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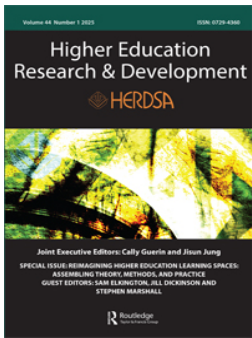
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The new artefacts: teaching development during the Covid-19 pandemic and implications for future practice

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ABSTRACT

Within the context of a dynamic higher education environment, demands for flexibility and technological advances present additional challenges for lecturers who are required to simultaneously develop their own praxis whilst encouraging students to engage with new and/or advanced digital tools. This paper focuses on a case study conducted at a post-1992 institution within the United Kingdom during the Covid-19 pandemic. It combines the use of photovoice with an abductive approach that employs sociomateriality (specifically spatial theories) to explore lecturers' perspectives on shifting delivery modes, approaches to supporting blended learning, and any changes in perceptions over time. The findings reveal three themes: reshaping practice, teaching spaces, and surveillance, and the paper draws on these to make a tri-fold contribution. First, it identifies, and evaluates, a range of tools as 'the new artefacts', and associated practices, that were foregrounded during this period. Second, it explores the potential for developing approaches to delivery. Third, it makes recommendations for the future advancement of HE policy and practice.

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Sociomateriality; spatial theories; blended learning; remote delivery; artefacts

Introduction

Within the context of a dynamic higher education (HE) environment, demands for flexibility, alongside technological advances, have led to increased online provision (a process that was accelerated by the Covid-19 pandemic (Scholkmann et al., 2024)). Related to this, Universities UK (2021) has appealed for higher education institutions (HEIs) to achieve widening participation goals and improve student outcomes by embracing technological change. Whilst El Galad et al. (2024) note calls for HEIs to develop broader perspectives around flexibility (for example, around assessment modes and deadlines), they conclude that more choice could present drawbacks; for example, in terms of both students' and educators' mental health. Mercarder and Gairin (2020) suggest that personal factors (including lack of interest) and professional aspects (such as insufficient training)

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present barriers for integrating digital technologies into teaching practice. Existing literature around academics' navigations of teaching during the pandemic includes participant concerns about student access to technology and the importance of continuing professional development (CPD) opportunities for academics (van der Merwe et al., 2024). Almpanis and Joseph-Richard (2022) adopted a multidisciplinary approach that drew on the UK Professional Standards Framework as its analytical framework. They concluded that a return to pre-pandemic practice is not desirable and suggest various developmental opportunities including improving students' understanding of synchronous and asynchronous delivery, assessment design, and a focus on problem-based learning. Fostering faculty enthusiasm for digital artefacts must be coupled with appropriate support to develop understandings of, and confidence in, related approaches for delivery (Greener & Wakefield, 2015; Ndzinisa & Dlamini, 2022).

Alongside demands for flexibility, and associated digitalisation, HE marketisation manifests through increased engagement monitoring, prompting warnings about a lack of understanding around related issues of privacy, discrimination, and risks for students' data (Szcyrek & Stewart, 2022). The literature identifies how surveillance can also damage relationships within HE, bolster existing inequalities (Beetham et al., 2022), and exacerbate student anxiety (Barrett, 2023).

As the pandemic expedited flexibility, digitality, and datafication (Beetham et al., 2022; Universities UK, 2021), some academics adopted a 'uses determinism' philosophy and instrumentalist approach towards technology; unsuccessfully replicating existing teaching methods (Almpanis & Joseph-Richard, 2022, p. 8). Conversely, others perceived the pandemic as a 'catalyst' for rethinking practice and increasing inclusivity (Broadbent et al., 2023, p. 18). Universities UK (2021, p. 1) suggests that 'returning to a pre-pandemic world, without any reflection or change, isn't realistic or desirable'.

The authors drew on sociomateriality for this research to explore 'the entanglement of human and non-human' as 'a fluid assemblage, performed and enacted relationally', and the interdependencies between spaces and occupants (Acton, 2017, p. 1444). Specifically, they employed spatial theories which 'in relation to changing spaces of education such as online learning, can begin to examine both the spatial distancing and distributing that occur, and the new proximities that become possible' (Fenwick et al., 2011, p. 129). In examining the exercise of power and the distinct, yet inseparable, concepts of both space and time within social contexts, the authors sought to develop understandings around the changing nature of teaching spaces, related artefacts, and lecturers' praxis, and the relationships between them. They acknowledged how such practices can be 'configured and reconfigured by multiple meanings and materialities that are fused together' (Orlikowski & Scott, 2008, p. 46). Through adopting a social ontology of practice (Simonsen, 2007), the authors perceive change as not being represented by the relatively static temporalities of pre- and post-pandemic HE teaching practice but instead through how practice is produced by, and produces, space within this context. As stated by Mulcahy (2018, cited by Gravett & Ajjawi, 2022), the staging, performance, and enactment of learning space reinforces perceptions of space as something that we *do*, rather than as an inert infrastructure that we *have* [authors' own emphases]. Sheller and Urry's (2006) influential work, which presented a 'new mobilities' paradigm, advocated for sociologists to move away from 'sedentarism' (p. 208) to examine a world that is increasingly defined by movement. Technology is central to this framing due to its enabling impact on the movement of goods, people, and ideas.

Recent literature has employed sociomateriality to explore how specific groups of students navigated the pandemic, including the relationship between space/s and international students' wellbeing (Deuchar & Gorur, 2023), and how doctoral researchers employed bricolage for promoting stability (Xu, 2024). Other research focuses on specific settings for delivery; for example, Lacković and Popova (2021) examine how materiality within lectures augments hierarchies and reproduces power dynamics. For this paper, the authors adopted sociomateriality to develop understandings around the multi-faceted, living, and changing nature of the relationships between HE materialities and lecturers' praxis during the pandemic 'to better recognise, understand and improve' delivery (Acton, 2017, p. 1449) within broader contexts.

This study makes its tri-fold contribution through reporting multidisciplinary findings, from research conducted over two semesters, that employed photovoice and spatiality theories to explore the following research questions. First, what are lecturers' perspectives on the shifting delivery modes necessitated by the pandemic? Second, what can be learned about approaches to supporting blended learning? Third, to what extent did lecturers' perceptions change over time?

Methods

The authors selected a case study approach to facilitate a temporal, contextual, and detailed exploration (Gillham, 2000) of lecturers' perceptions from a post-1992 university¹ within the North of England. Following ethics approval, the researchers used internal communication channels to invite participants from across the institution to take part in either an online interview or focus group (depending on availability) at two time points, Time 1 (T1) in semester one and Time 2 (T2) in semester two, during the academic year, 2020–2021. 26 participants participated in the study; 10 at T1 and 16 at T2, with six taking part at both time points. Multi-disciplinary perspectives are reported, including from landscape and built environment, health and wellbeing, education, criminology, business management, and languages.

The researchers took a semi-structured approach in facilitating discussions around shifting delivery modes, supporting blended learning, and any changes in perceptions over time. They sought to encourage participants' consideration of materiality within their working contexts (Orlikowski & Scott, 2008). Drawing on photovoice as a participatory action research method (Wang & Burris, 1997) to generate a 'nuanced and richer dataset' (Wass et al., 2020, p. 836), they encouraged participants to consider how the materialities of their spaces influenced their practice. They invited each participant to submit a photograph of their working space that was then shared on-screen during the interview or focus group to enable participants to immerse themselves in the material assemblages of practice, and facilitate interpretation of their experience within complex organisations (Broussine, 2008).

Recognising how a theoretical framework can support qualitative data analysis through facilitating focus, organisation, meaning-making, situation in the field, and evaluation (Collins & Stockton, 2018), the researchers employed an abductive approach to create, and adapt, the theoretical framework employed in this study. To generate new theoretical insights, the researchers used 'systematic combining' (Dubois & Gadde, 2002), involving processes of reflexivity, to constantly move back and forth between theory and data. First,

they drew on the avenues presented by the research questions, and identified similarities across participants' responses, to generate initial codes (reported on in Griffiths et al., 2021). Second, they reviewed existing literature around sociomateriality within the context of education. Third, they employed that literature to generate a coding table for analysing the data and arranging it into themes that aligned with sociomateriality.

The researchers acknowledge some methodological limitations. First, as lecturers, they were members of the same community as the participants. Whilst this presented risks around bias and subjectivity (Greene, 2014), the researchers acknowledged how creative methods can mitigate such concerns by suspending 'preconceptions of familiar territory, and facilitat[ing] an understanding of the unique viewpoints of participants' (Mannay, 2010, p. 42). Second, participant self-selection risks bias towards those with clear opinions on the topic (Sharma, 2017). Third, although individuals may be receptive to online discussions (Keemink et al., 2022), some may have been discouraged because of technological issues, or exhaustion from working online. Finally, the researchers did not systematically collect demographic data from the participants as they did not intend the findings to be generalizable.

Findings

The research explored lecturers' perceptions during the pandemic of shifting delivery modes, approaches to supporting blended learning, and any changes in perceptions over time. The data analysis revealed three key themes: reshaping practice, teaching spaces, and surveillance. Each of these themes will be explored in turn and by reference to the literature around sociomateriality. Where direct quotes are included, they identify both the participant number and the data collection point (either T1 or T2).

Reshaping practice

Despite the acute shift to remote delivery, many participants reported benefits of engaging with students online, particularly during T2 when participants had taught remotely for a full semester. Reflecting the general view, the following participant expressed their desire to retain the best from in-person and online delivery.

I don't want to deny all the challenges we've had, but the one word [I would use to describe this period] would be exciting because I think long term, this is going to change [...] my teaching practice and hopefully we can take the best of online learning with the best of classroom learning [...] But I think there are other advantages, which with people who do modern languages [...] the chat function was really useful to get the shy people into the conversation. (Participant 29, T2)

This participant, a modern languages lecturer, highlights discipline-specific variations in what may constitute 'the best of online learning'; for them, one of the new artefacts, the chat function, enabled a different modality for engagement. Further responses acknowledged how the 'shock' of the switch to online delivery compelled innovation and development:

So, what I would say about my own practice is I have found this past year to be an incredibly disruptive influence in terms of shocking me out of my comfort zone [...] I've been teaching for twenty-two years and I think I'm all right at it, you know, and I've got things that I do

and that seem to work, and I really enjoy it [...] I was in many ways forced to think radically about my teaching. And that has been, it's been hard work, but brilliant. And I really feel that it has helped me to develop my pedagogy and really expand my skill set when it comes to teaching and learning. (Participant 37, T2)

Given restricted access to materialities that are typically found within the physical campus, participants used 'conceptual and contextual sensemaking to perceive and exploit possibilities for action in their unfolding practice of work' (Waizenegger et al., 2023, p. 235). The findings demonstrate how participants adapted their practice by thinking creatively about the artefacts that were available within their environment. One participant, for example, reported encouraging students to be imaginative in using what resources they already had at home. They had reflected on the demographics of their cohort who were mostly mature students and living in family homes, in support:

What was challenging was that we normally do really experiential sessions. We have a session [where] we get them to literally muck about with glitter and sand. But what we ended up doing is getting the apprentices to use things in their own home environments. (Participant 1, T1)

Another participant also made use of their locale to supplement their teaching materials. They had used their lockdown walks to create an image database to support students' visualisation of concepts addressed within their lectures:

I've put together quite a lot of prep. So, I've got over 140 movie clips that I've taken of all the different things I would talk about in my lectures. [...] I went through all my lectures and sort of listed everything that I talk about and I've gone out over the lockdown with the camera, with a video camera, and I've done one minute slots for all of those and created a massive well, 140 image database. So, the idea is when I'm talking to the students since I'm not face to face with them [...] I'll be able to say, and here it is. (Participant 13, T1)

These accounts illustrate Acton's 'entangled amalgamation[s] of people-place-practice-process' in action (2017, p. 1449), and demonstrate how different strands can combine to impact delivery. These include: the physical or online nature of spaces; the artefacts available within them; established and innovative approaches for delivery; lecturers' values, motivations, and beliefs; and institutional requirements. Through these reflections, participants reveal new artefacts, and 'the interactions and engagements that these objects invited, promoted, [or] generated' (Herman & Tondeur, 2021, p. 682) as associated practices, to support delivery within these environments.

Illuminating the 'inherent separability between the technical and the social' (Orlikowski & Scott, 2008, p. 433), the findings reveal how the artefacts offered by technology ensured that practitioner input could still be embedded in courses, as explained by a participant from a health-related discipline:

We've tried to really think about how we can still make that a good experience. It's also a module where normally there's clinical experts [involved]. So we get people to come and speak about things that they've done, big projects that they've done and [...] we've asked people to record the briefing information, and given them a brief to speak to as part of a recording and giving those people some tools to use, like screencast-o-matic or even just voice over PowerPoint, but point to them in the direction of the help pages on how to do some of that or make an Adobe Spark. Some of the things that we've become quite familiar with really fast. (Participant 1, T1)

The previous participant explained how they used the support offered by their institution's 'help pages', another artefact foregrounded by the pandemic, to become familiar 'really fast' with enabling technologies. Similarly, participants discovered new ways of delivering content and derived satisfaction from developing their teaching tools to incorporate 'outside of the box thinking'.

I teach quite a lot of practical sessions and I teach lots of things that you can't just change to a Zoom with some screen share of a PowerPoint. [...] that's taken a lot of outside of the box thinking. So, I have become an absolute fan of YouTube [...] where I can find a very good, reputable YouTube video of the technique that we would have all practised. So, for basic life support, we'd normally talk about choking and then we would [...] practise with the choking vest. We can't do that via Zoom. So, it's more of a kind of a chat in a group. You know, how would you know if I was choking and asking them questions and then showing a video from something like Resus Council or St John's Ambulance or the NHS website [...] So, [I've] had to be more creative in some respects to still get across what I would have done in a face-to-face practical in an online way, that's still engaging for the student. (Participant 15, T1)

In this example, the participant: reveals their discovery of online resources (including YouTube as a new teaching space), (the materialities), and how they reflected on their potential (their meanings), and incorporated them into their practice (the social) as an enmeshed assemblage (Johri, 2022). Other participants similarly shared spatial-focused reflections, which are explored further below.

Teaching spaces

As previously acknowledged, the findings evidenced disciplinary differences within the switch to online delivery. Practical courses faced more challenging transitions than traditional academic disciplines, where lecturers could emulate in-person delivery more easily.

I suppose we run courses, we run modules that don't need lab space. They don't need anything particularly exciting that you couldn't have used a hundred years ago. We used desks, a whiteboard [...] and a room, and that's about it. So, in that respect, we have managed this whole thing very well. It's not been a massive problem to us. (Participant 34, T2)

The researchers note how the web conferencing tool, Blackboard Collaborate, can replicate the resources outlined by the above participant; namely, each timetabled class has a dedicated online room with a whiteboard function. However, during the pandemic, students were accessing online classes remotely at their own 'desk' and with disparate internet connectivity. (It is also worth noting here that students' study spaces did not always constitute a traditional desk set-up (see Griffiths et al., 2021)). In this environment, the supervision associated with on-campus teaching was either reduced or lost. For example, the following participant, from a social science discipline, refers to a metaphysical artefact, their skills of perception, and its impact on their practice.

In my previous practice background, [I was] engaging with people [in sometimes] very challenging and emotive situations. I've spent my entire career reading people and then adapting my responses based on what I'm reading from them. But trying to do that in an online environment is incredibly difficult because you can't pick up on body language. I find myself repeating things more than I would normally do because I'm not sure whether they've got it or not [...] I say to them, if we were in the room together, I'd know if you

were, you know, with me or not with me because you'd be nodding or smiling or whatever, you know, or know if I was boring you senseless because I would pick it up from your body language. (Participant 3, T1)

These observations align with research from Leijon et al. (2024) that demonstrates how 'people, space, interaction, and learning are intertwined' (p. 1474). Here, the participant explains how issues around 'embodiment' (Tietjen et al., 2023, p. 18) within the physical setting were exacerbated when delivery moved online. The assemblages afforded by virtual spaces meant that there were limited opportunities for drawing on students' body language to assess engagement and understanding.

Others agreed that it was difficult 'to gauge how [students are] receiving what you're doing, and how they're experiencing it' (P33, T2) and that it was '[...] really hard to measure progress' (P28, T2) but explained how they employed a range of pedagogical tools and techniques, including reactions and voting (P37, T2). Specific artefacts mentioned by participants included: 'Miro' (P33, T2); 'Google Docs' (P26, T2); 'Collaborate' (P25, T2); and 'YouTube' (P13 and 15, T1). This broad range of applications may reflect hurried policy development that lacked a unified approach.

Another facet of learning spaces was hybrid delivery (with some students on-campus, and some online), and this featured in T1. The following participant reflects on challenges around engaging students within two separate learning spaces simultaneously, and the additional layer of sociomaterial complexity that presented.

It was initially really hard work because [...] I'd never used Panopto and I was expected to record every lecture and every seminar and I really, really had to practise with Panopto to see how it worked and how it was going to be set out. Once I got the hang of it, that was fine. I got used to it. [However], I thought they were going to have hanging mics in the classroom, because that's how it was set out in [other classrooms]. But they didn't. They just had one mic on the podium and unfortunately, it was rubbish. [...] so, it means really that you are stuck to the podium [...] you're very limited to how you can move. [Also], I use the whiteboard all the time [but the] camera's not a good enough resolution to pick up whatever you're writing on the on the whiteboard. [...] So, for those people who are not in class, I don't think they got as good a service online. [Although] the recording also was there, it wasn't brilliant sound, they couldn't see what I was writing, and you're very, very restricted where you record. So, you can't run a class as you would normally run a class. (Participant 10, T1)

The embodied nature of the above reflections demonstrates the added psychological impact of hybrid delivery; the participant is unsure about how to *be* within this space. It also illustrates how familiarity with technological artefacts is only one facet; educators need to trust the functioning of the tools that they are required to use. This was reinforced by another participant who had to abandon hybrid delivery when the provided computer did not work: 'I can't [deal with] that on top of everything else' despite being 'quite keen to try it' (P5, T1). Another participant reflected that 'The tasks that we do in a classroom are very different to what we set up online. How do you include both sets of people at the same time?' (P6, T1). This awareness of different approaches to facilitate effective delivery within varied spaces is something that was not always acknowledged by institutional or sector policy. Participants also focused on student experience and engagement, and this is explored in the next section.

Engaging students

Despite the challenges, participants acknowledged how technological tools could positively impact student engagement through supporting development of understanding and management of independent study time. The following participants reference how their students used recorded lectures as an artefact.

Because that's been a big one that all my students have said, oh, I really like [recorded lectures] because I can go back to it and I can replay it, and I can just do it when I want to kind of thing. (Participant 6, T2)

So, if you're doing [an] informative session, [students] can listen to a bit of it, and then stop and then go back, or they can be in the live [teaching] session and think, right, I really got stuck at that point [...] or I really enjoyed that point. Let me go back to [the recording]. So, I think actually the combination of blended learning [...] is what [students] found really useful. (Participant 27, T2)

Both accounts acknowledge the benefits of blended learning, and specifically recorded lectures, for enabling students to revisit materials and providing increased flexibility. However, there were concerns about policies that required all sessions to be recorded, particularly when discussing difficult topics.

I'm not sure that [a seminar] needs to be recorded. I've got mixed views about this because my modules, as I've said before, are quite personal. If you say [to students], right, I'm recording [the session]. Sometimes that goes two ways. Sometimes students will forget, and they'll share something personal [...] or, they think, oh, well, I'm not gonna say anything. (Participant 8, T2)

Drawing links with the earlier themes of reshaping practice and teaching spaces, another perceived benefit of online learning was that students who struggled to engage in the physical classroom could add a question 'in the chat [or] send it privately to me' (P4, T1). Another participant put students into breakout rooms and used 'shared sensemaking artefacts' (Tietjen et al., 2023, p. 27) such as document sharing tools to view students' work in real time: 'whatever they are writing up, I can see and I can comment on, to provide support' (P7, T1).

From the lecturer's perspective, participants also considered how engagement techniques could be lost when recording materials.

[When recording] you're not spontaneous, no. It's very much stick to script and things that you want to tell them you can't. [...] You can't say some of the stories you'd normally say. (Participant 10, T1)

This highlights the impact of surveillance on practice in online spaces. Such feelings may have been exacerbated by the increased use of monitoring tools to track student engagement, and this is explored in the next section.

Surveillance

Participants discussed the engagement and monitoring tools that had been advanced by remote delivery, including learner engagement data and online meeting spaces.

[...] this analytical stuff. I mean it seems incredibly invasive but really useful for us to keep track [of engagement] because previously all I could do was leave a count on the Blackboard

site, so you'd know how many students had seen an item. You wouldn't know who. But, now I can combine both of those bits of data and I can see if have they watched the video and all that stuff because it's going to be so important, you know, I mean, I'm going to start every week with a quiz that makes sure that they've seen the previous week's video. (Participant 13, T1)

This participant reveals a perception that learner analytics data is useful for tracking engagement, but also plans to use a quiz as another artefact to check engagement with pre-session tasks. This suggests a need to reflect on how data can provide something more meaningful that might develop lecturers' conceptualisations of learner analytics and their possibilities (Scott & Nichols, 2017). Another participant outlined how online registers enable them to track engagement more effectively and be more responsive to students' needs.

I think [teaching online has] made me more vigilant too, so students who didn't turn up yesterday, I've already emailed them. And I, you know, instead of chasing them for three or four weeks, I'll be saying, oh, I need to have a Zoom with you now. [...] So it's another form of communication which we never used before. (Participant 2, T1)

Like other accounts, the perception is that students benefit from increased flexibility; in this case, when and where they can access academic support. However, different communication modes did not always translate into the development of an effective community, with one participant suggesting that they felt 'disconnected from the academic advisor group that I've got, and I think that they feel that too, and also that they feel disconnected from each other' (P15, T1). This aligns with research conducted by Leijon et al. (2024) that suggests entanglements between the emotions conjured by spaces and spatial practices.

Although the challenges of switching to online delivery were widely acknowledged, responses also demonstrated how this change facilitated innovation. Furthermore, T2 data illustrated participants' reflections on their practice and articulated desires for longer term changes to aspects of their delivery.

Discussion

This study sought to answer the following questions. First, what are lecturers' reflections on their experience of the changes to their delivery modes as necessitated by the pandemic? Second, what can be learned about approaches to supporting blended learning, including the potential implications for staff development? Third, to what extent did lecturers' perceptions change over time? The findings revealed three key themes of: reshaping practice, teaching spaces, and surveillance and engagement monitoring. The researchers examined these within the context of the literature that was introduced earlier around flexibility, online and digital provision, datification, and sociomateriality (specifically spatial theories). This paper makes its tri-fold contribution through: identifying, and evaluating, a range of tools as 'the new artefacts', and associated practices, that were foregrounded during this period; exploring the potential for developing approaches to delivery; and, making recommendations for the future development of HE policy and practice.

Whilst this paper draws on a case study that was conducted during the pandemic, its findings suggest broader potential. Despite the increased adversity presented by the forced move online, the findings demonstrate participants' propensity to be creative. Participants experimented with, and/or reimaged the fluid sociomaterialities of their working contexts and, from their collective accounts, an array of 'new artefacts', and

associated practices, emerges. [Table 1](#) outlines each of the artefacts presented within the findings and the implications for practice.

In alignment with research conducted by El Galad et al. (2024), some participants recognised how online delivery, and associated artefacts (such as the chat function and recorded lectures referred to in [Table 1](#)), could benefit student engagement, increase flexibility and choice, and support monitoring of academic progress. Discipline-specific, contextual factors also shaped perspectives; for instance, participants who did not require specialist teaching spaces appeared to find the transition easier (contesting earlier research findings, for example, from Mercarder & Gairin, 2020). These findings may be explained by participants' reflections that providing recorded lectures supported students' understanding; increasing their confidence to engage with other online activities. Given demands for more flexibility, this study demonstrates the importance of CPD to meet these needs (Almpanis & Joseph-Richard, 2022; Belikov et al., 2021; Younis, 2023).

Participants also questioned institutional expectations for online delivery; for instance, the requirement to record all classes. They generally favoured local, contextual, and discipline-specific approaches for ensuring that the use of technology was driven by pedagogical principles. Some participants, for example, felt uncomfortable in having their stories or perspectives recorded. This is notable given the documented power of storytelling within teaching practice (see, for example, Dickinson et al., 2020). Similarly, although participants appreciated the diversity of digital artefacts for encouraging engagement, and facilitating connections (for example through direct messaging), participants whose content covered sensitive topics believed that recording these sessions could discourage student engagement.

Table 1. Artefacts reported by participants as influencing the development of their online teaching, and the potential implications for teaching practice.

Teaching artefact	Implications for teaching practice
Online classroom tools including the chat function, voting systems, and reaction buttons	Enabling students to connect with the content, their tutor, and their peers in varied ways. Enabling tutors to measure progress in online spaces.
Found objects to support practical activities	Supporting creativity for, and meaning making between, tutors and students, but highly individualized and impacted by students' personal environment.
Tutor-created images and videos	Enabling tutors to connect teaching material to wider contexts, but dependent on time, equipment, and locale.
Screencasts for sharing practitioner perspectives	Diversifying knowledge. The permanency of such artefacts can pose a risk in terms of material rights and timely relevance.
Institutional help pages for technological tools	Illuminating the importance of mobilising institutional resources for supporting staff.
YouTube videos produced by external organisations and bodies	De-centering and diversifying knowledge.
Enabling students to join on-campus sessions remotely	Presenting implications for clarity, delivery style, and pedagogical congruence.
Recorded lectures	Enabling students to clarify concepts in their own time. Caution around recording student in-class interactions. Implications for staff capacity.
Document sharing	Enabling formative feedback, but dependent on staff capacity and capability.
Student virtual learning environment (VLE) engagement data	Providing raw data but no information about student comprehension.
Online meeting platforms	Enabling staff to respond to disengagement.

Furthermore, and mirroring students' concerns on this issue (Griffiths & Dickinson, 2024), many participants reported anxieties about their ability to measure students' progress within the online environment. Perceptions varied around the use of artefacts for monitoring engagement; participants saw some benefits but were also wary of the implications, using terms such as 'invasive' when discussing such tools. Whilst some participants found engagement data helpful for monitoring students who might be struggling, they drew on more pedagogically effective methods for tracking progress, such as in-module quizzes, to narrow the distance that they felt from their students' progress within the online setting.

The research demonstrates considerable potential for HE leaders and policymakers to rethink approaches to top-down, institutional-wide decision-making around delivery. Such homogeneity risks stifling lecturers' creativity, affecting their engagement and confidence, and impacting the student experience (Gourlay, 2022). Given increasing online delivery, the findings illuminate the necessity for academic staff to lead the development of their teaching practice within those environments, with the support of HE leaders and policymakers. Within the next section, the authors make recommendations around this theme.

Recommendations and conclusion

The creativity generated during the pandemic may directly relate to the need for an emergency response, and the resulting (relative) freedom that afforded for lecturers' decision-making. This study reveals participants' general positivity towards the 'new artefacts', and the development of associated practices. This strengthens previous calls (see, for example, Greener & Wakefield, 2015; Mercarder & Gairin, 2020) for HEIs to provide lecturers with support for realising their ambitions around delivery. Furthermore, in developing such opportunities, there should be less emphasis on top-down, cross-institutional, homogeneity, and more focus on lecturer-led approaches that are meaningful within the local, disciplinary context.

Similarly, it is essential that HEIs critically examine their use of learner analytics as artefacts to support student outcomes. In addition to broader concerns around student privacy (Szczyrek & Stewart, 2022) and the potential for 'gaming' the system (Griffiths & Dickinson, 2024), this study questions the pedagogical benefits of relying on learner analytics. Participants suggested a preference for more collaborative and embedded artefacts, and associated practices, for measuring student engagement, such as quizzes, reactions, and chat responses, that enable both lecturer and student to synchronously monitor progress, and facilitate direct, two-way, communication. The authors call for future research to examine how empowering lecturers, and supporting local systems, around monitoring student engagement, may help to resolve issues more quickly and effectively than current approaches that rely less, if at all, on the lecturer–student relationship.

The pandemic environment provided a unique setting for this research but its findings present broader potential. They raise key questions for HE leaders and policymakers around enabling, and supporting, lecturers' decision-making around further exploring and developing the array of 'new artefacts' that could be at their disposal, and evolving associated practices for encouraging meaningful engagement with them, to support delivery in different spaces for the benefit of all involved.

Note

1. Post-1992 refers to HEIs in the United Kingdom who were granted university status through the Further and Higher Education Act 1992. This includes both former polytechnic colleges and institutions created since 1992.

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Declaration of interest

The authors report there are no competing interests to declare.

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