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Using activity theory to explore how learning technology professionals support the use of a virtual learning environment during a period of change at a higher education institution—a small-sample in-depth study

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Abstract

This paper explores the role of learning technology professionals (LTPs) in supporting a Higher Education institution (HEI) that is migrating from one virtual learning environment (VLE) to another, through interviewing five participants to generate an in-depth study. The literature underpins the central thesis of this paper positing that the complexities of VLE migration, combined with ambiguous role definitions and unclear transition protocols, affect LTPs' ability to support institutional change. This project was driven by a desire to understand how best to support the use of a VLE when change is being thrust on its users. Activity-Oriented Design Method (AODM) was used to generate open-ended interview questions investigating possible contradictions that emerge specifically during the VLE migration process, and then the interview transcripts were analysed using to explore tensions within and between elements of the migration activity. Analysis through Activity Theory (AT) revealed that key challenges during the transition stemmed not from technological issues, but from unclear regulations, policies, and expectations surrounding the migration process. Particular tensions emerged round the division of labour and tool requirements during the transition period. This research contributes to the growing body of literature on managing VLE migrations, offering practical insights for other HEIs

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planning similar platform transformations. Future research could explore the broader implications of these findings across related activity systems involved in educational technology transitions.

1. Introduction

Virtual learning environments (VLEs) - also referred to as learning management systems (LMSs) - are fundamental to modern higher education (HE) delivery, supporting the blend of synchronous, asynchronous, online and face-to-face learning experiences (UCISA, 2023). The exact mix is vague and can be defined in many ways (Boelens et al., 2015). However, institutions increasingly face the challenge of migrating between VLE platforms or versions to meet evolving pedagogical needs and technological capabilities. This paper examines one such transition: a UK university's migration from Blackboard Learn Original to Blackboard Ultra, a change that represents not merely a version upgrade but a fundamental shift in platform architecture, functionality, and user experience.

VLE migrations take place for a number of reasons. Pedagogical needs driving VLE migration include better integration with third-party tools, such as MS Teams, which are required to deliver blended learning. There is also growing interest in the potential for artificial intelligence tools integrated within the VLE to support personalised learning pathways and automated grading (Taylor et al., 2021). Technological needs driving VLE migration include expectations of improved accessibility to comply with modern legislation (such as Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018), an emphasis on mobile-first learning (Gribble, 2024), a move to cloud-based solutions with continuous updates (Fiebig et al., 2023), and better analytics (Whelan et al., 2024).

The migration from Learn Original to Ultra (known as 'The Ultra Project') presents unique challenges that distinguish it from routine platform updates. While both systems share the Blackboard brand, Ultra introduces significant changes in navigation, functionality, and terminology, making the transition more akin to adopting an entirely new platform. The institution has responded by expanding its digital education team within the information technology (IT) department, bringing together learning designers, learning technologists, and application specialists - collectively referred to as learning technology professionals (LTPs) in this study - to facilitate this complex change. The wider project team includes project managers, IT staff, academic staff, and student representatives, operating under the dual oversight of a service owner (within the IT department) and a business owner (academic).

The university has some guidance on how courses could be structured in the VLE. This guidance is referred to as the Blackboard Baseline (or the Baseline). The hierarchy of the university is that academic disciplines are divided into faculties, which are subdivided into schools. Non-academic staff are referred to as professional services staff. The unit of analysis is the social practice of LTPs, who are professional services staff.

As a learning designer in HE, part of my role is to support effective use of the institution's VLE. This research specifically examines the role of LTPs during this period of significant technological and organisational change. While existing literature extensively documents academic responses to VLE adoption in an age of workload intensification, less attention has been paid to the third space professionals tasked with supporting these transitions. The study takes a sociomaterial approach to understand how LTPs navigate their responsibilities during platform migration, particularly when institutional expectations for VLE adoption may lack clear rationale or senior management support. The literature on VLE usage analysed through the framework of Activity Theory (AT) offers interesting perspectives such as recognising the multifunctionality of VLEs and their ability to act as instruments of control - recognising that academic preferences do not always align with institutional regulations. In addition, the literature on VLE migration explores the perspectives of key stakeholders, such as academic staff and students. What is not explored is how LTPs perceive their roles in relation to VLEs and the wider community.

This research focuses on the shifting purpose and role of a VLE, as perceived by LTPs in a higher education institution (HEI) when participating in a VLE migration project. Is the VLE there to support learners or is its focus the management of teaching staff and their activities? Arguably, its focus is teaching and learning, rather than education more broadly, but if we consider Passey's definitions (2019), the purpose of the VLE could be to enhance teaching and learning through the use of technology or it could be to enhance the management of teaching and learning.

Following on from this, what is the experience of those LTPs in supporting VLE usage in a period of change at a HEI? Where does responsibility for the VLE lie and what is its importance to various stakeholders?

The paper sets out small sample in-depth research applying activity theory using Mwanza's Eight Step Activity-Oriented Design Method (AODM) (2002), this in-depth study analyses interviews with five LTPs conducted in October 2023, during the early stages of the migration project. AT provides a particularly appropriate framework for this analysis, as it helps reveal the contradictions and tensions that emerge when established educational technology practices undergo significant change.

The paper is structured as follows: Section 3 discusses the theoretical framework's relevance to VLE migration; Section 4 reviews literature informing our understanding of technological transitions in HE; Section 5 details the research design; Section 6 presents and discusses notable findings; and Section 7 concludes with implications for practice and suggestions for further research into educational technology transitions.

2. Research questions

This inquiry is guided by the following main research question and three sub-questions:

RQ 1. How do learning technology professionals support and navigate their role during the transition from one VLE to another in a higher education institution?

> *RQ 1.1* How do learning technology professionals interpret the institution's strategic goals for VLE migration?
>
> *RQ 1.2* What contradictions emerge between different stakeholders' needs and expectations during the VLE transition period?
>
> *RQ 1.3* How do learning technology professionals' responsibilities and relationships with other stakeholders evolve during the migration process?

3. Theoretical framework

As a constructivist-interpretivist researcher, my position is influenced by Lincoln and Guba (2016) and their discussions around the duality of reality – its physical form and the multi-dimensional associated meanings and social interaction with it. Research participants have equal status, and a diversity of perspectives is welcomed. Guided by a theoretical framework of AT, activity systems have multiple realities which can be explored through my interactions as a researcher with the subjects of the research (Otoo, 2020).

This study employs Engeström's AT as a theoretical framework to examine the systemic tensions that emerge during VLE migration, particularly how LTPs can support academic staff during this period of change. Originally developed from Soviet psychology by L.S. Vygotsky and A.N. Leont'ev, and heavily influenced by Marxist philosophy (Engeström, 2014), AT uniquely allows for analysis of how institutional structures, power dynamics, and cultural mediations influence the migration process. The framework provides a way to examine how people engage in tasks, how those tasks are organised (and by whom), and how they are influenced by the broader social and cultural environment (Grönlund et al., 2023). Sometimes referred to as Cultural-Historical Activity Theory (CHAT), AT emphasises the historical and developmental aspect of activities (Mcavinia, 2016; Park and Jo, 2017), recognising that activities and their systems evolve over time in response to changing conditions, needs, and contradictions (Engeström, 2014; Grönlund et al., 2023). The framework is particularly valuable for understanding how contradictions between different elements of the activity system may drive or inhibit change during platform transition. While recognising the value of the CHAT terminology, activity theory (AT) will be the term used in this research.

Engeström's triangular activity systems model shows the relationships between the components within an activity system (see Figure 1).

According to AT (Engeström, 2014), an activity is formed by the relationship between the *subject* and the *object*. *Tools* that mediate the subject's interaction with the object or objective may be tangible or intangible. *Rules* are the norms, regulations or guidelines that govern the activity. They may be explicit or implicit. The *community* consists of the people who influence and are influenced by the activity (and who provide the social norms that shape it). The *division of labour* examines how tasks and responsibilities are distributed among different participants or components of the activity. The *outcome* represents the results or consequences of the activity which can be both intended and unintended and have an impact beyond the immediate activity (Hasan and Kazlauskas, 2014). The interactions and relationships between components are dynamic so can change over time as the activity evolves.

AT highlights the presence of contradictions and conflicts within activity systems. Contradictions, which represent structural tensions that accumulate over time, are fundamental components of an activity system and can serve as catalysts for development, learning, or change. Engeström (2014) identifies four levels of systemic contradictions:

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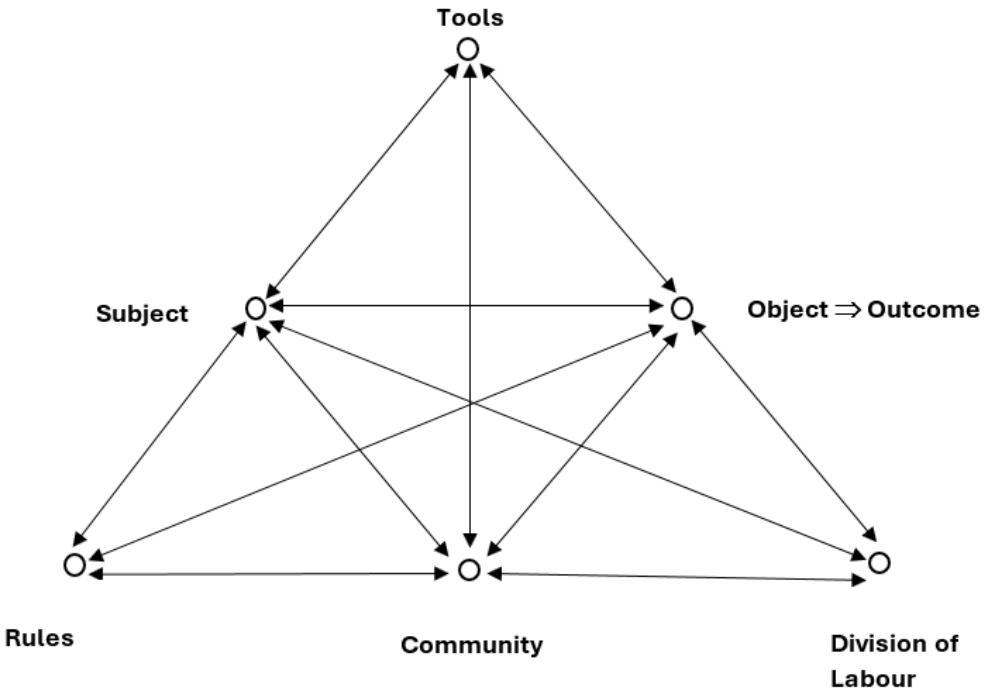
Figure 1. A representation of activity theory following Engeström (2014)



Primary contradictions occur within a single node of the activity triangle. Secondary contradictions arise between elements of an activity system, potentially undermining each other. Tertiary contradictions exist between different versions of the same activity system, while quaternary contradictions emerge between the activity system and adjacent systems.

Contradictions occur when there are tensions or discrepancies between different elements of the system (Chang and Kuo, 2021). These contradictions can be productive (driving change and development) or unproductive (hindering progress). Using Engeström's (2014) framework to explore the activity of moving from Blackboard Learn Original to Blackboard Ultra with LTPs can help with analysing how the components interact. Ultimately, conflicts and contradictions within the system could be addressed to improve the effectiveness of the activity.

AT has been drawn on in technology enhanced learning research, as it is a robust framework for interpreting the experiences of students, academic staff, and other stakeholders (Park and Jo, 2017). This theory has been successfully used by Varga-Atkins (2016) to study the role of a technology-enhanced learning implementation group in mediating an institutional VLE minimum standards policy. Additionally, the theory has found application as a framework for assessing the adoption of VLEs (Codreanu et al., 2017). Moreover, in the realm of blended learning, AT proves valuable in exploring tensions between formative feedback and summative feedback when delivered via a VLE (Grönlund, 2023). By employing AT, researchers can analyse significant contradictions within the activity system to identify barriers hindering the integration of technology (Benson et al., 2008; Blin and Munro, 2008; Grönlund et al., 2023; Karasavvidis, 2009; Park and Jo, 2017).

Most existing studies using AT have explored the use of a VLE (or aspects of its use) by academic staff; I will explore it from the perspective of LTPs who support both the technology and pedagogy.

As a learning designer in HE, part of my role is to support effective use of the institution's VLE. I wanted to research the barriers from the perspective of the third space professionals who are tasked with supporting adoption as most research focuses on the perspective of time-pressed academics in an age of workload intensification. My professional experience has shown that LTPs receive little support from senior management who expect them to ensure the VLE is well-used, without providing reasons for its use, which is corroborated by Fawns (2022). The literature on VLE usage interpreted by way of AT offers interesting perspectives such as recognising the multifunctionality of VLEs and their

Table 1. Mwanza's (2002) Eight Step Model

Identify the:		Question to ask:
Step 1	Activity of interest	What sort of activity am I interested in?
Step 2	Object-ive	Why is the activity taking place?
Step 3	Subjects	Who is involved in carrying out this activity?
Step 4	Tools	By what means are the subjects performing this activity?
Step 5	Rules and regulations	Are there any cultural norms, rules and regulations governing the performance of this activity?
Step 6	Division of labour	Who is responsible for what, when carrying out this activity and how are the roles organised?
Step 7	Community	What is the environment in which this activity is carried out?
Step 8	Outcome	What is the desired outcome from carrying out this activity?

ability to act as instruments of control - acknowledging that academic preferences do not always align with institutional regulations. What is not explored is how LTPs perceive their roles in relation to VLEs and the wider community.

Mwanza-Simwami (2011) developed AODM as a framework and model for characterising learner experiences with technology. Questions for the semi-structured interviews will be based on Mwanza's Eight Step Model (2002) (See Table 1) as this will assist with applying Engeström's model to an actual system to gain an understanding of it.

Responses to these questions should inform RQ 1 ('How do learning technology professionals support and navigate their role during the transition from one VLE to another in a higher education institution?') and the sub-questions, by exploring the subjects' perceptions around why the activity is taking place, what their role is in that activity, and the needs/expectations of stakeholders. Examining the activity's contradictions will reveal historically and culturally embedded problems, which can be within or between activity systems (Cong-Lem, 2022).

4. Literature review

This literature review underpins the core arguments of the paper by highlighting that a lack of clarity around the tasks expected of LTPs hinders the effective use of the VLE. Additionally, insufficient understanding of the VLE's purpose and ambiguous regulations governing its use further impede its successful implementation.

I drew on elements of PRISMA (the Preferred Reporting Items for Systematic Reviews and Meta-Analysis) (2020) to reduce researcher bias in the search strategy and analysis and increase the review's reliability. I searched using Lancaster OneSearch, an aggregate electronic database (combining 380 databases). Articles that were not in English, had not been peer-reviewed, or did not answer the research questions were excluded. If the full text was unavailable, it was excluded. The title of articles, abstract, and keywords were used to determine relevance. The full text was obtained for further evaluation. When uncertain about eligibility, articles were included in the next screening step. Studies that were unrelated to the research questions were excluded.

AT has been used to explore existing VLE usage, often with the means of providing rules or a structure to support its adoption. Other studies have explored the rejection of the VLE and reasons why this might be so. I have been unable to find any existing studies using AT to explore migrating from one VLE to another, or the specific role that LTPs play in this process.

Seven papers surfaced which explore activity around VLE usage. I will briefly summarise the focus of each paper before exploring their research in the context of my research questions.

- Chang and Kuo (2021) explore the use of a VLE as an entity that enhances theory and practice across a culturally defined boundary – in this context taking learning from the classroom to an online environment for graduate education studies.

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- Codreanu et al. (2017) use AT to explore working practices and why some teachers might reject a VLE from three perspectives: social, practical, and situated.
- Grönlund et al. (2023) use AT to explore tensions in a feedback activity when feedback is provided in VLEs.
- Loiseau et al. (2014) use AT to explore how teachers could be taught to use pedagogically sound designs via a tool that can be implemented in the VLE.
- Park and Jo (2016) use AT on a large data set to evaluate learning activity within a VLE. They use learning analytics to identify the most and least used activities and how usage changes across consecutive semesters, with the aim of improving education.
- Phahlane and Kekwaletswe (2013) use AT to generate a framework to ensure that the VLE is used effectively and can be accessed by learners via mobile devices.
- Varga-Atkins (2016) used AT to explore the generation and implementation of a VLE baseline policy and template.

I also explored recent literature around VLE migration, focusing on nine papers.

- Bove and Conklin (2020) explore whether the type and amount of training taken by academic staff during a VLE migration impacts their comfort level with using the new system. Training was offered by graduate assistants rather than LTPs, which may have impacted the process.
- Garcia et al. (2021) consider the impact of VLE migration on students.
- Glover et al. (2012) investigate the success of a VLE migration that was tailored to individual schools within one university that were starting from different existing VLE usage.
- Judge and Murray (2017) explore VLE migration within nursing education. Their case study revealed the importance of training two academics as specialist, but there were no LTPs involved in the migration.
- Kelly Jackson (2022) investigates the experiences of academics. They do not explore the migration from the point of view of LTPs.
- Paynter and Barnes (2021) focus on the experiences of academic staff, students and administrators during VLE migration, whilst comparing the features of Blackboard and Canvas.
- Rucker and Frass (2017) survey academic staff on the migration challenges they encountered but ignore the experiences of graduates and teaching assistants who are often the primary instructors.
- Ryan et al. (2012) describe the experiences of stakeholders during VLE migration.
- Such, et al. (2017) discuss important considerations relating to VLE migration.

I will now draw on this literature to explore the research sub questions.

4.1 RQ 1.1 How do learning technology professionals interpret the institution's strategic goals for VLE migration and platform change?

The analysis of how LTPs interpret institutional strategic goals for VLE migration must be understood within the broader context of VLE positioning in HE. While VLEs are ubiquitous in global HE (Park and Jo, 2017; Phahlane and Kekwaletswe, 2013), LTPs must navigate competing institutional priorities for these platforms. The multifunctional nature of VLEs - serving both pedagogical enhancement and administrative purposes (Grönlund et al., 2023; Phahlane and Kekwaletswe, 2013; Such et al., 2017) - creates fundamental tensions in how LTPs interpret and implement institutional migration strategies.

This tension is particularly evident in how LTPs must balance institutional control with educational innovation. Codreanu et al. (2017) highlight that VLEs can maintain, transform, or restrict current practices, suggesting their potential use as instruments of institutional control. Additionally, LMS migrations often arise due to the rapid pace of technological change, with institutions regularly seeking to upgrade or replace existing systems to stay relevant (Kelly Jackson, 2022; Rucker & Frass, 2017; Such, et al., 2017). These migrations require careful alignment with strategic objectives, as they represent more than technical transitions—they are integral to teaching and learning in higher education (Rucker & Frass, 2017).

LTPs must reconcile this control aspect with student-centred benefits - such as ease of access to resources for students (Park and Jo, 2017; Phahlane and Kekwaletswe, 2013) - when interpreting migration goals. The continuous acquisition and upgrading of enterprise systems, including VLEs, is recognised as a key strategy for fulfilling institutional directives and delivering sustainable value to the academic community (Garcia et al., 2021). However, this process often drives stakeholders to learn and adapt to new

technologies, making it imperative to identify the support and training required for successful implementation (Kelly Jackson, 2022).

The strategic positioning of the VLE as a 'facilitative boundary object' that extends the time, space, and range of activities available to staff and students to engage in teaching and learning (Chang and Kuo, 2021; Park and Jo, 2017) creates additional complexity for LTPs' interpretation of institutional goals. While this expansive view aligns with transformative educational objectives, it can also highlight and be a source of educator resistance (Codreanu et al., 2017), requiring LTPs to balance institutional aspirations with practical implementation challenges. VLE migrations are often driven by the need to achieve "a better state for institutional praxis and academic purposes" (Garcia et al., 2021), although others acknowledge that being technologically outdated can also be a driver (Ryan et al., 2012). Furthermore, scholars emphasise the importance of stakeholder involvement in achieving effective migration outcomes, as this is crucial to fostering innovation and addressing the challenges inherent in digital transformation (Garcia et al., 2021; Glover et al., 2012).

4.2 RQ 1.2 What contradictions emerge between different stakeholders' needs during the VLE transition period?

Several key contradictions emerge between stakeholders' needs during VLE transitions. The first major tension exists between academic staff preferences and institutional requirements. While academics make pedagogical choices based on their teaching approaches, these may conflict with institutional regulations and policies (Grönlund et al., 2023). This reflects what Fawns (2022) terms 'entangled pedagogy' - the complex interweaving of pedagogy, technology, and institutional structures where the VLE both shapes and is shaped by teaching approaches and institutional contexts. Additionally, VLE transitions often require academic staff to adapt their teaching practices, learn new tools and features, and navigate a system that may initially feel unfamiliar (Glover et al., 2012; Paynter and Barnes, 2021; Rucker & Frass, 2017). This adaptation process is frequently constrained by time pressures, with academics reporting limited opportunities to revisit or redesign course materials ahead of migration (Rucker & Frass, 2017; Ryan et al., 2012), as they have a range of commitments including teaching, research and administrative tasks (Bove & Conklin, 2020). This means that change management is a priority in VLE migration (Ryan et al., 2012).

A second contradiction emerges between institutional expectations and support provisions. While institutions require VLE engagement, educators may resist due to insufficient digital capabilities. The high-level IT proficiency needed to set up complex learning activities demands VLE-specific professional development (Chang and Kuo, 2021; Loiseau et al., 2014), yet this support is not always adequately provided. Even when training is offered, academic staff often find it insufficient or too basic, leading to reliance on informal, self-directed learning strategies (Kelly Jackson, 2022). This dynamic can exacerbate frustrations among academic staff, as technological challenges and unclear expectations around standardised templates can hinder adoption efforts (Judge & Murray, 2017). Moreover, migration fatigue - where stakeholders struggle to balance their existing workload with learning a new system - further complicates the process (Kelly Jackson, 2022).

A third tension exists between formal and informal institutional requirements. Despite Chang and Kuo's (2021) assertion that VLEs are "usually vetted in compliance with institutional regulations," Varga-Atkins (2016) found an unexpected lack of research on formal VLE policy implementations. Where policies do exist, they typically focus narrowly on course administration and content (Varga-Atkins, 2016), potentially reinforcing ideas around the VLE being a resource repository and auxiliary communication tool instead of a mediating instrument for interactivity with the potential to disrupt teaching practices (Chang and Kuo, 2021; Park and Jo, 2017). The additional flexibility afforded by new VLE tools, such as customisable course designs, can simultaneously empower and overwhelm educators, who often spend considerable time experimenting with these features (Rucker & Frass, 2017). Furthermore, academic staff and administrators may experience significant stress due to overlapping responsibilities during the transition period, as maintaining both old and new systems can cause confusion (Rucker & Frass, 2017).

Finally, there is a contradiction between institutional demands and recognition structures. While institutions expect VLE adoption, the lack of formal recognition for staff who actively engage with the platform can discourage uptake (Codreanu et al., 2017), creating tension between institutional goals and staff motivation. Administrators play a crucial role in alleviating these tensions by fostering open communication, reducing fears about change, and keeping stakeholders informed of the migration timeline (Kelly Jackson, 2022). Ensuring that academic staff are both confident and trusted as partners in the migration process is critical

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to its success (Garcia et al., 2021), as their adeptness with the VLE is a key determinant of positive outcomes for both teaching and learning (Kelly Jackson, 2022).

4.3 RQ 1.3 How do learning technology professionals' responsibilities and relationships with other stakeholders evolve during the migration process?

LTPs' roles and relationships undergo significant evolution during VLE migration processes. Initially, LTPs must establish collaborative relationships with academic staff to ensure their influence on the implementation process and prevent technical deficiencies (Grönlund et al., 2023). However, this relationship can be complicated by the undervaluation of LTPs' expertise in selecting, curating, and implementing new technologies, often resulting from insufficient agency and ineffective collaboration mechanisms with academic staff (Jumat et al., 2023).

As the migration progresses, the literature suggests LTPs' responsibilities expand to encompass more complex technical and pedagogical elements. Their unique blend of knowledge across pedagogy, technology, and academic practice positions them to take on crucial responsibilities such as establishing learning design models (Loiseau et al., 2014; Varga-Atkins, 2016). However, the migration process often requires LTPs to provide substantial and ongoing support to academic staff, addressing key challenges such as academic staff readiness, time constraints, and self-efficacy to adapt to new technologies (Kelly Jackson, 2022; Rucker & Frass, 2017). The frustrations of academic staff with constant technological change frequently necessitates both technical and instructional support, reinforcing the pivotal role of LTPs (Kelly Jackson, 2022).

A significant shift during the migration involves LTPs working alongside academic staff to support course redesign. Rucker and Frass (2017) highlight how academic staff often take on learning design duties during the migration due to LTPs being preoccupied with testing and learning the new system themselves. This situation underscores the need for hiring additional LTPs, a step that administrators should prioritise to reduce barriers such as academic staff workload and improve satisfaction with the migration process (Rucker & Frass, 2017; Kelly Jackson, 2022).

In the later stages of migration, LTPs' responsibilities extend to more specialised technical tasks, including the development of customisable VLE templates and the strategic mapping of VLE tools to pedagogically appropriate use cases (Loiseau et al., 2014; Varga-Atkins, 2016). These advanced responsibilities require LTPs to maintain complex relationships with multiple stakeholders while navigating challenges such as varying levels of IT proficiency among users, the constraints of internal policies and addressing the complexities of the new system. Training, initially perceived as a "one and done" process, often evolves into a continuous effort, requiring multiple one-on-one and group sessions to support both full-time and part-time academic staff (Judge & Murray, 2017).

The importance of planning and proactive administrative support is also emphasised in the literature. For example, Glover et al. (2012) and Kelly Jackson (2022) recommend forming a VLE committee comprising administrators, academic staff, LTPs, and IT professionals to develop an implementation plan that anticipates barriers and identifies patterns of interdependency. Such collaborative approaches can help mitigate challenges while fostering relationships that are crucial for the success of the migration.

Ultimately, the evolution of LTPs' roles during a VLE migration reflects their capacity to navigate dynamic and multifaceted responsibilities. Their ability to provide both technical and pedagogical support, while maintaining complex relationships with multiple stakeholders, is integral to ensuring the migration aligns with institutional goals and enhances teaching and learning practices.

Overall, the literature shows a gap and research opportunity at the juncture of these three questions. The purpose of the VLE is unclear, which may hinder its adoption. Levels of IT proficiency, and internal policies, also influence how a VLE is used. The range of tasks that are considered the responsibility of LTPs is wide-ranging. This paper aims to contribute to the empirical research by using AT to explore how LTPs in an HEI navigate their role during a VLE transition, in relation to an institutions' strategic goals, stakeholders' needs and expectations and their evolving roles and relationships.

5. Research design

A 'small-sample, in-depth study' (Tight, 2010, p.338) was chosen to explore how participants support the use of a VLE during a period of change at a HEI. This was to gain contextual, in-depth knowledge about a specific area, which fits with my constructivist-interpretivist perspective. Other authors have successfully deployed similar approaches, for example, Codreanu et al. (2017) and Grönlund et al. (2023) who explored VLE usage via semi-structured interviews.

5.1 Study area

The context of this research was a university in the UK. This institution has been using Blackboard for over 20 years to support its students and academic staff and has been recognised for its dissemination of good practice via an Anthology Catalyst award. The university was at the beginning of a three-year project to transition from Blackboard Learn Original VLE to Blackboard Ultra.

5.2 Study population

The participants consisted of LTPs in a digital education team within an IT department. For anonymity, participants are referred to as LTP1, LTP2, LTP3, LTP4 and LTP5. Two of the participants (LTP1 and LTP2) predominantly supported the technical functions of the VLE and its usage as 'application specialists'; the other three (LTP3, LTP4 and LTP5) were more focused on pedagogic use as 'learning designers'. These roles, while grouped under the broader category of LTPs for this study, maintain distinct responsibilities within the VLE migration project.

Participants' experience ranged from 2 to 23 years in educational technology, with institutional experience varying from 6 weeks to 23 years. This range provided perspectives from both recent appointees and long-term staff members, offering insights into how institutional knowledge influences migration support.

5.3 Sampling procedure

I used convenience sampling, whereby participants were selected because of their availability and readiness to participate (Creswell, 2014; Yin, 2018). This form of nonprobability sampling is appropriate as the study is focusing on a small sample and will not make statistical inferences in relation to the wider population (Yin, 2018).

Participants represented both technical and pedagogically focused roles, as well as differing levels of experience both in the role and at the institution. I have worked at this institution for a decade and have a network of contacts, as well as a deep understanding of the values and customs of this setting. This cultural familiarity gives me a common frame of reference with the research participants and enables me to draw inferences from what was said.

5.4 Data collection method

Semi-structured interviews lasting 50-80 minutes took place with all participants, during the early stages of the migration project. Particular attention was paid to potential power dynamics given my role within the institution (Mears, 2017) - I did not interview anyone that I manage. The interviews featured a mix of scripted open questions and areas for exploration (Mears, 2017).

Hammersley (2017) refers to three principles in research ethics: minimising harm, protecting privacy, and respecting autonomy. To reduce the risk of harm, 'member-checking' took place twice – interview transcripts and a draft of the research were shared with participants (Creswell, 2014). Participants had the opportunity to withdraw from the research, offer corrections or give feedback, thereby increasing the data validity as well as respecting participants' autonomy (Hammersley, 2017; Yin, 2018). The theoretical framework and chosen methodology aligned with qualitative semi-structured interviews. Mwanza's Eight Step AODM (2011) guided the development of interview questions, specifically focusing on migration-related contradictions. Questions explored:

- Participants' understanding of their role during the migration process.
- The institution's strategic goals.
- Stakeholders' needs and expectations.
- Changes in relationships with other stakeholders during the transition period.

5.5 Data management

Participants were informed about the research in advance via participant information sheets and were asked to provide informed consent ahead being interviewed. Interviews were recorded with participant consent. I adhered to General Data Protection Regulations (GDPR) - only required data was collected (and secured using multifactor authentication on Lancaster University systems).

To maintain participants' confidentiality and protect their privacy, identifiable data has been redacted (Hammersley, 2017). Ethics approval was gained from Lancaster University, and the institution where the research took place.

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5.6 Data analysis

A systematic coding approach using NVivo was employed, focusing on identifying contradictions within the activity system. The coding framework was developed through the following process:

1. Coding based on AT elements.
2. Coding identifying contradictions between elements.
3. Coding identifying contradictions between different versions of the activity system or adjacent activity systems.
4. Coding focusing on migration-specific tensions.

Participants' contributions were mapped onto an activity system model to represent a specific situation at a point in time and explore contradictions. The resulting model surfaced the most important contradictions that are discussed in the findings section.

6. Findings

The activity analysed in this study is the migration from Blackboard Learn Original to Blackboard Ultra (the Ultra Project), examined from the perspective of LTPs supporting this transition. The object of this activity is the successful migration of all courses to Ultra, with the intended outcome of enhanced VLE usage driving student engagement and success.

My contribution is to highlight the importance of understanding the complex factors that influence how LTPs support a VLE. Previous literature has touched on that issue, for example by emphasising the need for digital capabilities as I established in my literature review. However, my findings show the need to understand the cultural and social expectations, rather than the challenges of using technology itself.

The study included five LTPs from a mix of education backgrounds, technology backgrounds and 'other', with two describing themselves as having a blend of experience. The participants represented different specialised roles within the institution's digital education team. It was clear that their roles varied, and that their understanding of their purpose varied with business-as-usual tasks including:

- Delivering training for academic staff.
- Delivering training for new LTPs.
- Technical system support including configuration testing.
- Supporting other products that work with/alongside Blackboard.
- Learning design and pedagogic practice.
- Contributing to the Blackboard community and horizon scanning.

LTP1 described their role sitting between the software provider, technical IT support, pedagogical support, and the end users. This was corroborated by LTP2 who described their role as providing strategic input as well as on-the-ground support. Information obtained from LTPs during interviews has been mapped onto Engeström's activity model (2014) in Figure 2.

Figure 2. Activity system model (following Engeström, 2014), annotated with details of the VLE migration as described by LTPs who are supporting the migration from Blackboard learn original to Ultra. The four main secondary contradictions are shown.

Further definition of the components and details relevant to this context are in Table 2. The upper triangle of the activity system consists of components that govern its operation (Park and Jo, 2017). Secondary contradictions were identified between all elements of activity, however, only secondary contradictions between:

- Division of labour AND Subject
- Division of Labour AND Community
- Instruments AND Object or outcome
- Rules AND Community

will be discussed as these were the contradictions that elicited the most comments when the transcripts were coded in NVivo (see Table 3).

Figure 2. Activity system model (following Engeström, 2014), annotated with details of the VLE migration as described by LTPs who are supporting the migration from Blackboard learn original to Ultra. The four main secondary contradictions are shown.

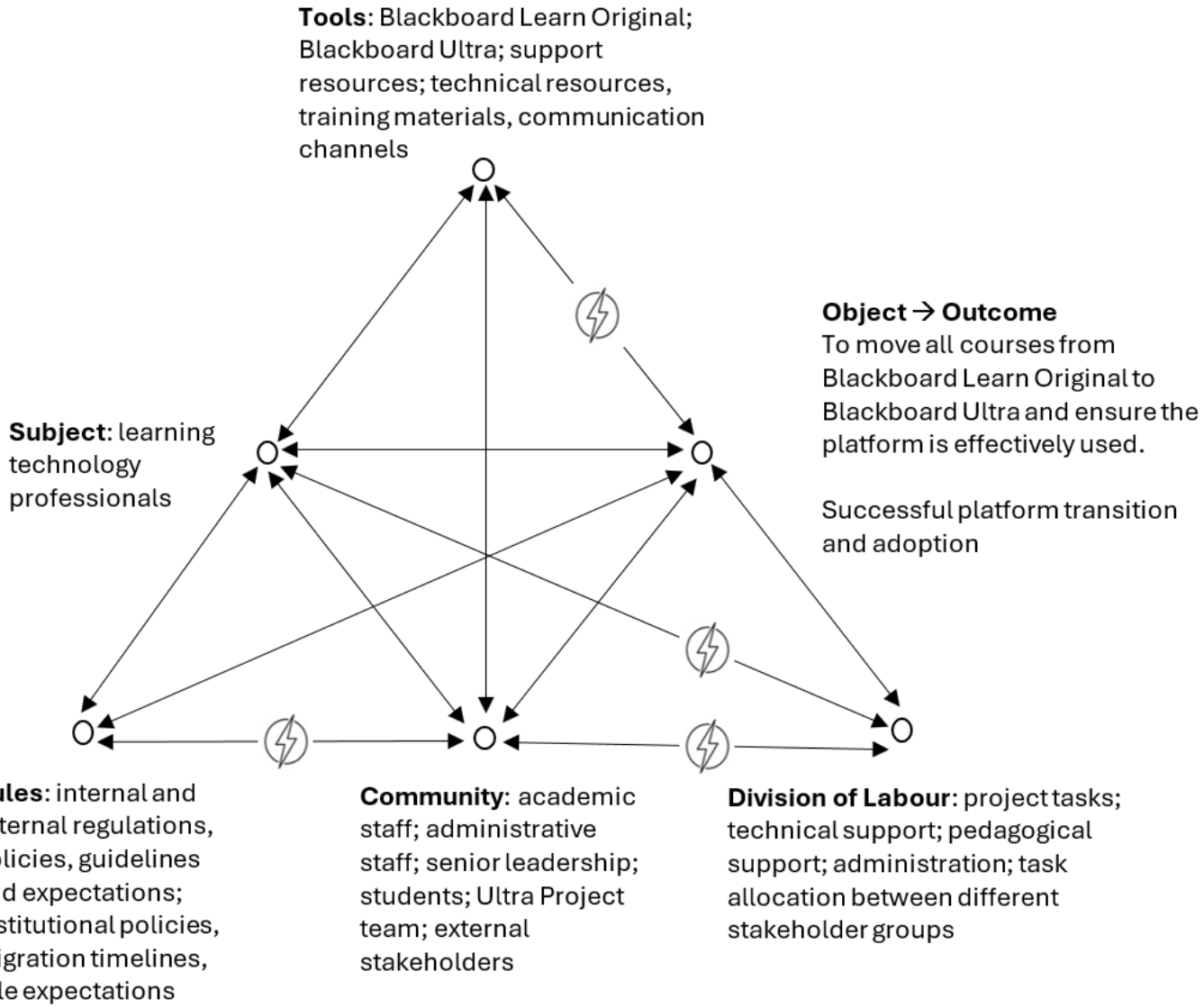

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Table 2. Elements of the activity system defined (Engeström, 2014)

Component	Definition	Description of the component in this context
Subject	People who have a defined purpose and from whose perspective the activity is being viewed.	Learning technology professionals.
Object (and outcomes)	An understanding shared by the subject of what that purpose of the activity is. The *outcomes* represent the results or consequences of the activity.	To move all courses from Blackboard Learn Original to Blackboard Ultra and ensure the platform is effectively used.
Tools	*Tools* mediate the subject's interaction with the object or objective and may be tangible or intangible.	Tools mediating between the LTPs and the move to Blackboard Ultra include templates, exemplar courses, the Baseline, a strategy, professional development sessions, and externally produced resources.
Rules	*Rules* are the norms, regulations, guidelines, or restrictions that govern the activity. They may be explicit or implicit.	Rules include internal and external regulations, policies, guidelines, and expectations. External legislation includes copyright, accessibility, and data protection. Internally, there are rules and cultural norms around retention of work, academic integrity, quality assurance, use of reading lists, pedagogy, accessibility, timelines, alternative VLE usage, and assessment platforms.
Community	The *community* consists of the people who influence and are influenced by the activity (and who provide the social norms that shape it).	The community includes stakeholders VLE migration: academic staff, professional services staff, senior leaders, the Ultra Project team, students, external examiners, and the VLE vendors.
Division of labour	The *division of labour* examines how tasks and responsibilities are distributed among different participants or components of the activity.	The tasks involved include project tasks (such as strategy writing and change management), technical support, pedagogical support, and administration.

Quaternary contradictions between the LTPs' Ultra migration project activity system and the adjacent departmental academic activity system were mapped (see Figure 3) and will be discussed alongside the secondary contradictions.

Analysis of interview transcripts revealed 287 references to secondary contradictions, distributed across four main categories. Table 3 shows their frequency distribution across participants.

Table 4 provides detailed examples from the interview transcripts illustrating some of the contradictions.

Overall, these findings have implications for how LTPs support the use of a VLE during a period of change. Exploring the elements of the activity has helped to surface some of the contradictions and therefore tensions within the project.

Figure 3. Activity system model (following Engeström, 2014) showing quaternary contradictions between the LTPs' Ultra migration project activity system and the adjacent departmental academic activity system.

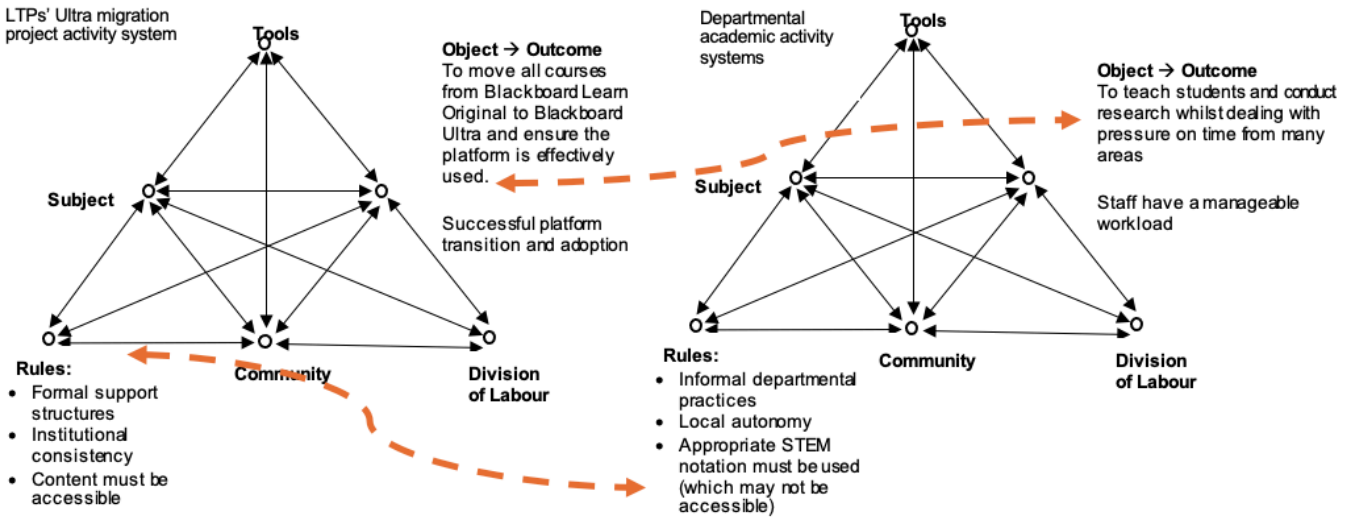

Table 3. Frequency of secondary contradictions identified within participants' interviews.

Secondary contradictions identified	LTP1	LTP2	LTP3	LTP4	LTP5	Total
Division of labour AND Subject	10	6	14	9	10	49
Division of Labour AND Community	6	7	8	10	14	45
Tools AND Object or outcome	6	5	7	8	6	32
Rules AND Community	7	5	8	7	5	32
Object or outcome AND Community	4	7	8	7	2	28
Object or outcome AND Rules	3	2	8	8	3	24
Tools AND Community	3	3	3	9	2	20
Division of Labour AND Object or outcome	2	4	4	0	2	12
Tools AND Subject	2	1	5	1	2	11
Division of Labour AND Rules	1	5	0	1	0	7
Subject AND Object or Outcome	1	2	0	2	2	7
Division of Labour AND Tools	1	3	1	1	0	6
Subject AND Community	1	3	0	1	0	5
Subject AND Rules	3	1	1	0	0	5
Instruments AND Rules	0	1	1	1	1	4

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Table 4. Key contradictions and their systemic implications

Contradiction Type	Examples and systemic implications	Participant Quote
Contradictions between Division of Labour and Subject.	The interviews revealed systemic tensions in labour division and professional identity, as the LTPs feel they are pulled in too many directions. There is role boundary ambiguity between: Project management Technical support Pedagogical support and development Administrative functions This reflects institutional hierarchy and power distribution issues.	"I feel an issue at the moment is… in our team, I feel we're constantly firefighting. That's how it feels because we're so busy answering tickets. There's just not the headspace and the time to step back and think, actually, if we made this improvement or we delivered this training or we updated this guidance or we created some more Knowledgebase articles or we put out much better communications, we could stop half of these tickets and that feels really frustrating… I feel very pulled in two directions. One is answering immediate tickets and putting out fires and the other is more strategic thinking. And I end up doing neither sometimes." (LTP1) "it would have been nicer to have made those preparation sessions a bit more focused: "Right now, we're going to look at this; now we're going to look at that!" and make sure everyone has a good background across the suite of tools in Blackboard; or say, "You're going to be the content gurus; you're going to be the assessment gurus". Although people might not like that, considering the amount of time available and the stakes, it might have been a better way to put ourselves in a position to be able to hit the ground running." (LTP3)
Contradictions between Division of Labour and Community.	The interviews revealed systemic tensions in organisational role distribution. The LTPs suggested that there was a lack of clarity in relation to responsibility for tasks and the distribution of pedagogical responsibilities across LTPs, academic staff, and the academic development unit. Some academics do not view the VLE as part of their teaching responsibilities which points to a fundamental misalignment between institutional expectations and professional identity. The division between content authorship (academic staff) and technical implementation (professional services) reflects deeper institutional tensions about the boundaries between academic and professional services roles.	"Who creates additional educational content is an interesting one, because there will be academics who create all the content they put on Blackboard, there will be some academics who work with Digital Learning to provide materials and Digital Learning create that content, there'll probably be aspects of external or other internal areas where that sort of content is created, and you may also find in some instances that there is some poor administrator sitting somewhere who is getting handed a brief and trying to turn that into a document that students are using because that is the terrifying reality of higher education. Which leads us on to that who uploads educational content to the VLE? In an ideal world, it would be the academic who has that agency over what is going on their course and is really making sure that they're providing the right materials to students, but you may find that it is an administrator." (LTP4) "You have got the classic where multiple instructors are teaching a course. They put their individual content into their named folders at the top layer but like in terms of when does the course get made available, no one wants to make a decision and then they just assume that the other will do it." (LTP3)

Table 4. (cont.) Key contradictions and their systemic implications

Contradiction Type	Examples and systemic implications	Participant Quote
Contradictions between Tools and Object.	The interviews revealed systemic tensions in the VLE's purpose and resource allocation. LTPs suggest that the VLE's purpose is ambiguous and there is an absence of supporting resources. The was also a tension between viewing the VLE migration as a technical implementation versus a pedagogical transformation. This contradiction manifests in competing institutional narratives about the project's purpose.	"I guess from a workplace culture, contractual kind of view of seeing the VLE as part of their teaching requirements, not just turning up to lectures and giving lectures like obviously that's still a big deal. But I think some academics feel like the VLE is an add-on rather than a really useful tool and something that should that you should be spending time embedding into their teaching practises." (LTP2) "I'd say probably the main stakeholder who's been prioritised is iSolutions because it's iSolutions that's doing most of the work; it's iSolutions that's doing most of the organisation of the project and so, by its nature, it's going to be reflected in iSolutions' kind of state of mind around this and looking at this more as a technical migration project rather than a pedagogy-related project, in my opinion and based on what I've seen from the project board meetings." (LTP3) "I mean in most, what is an IT project, right, because although it is an academic project, it's an IT project, because it's delivering an IT product… I think it's a difficult thing to look at a project like this as a global university project from an outside the IT perspective because it's much easier to see it as an IT project." (LTP4) "But I think the project is… all these projects, the software I think is a minor aspect like yeah, you definitely need some good software and some tools, it needs to be intuitive to use, but software's only good as the people who are using it. So, are they empowered to use it in a really effective way?... So, it's more about sharing good practise, about what is sort of evidence based good practise, and that everyone's had the time and the training to support that, and they've got the confidence and the desire, I suppose, to deliver that online. So yeah, the software is a minor part of it, I think." (LTP1)

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Table 4. (cont.) Key contradictions and their systemic implications

Contradiction Type	Examples and systemic implications	Participant Quote
Contradictions between Rules & Community.	The interviews revealed systemic tensions in governance and standardisation. It was felt there was insufficient standardisation and compliance. The LTPs all referred to internal expectations as well as national legislation. It was felt this information was in disparate locations and that the community might not be aware of these rules. This shows tension between established practices and technological change.	"In some ways there are there are challenges that I'm aware of that are through an almost a lack of rules around Blackboard. It does seem like some aspects of it are a bit of a sort of a wild area where people have been just sort of storing files for a long time, that sort of side of things." (LTP4) "I mean the biggest one I can think of for ignoring expectations is that from an IT support point of view, we would like everyone to use Blackboard. However, we have this historic VLE called 'secure.ecs' that the computing department want to use primarily. And it is… They are really against moving to Blackboard because it doesn't do X, Y and Z, but then they also ask us to fix things in secure.ecs because it doesn't do X, Y and Z. And we end up supporting two different platforms, it's a lot more work and it's difficult to convince them to move because the feature parity doesn't exist in Blackboard, but they would still get a better level of support if they did move." (LTP2) "So, what ways do people not follow the regulations would be like uploading poor quality, not copyrighted materials, scanned documents with the wrong orientation or something. Following poor practise, or not following the Baseline, so having inconsistent organisation and lack of key details that students need. Or and although it isn't a regulation to use Blackboard, many have like a single announcement saying all my stuff's on my personal website over here, which might not even be on a University platform, so it might be on an unsupported tool outside of the University like Blogspot or WordPress or an external WordPress, WordPress.com or something like that - that's what comes to mind immediately." (LTP3) "I do expect that there may be some faculties which may be taking VLEs more seriously than others, and I do have this understanding and some information which I cannot generalise, maybe with one or two courses, but I know that people have full freedom, so no one even checks them and asks them anything about VLE. So, they can use the way they want to use it. So, there is no such culture. But I am also aware that some faculties would probably have some kind of criteria that every faculty members will be following." (LTP5)

7. Discussion

The introduction discusses the centrality of the VLE in most UK HEIs. Codreanu et al. (2017) propose that VLE usage differs across countries, with the VLE being learner-centric in the UK, in comparison with being for school management and learning activities elsewhere. This links to systemic issues around the institution's strategic goals for VLE migration – is it to improve its administrative functions including data reporting and analytics, or to enhance its educational purpose? – and the needs of stakeholders. The literature review surfaced no existing research using AT to explore VLE migration, or the specific role that LTPs play in this process; therefore, this paper has implications for local practice and scholarship more broadly.

As mentioned in the findings (section 6), secondary contradictions were identified in all elements of the activity, representing systemic tensions that Engeström (2014) identifies as potential sources of transformation and learning. A number of quaternary contradictions also emerged between the LTPs' activity system and the adjacent academics' activity system. Significantly, these contradictions emerge primarily from the activity's cultural and social intermediaries rather than the use of technologies, suggesting that successful VLE migration requires institutional transformation beyond technical implementation.

The secondary contradictions between the division of labour and both the community and the subjects reveal underlying structural tensions in institutional organisation. The overlap of roles, where LTPs simultaneously perform their primary duties whilst also serving on the project board, reflects systemic issues in resource allocation and organisational hierarchy. These contradictions manifest as workload implications, but more fundamentally represent tensions between institutional efficiency drives and staff wellbeing.

The tools-object contradiction, where LTPs identify insufficient time for resource assessment and project completion, indicates deeper institutional tensions between project timelines driven by administrative imperatives and the pedagogical needs of effective VLE implementation. This systemic contradiction suggests a need for institutional reconsideration of how technology migration projects are resourced and scheduled.

The contradictions surrounding rules and community illuminate broader institutional challenges in governance structures. The institution has few regulations in relation to the VLE and other guidance is not centrally located, which reflects systemic tensions between institutional control and academic autonomy. The perceived need for additional rules around mandatory use of Blackboard and related systems (such as lecture capture), course creation criteria, accessibility (including captions), standardisation, and role delineation (such as assessment set up) suggests underlying structural tensions in how the institution manages educational technology.

7.1 LTPs are 'pulled in too many directions'

The analysis revealed fundamental systemic contradictions in how labour is distributed across four distinct domains:

- Project management
- Technical support
- Pedagogical support and development
- Administrative functions

These divisions reflect deeper institutional tensions between efficiency-driven project management and pedagogically-sound implementation and impact on LTPs professional identities. LTP3 and LTP5's experiences of unclear responsibilities in the Ultra Project point to a systemic contradiction between institutional hierarchies and professional roles. This manifests particularly in the statement that "a heavy workload can lead to a lack of opportunity to fulfil responsibilities in relation to the VLE" (LTP3), highlighting how institutional resource allocation directly impacts service delivery.

Time constraints emerged as a critical systemic tension, reflected across all participants: "We're very stretched" (LTP1), "I think time is going to be a really big challenge" (LTP2), "One of the key challenges: meeting the deadline... because we're running out of time" (LTP5) and "we've got to do like six months of work in the next six weeks" (LTP3). These time pressures extend beyond the LTP team to the broader academic community, with academic staff described as "very, very time poor" (LTP4). This represents a quaternary contradiction between the VLE migration activity system and adjacent academic systems.

The need for additional staffing, explicitly stated by LTP2 and LTP4, reveals structural inequities in resource distribution between academic and professional services. LTP1's reflection that, "I feel very pulled in two directions. One is answering immediate tickets and putting out fires and the other is more strategic thinking. And I end up doing

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neither sometimes" illuminates a fundamental contradiction between operational demands and strategic development, reflecting the institution's prioritisation of immediate efficiency over long-term effectiveness.

Technical support responsibilities create additional systemic tensions. While officially assigned to the IT department and its subgroups (including those who have responsibility for student records and automation of data) with some support also provided by the vendor, unofficial practices emerge as compensatory mechanisms. This is evidenced by LTP1's observation of staff in the computer science department providing unofficial assessment setup advice, creating contradictions between localised problem-solving and institutional best practices. This represents a quaternary contradiction between formal support structures and informal departmental practices.

The finding that Blackboard support varies in priority across LTP roles, sometimes only undertaken under managerial direction, points to deeper structural tensions in how professional services roles are defined and valued within the institution. This reflects broader systemic contradictions between institutional hierarchies, professional autonomy, and resource allocation.

These contradictions suggest that resolving workload issues requires more than additional time or staff. Instead, they indicate a need for fundamental institutional transformation in:

- How professional services roles are valued and resourced.
- The balance between operational and strategic work.
- The relationship between academic and professional service divisions.
- The alignment of project timelines with pedagogical needs.
- The integration of formal and informal support structures.

7.2 Lack of clarity in relation to responsibility for tasks

The analysis reveals fundamental contradictions between established institutional hierarchy and the operational reality in the distribution of migration-related VLE responsibilities. While senior management and the Ultra Project team officially hold project ownership, including responsibility for communications, change management and strategy writing, this creates systemic tensions between strategic planning and operational implementation. LTP4's observation that "the priority for the project is the project" reveals a deeper contradiction between project-driven metrics and pedagogical effectiveness.

A significant structural contradiction emerges in the distribution of pedagogical responsibilities across LTPs, academic staff, and the academic development unit. This diffusion of responsibility reflects broader institutional tensions between centralised control and distributed expertise, particularly in how educational technology initiatives are governed.

The creation and management of educational content reveals critical contradictions between institutional roles and actual practices. While academic staff are nominally responsible for content creation, LTP2 and LTP4's observation that some academics do not view the VLE as part of their teaching responsibilities points to a fundamental misalignment between institutional expectations and professional identity. This systemic tension is further exemplified by LTP4's observation that "some poor administrator somewhere... is getting handed a brief and trying to turn that into a document that students are using." This situation reveals power imbalances in how educational labour is distributed and valued within the institution.

Assessment creation presents another significant structural contradiction. The division between content authorship (academic staff) and technical implementation (professional services) reflects deeper institutional tensions about the boundaries between academic and professional services roles. As LTP4 notes:

> In an ideal world, it would be the academic who has that agency over what is going on their course and is really making sure that they're providing the right materials to students, but you may find that it is an administrator.

This contradiction highlights systemic issues in how academic agency and administrative support are balanced within the institution.

Administrative task allocation reveals further systemic contradictions. LTP2's emphasis on process documentation and LTP3's observation about course availability decisions-

> Multiple instructors are teaching a course. They put their individual content into their named folders… but like in terms of when does the course get made available, no one wants to make a decision and then they just assume that the other will do it.

- point to structural issues in how responsibilities are assigned and communicated.

These role boundary issues, identified as stressful by LTP5, represent more than operational confusion. LTP4's statement that

> When those roles and responsibilities are clear, it can have a really positive impact. I think the current distribution of roles and responsibilities influences the overall effectiveness in a way that is possibly negative because you have different routes for most things that are organisational.

suggests that these contradictions fundamentally impact institutional effectiveness.

These findings indicate that resolving these contradictions requires:

- Restructuring of institutional power dynamics between academic and professional services roles.
- Clear articulation of role boundaries while acknowledging necessary overlaps.
- Recognition of the relationship between role clarity and institutional effectiveness.
- Alignment of project governance with pedagogical priorities.
- Development of clear decision-making frameworks that respect both academic agency and administrative expertise.

7.3 Ambiguity of purpose of the VLE and absence of supporting resources

The analysis reveals fundamental contradictions between tools and the object that reflect deeper institutional tensions about the role of educational technology. A primary contradiction emerges between required and available resources - a range of tools were described as crucial to achieving the outcome, but many of these are currently unavailable. LTP3 identified the need for gap analysis, highlighting systemic issues in resource planning and allocation. LTP1 and LTP3 emphasised the importance of communications and a clear strategy explaining the value and outcomes, to ensure buy-in from users.

The conflation of tools and outcomes by some LTPs reveals a significant structural contradiction. While training and student support are positioned as project benefits, this reflects a deeper tension between viewing the VLE migration as a technical implementation versus a pedagogical transformation. This contradiction manifests in competing institutional narratives about the project's purpose.

The identified need for comprehensive support resources (including synchronous and asynchronous sessions, in-house and external guides, exemplar courses, and templates) points to systemic contradictions between institutional expectations and resource provision. LTP3's call for a 'playbook based on course archetypes' suggests a structural tension between standardisation and customisation in educational technology implementation.

A critical contradiction emerges between the need for experimentation time and institutional constraints. LTP2's suggestion that better student support training could free up staff time reveals systemic issues in resource allocation and staff development. The use of recognition programmes (the internal VLE Awards and Anthology's Exemplary Course Program) represents an institutional attempt to resolve these contradictions through incentivisation rather than structural change.

A systemic contradiction appears in competing views of the VLE's purpose. There was acceptance that the migration would bring benefits because staff would have to consider existing practices. LTP1, LTP2, and LTP4 envision cultural transformation and enhanced stakeholder support. LTP1 discussed what the VLE could be, which was echoed by LTP2 and LTP4 who said their desired outcomes were about changing the culture and surpassing stakeholder needs. LTP2's observation that "some academics feel like the VLE is an add-on rather than a really useful tool... that you should be spending time embedding into their teaching practises" reveals fundamental tensions in how educational technology is valued within the institution.

This tension is further exemplified in the project's characterisation. LTP3's observation that the project board views it "as a technical migration project rather than a pedagogy-related project" and LTP4's statement that "it's an IT project" directly contradict LTP1, LTP3, and LTP5's view that the software is only a minor aspect of the project. This represents a fundamental institutional contradiction between technical implementation and pedagogical transformation.

All five LTPs understood the need to move from Blackboard Learn Original as it is viewed as a 'clunky, outmoded platform' that is coming to the end of its life, so the level of vendor support is diminishing. Also, the university's contract for using Blackboard Learn Original is nearing its end, so a decision about continued usage had to be made. However,

the choice of Blackboard Ultra reveals tensions between practical constraints and pedagogical aspirations, with LTP2 and LTP4's references to alternative platforms suggesting underlying questions about institutional decision-making processes.

7.4 Insufficient standardisation and compliance

The analysis reveals fundamental contradictions between institutional governance needs and existing regulatory frameworks. The LTPs all referred to internal expectations as well as national legislation. It was felt this information was in disparate locations and that the community might not be aware of these rules. Issues were also raised around the dearth of policies. These contradictions manifest in what LTP4 describes as "challenges... through an almost a lack of rules around Blackboard. It does seem like some aspects of it are... a wild area," indicating systemic tensions between institutional control and academic autonomy.

A significant structural contradiction emerges around system standardisation. All the LTPs discussed areas where they thought legislation was lacking - this included a contractual obligation to use Blackboard which would make it easier for students to locate content and for staff to support just one system. The continued use of a bespoke VLE by one school, noted by LTP1, LTP2, LTP3, and LTP4, reveals deeper tensions between local autonomy and institutional consistency. Issues were noted around having to support two different platforms. This creates quaternary contradictions between different activity systems within the institution, manifesting in support challenges and inconsistent advice.

The absence of mandatory policies around lecture capture and accessibility reveals systemic tensions between educational inclusion and academic freedom. LTP3's observation that mandating lecture capture is "something that is quite shied away from" points to deeper institutional contradictions between pedagogical innovation and traditional academic autonomy. Surprise was expressed by LTP4 and LTP5 at the lack of lecture capture regulations and the possibility of enforcing a certain level of content accessibility was thought to be contentious.

A contradiction emerges around tool selection and support. LTP1 and LTP3's frustration with staff using unsupported tools, combined with LTP4's observation that this is "driven by a desire to have something that can be more malleable, even if it's not actually benefiting the students," reveals systemic tensions between pedagogical flexibility and institutional standardisation.

LTP4 stated that there should be clear rules around who can have a Blackboard course and for what purpose. LTP2 also suggested that rules defining responsibilities would be beneficial.

The standardisation contradiction extends to assessment processes, highlighted by LTP4's observation:

> You will probably hear the conversation of "we work very, very differently to other people" whenever you visit any school. But if you're looking at what administrators are doing, for instance, they are probably doing exactly the same thing in every school.

This reveals a fundamental contradiction between perceived uniqueness and actual operational similarities.

In-house VLE usage recommendations (the Baseline) represent an attempted resolution to these contradictions, but limited awareness of the Baseline among staff points to systemic issues in policy communication and implementation. This connects to broader contradictions around policy awareness. Various internal policies affecting VLE use exist – in relation to assessment, academic integrity, retention of student work, and additional exam recommendations - but they are not recognised as relevant to the VLE by the community. LTP2, LTP4 and LTP5 were aware that some schools/faculties have customs relating to when content on the VLE should be made available to students, but they did not know whether these are formally documented.

Legislative compliance in relation to copyright, data protection and accessibility adds another layer of systemic tension, particularly around accessibility requirements. All staff at the university are expected to be aware of the Data Protection Act 2018 - the UK's implementation of the GDPR, which controls the use of personal information. In contrast to this Web Content Accessibility Guidelines (WCAG) (2023), and the Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018 (PSBAR) were discussed as challenges for the community:

> there are some aspects or sort of some disciplines which can try their hardest to engage with the PSBAR and are still unable to deliver to a full standard because there are sector-wide challenges…, you know, accessibility and STEM being a main one. (LTP4)

This reveals quaternary contradictions between institutional requirements and disciplinary constraints.

These findings have significant practical implications for HEIs undertaking VLE migrations, suggesting a need for the:

- Establishment of clear governance structures that balance institutional standardisation with academic flexibility and autonomy.
- Implementation of workload models that recognise the complexity of LTP roles during migration.
- Allocation of resources and tools based on pedagogical needs rather than purely administrative timelines.
- Creation of centralised policy frameworks while maintaining appropriate local autonomy.
- Development of explicit role definitions while acknowledging necessary overlaps in responsibilities.
- Integration of accessibility requirements with disciplinary needs.
- Recognition of the relationship between local practices and institutional efficiency.

8. Conclusion

In conclusion, AT poses lucrative opportunities for a researcher to explore the experiences of LTPs supporting a VLE during a period of change at a HEI. The findings illustrate a wide range of contradictions across this university-wide project, which could have implications for its success. Secondary and quaternary contradictions in this activity, that are often attributed to technologies, in fact appear to originate in the activity's less visible social and cultural mediators – the systemic institutional structures. In particular, the lack of clarity around (and knowledge of) regulations, policies, guidance, and expectations by the community is a risk. Therefore, this examination of practice has implications for the LTPs, institutional policy, and for scholarship more broadly.

This study makes four contributions to the knowledge of how LTPs support a VLE migration. Firstly, LTPs face challenges due to role ambiguity and competing demands on their time, which prevents them from effectively focusing on specific tasks. The fluidity of role boundaries during VLE migration often creates tension between formal responsibilities and practical needs. Secondly, unclear divisions of labour, coupled with insufficient standardisation, lead to tension within the community, impacting the ability of LTPs to perform their roles effectively. This is compounded by the influence of existing power structures that complicate effective change management. Thirdly, ambiguity in the purpose and goals of the VLE, combined with limited availability of essential supporting tools, further hinders LTPs' ability to fulfil their responsibilities. Cultural expectations frequently conflict with technical requirements, creating additional obstacles. Fourthly, unequal distribution of resources and inadequate compliance standards reflect broader institutional hierarchies, leading to disparities in the support LTPs receive, ultimately affecting the overall success of the VLE transition. These findings have significant implications for how institutions manage VLE migrations and effectively support the LTPs facilitating such changes.

A limitation of this problematisation of object-oriented activity, and the recognition of contradictions in activity, is the intentionally small sample size for the purpose of gathering rich data, so it is not possible to make statistical inferences in relation to the wider population. This study focuses specifically on key secondary and quaternary contradictions within the activity system, acknowledging but not exploring primary and tertiary contradictions. This decision was made to maintain focus on immediate migration-related tensions while recognising that broader systemic contradictions warrant future research. Potential future research could expose and aggravate the primary contradictions of this activity.

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