



Transforming Curriculum Praxis and Workplace Capabilities: changing the way the game is played

eSTeEM Final Report

(project code: 18E-MRRI-EI-01)

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Executive Summary

Transforming curriculum praxis and workplace capabilities (project code: 18E-MRRI-EI-01) builds on two initial eSTeEM projects (i) [Enhancing Systems Thinking in Practice \(STiP\) in the Workplace](#) (Reynolds et al., 2016; 13L-MR-EI-02); and (ii) [Framing Professional Competencies for Systems Thinking in Practice](#) (Reynolds et al., 2018; 17C-MR-EI-02).

This third project investigated how a postgraduate curriculum in Systems Thinking in Practice (STiP) at The Open University (OU) can shift from a competencies-based design toward a capabilities-informed praxis. The project (2018–2025) was led by Martin Reynolds and Ray Ison with team members Rupesh Shah and Helen Wilding and used participatory action research and systemic inquiry across three parallel workstreams:

- WS-1: Institutional research into innovation and governance in HE curriculum design (interviews, document review, literature synthesis).
- WS-2: Trailblazer activity and approvals for a Level 7 Systems Thinking Practitioner Apprenticeship (STPA) (employer workshops, Trailblazer group meetings, provider engagement).
- WS-3: STiP 2020 curriculum refresh (module production, learning design, AL engagement, pilot presentations).

Key outcomes and impacts

- National approval in 2020 by the Institute for Apprenticeships and Technical Education (IfATE/ Skills England) for the Level 7 (postgraduate)

Systems Thinking Practitioner Apprenticeship (STPA) Standard – the first formal occupational recognition connected to a postgraduate STiP curriculum pioneered at OU since 2010. Over ten Higher Education Institutions (HEIs) set up Level 7 programmes for the STPA, with some also establishing corresponding postgraduate accredited qualifications (PG Diplomas and Masters) in systems thinking. Professional accreditation pathways developed in parallel by partner organisations – Systems and Complexity in Organisations (SCiO) and Systems Practice Assessments (SPA Ltd).

- OU produced revised 30-credit STiP core modules TB871 (Making strategy with STiP) and TB872 (Managing change with STiP) with a 2020 launch, both demonstrating strong postgraduate registrations, improved retention, and high student satisfaction. Two 30-credit apprenticeship-specific modules were created TBXY873 (Co-designing interventions with STiP) and TBXY874 (Evidencing STiP). TBXY874 (portfolio/ePortfolio module) embodied the project's theory of change for capability development.
- Despite approval and early cohort launches (2023–24), STEM Faculty withdrew OU STPA provision in 2024 due to low registrations and institutional/ Faculty financial priorities – particularly in maintaining a conventional STEM identity. STiP mainstream provision faced similar withdrawal recommendations but was retained after review. The withdrawal curtailed planned post-launch evaluation for STPA.

- WS-1 found more barriers (six) than enablers (three) in OU contexts for curriculum praxis; common enablers were staff motivation, permission/endorsement, and relationships; common barriers were over-standardisation, imposed change, administrative constraints, time pressures, lack of discursive space, and limited involvement of ALs.
- WS-2 demonstrated a successful multi-stakeholder Trailblazer Group (TBG) learning system that navigated IfATE and external end-point assessment (EPA) complexities and engaged employers, alumni, and HEI advisors. It contributed significantly in producing a new Standard and recognition of a professional role of a systems thinking practitioner (STP), and multiple providers – but exposed tensions between employer-led KSB frameworks and capabilities-oriented pedagogy.
- WS-3 produced an STiP curriculum (TB871/TB872) that better supports workplace experimentation and practitioner development, reinforced AL engagement in production, and supplied fresh pedagogic patterns. These include fostering safe-fail spaces for praxis, and bricolage as a methodological approach for both STiP students and curriculum practitioners; both fostering capability rather than fixed competence. At the time of publishing the final report, the workstream had failed to persuade the School and Faculty to adapt and adopt the two new STPA modules TBXY873 and TBXY874 for the mainstream STiP curriculum

Recommendations (high level)

- Protect and resource discursive, safe-fail spaces (time, tutor support, AL recognition) essential for capability development.
- Integrate work-based portfolio practice (ePortfolio; practice tutor role) into mainstream PG pathways to extend capability benefits beyond apprenticeships.
- Recalibrate governance and funding models to enable more agile, relational curriculum design, reducing over-standardisation and enabling cross-module/qualification budgeting.
- Foster collaborative provider networks (shared assessment practices, provider communities) to resist purely competitive market pressures and sustain capability-rich pedagogy.

1. Aims and scope

Systems thinking is increasingly recognised as being relevant to meeting contemporary workplace challenges associated with VUCA (volatility, uncertainty, complexity and ambiguity). Global recognition for the role of systems thinking was evident in publications from UN (e.g. United Nations, 2014; Draper, 2016), WHO (e.g. Adam, 2014) and OECD (2017). As the only UK provider of a specific postgraduate (PG) programme on Systems Thinking in Practice

(STiP)¹, the OU was well placed to respond to these new demands as well as share experience of curriculum design in this field. Building on two earlier STiP-oriented eSTeEM projects (Reynolds et al., 2016; Reynolds et al., 2018), this third project focused on challenges around developing capabilities over and above competencies – for students and curriculum designers alike.

Project aim

- To experiment with transforming curriculum design from a competencies approach (delivering pre-specified and fixed learning outcomes and/or Knowledge, Skills, Behaviours) toward a capabilities-informed curriculum praxis that enlarges learners' and curriculum designers' freedom to choose reasoned pathways of action valued in workplace complexity, using OU postgraduate STiP as a case study.

¹ The postgraduate Systems Thinking in Practice postgraduate programme offering PG Cert, PG Diploma and MSc was launched in 2010. This drew on experience of undergraduate teaching which started in 1971. Other HEIs in UK and beyond have not provided systems thinking specific qualifications but may have embedded some Systems concepts and approaches in qualifications linked to other professional domains (e.g. management, leadership, environmental sustainability).

Specific goals

- WS-1: Build institutional literacy on workplace capabilities for (a) students and (b) academics designing PG curriculum; map enablers and constraints for curriculum praxis at OU and beyond.
- WS-2: Advance an employer-led Trailblazer Group to secure a Level 7 Systems Thinking Practitioner Apprenticeship (STPA) Standard and work to make OU a provider.
- WS-3: Refresh STiP curriculum for 2020 to foreground capabilities (TB871, TB872) and develop apprenticeship-specific modules (TBXY873, TBXY874) with the longer term goal of transforming the mainstream STiP curriculum.

Scope and boundaries

- The inquiry addressed two workplace orders: the workplace of postgraduate students (1st order) and the workplace of academic and academic-support staff designing and delivering curriculum (2nd order).
- Methods privileged participatory action research and systemic inquiry. The findings are contextualised to OU as a distance-learning, part-time postgraduate provider but draw transferable insights for other HE providers.

Project timeframe and resources

- Main activity 2018–May 2020 with initial extensions to July 2020 and follow-up activity through 2025 to complete reporting, review launches, and monitor initial apprentice cohorts.
- Funding and in-kind time were allocated from eSTeEM and STEM Faculty for worktime of team members – Martin Reynolds (MR), Ray Ison (RI), Staff tutor, Rupesh Shah (RS), and Associate Lecturer, Helen Wilding (HW); team member HW was contracted for focused research support.
- Additional funding support from School of Engineering and Innovation through STEM Faculty was secured prior to start of the third eSTeEM project specifically for supporting a series of WS-2 workshops with TBG members

2. Activities

2.1 Overall approach

We conducted the eSTeEM project work (including curriculum development) as a systemic inquiry based on principles of participatory action research (PAR cf. Fals-Borda, 2006) and STiP (Ison, 2017; Reynolds and Holwell, 2020 [2010]).

The overall aim to explore and develop workplace capabilities – including those of students being served and OU staff working on curriculum provision – was met through three inter-related, concurrent workstreams.

- Workstream 1 (WS-1) – explore experiences of enacting curriculum praxis both (a) beyond the ASTiP group but within the OU, and (b) beyond the OU (lead: RS/HW)

- Workstream 2 (WS-2) – progress the STPA development work and explore experiences of enacting curriculum praxis in doing so (lead: RI)

- Workstream 3 (WS-3) – progress the STiP 2020 development work and explore experiences of enacting curriculum praxis in doing so (lead: MR)

As part of writing this report, an extension of the systemic inquiry – tentative Workstream 4 – was agreed in July 2020 with further eSTeEM support for HW and central academic time. The primary aim for WS-4 was to explore means for taking the inquiry further beyond the findings associated with the OU case study, including opportunities of possible external funding support for creating space towards developing more a progressive higher education curriculum. However, ensuing capacity restraints on central academic team arising since 2020 limited these final workstream activities to HW taking on the role of setting up and promoting scholarship seminars for STiP academics, and assisting with drafting of final report.

Fig. 1 illustrates the overall systemic inquiry approach in terms of three core workstreams and a follow-up workstream

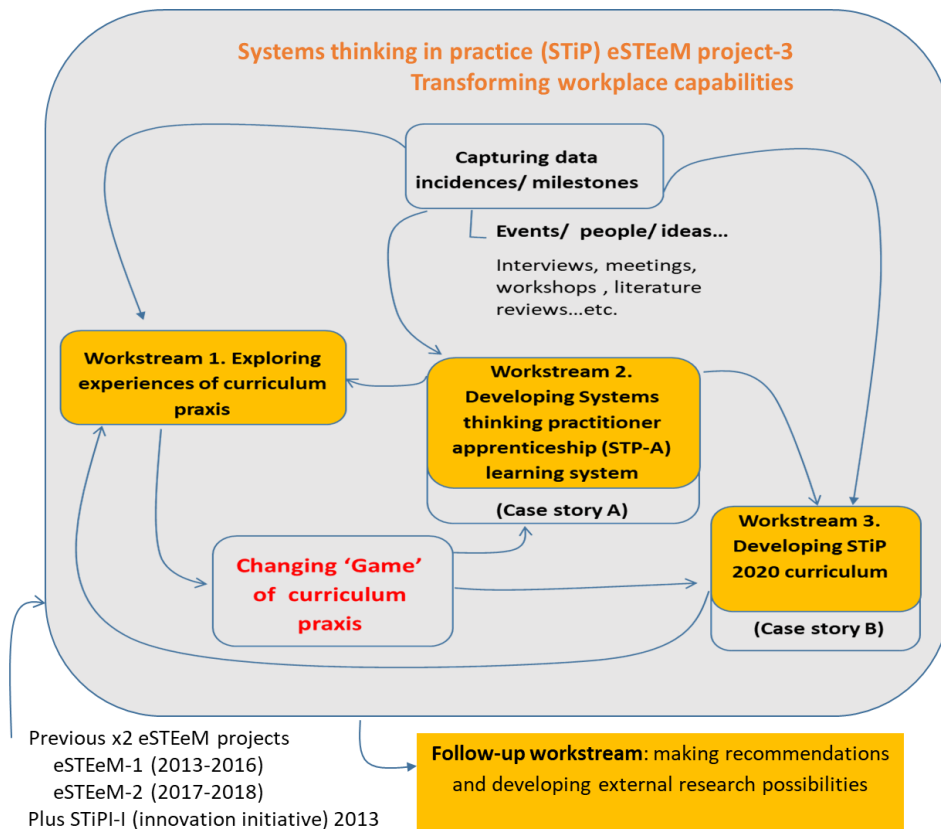


Fig. 1 Conceptual model of eSTeEM Systems Thinking in Practice (STiP) project-3: (Changing the game) Transforming curriculum praxis and workplace capabilities illustrating three core workstreams. Project 3 informed and resourced by two previous eSTeEM projects and wider STiP Innovation Initiative set up in 2013 by members of ASTiP – the Applied STiP group in School of Engineering and Innovation.

Coordination of workstream activities was undertaken collectively with orchestration from Project leads (Reynolds and Ison).

Disruption occurred with all four workstreams due to externalities including: (i) pressures on staff time through early retirement coupled with reduced contract times of senior ASTiP staff; (ii) ongoing University Curriculum Review and consequent reduction of PG curriculum at Faculty level; and (iii) Covid-19 pandemic. These disruptions form part of the case stories for WS-2 and WS-3 presented in the Findings section. The key significant change for WS-1 was the need to cancel a planned workshop due to take place in Spring 2020. At that time, it was anticipated that we might be able to reschedule a workshop along with launching of this eSTeEM report to coincide with ASTiP group plans for a series of 50th anniversary events celebrating OU systems teaching in 2021. The follow-up workstream was disrupted (in a welcome way) by the success of workstream 2 (approval for developing new STPA modules) and the need for central academic time to focus on initiating new module development. As a result, more of HW's time was used in drafting sections of this final report and there was less focus on progressing an external research bid than initially anticipated.

The specific tasks we undertook to generate/gather and analyse data in each of the workstreams are outlined below. Conventional 'research' data – mostly from interviews and formalised observations – was complemented with 'natural' data accumulated from relevant email exchanges and conversations etc.

2.2 WS-1 Exploring experiences of enacting curriculum praxis

WS-1 had two key activities – interviewing OU colleagues and identifying relevant literature to understand experiences elsewhere (see Fig 2).

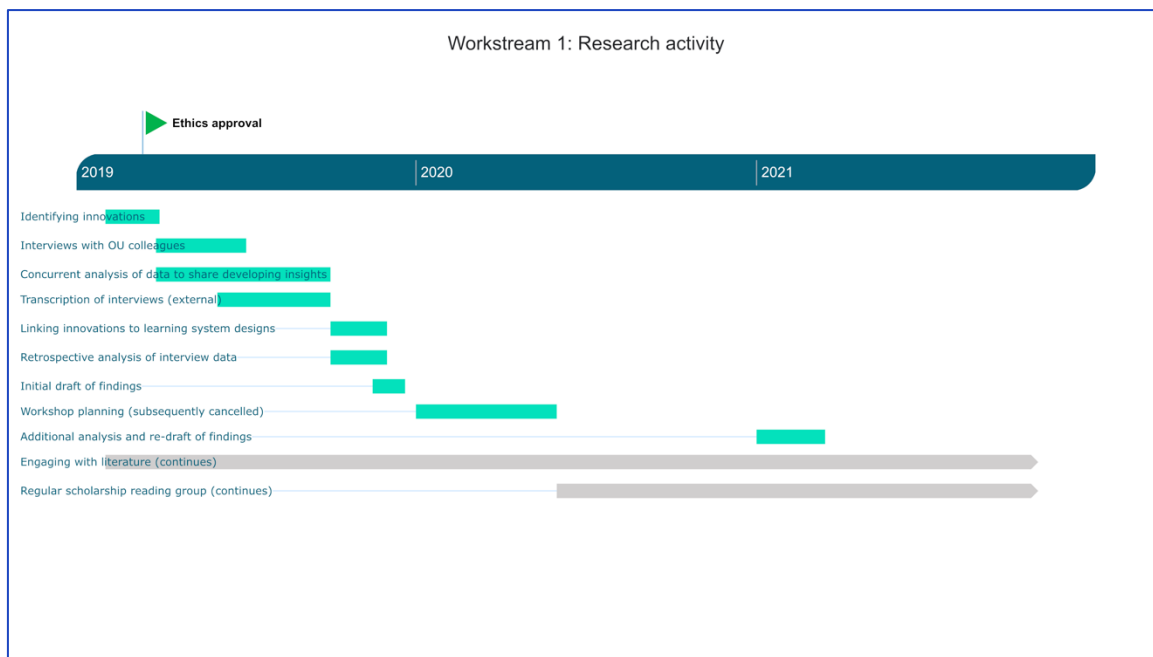


Fig 2: Key dates in Workstream 1 research activity

Early in 2019, we sought ethical approval for interviewing OU colleagues (Reference HREC/3196/Reynolds). To identify possible participants, a combination of OU online sources, our pre-existing knowledge, and word of mouth were used to identify innovations that were claimed to be, or we perceived as, linked to improving the OU ability to develop the workplace capability of students. Sources included scholarship websites; Quality Enhancement Lunchtime seminars; Employability Enhancement and Career Progression (EECP) seminars; internal conference programmes; open research

online (ORO); and, the main OU website. There was no intention to be exhaustive, the concern was with scoping an illustrative range of innovations across institutional, qualification and module levels. The original intention was to focus on examples at a postgraduate (PG) level only. However, this was expanded to include examples at an undergraduate (UG) level when it became apparent that PG examples did not feature strongly in these sources. Subsequently, the numerous innovations and word of mouth were used to draw up a list of potential participants to invite for interview.

A total of 13 colleagues were interviewed. Five were connected with institution-wide developments; four with postgraduate modules/qualifications; and, four with undergraduate modules/qualifications (for details see Appendix **Error! Reference source not found.**). The interviews invited participants to reflect on, and examine, their experience of introducing new ideas drawing on a semi-structured interview guide (Appendix B).

HW drew on personal notes and recollections of the interviews to share insights with the rest of the co-investigator team (through email, asynchronous online discussion threads, online meetings, and, prior to COVID-19, the occasional face to face meeting). After transcription, the data was analysed retrospectively to explore curriculum praxis in the OU. Insights provided input to the development work of WS2 and WS3 enabling us a practitioners to develop our own praxis capabilities.

Literature review was continuous. Whilst literature associated with curriculum design and the benefits of new pedagogical ideas are extremely common, it was much more difficult to locate literature detailing HEI practitioners experiences of making changes and enacting curriculum praxis. Initially, insights from the literature were shared in team meetings, by email and using MS Teams. However, it became apparent that there was little workload capacity for the research team to engage with literature in isolation. Therefore, in 2020, a reading group was introduced with a series of papers curated by HW and themed on a pre-agreed topic. The Reading group has expanded with other ASTiP colleagues participating, and continues with the themes relating to STiP pedagogy on an approximate bimonthly basis through to 2025.

2.3 WS-2: STPA development work

The full case story for WS-2 will follow in section **Error! Reference source not found.** . Here the focus is not on what happened, but the activities we undertook to ensure we captured the details of these developments and experiences of it (Fig. 3).

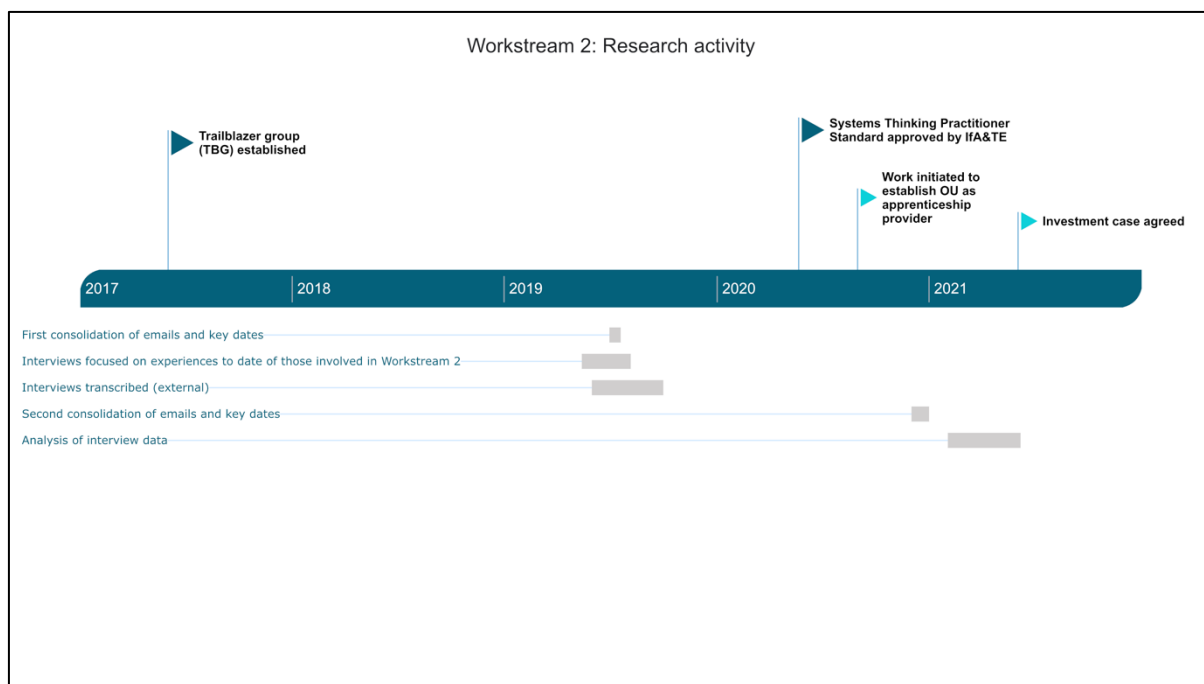


Fig. 3: Key dates in Workstream 2 research activity

‘Natural’ data included email exchanges, records of meetings and our reflective journals. An initial consolidation of the key dates and discussions up to mid-2019 was produced. This was further developed at the end of 2020 and iterated in the development of this report (Appendix C).

In addition, we conducted interviews to generate data. Formal research interviews were conducted (by HW) with OU colleagues (including RI, MR and RS)² who were involved in WS-2 (Appendix D). HW drew on personal notes and

² A total of nine interviews were conducted across both workstream 2 and workstream 3. Some colleagues reflected on their experiences of both workstreams so it is not possible to divide this further.

recollections of the interviews to share insights with the rest of the research team. After transcription, the data was analysed retrospectively (HW).

We also conducted informal interviews with employers and Trailblazer group (TBG) members which was used to inform the work in progress only (contracts with Mike Walker, AL, and Bryan Hopkins, STiP alumnus, plus report by OU Business Development Unit (BDU)).

2.4 WS-3: STiP-2020 development work

Figure 4 captures the activities of more general STiP developmental work beyond the Apprenticeship

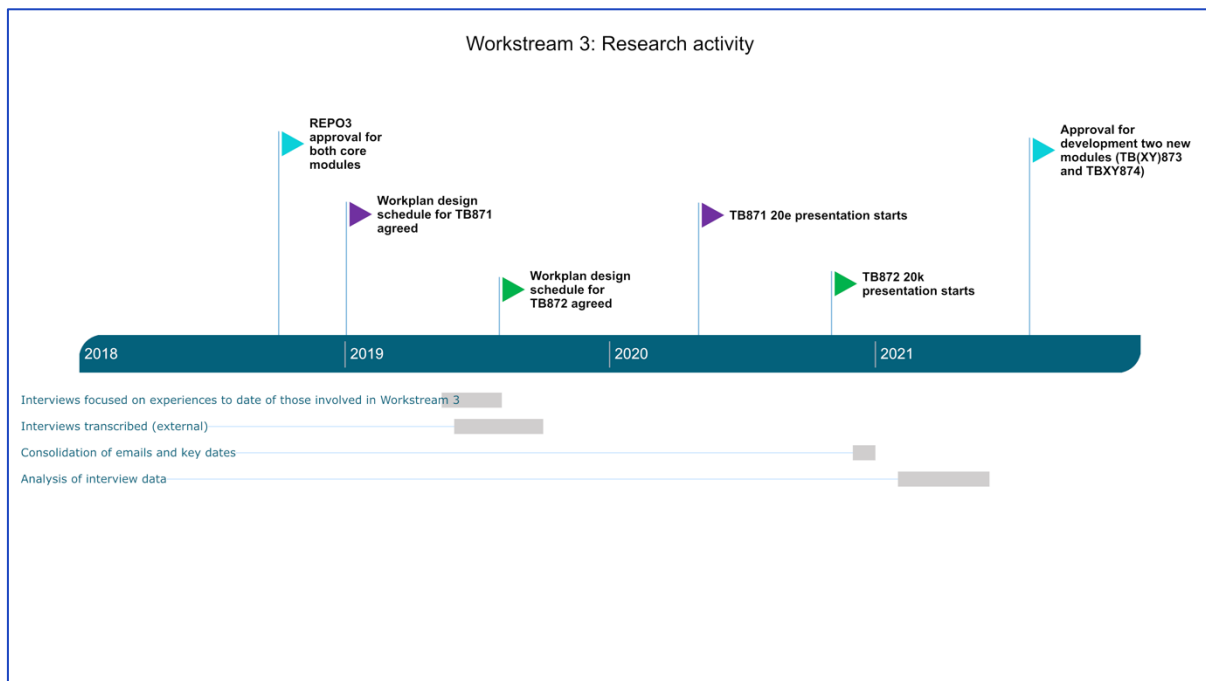


Fig. 4: Key dates in Workstream 3 research activity

‘Natural’ data included email exchanges, records of meetings and our reflective journals. A consolidation of key dates and discussions for WS-3 was produced at the end of 2020 and further iterated in the development of this report.

Formal ‘research’ interviews were conducted (by HW) with OU colleagues (including RI, MR and RS) who were involved in WS-3 (details in Appendix D). HW drew on personal notes and recollections of the interviews to share insights with the rest of the research team (at meetings/using Teams). After transcription, the data was analysed retrospectively (HW).

2.5 Towards a lens for exploring findings

Literature reviews provided a core activity of the research. Annex 1 summarises a review of literature led by HW relating to workplace capabilities and curriculum praxis. The review ends with the invitation to view curriculum praxis as a learning system, but with varying viewpoints regarding the purpose, constituents and configurations of the system. Annex 2 (also led by Helen), identifies five slightly different viewpoints as conceptualisations of such configurations using different sources of literature: (i) curriculum as emergence from external and internal influences in a socio-cultural context; (ii) curriculum as an interface system mediating between university and employer; (iii) curriculum learning system with a community of practice (CoP) as part of the workplace but separate from university; (iv) curriculum learning system with a CoP as separate from university and workplace and interface system; and (v)

curriculum as an integral to lifelong learning system comprising a landscape of practice .

Different perspectives can view the dynamics of curriculum development in different ways, drawing on different emphases and positioning of academic and workplace influences. It is not our intention to claim that one conceptualisation is 'better' than the others. They can be more or less useful in different circumstances. Acknowledging these different perspectives and possibilities of varying configurations between elements of curriculum development, we formulated a research lens using a capabilities approach towards curriculum praxis that serves capabilities development both in students' own workplace and in our own educators' workplace. The purpose (the 'what') and rationale (the 'why') of curriculum praxis as a learning system was agreed upon:

Purpose: *to design and enact learning systems by means of theory-informed constructionist systems thinking, with morally committed action (in support of OU values and endeavours towards promoting social justice), and reflexive practice.*

Rationale: *in order to enhance creation of appropriate learning spaces for workplace capabilities to develop for students and educators alike.*

The purpose serves pedagogical practice "in which harmful or unsustainable practices and power relationships can be understood and reoriented, and in which new possibilities for action can emerge and be enacted" (Mahon, 2014, p.54)

Fig. 5 illustrates the scope of workplace capabilities being addressed through each workstream in this project.

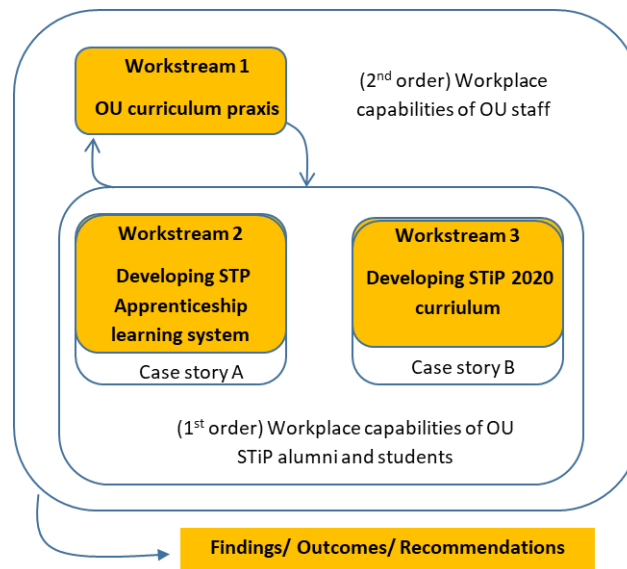


Fig. 5 Collating findings from workstreams 1 to 3 (transforming workplace capabilities) associated with the case study of postgraduate provision for a systems thinking practitioner apprenticeship (STPA) and systems thinking in practice (STiP) qualifications, in relation to two different workplaces: (i) workplace of alumni/ students; and (ii) workplace of OU staff supporting curriculum provision.

Beginning with the first Workstream (WS-1), we examine how the OU context shapes the possibilities for, and threats to, enacting curriculum praxis. But also, since curriculum praxis can be concerned with changing the context so that new practices are possible, we also try to imagine what is needed to enact curriculum praxis.

3. Findings

Findings span institutional enablers/constraints (WS-1), the Trailblazer-led learning system that produced the STPA Standard (WS-2), and the STiP 2020 curriculum production and presentation outcomes (WS-3). Across streams, tensions emerged between capability-oriented pedagogy and institutional structures shaped by market, credential, and efficiency pressures.

3.1 (WS-1): Experiences of enacting curriculum praxis

Drawing on similar research from Mahon (Mahon 2014, Mahon, Heikkinen and Huttunen 2019) analysis of the data generated in WS-1 revealed both enablers for, and constraints to, enacting curriculum praxis in the OU.

Enablers – opportunities for curriculum praxis in the OU

Three key enablers were identified in the data – (E1) OU staff attitudes and backgrounds, (E2) gaining permission for innovation, and (E3) relationships with others. Each of these are elaborated in Box 1 below.

Box 1 Enablers for curriculum praxis in the OU

Enabler 1: Attitudes and backgrounds of OU staff

The primary enabler to curriculum praxis are the attitudes and motivations of OU staff. The participants we interviewed portrayed making improvements as an unquestioned part of their job. They

approach everything they do in terms of seeking opportunities to make improvements using guiding questions such as “what do I need to do to bring something new into the student experience?” (Participant 1) or “how can I help the OU get better at doing this?” (Participant 6). For some, it was also a core part of who they are as a person. As one participant said “I always do those things. It’s not particular to this situation. It’s across my life.” (Participant 10).

Participants often started their account of how an innovation came to be with a retrospective of their experiences both within and outside of the OU demonstrating the importance of their own trajectory to what they do. Ideas arise out of previous experience, knowledge of technological advancement, familiarity with pedagogical developments, contact with students, and, discipline-specific research.

Of particular interest is the way in which the background or academic discipline of the participant influenced not just the desired change but the way in which they approach and talk about the process of making change happen. For example, one participant, from a teaching background, spoke about the innovation process in terms of an interaction between reading pedagogical research, conducting their own scholarship projects, and, making changes. In another example, we asked a participant from a design background about the language that they were using when talking about the process and they replied:

“I do think, there’s this idea of trying out is very much a design process, I think fundamental to it and in our core modules that exactly what we are teaching our students to do and we basically do what we preach in a sense, so yes we do experiment with different set ups...” (Participant 12)

Enabler 2: Gaining permission to introduce new ideas

The main factor that participants reported as helpful to introducing new ideas and practices is gaining the endorsement and support of appropriate senior colleagues, university committees or key stakeholders accompanied by funding where needed. This involves making the case for the change and the potential benefits it will bring but helps legitimise the work. One participant said that having permission gave a sense of

freedom to be disruptive. Another, that it helped to know that a key stakeholder supported the case being made. Gaining permission is not a one-off event, it is an ongoing process of conversations, negotiations and updates.

There was one example given of an innovation that had to cease because permission was withdrawn.

Enabler 3: Relationships with others

Participants emphasised that they do not work in isolation. One participant highlighted how important it is to create shared enthusiasm and ownership of new ideas and allow ideas to develop through conversations.

Personal networks are used to identify others with relevant knowledge or experience; networks and influence; or, access to necessary resources. Colleagues often need to be convinced about the idea and its potential impact. But once on board, they take on various roles such as enhancing the idea; being critical friends; arguing the case for change; providing resources; and, reducing distractions so that the space needed for innovation is protected.

Noteworthy that the eSTeEM scholarship project itself might be regarded as performing a higher level of enabling function, in providing a further space for conversation to identify enablers and constraints.

In some situations, whole teams (such as a module team) are engaged in curriculum design. In this context, the experience of introducing new ideas will vary from individual to individual. For some it can be exciting and liberating. For others it is uncomfortable and can create anxiety particularly if the changes challenge established roles and familiar procedures.

Constraints – barriers to curriculum praxis in the OU

The data revealed that the context is not always conducive to introducing new ideas and practices, as these quotes illustrate:

“The processes that we have within the Open University, the support we have, the ability of [...] administrators. Each of those is a barrier to innovation. As is the governance that we go through. As are the systems that we use, as are our inability to look outside the organisation.” (Participant 10)

“we were operating in a bubble in the sense that we were kind of a small island of trying to do things differently in a big sea of trying to do things exactly as they’ve always been done. So, you know, it’s quite difficult to innovate in a context where everything has been set up to do work in a specific order and in a specific way” (Participant 7)

Six key barriers were identified in the data – (B1) over-standardised approaches, (B2) imposed changes (B3) constraining management and administrative practices, (B4) time constraints, (B5) constraints on discursive spaces, and (B6) restrictive access for deliberation – elaborated more in Box 2.

Box 2 Barriers to curriculum praxis in the OU

Barrier 1: Over-standardised approach to module production

Curriculum design practices are particularly influenced by the institutionalisation of project management approaches to module production and a mind-set that a module needs to be delivered,

relatively unchanged, for eight years or more. Some participants expressed frustration with this process in terms of the amount of investment and length of time needed 'up front' and its impact on responsiveness to market changes. There were also concerns that once produced modules become out of date in relation to content, pedagogy and/or technology. Furthermore, navigating the administration and resource requirements for module production can interrupt the ability to introduce innovative pedagogies or technologies:

"So, yes, we were enthusiastic, optimistic and ready to go. Ready to get going and writing and we just, at every single turn we took, there was another frustration [...]. Literally, everything [...] was swept away from us" (Participant 11)

Barrier 2: Imposed university-wide changes or initiatives

Participants often referred to the need to fit with university-wide changes or initiatives. For example, to reduce face to face teaching; to move from 30 point to 60 point modules; to use the FutureLearn platform; or, to increase the content delivered on-line. In turn, these changes were often attributed to the need to reduce the cost (financial and/or staff time) of production and/or presentation. In one instance, the participant attributed the innovation to the need to ensure the discipline survived in a context that values high throughput undergraduate qualifications rather than lower throughput postgraduate ones.

These drivers were not always viewed positively from the perspective of pedagogical improvements. Some curriculum changes were reported in a way that they were a response to the realisation that student experience and outcomes had deteriorated, or could do so, as a result of a university-wide change. For example, the reduction in face to face teaching created the conditions where innovations such as online group tasks and other forms of face to face events were necessary.

Barrier 3: Management and administration practices

Participants highlighted that management and administration practices constrained innovations in management, administration and curriculum design. As one participant explained, the institutionalisation of

standardised practices set up expectations so if you want to do something different you need to justify why.

Another participant drew attention to the need for the OU to be less risk averse when possible innovations are considered.

A challenge facing those developing a new qualification/apprenticeship programme or defending an existing one is making the case that there is a market for the curriculum and therefore will be financially viable. One participant talked about the need to defend a PG qualification on the basis that it reached a large share of a relatively small market (as compared to the perceived norm of UG modules that are delivered en masse). In this instance, the academic team were also aware that the market would be most interested in studying in smaller chunks, but due to financial models had to conform to producing a 60 point module that could be less popular. Another participant commented that traditional market research methods are not effective in identifying emerging market needs or exploiting the potential to create entirely new markets.

Some participants expressed concern about other ways in which standardised approaches to curriculum design can generate administrative constraints. Those mentioned included drafting stages (D1, D2, D3); scheduled module team meetings; and, rights-clearance processes.

In other examples, participants encountered problems because there were no procedures, financial arrangements or technological solutions for doing what they wanted to do. For example, whilst it is a simple process to email all students currently studying a particular module, it is more complex to email those registered on a qualification (whether or not currently on a module) or alumni of a qualification. Without these procedures in place, barriers such as different interpretations of the nature of the contact and data protection can make what seems a simple task very complex and time consuming. Another example, is that budgets for developing new resources or technological tools are attached to a module, rather than to a qualification or entire schools/faculties where economies of scale could make some innovations more affordable and attractive.

Participants recognised the importance of both Core Systems Replacement (CSR) and the introduction of the AL contract as potential facilitators of the innovations that they were involved in. However, in the meantime temporary workarounds are required. In respect to CSR, participant 10 highlighted that “until we’ve seen it, we don’t know if it will be able to achieve the things that we want it to achieve” demonstrating a degree of uncertainty about whether these changes will be enabling or constraining.

Barrier 4: Time constraints

Participants noted that doing things differently does take time, even if innovations ultimately hold the potential to save resources:

“So, there’s a learning curve involved and I think there was an assumption that that learning curve would not be there and that everything would be quicker and cheaper immediately, but actually there was quite a bit of extra work involved in trying to do things a different way” (Participant 7)

However, most participants innovated in the context of time constraints whether that was the pressure of module production timelines; other demands on their own time; or, the timely availability and responsiveness of co-innovators. One participant highlighted that the work was categorised as study time in their workplan, another that the work was taking place in their own time.

Time constraints can mean that the original ideas are not fully implemented but adapted or scaled back to fit the time available.

Barrier 5: Little space to surface and discuss perspectives on desired outcomes

Whilst those involved are committed to improving student experience and outcomes, the different possible interpretations of a good student experience, how people learn and desired outcomes can create differences of point of view with respect to the most appropriate curriculum design.

Participants in WS-1 mentioned success in both broad terms, such as module/qualification learning outcomes, and more narrowly linked to particular measures, such as student retention or more students qualifying (MSQ). It was notable that, unless a participant was being interviewed about initiatives associated with employability or apprenticeships, workplace capability of students was not focused on as a primary reason for making changes.

These tensions need to be resolved in a curriculum design process but there often is not the appropriate space to do so.

Barrier 6: Missing colleagues ('players in the game')

There were few examples of full engagement of AL teams in curriculum design. In comparison, there were examples of innovations where problems had arisen because it had not been possible to consider the implications for AL workload or technological awareness and suitably prepare them for their role in realising curriculum design changes:

"I don't think with the best will in the world anybody realised until the module was going into presentation that there was an awful lot of new stuff for both tutors and students to get to grips with"
(Participant 8).

One participant suggested that ALs were under-used as sources of ideas for curriculum design and as critical friends in checking the feasibility of novel approaches. Others suggested that greater consideration needed to be given to AL training needs when new pedagogical ideas or VLE developments were being introduced in a module or across the OU.

Summary: a systems lens for examining case stories

The enablers and constraints identified in the OU context are a manifestation of those identified by Mahon and colleagues. WS-1 has highlighted that participants experience more constraints to curriculum praxis than enablers. Most participants had identified ways around – or through – the barriers.

However, they were not confident that they had created a change that would make it easier for anyone following a similar path in the future, or, that their work had led to sustainable improvements to mainstream business or student experience.

WS-1 provides insights into the general context – opportunities (enablers) and threats (constraints) – in which the two workstreams WS-2 and WS-3 were carried out. These two workstreams represent particular instances of the enactment of curriculum praxis, both actively involving research team co-investigators. They are presented in this report as case stories – analogous to ‘match reports’ in our using the metaphor of particular ‘games’ of curriculum praxis played out as learning systems. The STPA case story (WS-2) represents a learning system primarily for the design of a new Apprenticeship Standard, and secondarily for the design of an OU curriculum qualification to support provision against the Standard. The STiP-2020 case story (WS-3) represents a learning system for the redesign of an existing OU curriculum associated with the PG programme of systems thinking in practice.

To assist analysis and comparison between the two games at play, the findings from each learning system are examined in relation to a benchmark reference system – or lens – helpful in flushing out features of curriculum praxis and

capabilities.³ The 'reference system' comprised four sources of influence. In relation to curriculum praxis, the sources can be summarised in terms of four questions of political economy (parameters common to both learning systems):

1. sources of motivation (who gets what? values informing curriculum praxis),
2. sources of control (who owns what? power and accountability in making praxis work),
3. sources of knowledge (who does what? practicalities and assurances along with uncertainties and complexities entailed), and
4. sources of legitimacy (who suffers what? rationale enabling or constraining praxis).

For each of the two case story learning systems – WS-2 and WS-3 – a brief context is provided, followed by sections addressing the four sources of influence respectively – needs (motivation), decision making (control),

³ Derived from reference system associated with critical systems heuristics (CSH). See Ulrich and Reynolds (2020). Ch. 6. Critical Systems Heuristics: The Idea and Practice of Boundary Critique. In: Reynolds, Martin and Holwell, Sue eds. Systems Approaches to Making Change: A Practical Guide. 2nd Edn. London: Open University and Springer, pp. 255–305.

provision (knowledge), and legitimacy – followed by a final section summarising the wider significance of the case story.

Whilst the four influences might be regarded as *inputs* to the system, the immediate *outputs* are the findings associated with each source of influence. The broader *outcomes* might be regarded as findings associated with the significance associated with the case story beyond that of the immediate case. More broader still are the potential *impacts* of both case stories; a concern addressed in a final section of the report.

3.2 (WS-2): Case story of STPA development work

Context

University apprenticeships provide a route to higher education (HE) through work-based learning. They might be regarded as part of wider developments and debates on resetting and repurposing of higher education triggered in-part by the Bologna process launched in 1999; intergovernmental

higher education reform process initiated through the European Union.⁴ Box 3 summarises the external drivers for apprenticeships in the UK.

Box 3 UK Higher Education Apprenticeships (external)

Extending higher education curriculum to include degree apprenticeships was given legitimacy primarily as a means for supporting an alternative funding stream for HE (through employers in the marketplace). But such a shift also enabled space for rethinking and experimenting on the role of the University curriculum in relation to internal and external influences (cf. Lattuca and Stark, 2009).

An added impetus in the UK was the introduction of the Apprenticeship Levy; initiated by the UK government in April 2017. All employers paying a wage bill of more than £3 million per year are required to pay 0.5% of their payroll each month as a levy tax which can then be reinvested back into their workforce in the form of Apprenticeship training. The Apprenticeship Levy introduced in the UK is designed to put apprenticeship funding in the hands of employers and encourage them to invest in and create apprenticeships.

[Trailblazer groups](#) are groups of employers who take responsibility for developing and championing an apprenticeship. An apprenticeship trailblazer group (TBG) is responsible for developing apprenticeships standards specific to job roles which have never had an apprenticeship programme, or standards that will replace existing programmes for other job roles. TBGs can thereby influence HEIs and other educational providers in prompting investment towards new curricula in serving apprenticeships. Trailblazer groups were

⁴ The Bologna process which began in 1999 originally involved 29 European countries with the aim towards standardising Higher Education provision with Quality assurance to enable transnational mobility between academics and students; accompanied by the setting up of agreed credit transfer mechanisms between HEIs. The wider aim was to transform HE from a system that serves an *industrial* society to one that serves a post-industrial *knowledge* society.

initiated through the UK Skills Funding Agency in 2013 (SFA; acronym extended with remit to Education to ESFA in 2017) though given a boost in legitimacy and authority by the Institute for Apprenticeships (IfA; acronym extended later to IfATE reflecting a broadening remit to include Technical Education) in 2017 with the introduction of the Apprenticeship Levy.* Once the group and its proposal for a new occupational standard is recognised by IfATE, they write the occupational and end-point assessment (EPA) plan, and collate funding evidence to inform the funding band recommendation.

*IfATE subsequently changed later in 2025 to a similar parastatal – Skills England – with more focus on Levels 5 and 6 apprenticeships, and associated concerns for a reduction of Level 7 apprenticeship levy support.

Meanwhile, prior to 2018, the OU had been through what academics in particular had experienced as an unprecedented period of turmoil under the leadership of several prior (less-academic/more corporate) VC appointments (including one appointment from a CEP of Microsoft Education, followed by an appointment of a BBC Executive Producer). In contrast to what was experienced by some colleagues as a creeping culture of management consultancy, 2018 spawned a renewed confidence towards restoring academic integrity along with appropriate governance structures. The sense of renewal coincided with impending 50th anniversary celebrations, expressed with a reaffirmation of mission by the newly appointed VC – Tim Blackman – in 2019:

“The OU is one of the UK’s best inventions. It ranks with the NHS and National Parks as a visionary idea, bringing the opportunity to learn and study to anyone, whatever their circumstances.” ([OU Newsletter, 2019](#)).

The OU began taking on new challenges and opportunities in exploring its relationship with workplace learning and learning for work, particularly in experimenting with apprenticeships and formulating an employability strategy,

coupled with OU expertise in lifelong learning. The OU was beginning to address some of the challenges hinted at in an earlier address to the OU from Carolyn Fairbairn, Director-General of the CBI:

“...greater flexibility in degree provision will help people access the life-changing opportunities that a university education can provide. ...[W]e will need greater dynamism in our higher education provision – including reforming traditional course delivery ...recognising the need to provide more in-work options like part-time, distance learning, and apprenticeships....In developing [these] ideas ... I have benefited from The Open University being akin to a public policy lab on ‘what works’ in supporting learning and earning.” (Fairbairn, November 2017 in OU pamphlet ‘Fixing the broken market in part-time study’ p.2).

The Business Development Unit (BDU) developed an Apprenticeship market strategy which was approved by the Vice Chancellor’s Executive (VCE) in February 2018. This was subsequently updated in November 2019 through the [Strategic Vision for Apprenticeships](#).

In 2017, an investment case for STPA was submitted for STEM Faculty approval. ASTiP staff met with various Faculty and Board of Studies staff over February–March 2017 to scope out a possible Level 7 Systems Thinking Practitioner Apprenticeship (STPA) to be offered on the back of the very successful STiP PG programme (since 2010) and the findings of prior eSTeEM projects. Funding for investment was approved. The ASTiP Group organised and hosted a meeting at Walton Hall to explore the potential of the STPA (including some key externals/employers). The OU was encouraged by externals and those present to proceed. With the full support of the Head of Engineering and Innovation (E&I)

School, the Director of Teaching for E&I Board of Studies (BoS) and STEM Associate Dean for Curriculum, the ASTiP Group pushed ahead with first steps on establishing a trailblazer group.

Figure 6 provides a generalised timeline of various stages of WS-2. A more detailed exposition of actual events in the timeline can be found in Appendix C.

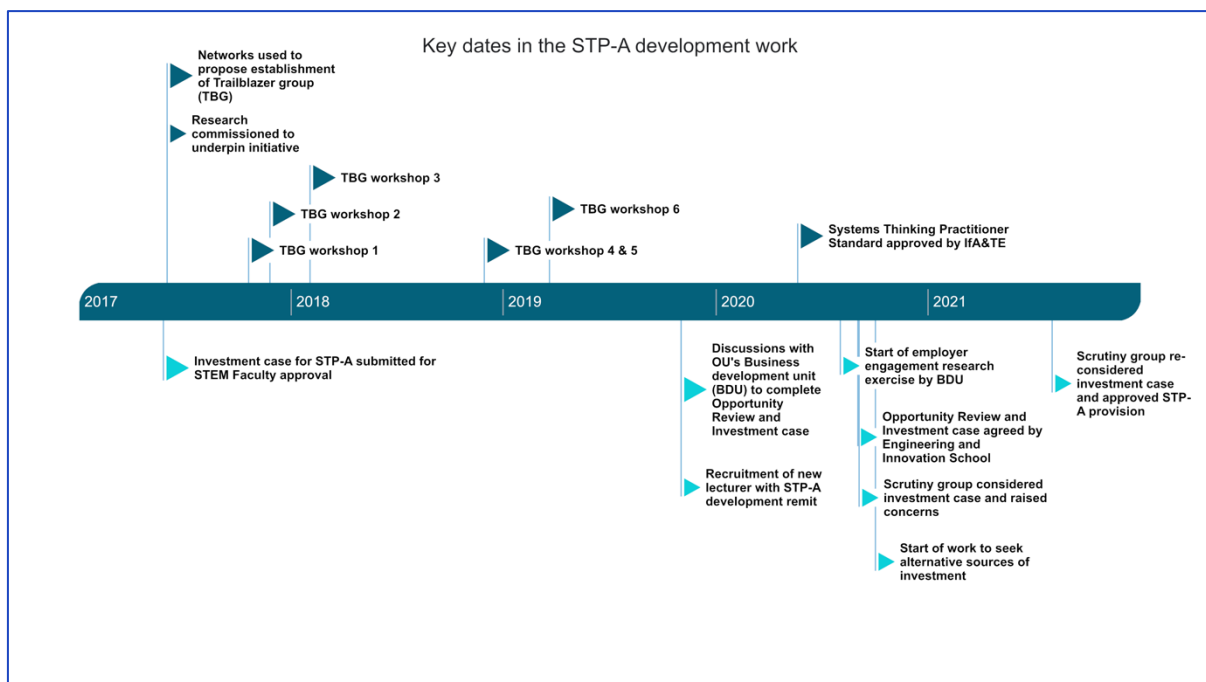


Fig. 6 Timeline of key stages in development of the Systems thinking practitioner apprenticeship (STPA) beginning with OU-supported formation of a trailblazer group (TBG) with endorsement from Institute for Apprenticeships and Technical Education (IfATE) in 2017 to eventual OU production work on STPA provision in 2021

STPA at the OU was finally launched in May 2023 with a total of 16 apprentices. Following a similar number of initial registrations for the second cohort in May 2024, a decision was made by STEM Faculty Executive team in September 2024 to close the programme.

(sources of motivation) STPA needs: drivers and measures of change

The **prime objective of WS-2 was to progress the establishment of, and external approval for, a level 7 Systems Thinking Practitioner Standard.** This was understood to respond to the interest that Systems Thinking Practitioners and employers had expressed in having a formalised, externally validated ‘competency framework’ for professional recognition of systems thinking practice.

“timing was serendipitous – just ending eSTeEM phase II and opportunity arose for [trailblazer group] support” (MR)

The network of contact with employer representatives, training providers, practitioner communities and a thriving, self-organised STiP alumni community established through prior eSTeEM projects served as a starting point for promoting the possibility to form a trailblazer group and identify prospective members. These different stakeholders each had their own drivers and measures of change. As one example, the practitioner community, SCiO (Systems and Complexity in Organisations), with whom we work on existing modules, had already worked on a competency framework that they wanted to be accepted more widely. In addition, this grouping had an ambition to gain recognition as a professional body for Systems Thinking Practitioners. The trailblazer group and the establishment of the Standard therefore presented SCiO with an opportunity to progress these aims.

Training providers, such as universities, cannot be members of trailblazer groups but can act in an advisory capacity. Although the OU had already become a provider of other apprenticeships, it had not invested time and expertise to support the work to get a new occupational Standard established in the first place (colleagues D&F). Within the OU, there were different motivations expressed for investing in this process and a much longer lead-in time than the usual module production processes. On the one hand, it was perceived as important to ensure recognition of the subject area in its own right (colleague D). However, this was also seen as a way of influencing the external context in a way that would subsequently provide new opportunities for providing a curriculum for different types of students and therefore gain business and income for the OU (colleagues E&F). The establishment of the standard would inevitably require new modules to be written which would enhance the suite of postgraduate T-modules⁵ provided in the school (colleague D). Furthermore, as one colleague observed, this presented a promising way of ensuring the ongoing 'survival' of the ASTiP group and the subject area:

"I was hearing noises from the STiP group that they were worried about the future of STiP. Because they could see that many of them are approaching retirement or getting near to that point and they couldn't really see any

⁵ The two existing STiP modules (TB871 and TB872) are electives for a number of PG qualifications as well as a requirement for the PG STiP specific qualifications.

succession planning for who would replace them. And, the fear was that the whole area might, might die away. [...] So I was saying a postgraduate STiP apprenticeship might be a thing to do. And they [ASTiP group] just, they just leapt at it. They could see that it was a fantastic opportunity.” (colleague D)

It was these more internal concerns that were the drivers behind **the secondary objective of WS-2 which was to progress OU provision against the upcoming STPA standard.**

Uptake of apprenticeships in general by the OU was not as much as expected. For STPA there was hope of attracting a market similar to those of the business school (colleague E). However, recognising there is not a well-recognised market, one task for ASTiP was having to convince colleagues inside the university that there is/ will be a market (Colleague F). The key driver amongst ASTiP colleagues was the task of creating market demand for the STPA, building on the prior success amongst STiP alumni in creating the STPA.

(sources of control) STPA decision making: autonomy and accountability

Although the ASTiP group members helped to initiate and were keen to support the work of the trailblazer group and initiate the work for the OU to become a provider, they had limited control over the necessary resources to do so.

Resources and the Trailblazing Group

At first, the ASTiP group put forward proposals to be supported by the university for a bid to Higher Education Funding Council for England (HEFCE) under the Degree Apprenticeship Development Fund Round 2 scheme. Bids were restricted

to one per organisation and the STiP bid, despite strong initial support was displaced by a bid from Social Work (SWDA, Social Worker Degree Apprenticeship). Fortunately, in 2017/2018 the Faculty was able to provide a funding allocation of £32K and this was further supported through the E&I school budget (c.£18k). These resources enabled the ASTiP group to organise and host a meeting at Walton Hall to explore the potential of the apprenticeship (Spring 2017), and subsequently provide facilitatory and administrative support for the TBG to have six further workshops (2017–2019). In the same period, a new full-time STiP lectureship appointment was endorsed and taken up in 2018 in anticipation of the developing apprenticeship provision.⁶

Well over half of the eventual members of the TBG were either STiP alumni or representatives of their employers. In addition, it was a STiP alumna who introduced the person who became the chair of the TBG. As one colleague commented, this was an unintended, but beneficial, impact of the ASTiP group maintaining contact with former students:

⁶ Natalie Foster was appointed lecturer. In the same period however, ASTiP group experienced a net reduction in full time equivalent academic support with early retirements from one Senior lecturer (Chris Blackmore) and one Professor (Simon Bell), as well as reduced part-time role for one other Professor (Andy Lane) and Staff Tutor and co-investigator (Rupesh Shah).

“There has been various things over the years, that have been aware of the STiP alumni community and knowing that, thinking this is a positive thing. But not always knowing how best to tap in to it for the benefit of the community themselves, but also for the benefit of the university, and suddenly, actually, the fact that such care had been taken over nurturing that community has suddenly reaped huge rewards. Which, it wasn’t done with that in mind, it was done because it was felt like it was a good thing to, a positive thing to have that community and to support that community. But suddenly the benefits have become very apparent” (colleague E)

Up until STPA, OU had for long been the only HEI that has focused on teaching STiP, rather than incorporating systems thinking in specific domains (such as Business and Administration or Health and Wellbeing programmes). This presented a challenge for the TBG in terms of collating the funding evidence from three potential training providers (OU, Hull University, and Cranfield University). The ASTiP group worked through their network of academic contacts to inform them of the work of the TBG and organise their involvement with the sixth TBG workshop.

STPA at the OU

On the whole, academic colleagues were enthusiastic about the development of the Standard and the possibility this brought in terms of income. However, they also expressed concern about the work that would need to be done to

develop funding estimates and bring their universities on board as providers. Providers wanted to be able to work together so that high quality curricula can be developed but at the same time wanted to avoid this being perceived as price fixing. Two universities (Hull, Cranfield) were able to develop costings to support the work of the TBG. Contributions also came from academics at Lancaster and Kent universities. However, it was notable that internal procedures within the OU meant that it was not possible to be as responsive as other Universities for a STPA launch in 2020 within the required timescales. New modules in addition to the two existing core STiP modules required developing to cover the requirements (total of 54 knowledge, skills and behaviours) of the new Standard. Once the STPA standard was approaching its final approval by IfATE, attention only then could be turned to the task of securing internal approval and resources for the OU to be one of the providers against the Standard.

In late 2019, ASTiP colleagues began discussions with the OU Business Development Unit (BDU) who are lead players in organising OU apprenticeship provision. Even though IfATE had become convinced of the need for this new occupational standard, there was still the need for the OU to be convinced of the size of the potential market for provision. This is particularly difficult in a new area of curriculum (colleague D). However, through a series of commissioned interviews with potential employer 'customers' organised through BDU and facilitated by ASTiP colleagues, a case for becoming a STPA provider was firmly established as part of an Opportunity Review and Investment Case (ORIC)

drafted in 2020. It is notable that this was a marked change in the university's position in 2017 when it was not willing to support the HEFCE bid.

The ORIC for the STPA gained approval from the School's Board of Studies, but needed wider STEM faculty approval for resource support. Even though the Faculty had provided the initial resources to support development of the STPA Standard, it was reluctant to support the next stage of investment. There were two key reasons for this position. Firstly, STEM was under significant financial constraints with a mixture of competing needs (particularly in supporting a new Bachelors of Design programme that would, along with other undergraduate programmes, attract more registrations). And secondly, it had had a less than satisfactory experience of resourcing UG apprenticeship programme in Cybersecurity.

Members of the ASTiP group engaged in protracted discussions with the Executive Dean and Associate Dean (Curriculum) amongst others both inside and outside the Deanery. They also gained support from the University Secretary who was keen to have the apprenticeship available internally for People Services personnel. These discussions led to a revised submission to Scrutiny Group (SG) and a newly established STEM Management Committee. With significant influence from the University Secretary and continued support from the School's Board of Studies, the submission was finally approved at Faculty and University Teaching Committee levels in April 2021. The decision to develop

modules was again delayed by another six months to ensure compliance with Ofsted regulations (all apprenticeships are subject to Ofsted inspections)

Demonstrating the size of market in a new area of curriculum differs between a Level 7 apprenticeship and a conventional PG curriculum – the market for an apprenticeship is not the same as it is for Masters (colleague D).

Apprenticeships needs large scale employers to make economies of scale work (colleague E). Similar problems arose with TBG convincing the IfATE of there being a market (Colleague F and Colleague F). In contrast with the OU, the TBG had space and relative autonomy based on trust between the various stakeholders including academics, professional bodies, and employer representatives. The group members navigated the regulatory framework provided by the IfATE with relative ease.

For the OU, anxieties were expressed at Faculty Executive levels regarding the extra costs of tutor support. Apprenticeship Practice tutors (PTs) have a higher full-time equivalent (FTE) compared with Associate lecturer (ALs). However, apprentices supported by the Government levy typically bring in twice the income compared with non-apprentice students. The unfulfillment of 'target' registrations particularly with the 2nd cohort of apprentices in 2024 was a significant reason for withdrawing the programme after 2024.

(sources of knowledge) STPA provision: uncertainties and complexities

For TBG to set up a standard, the STiP alumni community was vital (colleague E). There was importance amongst TBG members in being able to straddle department boundaries and appreciate different perspectives (colleague F).

Reflecting the findings of WS-1, this account highlights how OU institutional structures are not always enabling of its academic staff enacting curriculum praxis:

“And I don’t think the bureaucracy means to put up barriers... But its just a case of everyone trying hard to do their bit and, with everyone trying so hard to do their bit, all those bits get in the way, you know [laughs] [...]

“[However,] what does work well is that the people on the coalface are willing to take responsibility for those relationships and make sure that things get pushed through and through them keeping communications going and building relationships, that’s how things get done” (colleague F)

Role of a professional body and potential providers

The STPA was approved at Level 7 (postgraduate), though with a non-mandated degree programme. This enables any agency to be a provider against the Standard – subject to convincing the external End Point Assessment Organisation (EPA-O) – approved and appointed by IfATE – of being able to provide against the agreed set of KSBs. The uncertainties associated with trailblazer group deliberations centred on two concerns: (i) securing at least one agency to act as an EPA-O – given that the new Standard has no externally recognised professional agencies associated with the professional role of a systems thinking practitioner; and (ii) securing sufficient providers that can deliver the support for apprentices. So whilst the external *demand* for STP apprenticeships was not in question, the *supply* of provision remained uncertain. By 2022, both of these concerns had been successfully addressed. Systems Practitioner Assessment (SPA) Ltd – was set up as an EPAO under auspices of, though independent from, SCiO (Systems and Complexity in Organisations). AdvanceHE – an established EPAO for several other apprenticeship programmes – recruited a number of systems thinking practitioner consultants to develop capacity for assessing STPA and began work from 2020. SPA Ltd whilst gaining recognition and formal approval from OFQUAL, became the OU designate EPAO.

Meanwhile, at least six institutions including the OU, developed curriculum to support the apprenticeship as providers. Given the non-mandated degree status of the final apprenticeship standard, a number of other non-University institutions were able to set themselves up as providers. As providers, Universities were able to provide an internally assessed degree qualification (PG Diploma or Masters) in addition to the externally assessed Apprenticeship

Role of alumni

Even though STiP alumni articulated the need for external validation, they also reported that contemporary workplaces rarely offer access to a community of systems thinking practitioners which play a key role in work-based learning (eSTeEM project 1: Reynolds et al., 2016). A key challenge in STPA provision was to support such learning for individual apprentices whilst nurturing both a sense of value amongst employers and STP professional identity.

The influence of the trailblazer group on curriculum development at the University is significant. In developing a new module specification (REPO3 using OU terminology) it is customary to make a start with drafting a set of learning outcomes (LOs) – learning experiences anticipated from the learner – in order to then flush out an appropriate pedagogy. Traditionally LOs are pre-structured typically to some variant framing of four categories: **knowledge and understanding, cognitive** skills – reasoning abilities; **practical/professional** skills (related to the world of work); and **key** skills (communication, teamworking etc.). Later, these are then iterated more and flushed out in developing a teaching and learning strategy (REPI1 using OU terminology). The STiP2020 modules followed this pattern of curriculum development practice. However, the process was also informed by the parallel practice of developing the new STPA qualification. As with all apprenticeships approved by IfATE, the STPA Standard requires establishing a benchmark set of knowledge, skills and behaviours

(KSBs) that an apprentice needs to achieve for qualification. An End Point Assessment (EPA) strategy – akin to the OU teaching and learning strategy (REP11) – was then designed building on the KSBs. Although KSBs and EPA are principally established by employers with guidance from professional bodies (for STPA, members of SCiO – Systems and Complexity in Organisations – provided the professional input), some partial involvement of HEI practitioners enabled some advisory feed to, and prior notice of, both KSBs and EPA, amongst some HEIs.

This proved useful in ascertaining the further curriculum needs for STiP 2020 if OU was to become one of the providers for STPA. Meanwhile, the process of developing LOs through more meaningful conversation amongst HEI providers, employers and professional bodies – as advocated by Lane (2017) – has proved useful for enabling a more capabilities-informed approach in the HEI educationalists workplace.

Role of employers

Employers have a pivotal role in a curriculum that incorporates work-based learning within the structure of apprenticeships. Whilst employers work together in trailblazer groups to define the standards that must be achieved by apprentices, the employer of the apprentice also needs to take a stronger role by providing a learning environment, ensuring an appropriate range of experiences, and, providing opportunities for the apprentice to utilise the

knowledge and skills gained through academic study. Furthermore, it can be the employer, rather than the apprentice, who is perceived as the “customer” of the university. Given the novelty of the occupation of Systems Thinking Practitioner, there may be a problem for employers in fulfilling the role of the mentor which may impact on the nature of the work of university-employed practice tutors (PTs).

A series of tripartite meetings involving the apprentice, employer/ ‘mentor’, and PT is scheduled (minimum of three per year) as part of the apprenticeship curriculum to try and manage that complexity.

Two other sources of complexity exist. One involves the balance between academic and workplace learning, and the interface system to meet the requirements set by the IfATE. For example, STPA Standard from IfATE includes requirements for 20% off-the-job training.⁷ Where this equates to one day a working week of 8 hours, a tension may exist in OU requirements of

⁷ See <http://www.open.ac.uk/business/apprenticeships/how-manage-20-job> for information on what constitutes off-the-job training.

approximately 10–12 hours/ week for accredited part-time postgraduate study. Fortunately the existing STiP curriculum is designed to build in work-based, experiential learning.

The final source of complexity involves potential tension between assessment demands. This is particularly valid for non-integrated degree apprenticeships like STPA where there is no mandated degree associated with the Apprenticeship qualification.⁸ Where assessment for the Apprenticeship is undertaken by an external body – the EPA-O – (often not an HEI) there may be differences in assessment measures. For example, the off-the-job measures serving principally a postgraduate diploma may be more academically rigorous than the more experiential EPA measures serving the Apprenticeship.

(sources of legitimacy) STPA game changing: novelties and concerns

⁸ In 2021 IfATE began removing mandatory degrees from some Apprenticeship Standards. For example the long-standing Senior Leadership Masters Apprenticeship no longer has an integrated Masters degree. As with STPA the degree being provided from 2022 for SLA is a non-integrated PG Diploma.

It is noteworthy that there were some stakeholders (including MR and HW) who were sceptical of the ambition to formalise an apprenticeship around a systems thinking practitioner. Doing so risks professionalising practitioners in a way that compartmentalises systems thinking in practice capability rather than embedding the capability into a variety of other professions and roles. Similar concerns were expressed in the earlier project regarding the professionalisation of STiP (eSTeEM project 2: Reynolds, Shah, and van Ameijde., 2018). In 2022 concerns were expressed by a network of providers regarding the dominance of the one professional body – SCiO – in formulating the KSBs – specifically, reference to the SCiO competency framework in relation to K2.1 (Pers. comm. involving MR and Maya Vachkova, Programme Lead STPA, Exeter University, and Lead representative of an initial network of STPA providers, August 2022).

The innovative features of an apprenticeship programme rests on a shift of curriculum praxis from one where control in design and practice in delivery no longer rests entirely with HEIs in relationship with individual students but involves employers and professional bodies as well. With the OU, an overriding tension may exist between two cultures; an OU culture of promoting and enabling lifelong learning determined in partnership between the OU and OU students, and a more externalised culture informing employability based on professional demands. The capabilities approach to curriculum praxis may provide a source of addressing this tension. Drawing on Geay (1998, op.cit. section 4.2.3), three features of a new ‘interface system’ of curriculum provision can be identified

(institutional, personal, and pedagogical), each with sources of potential tension. The following section highlights these three sources of potential tension:

Institutional tensions

The OU has long been a pioneer in promoting lifelong learning through curriculum provision that addresses social justice (enabling access to previously academically marginalised groups) and workplace capabilities (enabling part-time study to at best complement, or at least not interfere with, workplace practices). As with other HEI providers, the OU faces the challenge of building employer relationships (colleague F). 'Red brick' universities tend to establish close relationships with large, local employers (colleague E) and this lack of a local connection is perceived as a particular challenge for the OU. In the case of STPA, it has been smaller sets of relationships between academics and employers (many of whom are, or have been introduced by, STiP alumni) that has helped to overcome this lack of localism.

Personal tensions

For individual apprentices, there is a challenge of integrating the 'worlds' of workplace, academic work and being part of a (professional) community of systems thinking practitioners (STPs), and nurturing a new identity. For STiP at OU this is referred to as a signature praxis. One feature of any STP signature praxis is the variation in range of professional practices to which any one STP might support. The absence of any formalised occupational role as a STP in most workplaces along with the transdisciplinary nature of STiP support

suggests potential migratory behaviour from one source of employment to another. Many STPs act as lone consultants with little allegiance to any one particular employer. There is then a tension between developing individual capability (and choosing employment opportunities) and serving an employer sponsor for an apprenticeship.

Pedagogic tensions

There is a challenge of mediating experiences of workplace-learning and academic-learning in nurturing an emergent STP identity – a central design task addressed by workplace activities in STiP core modules at the OU (*Making strategy with STiP* – TB871, and *Managing change with STiP* – TB872, along with *Co-designing interventions with STiP* – TB873), supplemented with a newly developed Portfolio module *Evidencing STiP* (TBXY874) designed for STPA. In developing pedagogy for developing STiP capability the role of those crafting the curriculum design and those enacting/ supporting curriculum delivery – particularly Practice tutors (associated with the core ePortfolio module) and ALs (tutors associated with the sister modules) – is critical. They provide the mediating role for conversing between different Worldviews (values and assumptions) aligned with employers and apprentices.

It is perhaps also important that the stronger relationship between university and employer does not impoverish the opportunities that students/apprentices

have in designing and enacting their own lifelong learning system; in short, enabling development of student capability.

Summary: significance beyond the STPA development work

The apprenticeship model offers potential for influencing non-apprenticeship pathways. STiP team academics are looking at how to customise the flagship TBXY874 (portfolio) module – Evidencing STiP – to a non-apprenticeship variant of the newly established apprenticeship PG Diploma degree pathway – STiP [Professional]. For example, drawing on ideas of the ‘Practice tutor’ role with TBXY874, work in 2022 was initiated to explore the role of a STiP qualification pathway tutor. Potential cross-discipline collaboration exist with colleagues’ work on the newly introduced Bachelor of Design (BDeS) programme with its signature ‘vertical space’ for supporting student support continuity between modules on the qualification over the three years.

Whilst these findings are situated with respect to a particular curriculum development, what might be the wider relevance? Questions arise regarding the role of Universities with apprenticeships in the wider sphere of supporting lifelong learning capabilities in ever fast-changing employment circumstances. The role and functioning of apprenticeships will need to be more adaptable to a changing logic of what ‘work’ means in relation to ‘lifelong learning’ capabilities in our post-industrial economies. Are they simply providing an alternative short-

term fix for employability gaps in an existing market, driven by current industrial demands (an alternative to professional ‘training’ programmes in developing competencies)? Or might University-led apprenticeships be able to foster new capabilities (a) amongst students equipping them with aptitudes for developing alternative pathways to ‘employment’, but also (b) amongst HEI providers in reconfiguring workplace practices in our own endeavours with curriculum development?

Whilst the success of apprenticeships at OU and in HE sector more generally remains in question, the OU may benefit from experiences with its apprenticeship endeavours – and the underpinning shift from developing competencies to developing capabilities. Potential influences may come in terms of changing the game of curriculum praxis amongst colleagues in the education sector more generally (including non-apprenticeship programmes) as well as offering a fresh game to experience, with adapted rules of the game, for conventional non-apprenticeship students.

3.3 (WS-3): Case story of STiP-2020 development work

Context

As a distance learning provider, the Open University has developed a module production process which invests in developing a range of online and printed

resources which are used by students as they self-manage their study – a unique model of open-supported learning.⁹

The PG STiP qualification introduced in 2010 included two highly successful core STiP modules (TU811 and TU812). These modules were granted a 2-year extension on the usual 8-year module lifespan. STiP 2020 was initiated to develop their replacements (TB871 *Making Strategy with STiP*, and TB872 *Managing Change with STiP*¹⁰) following OU module production schedules. MR was the Production Chair for both modules, and Lead author for TB871. RI acted as supporting co-Production Chair and Lead author for TB872.¹¹ RS authored material for TB871. The work was closely informed by the ongoing STPA development work.

⁹ A module production team comprises academic staff who author the materials and a range of non-academic staff (e.g. learning designers, media support) who advise and support the process. Once produced, a module usually has an 8 year lifespan before it is replaced or retired. During its lifespan, a typical OU module will be presented to thousands of students supported by Associate Lecturers both individually (email, telephone, assignment feedback) and in groups (tutorials and forum discussions).

¹⁰ New 'TB' coding reflects external HECoS codes relevant for modules in business sector – 100810 (strategic management)-33% and 100743 (systems thinking)-75%, and possible alignment with Faculty of Business and Law (FBL).

¹¹ Magnus Ramage provided co-authorship with Ray on TB872, following the initial work of Christine Blackmore on predecessor module, TU812.

The 'Module specifications' were approved by School Board of Studies (BoS), Faculty Executive, and University Teaching Committee in late 2018. Faculty approval for extending existing modules was secured at the same time. Production work began for TB871 in 2018 (1st presentation May 2020) and TB872 in 2019 (1st presentation November 2020). Module Team Production meetings were held monthly, and jointly in order to maintain as far as possible synchronous, coordinated development.

As Qualification Lead, MR was able to represent both modules during production at regular monthly Executive BoS meetings, quarterly Taught Postgraduate (TPG) group meetings, and annual TPG workshops. All 3 ASTiP academics (MR, RI, and RS) could also attend regular monthly E&I School meetings and workshops.

Fig. 7 provides a generalised timeline of various stages of WS-3. A more detailed exposition of actual events in the timeline can be found in Appendix D.

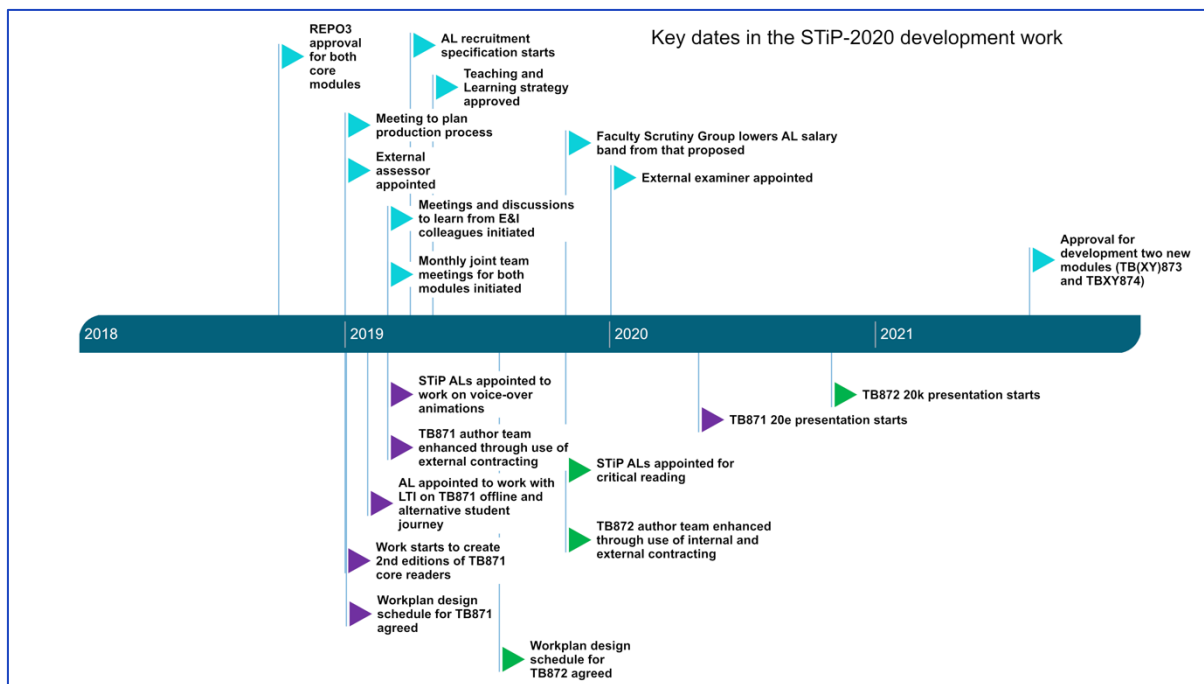


Fig. 7: Key dates in the STiP-2020 development work

(sources of motivation) STiP-2020 needs: drivers and measures of change

The **prime objective of WS-3 was to progress support for STiP capabilities**

amongst students in their workplace as part of the revised STiP 2020

curriculum design, on the back of prior scholarship work (eSTEeM STiP projects 1 and 2) and forthcoming likelihood of OU being a provider for the level 7 Systems

Thinking Practitioner Standard. A **secondary objective was to monitor**

workplace capabilities at the OU workplace as part of developing STiP 2020 curriculum praxis.

Espoused concerns for developing capabilities

STiP core modules from 2010 were clearly successful with respect to a curriculum designed for integrating academic study with situational practice (e.g. workplace); learning from the application of STiP ideas to students' own area of (usually professional) practice and localised situations of concern. The pedagogy was built around this experiential element – and consequent sharing of experiences in the safe space of module forums moderated by Associate Lecturers (tutors). The praxis is a point of departure from conventional higher education practice of presenting external case studies as exemplars of practicing STiP ideas (cf. Blackmore et al., 2015). As noted by one interviewee “early on in STiP 2020 the framing was that this is a refresh, not a complete redesign. This impacted on way STiP team members thought about the work” (RS). The refresh was driven by a heightened concern over developing STiP capabilities.

However, it is particularly notable that when interviewed (by HW) in the midst of TB871 production, MR, RI and RS did not refer to this driver when talking about their curriculum design work. When HW asked MR about this, the measure of change seemed less ambitious:

“I think the only thing we can do is to nurture an awareness of something beyond the OU, which is around capabilities development if you like and to give them [students] a taster of some of the things they can expect post higher education study”. (MR)

Furthermore, whilst the concern for developing capabilities drove the academic members of the TB871 and TB872 production teams, it was not widely discussed with, and understood by, non-academic support staff involved in module production:

Interviewer: "so this eSTeEM work and also the two eSTeEM projects that have come before it have always been quite interested in if you like the work based capabilities of the students to use systems thinking in their workplaces, is that something that you recall being a driving force thinking what does this mean for the person transferring this to the workplace? Is this something that comes out in the production much or not?"

Colleague C: "Not really, no,"

Like colleague C, colleague B had no awareness of the interest in capability development. When HW mentioned it in interview, they equated it to the university-wide work on employability.

Actual concerns revising curriculum

Aside from espoused concerns from eSTeEM research team for improving the way the modules develop STiP capability, other drivers were uppermost in the explanations of those interviewed.

The modules had already been granted an additional 2 years of life so the main reason for the work was simply that it was time to do it (MR). In doing so, it was perceived that the modules would be improved with respect to meeting current university practice including:

- putting more material online/reducing printed material, partly to reduce the cost of presentation (colleague C)
- making the materials interesting to ensure higher student retention and satisfaction (colleague E)
- building on possibilities and opportunities of online VLE to introduce more animations and short videos (colleague C)
- re-consider assessment strategy in line with the OU work to lighten the load of assessment (MR)
- considering whether there needed to be more coherence of style and language between the two sister modules (MR/colleague C) and between the two streams within TB871 (MR/RS)

- bring in new examples, including ensuring there is more cultural and contextual variety (RS)

The focus therefore was more on the style of delivery, rather than substantive changes of content or learning achieved.

From an E&I School perspective, there was also a drive for ensuring with conscious effort that PG modules all complement each other as electives for different qualifications (colleague D). In a retrospective comment, one interviewee stated another element of success might be wellbeing of staff involved in production – that is, an issue of workload management (colleague E).

(sources of control) STiP–2020 decision making: autonomy and accountability

Whilst E&I school is highly committed to the STiP curriculum, it does not have the staffing resources it needs (colleague E). This means that the ASTiP group members involved in production were time poor (colleague B). Focusing on module production can distract from research work (colleague B), from the more organisational requirements of the Staff Tutor role and the space to reflect and learn (RS).

Resources of staffing and time

The lack of time impacts on the wellbeing of those involved (colleague E) as this quote illustrates:

“so my overall experience at the moment is frustration I suppose that I can’t, I don’t seem to be having the time, time management is a big issue with me”
(MR)

In an effort to overcome this, resources were made available to expand the number of people involved in module development (colleague E) through contracts with external consultants and Associate Lecturers. Whilst this did have the benefit of more time, it also introduced additional complexities in terms of accountability and the time needed to manage and coordinate all those involved (RS). Furthermore, the budget for some curriculum innovations are held centrally so require navigating a (time consuming) bid process prior to even starting the work.

With a small number of academic colleagues involved in module production, the need to meet deadlines and fit with production deadlines squeezed out the type of conversations that enable curriculum praxis:

“I harp back to better days when we had the time and affordability, we had those meetings engaging quite purposefully with the hard core pedagogy material that we would be drafting. What tends to be creeping in with more recent production meetings is this sort of sense of having to conform with deadlines, with administrative guidance around the use of audio visual.” (MR)

Decision making around OU curriculum development invites a complexity of financing (colleague C); there are “many stages, many involved in decision making, individuals, different committees. Outsiders don’t understand that” (colleague F). There are always difficulties when wanting to do ‘extras’ in managing relationships with, say, innovative use of AV/animations etc...(colleague C)

Resources of tutor support

The emergent developing role of the STiP Associate Lecturer (AL or Tutor) was critical to the success of STiP since 2010. The practice-based learning pedagogy underpinning core STiP modules required a particular type of support for students working with OU material in their own areas of practice. The support required provision of a secure safe-space outside of the students’ workplace for students to practice and reflect on using STiP ideas. Unlike the contractual arrangements between employers and HEIs delivering apprenticeships, the University could not guarantee support from students’ workplace colleagues with non-apprenticeship programmes. The STiP ALs acquired particular expertise and skill-sets for supporting, enabling, and developing STiP capabilities amongst their students through work on individual and group tutorials, moderating online discussions on module forums, and critically providing invaluable discursive feedback on assessments. In developing STiP 2020 a case was made by the STiP team for revising the STiP AL

salary banding giving recognition to peculiar STiP aptitudes in supporting STiP capabilities.

The case was not supported by Faculty for concern that ALs from other PG subject areas might feel disadvantaged and envious (Pers. Comms. AD (Tutor support) April, 2020).¹² ALs' time and resourcefulness was seen as a key factor in developing STiP capabilities amongst students. Discursive activities are particularly effective in supporting performance of STiP based on methodological metaphors of 'conversation' and 'bricolage' (Reynolds and Shah, 2020). Feedback on TMAs along with contributions to module discussion forums and orchestration of tutorial sessions provide an invaluable resource in supporting capabilities, as evidenced in subsequent feedback from SEeM (Student Engagement and Experience Monitoring) data, and External Examiner reports on both core modules.¹³ There was arguably an issue amongst some senior colleagues within Faculty Executive in recognising aptitudes of tutors in supporting and developing 'capabilities' beyond conventional support of

¹² The assumption was also made that ALs would then migrate over to STiP from other disciplinary areas, assuming that the skill sets associated with ALs were transferable between disciplinary areas; i.e. not recognising or appreciating the peculiar skill-set of STiP tutoring.

¹³ SEeM data is retrieved after each presentation of a module, not only on key performance measures but opportunities for students to contribute with open comments – (capturing 'student experiences')

subject-specific 'competencies' (measured by levels of relevant subject literacy).

A modest upgrade of salary band was finally approved based on the success of registrations on both STiP modules and the largely favourable feedback from SEeM data. This provided a source of goodwill for asking tutors to provide student feedback on end-of-module assessments (EMAs) for both core modules. Such feedback recognised the elements of continued development of student capabilities beyond simply academic progression.

AL resource issues came to increasing prominence with new general AL contractual arrangements gradually coming into play from 2022. It is beyond the scope of this research inquiry to monitor the effects of these changes, though two consequent features are worth noting in relation to how curriculum praxis is being played out with respect to supporting capabilities of ALs with colleagues as educators. Whilst the contracting provides greater security of tenure for ALs, arrangements also invite more systematic (granular) attention by ALs to time-management concerns, with potential undermining and loss of, prior elements of 'goodwill' – valued as a key immeasurable – though sometimes over-exploited – tutor resource. Secondly, Staff tutors – as line managers for ALs – are increasingly required to undertake more systematic regulatory tasks with ALs (in relation to granular time-sheet data) which can

possibly undermine some of the more collaborative tasks involving AL participation in curriculum development in addition to curriculum presentation.

(sources of knowledge) STiP-2020 provision: uncertainties and complexities

Curriculum production typically invites multiple actors. The relationship with external assessor and critical reviewers from different practices can be experienced as both more and less helpful (RS). Learning Design Services (LDS) support brings valuable ideas from what has happened on other modules, and these can spark other ideas within the module team (colleague C).

There are different levels of rigour (assurances) in dealing with uncertainties of curriculum development. Typically, guarantors of rigour are associated with 'reliability' (based on repeat-ability). Other co-guarantors of 'resonance' (alliance with other subject literacies) and 'relevance' (alliance with wider societal and ecological issues) might also come into play. All three co-guarantors are significant in supporting development of capabilities, and particularly important with supporting systems thinking in practice – an interdisciplinary and transdisciplinary endeavour (cf. Reynolds, 2015)

Assurances of reliability

LDS supports teams in terms of high level module design – workload mapping, categorising activities to see if students involved in different types of thinking, advice on best types of tool to use/parts of the VLE available, mapping student journey, and building in opportunities for real time student feedback (colleague B). The Curriculum Manager is assigned to project manage the academic input, and within LDS, different project managers are assigned to organise media development/ editing etc. The CM negotiates between various factions if one or other are not going to meet deadlines (colleague C)

Within a module team, academic members of staff bring knowledge of the content of the curriculum and discipline-specific pedagogy, whilst academic-related staff bring more generalised knowledge of student needs, learning design and the potential of the VLE technology. There were a number of complexities that arose when bringing together these two forms of knowledge.

Non-academic staff have knowledge of student needs that is drawn from non-discipline specific, general research and focus group work with OU students. This had led to the development of guidelines and perceived good practice with respect to what makes interesting and engaging learning. Some tensions arising from different viewpoints arose. For example, watching videos remained assimilative rather than interactive in the way workload mapping uses term (colleague B). There were different perspectives on what PG students need and

whether same as UG students or not... with an expectation that PGs will do more reading – stepping towards research (colleague B)

Assurances of resonance and relevance

In the case of STiP 2020, the academic staff drew their understanding of student needs from their own interaction with STiP students both during study (e.g. on the module forum) and afterwards (e.g. on prior eSTeEM funded research). Furthermore, the subject matter of STiP includes particular theories of learning and change that need not be learned by students but experienced by them during the course of their studies.

This led to a number of creative (?) tensions during the production process. As an example, the guidance on designing for student retention (van Ameijde et al, 2016) includes recommendations to include an indication of the time commitment required for each section and activity (p. 21). Whilst very helpful for many subject areas, particularly at UG level, there was less relevance for STiP. Drawing on prior experience of STiP study and the range of capacities amongst STiP students at various different levels of confidence, and different student backgrounds and circumstances, module teams did not wish to over-prescribe study planner. Coupled with the capability ideal of promoting student autonomy at PG level, TB871 team designed provision of optional routes for students to follow, depending on their circumstances. Further future student capabilities were enhanced by inclusion of further AL feedback on EMAs

enabling students to reflect more on the relevance of their project work to their particular future areas of practice.

Another core design feature of STiP 2020 was the inclusion of ALs in the drafting process. For the first time in module production, the TB871 module team elicited involvement of all ALs (ten at the time). This support ranged from critical reading of new material to support in drafting storyboards for animated tutorials, providing feedback and delivering voice-overs for the tutorials. Such involvement enhanced the confidence and capability of our cohort of ALs in working collegiately together with students – supporting assurances of resonance and relevance. One colleague brought into the production process reflected on the duality of praxis experienced; the sense of “learning.. production at same time as doing it. A new experience” (RS)

(sources of legitimacy) STiP–2020 game changing: novelties and concerns

Whereas the original STiP 2010 was premised on developing a market for systems thinking in practice with particular attention towards promoting a systems thinking literacy, STiP 2020 (with impetus from outcomes of eSTEeM projects 1 and 2) was premised more towards encouraging STiP capabilities amongst developing systems thinking practitioners. The rationale here encountered resistance from two sources contributing to an alternative dominant narrative on curriculum development – a focus on employability needs as prescribed by ‘the market’ (rather than constructed by individuals in co-constructing markets), and a focus on academic postgraduate success as

measured by metrics of Masters level retention and progression (rather than modular satisfaction levels expressed by individuals with more interest in continual professional development)

Employability demands of existing market

The production of new modules was an opportunity to address students' concern regarding difficulties in applying STiP ideas at the workplace. Therefore, the academics involved in production embraced an enhanced explicit goal of developing STiP capabilities. This motivation was further informed by the anticipated need for the new modules to be suitable for the STP Apprenticeship as well as the existing PG qualifications (colleague E).*

As noted earlier, the drive towards supporting developing STiP capabilities was not universally or explicitly shared by the wider module team; with a misguided equating of capability development to the university-wide work on employability (colleague B). The distinction between a pedagogy for 'employability' and pedagogy for 'capability' represents a difference that makes a difference to changing the game of curriculum praxis.

Employability invites attention towards having a curriculum that fits with pre-existing jobs or roles in 'the market', rather than looking towards reframing of jobs and roles in creating a different market. Being 'capable' may often invite

challenges to the status quo and equip students with the power to reshape job roles and responsibilities rather than simply fitting with existing frameworks. Whereas 'employability' fits with an existing game of Market supply (satisfying the market), 'capability' continually enables the creation of a Demand pull (changing the market).

Conventional academic measures of success

Another related potential source of retaining the status quo in curriculum praxis is the shift towards mainstream HE practice in having a curriculum structured around Qualification pathways. Many STiP students typically undertake core STiP modules for purposes of continual professional development (CPD) rather than seeking to add a further PG qualification to their portfolio. From data on qualification progression, it would appear that STiP students value more the experience of learning from practice in developing capability rather than learning for credit (merit) in developing competency. STiP 2020 team authors were encouraged towards "writing with possibility of apprenticeship in mind – having to future proof the modules but at same time make them work as modules for the quals" (colleague E)*

*With subsequent feedback and experiences from STPA apprentices and Practice tutors associated with STPA, there were concerns expressed about the workplace activities associated with the core STiP modules TB871 and TB872. Concerns were mainly directed towards the lack of explicit reference to the 54

knowledge/skills/behaviours (KSBs) associated with the STPA Standard in design of the activities. Concerns were also expressed about the workload commitments, given that the two core modules dealt with learning outcomes (LOs) associated with the STiP Diploma [Professional] – above and beyond the KSBs associated with the STPA.

Summary: significance beyond the STiP-2020 development work

The capabilities approach towards curriculum praxis resonates with the OU tradition of lifelong learning through an historically deeply embedded praxis of open-supported pedagogy. The postgraduate STiP curriculum exemplifies this tradition by seeking ways of developing workplace capabilities amongst our mostly mature-age cohort of students in often senior positions of societal workforce. Support covers a range of professional traditions from different sectors including environment, healthcare, conflict resolution, software design, engineering, business, and education. The workstream informed not only the pedagogy in support of student capabilities, but the capabilities underpinning curriculum praxis amongst those of us in the education sector generally, and more specifically at the OU.

Uniqueness of the OU in supporting lifelong learning marks out territory distinct from mainstream Universities. The drive towards Qualification pathways signals a shift towards consolidating OU conformity in the wider community of HEIs. Traditionally the OU was regarded as spearheading radically innovative departures from the norms of higher education provision and curriculum praxis

in terms of democratic openness to all potential abilities. Arguably, the OU appears now to judge itself on conventional criteria of 'meritocratic' measures of HE 'competence'; measures fixed by key performance indicators determined by external agencies (e.g. HE Academy).*

Both core modules are subject to life cycle reviews (LCRs) in the autumn of 2025. LCRs occur a few years before the official 8-year life cycle end of any OU module. Whilst the two modules are due for final presentation in 2027, LCRs may allow for an extension of presentation (anything from 2 to 5 years) usually accompanied with some resources for minor amendments. LCRs may alternatively recommend a complete replacement or simple withdrawal. As part of the LCRs, the STiP team may also have an opportunity for exploring possibilities of reversioning existing apprenticeship modules TBXY873 (co-designing interventions with STiP) and the portfolio module TBXY874 (evidencing STiP) for non-apprenticeship presentation – thus widening the portfolio choice of STiP modules for non-apprentice students.

*An extra impetus to LCRs of STiP modules can be sought from plans by UK Government sponsorship of Lifelong Learning Entitlement (LLE) – an initiative that privileges modular rather than program delivery. A Department of Education overview of LLE in April 2025 proposes availability of government loans for individual modules as stand-alone courses (following original OU-

inspired forms of delivery). The scheme will be launched in 2026 with expected roll-out from January 2027.¹⁴

3.4 Summary of findings

The findings of the research inquiry can be outlined in terms of possible enablers and barriers of capability development as generally expressed in findings from WS-1 (3 enablers and 6 barriers), and manifest in curriculum development for WS-2 (STPA) and WS-3 (STiP 2020). A few key enablers and barriers are singled out and summarised below for (i) students being served by each curriculum (1st order ‘players’), and (ii) educators designing each curriculum (2nd order players).

Table 1 Summary of key findings from WS-2 and WS-3

(i) (1st order) Students’ capabilities being served by curriculum (STPA and STiP)		
	<i>Enablers</i>	<i>Barriers</i>
WS-2 STPA*	Employers’ role in co-producing the Standard providing some assurance of address to workplace capabilities; regular tripartite meetings providing potential conversation space for collaborative experiential learning	Set of 54 KSBs has a risk of generating experience of tick-box of ‘competencies’; STPA has set of compliance tasks for students which might distract from learning; significant time constraints in working with portfolio module and work-based modules at same time; restrictive time for apprentices to learn from each other on learning platform

¹⁴ UK Government, Dept of Education (2025) Policy Paper <https://www.gov.uk/government/publications/lifelong-learning-entitlement-lle-overview/lifelong-learning-entitlement-overview> (accessed, July 2025)

WS-3 STiP	Experience of earlier STiP modules ensured attention to features of capability development including enhanced forum (safe) spaces for students to exchange experiences of applying systems tools in their own workplace/ areas of practice; students' access to experienced tutors supporting STiP capabilities.	Mostly, barriers around restrictive access to students' workplace (other than apprentice students) with influencing conditions required for developing capabilities, e.g. ensuring safe-fail practices of experimenting with systems tools; more attention needed to ensure wider active participation on forums for sharing experiences and fostering community of practice; tutor support restricted to short-term 6-month modular cycles
* It was outside the remit and extended time frame of this project to confirm with OU apprentices their own experiences of working with STPA. Reflections come from feedback to Qualification Lead of STPA (MR) during first presentation (May 2023-2025)		

(ii) (2nd order) Educators' capabilities being served by curriculum (STPA and STiP)*

	<i>Enablers</i>	<i>Barriers</i>
WS-2 STPA	Engagement with new 'players' in design of apprenticeship curriculum (employers and professionals) with openness to push boundaries of existing curriculum development practice; support of University professional services (e.g., Office of University Secretary, and Business Development Unit) in exploring new possibilities with pedagogic delivery	Strict compliance issues needing to be adhered to, and determined outside of the University, including IfATE Standard of fixed knowledge, skills and behaviours, end-point-assessment for STPA, and Ofsted regulations on teaching apprenticeships; built-in biases against new forms of curriculum delivery, including Practice tutor support
WS-3 STiP	Goodwill from colleagues recognizing the success of prior STiP programme; experience and trust amongst STiP team members, including tutors, for experimenting on new ideas	Performance indicators biased towards 'credentialism' - Masters success (retention and progression); OU efficiency focus on curriculum cuts generating a fractious environment for enabling trust beyond curriculum team members
* eSTEE M project itself enabled space for more reasoned exchanges amongst OU educators		

Annex 3 provides a systems thinking perspective on curriculum praxis arising from the workstreams. It includes use of the CSH lens in capturing the wider context of the game of curriculum praxis, along with the development of a theory of change as a purposeful activity model for developing capability, and a further systems model based on complex adaptive systems for comparing

configurations of a competency approach with those of a capabilities approach in the game of curriculum praxis.

The annexes associated with this report represent both *outputs* and *outcomes* from this project. The final section of this report deals with other key outputs and outcomes, as well as possible longer term *impacts* of the research.

4. Recommendations

Some features of an enabling culture for capabilities development – both for students’ workplace and the workplace of higher education provision – can be summarised in comparing the prevailing culture of nurturing ‘competencies’ with a transitional culture for nurturing ‘capabilities’ (Table 2).¹⁵ Our general recommendation for HEIs is to adopt attributes of nurturing capabilities rather than competencies (see Annex 3 for STiP perspective on contrasting competencies with capabilities in HE curriculum).

¹⁵ Features listed derive from presentation made by the eSTeEM team (Reynolds et al., 2020) Reynolds, M., Ison, R., Shah, R, and Wilding, H (2020). [Beyond employability: a more radical role for Higher Education in developing workplace capabilities](#). In: *Employability Conference 2020 Expanding the narrative for a rapidly changing world*, 11 Mar 2020, Walton Hall, Milton Keynes

Table 2 Transitioning from competitive gaming of a purposive workplace system towards collaborative gaming for more purposeful workplace systems

Workplace cultural attributes in ‘playing the game’	
(from) nurturing <i>Competencies</i> (purposive system)	(to) nurturing <i>Capabilities</i> (purposeful system)
Residual focus on individual performance to serve existing employment needs	Relational focus on individual <i>and</i> collective performance to cultivate existing and potential employment needs
Focus on competitive advantage in securing ‘goals’ (serving existing demand-led market)	Focus on collaborative potential in ‘shifting the goalposts’ (creating demand-shift with new markets)
Strict adherence to prevailing conventions or ‘rules of the game’ (e.g. Standards or ‘best practice’)	Playing to ‘rules’ though with an eye towards breaking or adjusting conventions in response to ever-changing circumstances
Knowledge regarded as (positivist, objective) commodity to be consumed in order to foster greater capacity	Know-how regarded as (continually co-constructed) as part of capacity building in situated practices
Underpinning culture of ‘meritocracy’ – <i>doing things right</i> – single loop learning	Underpinning culture of ‘integrity’ – <i>doing the right things</i> – double loop learning
Reinforcing ‘fail-safe’ working spaces driven by ‘results’ defined	Reinforcing ‘safe-fail’ working spaces allowing for ambiguity,

unambiguously in terms of correct/incorrect practice	innovative experimentation, and learning
Developing thinking and practice primarily for instrumental/ extrinsic value	Developing praxis (thinking <i>in</i> practice) for pragmatic/intrinsic value in supporting system viability

From our systemic inquiry – and with these attributes in mind – some significant challenges in changing the game for curriculum design and delivery towards a capabilities approach can be identified. We can separate these in terms of primarily serving 1st order support (for apprentices/students as intended beneficiaries of HE provision) or serving 2nd order support (amongst colleagues as decision makers and curriculum designers in HEIs)

Serving (1st order) capabilities support for apprentices and students

The significant task for postgraduate curriculum development – whether for Level 7 apprenticeships or non-apprenticeship programmes – is to ensure appropriate safe-fail space for students to practice capabilities. The challenge is significant – in moving beyond attention purely to either pre-set KSBs and/or associated competency frameworks, or conventional sets of LOs (learning outcomes) typically required for HEI curriculum approvals. With the advent of generative AI, the market for graduates is changing, and arguably diminishing

for conventional graduates¹⁶, making it more imperative for providers to focus attention on developing capabilities amongst students in providing confidence/ agency to shape personal pathways in an ever changing landscape of working practices.

For students, it remains to be seen with the STPA roll-out how different institutional STPA providers in England can orchestrate curriculum delivery and in particular, practice tutoring, for their apprentices. As with capabilities development in general, there is no guarantee of apprentices experiencing improvements in their workplace capabilities. Providers may choose to simply privilege a tick-box procedure for checking against the 54 KSBs (knowledge, skills and behaviours) associated with the STP Standard.

With the OU STiP 2020 curriculum development there will remain questions, challenges and opportunities for enabling STiP students to fulfil capabilities development in their workplaces over and above satisfying the minimum requirements of passing (satisfying the pre-set LOs) associated with a

¹⁶ . According to [The Guardian, June, 2025](#), the number of graduate roles advertised is at its lowest level in seven years, with a 33% decrease compared to 2024, with downturn is attributed to factors like employers pausing hiring and utilizing AI for cost-cutting.

postgraduate STiP qualification (at Certificate, Diploma, or Masters level). As with STPA apprentices, the success will be variable amongst different students and their different motivations for undertaking a STiP course.¹⁷

There are also potential challenges for professional bodies associated with STiP. Some may see the STPA as being a vehicle for being categorical in defining what constitutes being a systems thinking practitioner (STP); a definitive checklist of STiP 'competencies'. The risk is in having STP role regarded from a technocratic professionalism viewpoint (Dzur, 2008; Reynolds, 2023). There may be a role for Universities to influence such tendencies as part of their own expanding portfolio of capabilities.

¹⁷ Five different STP archetypes were identified from work with alumni in the first STiP eSTeEM project (2013-16) depending on level of experience and levels of systemic sensibilities and systems thinking literacy on entry. The archetypes comprised: (i) Teach me tell me – often with systemic sensibilities though no ST literacy; (ii) 'MBA-ready' – experienced junior managers with some ST literacy; (iii) Get diploma and make hay – variable degrees of sensibilities and literacy though not aware of distinction between theory and practice; (iv) Geoffrey Vickers 'lite' – mostly senior practitioners with some experiences of capabilities, though possibly with systemic sensibilities having been diminished with practice; and (v) Naked systems thinkers – with systemic sensibilities but little systems thinking literacy (Reynolds et al, 2016)

Serving (2nd order) capabilities amongst providers of HE curriculum

Much of the success in relation to enabling student workplace capabilities will though be dependent again on the actual workplace capabilities of education practitioners responsible for teaching the qualifications. One overriding challenge for the HE sector in general is to clearly differentiate the role of HEIs in contrast with Professional bodies and/or non-HEI providers of apprenticeships in supporting capabilities rather than just competencies. But in so doing, HEIs and the students being served can benefit considerably by working in partnership rather than in competition.

The STPA offers opportunities for collaboration amongst providers. This has been evidenced by the setting up in 2022 of an informal group of providers led by Exeter University. Bimonthly meetings amongst representatives of each provider were chaired on a rotational bases. Initially the forum provided helpful exchange of experiences as well as providing a unique collective 'voice' to the IfATE representatives and Professional body representatives. In addition, the EPA Organisation – Systems Practice Assessments Ltd – has orchestrated several meetings (up until end of 2024) inviting all providers to share their experiences of having taken apprentices through their first EPA. Representatives from the other EPAO – AdvanceHE – also participated in two online 90 minute meetings.

With initial meetings there was a drive amongst providers to understand what was required of the EPA, and a drive for EPAOs to understand needs of their provider 'clients'. However, there appears to have been diminishing enthusiasm for collaborative endeavours. The spirit of 'market' competition for apprentices amongst providers, and providers amongst EPAOs, appears to have overridden cooperative endeavours needed for supporting capabilities approach to curriculum design and delivery.

With improved practice amongst practitioners associated with STiP 2020 – and particularly the collaborative involvement of STiP Associate Lecturers – the curriculum team are increasingly confident with delivering on STiP capabilities development. The working space for presenting core modules has improved significantly during the course of the eSTeEM project. Ongoing improvement of capabilities amongst practitioners can be significantly enhanced with the active role of an experienced Staff Tutor in orchestrating practice tutoring support. For example, during the inquiry, team member Shah (as Staff tutor) undertook parallel work to recast monitoring of STiP tutors away from a conventional one-way, linear, check-list, approach, towards an endeavour that

is more about conversation and collaborative inquiry within a community of practice¹⁸.

From experiences of securing approval to be a provider for the STPA, workplace capabilities in other areas at the institutional level of OU remain questionable. Developing an enabling culture of trust amongst practitioners is key to fostering innovative curriculum development. The bruising experiences encountered by senior academics in the eSTeEM team in not being consulted before Faculty recommendations of curriculum cuts to both STPA and STiP in 2024 created not only an erosion of trust, but significant costs in terms of health and wellbeing amongst many colleagues. The investment of considerable finance, time and emotional energy in innovative curriculum development, only to have the outcomes not realised and through being unavailable to students, signals a serious disconnect in the system of governance within Faculty that can undermine capabilities.

¹⁸ The work of Shah was recognised by Faculty Assembly (11 June 2025) with a Special Achievement Award

5. Impact

5.1 Outputs and outcomes

From a STiP perspective, *impacts* represent the longer term and wider effects of the research. The current report represents an *output* from the third and final project in a series of three action research STiP endeavours that began in 2013. The final report has been delayed because of a mixture of ongoing staffing restrictions affecting the STiP team in particular, alongside turmoil concerning the future of the STiP curriculum.¹⁹

Box 4 captures the outcomes of prior projects 1 and 2 that have informed this third and final eSTeEM action research endeavour.

Box 4 Backdrop of outcomes from prior two eSTeEM projects
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¹⁹ In June, 2024, uncertainty around the STiP curriculum and newly introduced STPA curriculum came to prominence with an unexpected Faculty Executive Team announcement that both programmes would be withdrawn. STPA withdrawal recommendation being made with the first cohort not having completed even half of the course, and STiP recommendations being made despite continuing healthy registration numbers. Much of the ensuing turmoil amongst academic colleagues centred on the total lack of engagement with STiP academics including the Qualification Lead before making the recommendation for withdrawal. Although the decision on withdrawing STiP was revoked in September 2024, withdrawal of STPA was sanctioned with immediate effect (teaching out both 2023 and 2024 cohorts of apprentices) without any opportunity for a post-launch review.

- (i) [Enhancing Systems Thinking in Practice \(STiP\) in the Workplace](#) (Reynolds, Shah, Wedlock, Ison, and Blackmore, 2016); and
- (ii) [Framing Professional Competencies for Systems Thinking in Practice](#) (Reynolds, Shah, van Ameijde, Ison, and Blackmore, 2018).

For a reminder of context, each of the preceding two eSTeEM projects have their own specific output reports, as well as outcomes that have contributed to Project 3. Project 1 first identified the need for more formal external recognition of STiP capabilities in the workplace, and how such capabilities might be recognised and measured (Reynolds et al., 2016). Project 2 generated an awareness of difference between the role of HE institutions such as the OU, and institutions providing professional support for STiP, in identifying appropriate measures of success for STiP (Reynolds et al., 2018).

This outcome prompted more attention from Systems and Complexity in Organisations (SCiO) – a closely affiliated institution to the OU Systems group – to establish themselves as a recognised professional body representing systems thinking practitioners (STPs). Whilst the OU might focus more on developing STiP capabilities through learning outcomes (LOs), SCiO endeavours as professional organisation became manifest in their development of a STP Competency Framework.

SCiO later became the recognised professional body on the Trailblazing Group for the STP Apprenticeship Standard working alongside Applied STiP (ASTiP) group colleagues on eSTeEM Project 3 at the OU.

The approval by the UK government of the STPA Standard in 2020, accompanied by an implicit recognition of the professional role of a systems thinking practitioner, represents the jewel in the crown as an outcome of the series of three eSTeEM projects undertaken by various members of the ASTiP group. It is an outcome achievement for which the E&I School, STEM Faculty, and University

can be justifiably proud in the tradition of spearheading innovative change in higher education.

More specific outcomes associated with Project 3 can be further documented in relation to curriculum development associated with WS-2 and WS-3. In January 2021, the STiP team received two citations on the annual Open University [Best Practice Report](#) from QME – Quality Monitoring and Enhancement:

- under 'Employability': citation for *Initiating and co-developing Level 7 Apprenticeship Trailblazing Committee (TBC) for Systems Thinking Practitioner (STP) drawing on STiP alumni and Faculty support* (p.21); and
- under 'Tuition': citation for *Commissioning of ALs in evaluating and co-producing STiP materials for STiP-2020* (p.53)

Both citations provide evidence of internal success for Workstreams 2 and 3 respectively.

Appendix F documents specific curriculum development outcomes for the OU associated with Workstreams 2 and 3. These include the development of (i) new apprenticeship programme (the STPA) and associated new 90 credit PG Diploma – STiP [Professional] – with new modules TBXY873 (Co-designing

interventions with STiP) and TBXY874 (Evidencing STiP), and (ii) refreshed mainstream STiP curriculum with new modules TB871 (Making strategy with STiP), and TB872 (Managing change with STiP). Both latter modules were also available for STPA.

More significantly, the eSTeEM project has wider outcomes and potential impacts in terms of promoting lifelong learning in the workplace of students and university staff alike. It has been impactful in two dimensions – for internal OU practices and curriculum provision, and for the wider HE sector.

5.2 Enhanced capabilities with the OU

A longer-term impact of STPA on STiP 2020 is the potential increase of available choice that non-apprenticeship students might have with *874 and *873 in continuing studies. Two significant parts of the new resource input for TBXY874 in particular are (a) establishment and appointment of Practice Tutor (PT) role to act as mentor for individual students throughout the apprenticeship, and (b) the introduction of new ePortfolio software package (MyKnowledgeMapping) to enable students to develop skills of evidencing STiP. The 30 credit module runs for the full 24 month duration of the STPA.

With modest innovation, a customised non-apprenticeship version of *874 is likely to be needing to conform to a standardised 6-month module to be taken after students have completed their workplace activities in the three preceding

sister modules. The role of the AL on such a module is likely to change, taking on responsibilities more aligned with that of a PT.

Perhaps more adventurously, some version of the Portfolio work-based module might possibly run in parallel with sister modules as currently undertaken by apprentices in achieving the PG Diploma in STiP [Professional]. A similar initiative is being explored with the BDes (Undergraduate Design programme developed for first presentation in 2024) with the innovative introduction of a 'vertical space' in the programme.

The space is comparable to the work-based modules of apprenticeships; with a tutor that might accompany any one part-time student throughout a programme of study (eSTeEM project lead, Reynolds, has been consulted by the BDes team in setting up the programme). Meanwhile, ASTiP colleagues have been exploring a similar initiative with the Faculty based on having an assigned **STiP Qualification Pathway Tutor**; the possibility of having an AL dedicated to all STiP modules of a student throughout her programme; at least the two year Diploma qualification.²⁰

²⁰ Pers. Comms. between team member, Rupesh Shah, and STEM Deanery Staff in October 2022

Reconfiguring existing structures of curriculum praxis can help provide alternative spaces for different expressions of agency amongst practitioners. The setting up of the TBG provides one example. A consequent impact has come through the setting up of spaces for collaboration and learning amongst academics (including authors of this report) amongst different providers of the STP Apprenticeship, following approval in 2020; enhancing both internal (OU academics) and external capabilities.²¹ (It is worth noting that the various scholarship projects being enacted through all Faculties at the OU (eSTeEM, SCiLab, Praxis, FASSTest.) provide a continuing rich platform for enacting and developing workplace capabilities at the OU.)

For the eSTeEM series of STiP projects, the team set up a periodic Reading group in order to engage with wider selected literature on capabilities development. From September 2022, the Reading group was extended to include all members of ASTiP – including ALs, Staff tutors, and others from the OU with an interest in developing STiP capabilities.

²¹ Both Reynolds and Ison became External Examiners for STPA at Universities of Exeter and Cranfield respectively. Other initial spaces for collaboration and consultation amongst providers were set up by end point assessment organisations – AdvanceHE and Systems Practice Assessment Ltd – during the course of 2023 and 2024.

Learning Design Services (LDS) at the OU provide helpful advice to curriculum teams across the University in developing new modules. The relationship can be reciprocal. Several LDS personnel are STiP alumni and can carry influences of STiP capabilities within their own areas of practice – both in recommending student (1st order) practices in other curriculum areas, as well as possibly informing their own (2nd order) practices.

Box 5 illustrates such influence, with ASTiP colleagues' invitation to enact and support capabilities development at the OU (Box 5). One impact of eSTeEM work on STiP capabilities is the growing systemic awareness within the OU of limitations on the prevailing modes of practice in curriculum design that have rested on a traditional OU division between professional 'academic' input and professional 'delivery' input (cf. Ison, 2012 [1999]).

Box 5 Curriculum praxis in supporting governance capability at the OU

In 2022, with permission from Dave Hall (University Secretary at OU and lead for Professional Services), a STiP Community of Practice was initiated by STiP Associate Lecturer and Assistant Director, Academic Services, Barry Verdin. The initiative was aimed to enhance in-service support for OU employees with STiP capabilities. The CoP is hosted by the OU Professional Services and had its first meeting on 22nd August 2022, with project-team colleague, Professor Ray Ison, invited as guest speaker. Following the tragic passing of Barry in late 2023, the CoP has been continuing with workshops orchestrated by STiP alumnus and Senior Project Manager with Learning Design Services

(LDS), Anne Gambles, along with colleagues from Organisational Development and Evaluation (People Services) and the ASTiP group.

The CoP initiative followed a similar previous 2008 endeavour at the OU set up with funding from the University initiated through Ray Ison called the **PerSyst project**. PerSyst support was drawn from 40 years of OU curriculum praxis associated with undergraduate systems thinking teaching. PerSyst programme initiated by then Head of Systems (Ray Ison) was led by Senior Lecturer – Rose Armson – with implementation support from Rupesh Shah (Associate Lecturer at the time). It was set up to introduce ideas from systems thinking, and particularly experiences from the Systems residential school (TXR248 – Experiencing Systems Practice), in providing in-service support for personnel in Human Resources Development at the OU (precursor to People Services). The aim was to enable participant staff members responsible for governance support to engage with activities that go beyond traditional ‘best practice’ training (single loop learning) towards more exploratory exercises using simple systems thinking tools for rethinking their roles and responsibilities (double loop learning).

With learning from PerSyst and the subsequent action research series of eSTeEM projects, the current CoP is likely to have more of a capabilities approach towards offering STiP support.

The current rendition of the STiP CoP being led by Anne Gambles with support from People Services and ASTiP appears much more robust. In 2025, a thorough review of the CoP was undertaken following a sequence of successful and generally well-attended sessions provided by both external and internal guest presenters/ workshop facilitators. An [Internal Systems Thinking Hub](#) of OU STiP resources has been developed by CoP members specifically to support staff from People services. A freely accessible [STiP CoP Handbook 2025.pptx](#) was launched in September, 2025 – guidebook on systems thinking specifically targeted for OU staff compiled by Anne with CoP colleagues drawing on experiences of CoP sessions. A White Paper was also produced, exploring future possibilities of STiP CoP influence on organisational development and governance issues at the OU. Since July,

2025, Reynolds (along with Anne Gambles) have been involved with a review of the Charter and Statutes of the OU with the Office of the University Secretary, using the CSH framing as a device for supporting the review (to be finished and published later in 2026)

Aside from STiP academics and People Services, the STiP CoP at the OU involves practitioners from LDS responsible for supporting academics in their learning design of curricula content (modules). The demand for STiP can be aligned not only with the complementary desire for a more capabilities approach to service delivery, but also with an awareness of the value in nurturing systemic sensibilities and using aspects of systems literacy for reviewing curriculum strategy more generally (Box 5).

5.3 Enhanced capabilities for HE Sector and beyond

Aside from internal support for the OU, STiP capabilities amongst project team members – developed through the project – are being recognised externally. The UK Government Office for Science (GO-Science) in 2021 set up a Systems Thinking Expert Group (STEG) to help guide civil service with improved policy support. eSTeEM co-lead, Ison, continues to be an influential member of STEG. In late 2025 a member of STiP CoP is applying for membership to newly created multidisciplinary team – UK Government Department of Science, Innovation and Technology (DSIT) College of Experts. Rupesh Shah and Ison have been working with International Baccalaureate (IB) in setting up new courses on STiP

capabilities, with Shah acting as External Examiner with IB in piloting course on Systems Transformation to be piloted in 2030. Amongst other endeavours, since 2023, Reynolds has been involved with advising on numerous forums including the Alliance for Health Policy and Systems Research (part of WHO), [UN Joint Investigation Unit \(JIU\) Review on racial discrimination](#), and UK Department of Environment Food and Rural Affairs (DEFRA). Reynolds and Ison have in addition been involved in talks with NHS Wales and BBC in attempts to customise OU STPA delivery for informal apprentice support in STiP. All initiatives clearly arising from recognising the importance of STiP arising from OU PG curriculum development.

There are different levels of impact external to the OU. A wider and long-lasting impact is in supporting the way in which societal actors (collective and individuals) are able to deal with increasingly complex situations of change and uncertainty in the post-industrial era. At a more prosaic level, STPA approval enabled opportunities for workplaces in both public and private sectors, and from small to corporate size workforces, to create new roles for accommodating STiP, including making appointments for systems thinking practitioners. At the same time STPA opened the door for an emergent professionalisation of a STP. The UK systems thinking group, SCiO (systems and complexity in organisations), a long term partner with ASTiP Group at OU, in-turn became further

emboldened to take on the role of being the professional body, with tentative moves towards setting up professional accreditation.²²

The approval of STPA has opened up opportunities for more Universities to develop curricula for purposes of supporting workplace capabilities. Towards the end of 2024, over ten institutions including Universities in the UK have registered as providers for STPA. Aside from broadening the range of provision in the HE Sector, there is a significant income-stream for HEIs other than student fees arising from Government levy on Apprenticeships to which the sector was able to draw.²³ Beyond any UK decision making on Level 7 apprenticeship support, the case story of STPA has also been recognised internationally as a significant development in legitimising the skills and capabilities of systems thinking in practice across different sectors and different countries worldwide. The resources being developed and delivered by the OU for both STPA and STiP

²² SCiO now offers different levels of STP accreditation – with the STPA award qualifying for ‘Advanced Practitioner’ <https://www.systemspractice.org/professional-accreditation> (accessed 30 June, 2025)

²³ In 2025, UK Government has withdrawn Levy support from Level 7 apprenticeships including STPA.

curricula provide a potential set of choices for providers of the new curriculum area to draw upon in their respective curriculum design.²⁴

STPA is officially designated by IfATE (from 2025 renamed Skills England) as a non-integrated degree apprenticeship (not requiring a mandated degree). So whilst mainstream Universities like the OU can offer credit-bearing degrees (e.g. the PG 120 credit Diploma) as part of, and in addition to, an Apprenticeship, there is no legal binding to have such accreditation.²⁵ STPA has therefore also enabled other non-HEI providers to enter the game of apprenticeship delivery. This may have positive and less positive impacts. Inclusion of non-HEI providers can add variability to the type of provision being offered and therefore more choice for employers. Such providers are possibly less constrained by additional standards of accreditation required by HE Academy. Correspondingly, non-HEI providers may have less concern for ‘capabilities’ development (associated more with learning outcomes of PG degrees), with a

²⁴ As part of the 50th Anniversary of Systems teaching at the OU in 2022, Project leads (Reynolds and Ison) were able to consolidate the wealth of open access STiP teaching resources to an open access [Systems Thinking Hub](#) available on the public access OU OpenLearn platform.

²⁵ In approving the development of the Apprenticeship, the OU also approved a new PG diploma pathway called the Diploma in STiP [Professional] (OU code E98) as distinct from the non-Apprenticeship Diploma (OU code E28). Apprentices will be able to claim this qualification in addition to the STP apprenticeship.

steer more towards satisfying 'competencies' associated with the knowledge, skills and behaviours of the STPA Standard.

Finally, the STPA Standard and STiP programmes serving STiP capabilities provide opportunities for individuals to have greater adaptability to change employment and lifestyle, including creating new pathways of pursuing livelihood. Whilst this may be limited by the employer sponsorship associated with apprenticeship scholarships, the OU is in a particular unique space to foster student capabilities as agency through its commitment to lifelong learning through open-supported pedagogy. The peculiar subject matter of STiP also creates further agency amongst students to shape their own set of choices.

Whilst withdrawing funding for Level 7 apprenticeship levy support, from September 2026, Skills England will be providing [Lifelong learning entitlement \(LLE\)](#) funding for courses and modules starting from January 2027 onwards. The LLE will allow people to develop new skills and gain new qualifications at a time that is right for them. There is here another opportunity for demand-pull source of income stream, affording Universities and other potential providers in England at least, to customise curricula in serving capabilities development

5.4 Summary of challenges

Our engagement with this eSTeEM project has surfaced and sharpened awareness of the limitations and possibilities of higher education in general,

and distance learning with part-time postgraduate education at the OU in particular. In our view, the OU as an HEI needs to reset priorities towards being a unique provider of capabilities development through continual investment in lifelong learning. The HE sector in general needs to seriously question its potential role as either a market player – providing commodified learning outputs (with a ‘residual’ focus) to satisfy existing market/ employer demand – or as a significant constructive shaper for (more relational) societal and ecological wellbeing.

In being a significant game-player in the space of part-time postgraduate provision, the STiP programme at the OU – and associated eSTeEM action research inquiries – has demonstrated potential personal affordances and institutional opportunities in shifting the goalposts, and creating space for developing new demands for a more capabilities oriented approach to curriculum design.

6. Dissemination

Deliverables

The inquiry-based, longitudinal nature of this research meant that it informed, and was informed by, a number of workshops and presentations at a range of events. The chronological details of some key events during the formal duration of the project (**2018 to 2020**) are presented in Figure 8 and full references where available are provided below in alphabetical order.

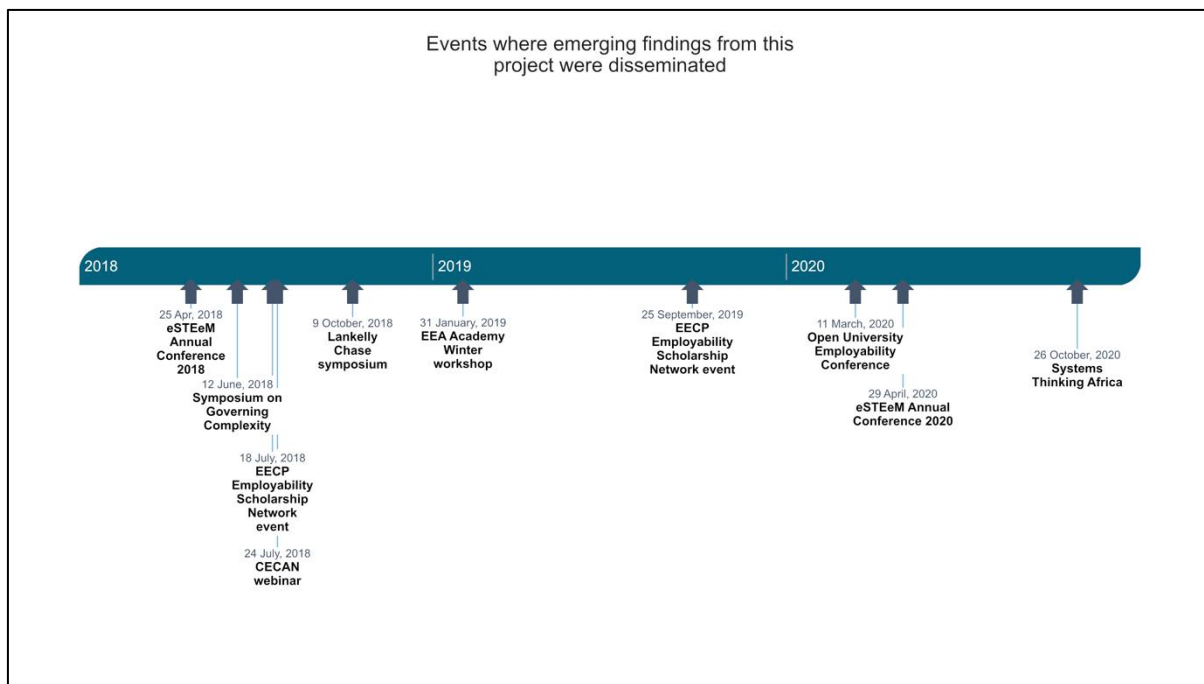


Figure 8: Events where emerging findings from this project were disseminated

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Figures and tables

Figure 1 – Conceptual model of eSTEEeM Systems Thinking in Practice (STiP) project-3: *Changing the game* illustrating three core workstreams.

Figure 2 – Key dates in Workstream 1 research activity.

Figure 3 – Key dates in Workstream 2 research activity.

Figure 4 – Key dates in Workstream 3 research activity.

Figure 5 – Collating findings from workstreams 1 to 3 (transforming workplace capabilities) associated with the case study of postgraduate provision for STPA and STiP qualifications.

Figure 6 – Timeline of key stages in development of the Systems Thinking Practitioner Apprenticeship (STPA) beginning with OU-supported formation of a trailblazer group to eventual OU production work.

Figure 7 – Key dates in the STiP-2020 development work.

Figure 8 – Events where emerging findings from this project were disseminated.

Tables

Table 1 – Summary of key findings from WS-2 and WS-3 (students' and educators' capabilities being served by curriculum).

Table 2 – Transitioning from competitive gaming of a purposive workplace system towards collaborative gaming for more purposeful workplace systems (attributes comparison).

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(Full listing combined, including references' listings from Annex 1, 2 and 3)

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1. **Project 1 (2013–2016) Enhancing STiP at the Workplace**

https://www.scholarship-exchange.open.ac.uk/projects/Enhancing_Systems_Thinking_in_Practice_at_the_Work/182059 (eSTEEem code: 13L-MR-EI-02)

2. **Project 2 (2017–2018) Framing Professional Competencies**

https://www.scholarship-exchange.open.ac.uk/projects/Framing_professional_competencies/182164 (eSTEEem code: 17C-MR-EI-02)

3. **Project 3 (2018–2020/2025) Changing the Way the Game is Played
(Transforming PG curriculum praxis and workplace capabilities)**

https://www.scholarship-exchange.open.ac.uk/projects/Changing_the_way_the_game_is_played/182266 (eSTeEM code: 18E-MRRI-EI-01)

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University approval processes

An ethical review was obtained according to the Open University's code of practice and procedures before embarking on this project. Reference number **HREC/3196/Reynolds**

Appendix A: Summary of participants interviewed

SEPERATE FILE

Appendix B: Semi-structured interview guide

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Appendix C: Detailed timeline for STPA development work

SEPERATE FILE

Appendix D: Detailed timeline for STiP 2020 development work

SEPERATE FILE

Appendix F – Curriculum outputs associated with Workstreams 2 and 3 (STPA and STiP 2020)

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Annex 1: Workplace capability and curriculum praxis (Lead author: Helen Wilding)

SEPERATE FILE

Annex 2: Conceptualising Curriculum as a Learning System with Different Configurations of Entities (Lead author: Helen Wilding)

SEPERATE FILE

Annex 3: Curriculum praxis from a systems thinking perspective (Lead author: Martin Reynolds)

SEPERATE FILE