regarding online expectations that led to these online communities not being fully developed to meet the diverse needs of students.

Discussion

This research contributes to understanding how the COVID-19 imposed lockdowns affected ITE pedagogy in Wales. Thirteen university teacher educators with differing degrees of expertise in online learning design provided insight into institutional approaches to emergency pedagogy across eight Welsh university ITE programmes. Using the Community of Inquiry framework, the key elements of social presence, cognitive presence and teaching presence are clear in the Welsh context (Cronin, 2022; Garrison et al., 2010). However, social presence is diminished, and teaching presence dominates. This discussion focuses on the words to the wise when reflecting on the design of online pedagogies and their ability to enact productive communities of inquiry.

When applying the lens of 'social presence', digital equity is a critical enabler that supports effective communications. Similar to others, it was found that such equity can be complicated, with a lack of digital equity being a barrier for some (Cronin, 2022; Willems et al., 2019). For instance, challenges

experienced included inadequate digital infrastructure, particularly for those based in more rural locations. Being unable to access digital tools through the medium of Welsh also had a significant negative impact on ensuring social inclusion and digital equity. The university teacher educators referred to how limited they felt in being able to support their student teachers with digital issues. This reflected the lack of preparedness of most of the universities for the level of remote instruction needed at the time. It is important to note that one of the ITE programmes is designed to be fully online/blended learning.

'Online etiquette' is an important aspect of social presence and on this occasion, concerns were raised by the university teacher educators regarding levels of engagement and attendance. Such concerns have been reiterated by others, with guidelines for conduct online proposed (Mistretta, 2021). Yet, it is imperative for university teacher educators to nurture active participation across all aspects of online learning – such as with the course materials and their peers (Vaughan, 2010). A particular level of challenge regarding this aspect was reported; the use of cameras and chat facilities is important in supporting social presence, yet it was reported to be lacking, and these aspects can help to facilitate cognitive presence. Consequently, this could negatively influence the effectiveness of the teaching presence as perceived by the student teachers (Xue et al., 2023).

The use of virtual learning environments in higher education has an established history. Rather than using technology as a resource repository, online pedagogy focuses on establishing and growing online learning communities. In Wales, the approaches adopted for online teaching by the university teacher educators varied, yet the shift in culture was clear. To enable the university teacher educators to optimise their students' engagement, the creation of effective online communities and positive relationships were identified. Overall, the philosophy underpinning this emphasised that the approach needed to be flexible and aligned with the beliefs and values of teaching, with 'real-time' interaction and engagement at the centre when creating the teaching approaches at the time. Without active learning components like peer interaction, online courses risk resembling interactive books rather than dynamic learning environments (Hew et al., 2020). Integrating active learning strategies, such as flipped learning models and peer discussions, enhances students' comprehension and engagement (Hew et al., 2020). Hodges et al. (2020) underscore the importance of various forms of interaction—student-content, student-student, and student-instructor—in online learning, indicating their positive impact on learning outcomes. Thus, comprehensive planning for online education should prioritise supporting diverse interaction types and recognising learning as both a social and cognitive process (Hodges et al., 2020).

However, the design principles adopted by ITE programmes for the teaching approaches varied, with some very clear in their role of providing scaffolding and facilitating critical reflection using a range of different forms. This finding supports those previously reported by others; where various forms of interaction are crucial (Goldie, 2016; Hodges et al., 2020). However, interviewees questioned the suitability of online delivery for important elements of ITE. This was particularly pertinent when focus was required on the professional standards for teaching and leadership, as developing professional relationships proved to be challenging. Yet, as classrooms continually evolve with changing student demographics and technological advancements, they may offer new avenues for interaction and exploration of student understanding beyond the university through situated critical reflection on practice, supporting to gain deeper insight into their actions, enhancing their ability to navigate challenging situations with confidence (Machost & Stains, 2023).

The development of effective professional relationships is linked to the sense of belonging, which is also a major factor in the students' perceptions of the teaching presence. However, creating a sense of belonging for their new online community was particularly challenging for university teacher educators at the time. A key aspect that negatively influenced levels of belonging was the reduction in student engagement, which is critical for online learners (Peacock et al., 2020). University teacher educators also highlighted that several other barriers were critical in hindering this important element, such as poor connectivity and a lack of Welsh-medium resources. Additionally, a lack of guidance at an institution-wide level was indicated to impact university teacher educators' ability to meet their students' needs as effectively as they would have liked. Despite the importance of the aspects highlighted above by the university teacher educators in Wales regarding their forced shift to distance and online learning, it is recognised that the sample size and study design for this research are limitations. The sample size was small, reflected in part by the small number of HEIs delivering ITE in Wales and the lower response rate than anticipated to contribute to the study.

Conclusion

Although initially presented as challenging, the enforced shift to distance education and online learning has been unexpectedly transformative for academia. Yet, it is apparent that Wales was, and still is, in digital catchup. Even though the Welsh culture, geographical landscape and bilingualism can offer a clear sense of belonging, during the lockdowns, these same factors impeded 'belonging' for student teachers and their university teacher educators in Wales. It is critical for the ITE sector to be outward-looking in its attempts to learn from existing research and proven pedagogic models that can be applied to enhancing the professional learning and capacity of university teacher educators and those with strategic responsibility for ITE within institutions and across the sector to ensure ITE in Wales continues to thrive and is prepared for similar future events. Post-COVID recovery represents a valuable opportunity for Wales' ITE and similar bilingual countries to reimagine ITE's pedagogy collaboratively.

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Data availability statement

The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research, supporting data is not available.

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Appendix A

Semi-structured interview questions

1. What was your experience, if any, of distance learning and online teaching prior to the Covid-19 pandemic and lockdown?
 - Did you have any other experience of distance learning in a previous role and or institution?
2. Can you describe what happened in your ITE department when you made the shift to online teaching, in terms of transferring components of the programme, i.e. lectures/seminars to the VLE, etc.?
 - Could you describe it/explain it a little further?
 - How would you describe the role of the academic in that online teaching phase? Did it change over time?
3. Can you describe the rationale for the way you structured your response to the shift to online teaching? What were your priorities with regard to teaching and learning during this time?
4. How did the online pedagogy in response to lockdown differ from the blended or face-to-face pedagogy of ITE in your institution?
 - Could you describe it/explain it a little further?
 - What were features which differed?
5. What were/are the most effective features of the online pedagogy of ITE at your institution for preparing ATs for their formative year/NQT year in school and why?
 - Can you think of any activities that worked well and were kept in place following the return to face-to-face teaching?
6. Were there/are there any principles which underly the teaching and learning design you adopted?
7. Please describe a specific way that you engage and motivate learners during online teaching.