Practical theorising for the implementation of educational change: Evidence from sub-Saharan Africa

Kristina Stutchbury *, Oliver Biard

The Open University, United Kingdom

ARTICLE INFO

Keywords:
Teacher education
Implementation
Normalisation process theory
Learner-centred education
TESSA
ZEST

ABSTRACT

New school curricula across Africa are calling for new approaches to learning and teaching. In response, much educational development work focuses on supporting pedagogic change. The successful implementation of educational change is challenging, attested by persistently low achievement levels, yet it remains under-theorised. However, ‘implementation’ as a process is well-theorised in the field of healthcare. This paper explains a middle-range sociological theory – Normalisation Process Theory – which seeks to describe how new practices become normalised. Drawing on evidence from the field, it argues that NPT, although developed in healthcare settings, offers insights which could benefit the implementation of educational development projects.

1. Introduction

In this journal, Schweisfurth (2011) highlighted the challenges of implementing pedagogic changes based on notions of learner-centred education (LCE). She suggests that ‘the history of the implementation of LCE in different contexts is riddled with stories of failures grand and small’ (p425) and concludes that ‘the stories of unequivocal success in implementation are few and far between’ (p430). This paper draws on ten years of educational development work to illustrate learning about implementation processes, arguing that developing a theory of implementation in the context of international development is overdue. Since Schweisfurth’s paper was written more than a decade ago, new curricula have emerged which place more emphasis on skills, values and competencies alongside academic knowledge (e.g. in Zambia and Kenya), but educational outcomes nevertheless remain low, suggesting that this issue still needs attention.

There is an interesting debate about the nature of LCE and whether or not it is an appropriate intervention (e.g. O’Sullivan, 2004; Schweisfurth, 2015; Tabulawa, 1997; Vavrus, 2011) and much discussion of the ‘barriers’ to its implementation (e.g. Schweisfurth, 2011). Rather than re-open that debate, this paper focuses instead on the processes of implementation. It seeks to understand why implementation is so difficult and how the processes might become more effective. At the same time, our work has provided insights that have led to a better understanding of LCE and how it might be interpreted in different contexts.

The notion of ‘barriers’ implies that embodied social structures (e.g. assessment systems) alongside prevailing attitudes and values create an environment in which implementation is not possible. However, it has been suggested that ‘barriers to change’ is an unhelpful metaphor (Checkland et al., 2007) as it enables professionals to maintain their identity as hard-working individuals whilst ignoring the underlying social realities which make implementation difficult. Checkland et al. (2007) report examples from healthcare in which addressing the underlying social realities enabled the apparent ‘barriers’ to melt away. Could the same apply in Educational Development? A focus on the processes of implementation may reveal more about the underlying social realities, and could thereby support success, as well as informing the debate about the intervention itself.

In the field of International Educational Development ‘theories of change’ approach implementation in a variety of ways. In projects, the focus is often on ‘inputs’, ‘outputs’ and ‘outcomes’ designed to solve a specific problem, with the underlying assumptions often going unacknowledged and unexamined. Processes of change in Education are often described in terms of ‘plan – do – evaluate’ (Wedell, 2009) and those implementing change are encouraged to consider a wide range of factors which might impact on what they are doing. The argument here is that by conceptualising the processes of implementation, concepts can be discussed and shaped for a particular context, automatically surfacing and critiquing assumptions. In this way, what has been termed ‘second-loop’ learning (Argyris, 2002) can take place.
This paper focuses on the issue of ‘implementation’ by presenting an evidence-based sociological theory - Normalisation Process Theory (NPT) - which attempts to describe how new practices, ways of thinking and organising work become normalised and operationalised in the context of healthcare. It seeks to demonstrate how the concepts that make up this theory can be used to understand some of the complexities involved in implementing pedagogic change in international development contexts. This paper suggests that these concepts help to clarify the underlying social realities that sometimes prevent change (and manifest themselves as ‘barriers’). It will draw on data from a programme of educational development projects in sub-Saharan Africa (Teacher Education Support Service Africa – TESSA) to argue that, with greater focus on the processes of change, projects promoting pedagogic change are more likely to be successful and sustainable; that is, implementation is more likely to be successful.

The paper starts by explaining the tenets of NPT, where it came from and how it has been used. It provides the background to NPT and explains its theoretical underpinnings. An introduction to the programme of activities on which this work is based is followed by an examination of the four generative mechanisms of NPT, drawing on examples from practice. The purpose of this paper is not to evaluate the programme, rather, to use the programme as a context to illustrate the principles. Inevitably some evaluative judgements are made, but the intention is that the reader should take away an understanding of the key concepts of NPT. The contextualised examples are intended to help that understanding. The analysis provides insights into aspects of the projects which have worked, or not, and why that is the case. The ways in which these insights have shaped on-going work are highlighted. The paper uses evidence from a variety of different activities to argue that theorising implementation in this way is highly relevant to International Educational Development. In the Discussion section we explore some of the literature on implementing change in Education, making the case for NPT and addressing its limitations.

2. Normalisation process theory

2.1. What is it?

‘NPT identifies, characterises and explains key mechanisms that promote and inhibit implementation, embedding and integration of new healthcare techniques, technologies and other complex interventions’ (May et al., 2018, p1).

NPT describes four generative mechanism which provide a set of conceptual tools for explaining the processes of implementation (May and Finch, 2009). Derived from empirical evidence, NPT focuses on what people do in their professional situation, rather than what they believe or intend. This is relevant in our field where many good intentions fail to produce sustainable change. The argument is that by deliberately paying attention to these concepts, the process of implementation is more likely to be successful. Conversely, analysis of unsuccessful implementations can be traced back to a lack of attention to one of these concepts. The generative mechanisms are described in Table 1.

Whilst some of these concepts overlap with those currently used in educational change research, others are less obvious including reflexive monitoring and cognitive participation (e.g. Wedell, 2009) This is significant because pedagogical change is about much more than what teachers do: successful and sustainable change relies on new attitudes and beliefs about learners and learning (e.g. Brodie et al., 2002) cognitive participation. Often circumstances change during implementation. Therefore, there must be an on-going process of re-evaluation, rather than reliance on formal ‘end-of-project’ evaluations (reflexive monitoring) (e.g. Stutchbury et al., 2019), ‘Coherence’ is a more powerful concept than ‘planning’, highlighting the interaction between ideas and context as crucial in designing interventions.

Interventions in healthcare are clearly different from those in Education, in that the new process often has a narrow scope and focus. However, new processes often involve practitioners changing their behaviour in some way to accommodate a new protocol. Pedagogical change is more complex and involves new practices which often challenge existing attitudes and values. However, as this paper argues, these concepts have relevance in our field.

2.2. Where NPT came from and how it has been used

NPT was developed in a healthcare context, in a project introducing video consultations into dermatology. The original paper (May and Finch, 2009) has been cited over 1300 times, with the vast majority of the examples coming from healthcare. A systematic review of the use of NPT in healthcare contexts highlights a range of different applications including complex intervention trials, feasibility studies, process evaluations, field studies and one ethnography (May et al., 2018). The

---

**Table 1**

The concepts of Normalisation Process Theory (adapted from May and Finch, 2009).

<table>
<thead>
<tr>
<th>Generative mechanism</th>
<th>Definition</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coherence</td>
<td>Introduces and defines the practice in terms of its meaning, use and utility. Coherence highlights the ways in which the new practice is different from other practices. Coherence requires that actors collectively invest meaning in the new practice, in their context.</td>
<td>The new practice needs to be understood by individuals and by the group (individual and communal specification). The ways in which it differs from current practices needs to be articulated (differentiation) so that the actors involved can invest meaning in the new process and can internalise it. The activation of the new practice is more likely to be successful if the right actors are introduced to the practice (initiation), work together to understand it (enrolment) and ‘buy into’ the new ideas (legitimation).</td>
</tr>
<tr>
<td>Cognitive participation</td>
<td>Involves the actors engaging with new practices and identifying courses of action, within their organisation, that will lead to the new practices becoming operationalised. Cognitive participation requires actors to interpret and ‘buy in’ to the new practice.</td>
<td>Collective action is the intellectual and physical work that takes place to operationalise a new idea. It depends on the necessary relationships being in place (interactional workability), the actors having the relevant skills (skill-set workability), and the successful integration into existing social structures (context integration). Rather than focus on what ought to happen, reflexive monitoring involves analysing what is happening as a new practice is introduced – the enablers and the constraints that are in evidence. It involves communal and individual appraisal by those familiar with the context. It may lead to modifications in the practice (reconfiguration). Attention needs to be paid to this stage to the earlier ‘meaning-making’ (coherence and cognitive participation). There is a danger at this stage, if there is not a shared understanding of the practice, that implementation as intended will fail.</td>
</tr>
<tr>
<td>Collective action</td>
<td>Involves the actors in taking collective, purposive action towards the agreed goal. Collective action requires the actors to operationalise the new practice and to mediate it within the appropriate networks.</td>
<td></td>
</tr>
<tr>
<td>Reflexive monitoring</td>
<td>Involves the continuous evaluation of patterns of collective action, including making judgements about the utility and effectiveness of the new practice. These judgements feed back into ensuring the coherence and meaningfulness of the practice.</td>
<td></td>
</tr>
</tbody>
</table>
review (across 108 separate studies) concludes that:

- the constructs of NPT accurately describe implementation processes and can be applied in a stable and consistent way across contexts;
- NPT provided conceptual tools to explain feasibility and the impact (or not) of interventions;
- NPT can be applied flexibly across researchers working in different contexts and settings.

NPT has been used to plan implementations, to analyse what has happened and, perhaps most helpfully in our field, to explain implementation outcomes, so that projects and interventions can build on each other more effectively. It has also proved to be useful in the context of complex interventions in the filed of Primary Care (Huddleston et al., 2020).

The ideas have been used in the field of ICT. For example NPT was used to explain the factors and actions that promote the work of routine embedding of new technologies in the practice (Sooklal et al., 2011). Wood (2017) advocates for NPT in Education. Examining implementation of change in a secondary school, he suggests that NPT is “general enough to transfer between contexts whilst being specific enough to translate into action” (Wood, 2017, p38). This work builds on his contribution by drawing on empirical evidence to demonstrate how the concepts of NPT play out in practice, providing practitioners in the field of International Development with a tool which can be used to both plan for implementation and to understand why it has or has not worked as intended.

3. The body of work on which this paper is based

3.1. Introducing TESSA and ZEST

As part of its mission, the Open University (OU) has engaged in International Research and Development work over a number of years. The longest-running project is Teacher Education in sub-Saharan Africa (TESSA). TESSA was started in 2005 by Professor Bob Moon and was an emergency response to a crisis in teaching in sub-Saharan Africa: an acute shortage of trained teachers, and inadequate training (Moon, 2000, 2010; Wolfenden, 2008a, 2008b). TESSA was designed to support teachers in improving their practice. Activity has been continuous since 2005, attracting over £5 m of grant money. This provides an invaluable opportunity to reflect on learning about implementation over time, but also perhaps a moral imperative to ensure that learning from TESSA can contribute to the knowledge base about implementation in development contexts. The work is described briefly here to provide relevant context to understand the examples provided.

The project brought OU expertise in supported open learning together with representatives from 14 institutions involved in teacher education, from nine countries. Together, they developed a bank of educative teaching materials to support the primary school curriculum and published them on the internet as open educational resources (OER). The resources are ‘educative and published them on the internet as open educational resources educative teaching materials to support the primary school curriculum. Wood (2017) advocates for NPT in Education. Examining implementing of change in a secondary school, he suggests that NPT is “general enough to transfer between contexts whilst being specific enough to translate into action” (Wood, 2017, p38). This work builds on his contribution by drawing on empirical evidence to demonstrate how the concepts of NPT play out in practice, providing practitioners in the field of International Development with a tool which can be used to both plan for implementation and to understand why it has or has not worked as intended.

The focus on teacher educators has been successful, with TESSA OER embedded in the courses in a number of large distance learning institutions (e.g. Open University of Sudan, Open University of Tanzania) and Colleges of Education (e.g. OLA College, Ghana). However, within teacher education, there is resistance to change and a lack of professional collaboration, very little modelling of pedagogy and a lack of emphasis on teaching practice (Moon, 2010; Moon and Umar, 2013; Stutchbury, 2019). This means that new teachers are ill-equipped for practical teaching, especially in policy environments which are asking for more active and engaging pedagogy (e.g. Ministry of Education and Employment, 2012; Ministry of Education and Ministry of Higher Education, Science, Technology, 2015). This has created challenges for TESSA, but also the opportunity to learn about the processes of implementation.

TESSA is perhaps best conceived as a programme of activities with different projects focusing on different countries, and different aspects of teacher education. For example, ‘TESSA Secondary Science’ developed resources at secondary level, whilst ‘Embedding and extending’ used a case study approach to explore how TESSA can become embedded in schools (Murphy and Wolfenden, 2013; Stutchbury et al., 2018; Wambugu et al., 2019). Work with TESSA in Zambia led to a substantial grant from the Scottish Government to fund Zambian Education and School-based Training (ZEST). ZEST is a collaboration between the OU, World Vision Zambia and the Ministry of Education (MOE) to strengthen existing structures for school-based continuing professional development in Zambia by embedding TESSA approaches and providing access to the OER (Stutchbury et al., 2019).

The work of the programme is challenging, as changes in behaviour are required, and evaluation is difficult in that the desired objective of ‘good teaching’ is difficult to measure. Nevertheless, we do have evidence of impact (Harley and Simiyu Barasa, 2012; Stutchbury, 2016; Stutchbury et al., 2019; Wolfenden et al., 2010; Wolfenden and Buckler, 2013), but perhaps equally interestingly, we also have evidence of why implementation is difficult (Buckler et al., 2021; Stutchbury, 2019). This work came about when the one of the authors was invited to lead TESSA Secondary Science, an intervention to support the teaching of secondary science. Seeking insights into the issues of implementation they came across the contribution from Schweisfurth (2011) and resolved to do better.

3.2. Implementing TESSA and ZEST

The focus of the model of change in TESSA is on the place where the change is most needed (classrooms). The assumption is that ‘the closer one is to the problem the greater is one’s ability to influence it’ (Elmore, 1980, p605). TESSA assumes that teacher behaviour in classrooms with
have multiple influences. It recognises that although policy makers and project leaders can define the arena in which implementation takes place, and allocate resources, they cannot necessarily anticipate the local environmental factors that can affect implementation or influence private behaviour. TESSA OER demonstrate the possibilities for classroom teaching, and the aim is to initiate small behaviour changes eliciting new responses from learners, which in turn encourage further behaviour changes. We have found that, over time, this can lead to new attitudes to learners and to the role of the teacher (Murphy and Wolffenden, 2013; Stutchbury et al., 2019), a finding which is reinforced in a recent systematic review of LCE (Bremner et al., 2022). There was never a blueprint for how TESSA OER and associated resources should be used. Rather, resources were allocated to partners to identify models of local use, relevant to their context (TESSA, 2011). For sustainable change in International Educational Development, the ‘implementers’ need to be the people on the ground – head teachers, district officials, teacher educators and teachers. The role of fund holders and NGOs is to enable and support the changes in pedagogy and teaching approaches required. Since 2011, NPT has been used as a tool to try and understand the implementation challenges associated with TESSA and ZEST and to work out how best to support those charged with implementing a new school curriculum or new pedagogies. NPT has provided a framework to plan for implementation, to evaluate implementation and, perhaps most interestingly, to unpick difficulties that have arisen. The rest of this paper explains how the generative mechanisms of NPT have been used in our work with implementers. It draws on field notes, case studies, interview data from several different projects, and survey data from online courses, as well as on data from storytelling workshops in Uganda, a doctoral study in Kenya and evaluation data from ZEST. Much of the data has been used in other publications; the purpose of this contribution is to look across several projects to provide an evidence base for a theory of implementation.

4. Exploring the concepts of NPT in context

4.1. Coherence

In the language of NPT, coherence involves explicit consideration by a group of actors (communal specification) of how the participatory teaching approaches being proposed differ from current practice (differentiation), and why they are important. Individuals need to understand what they are being asked to do in the classroom (individual specification) and why. The implication is that, for the new teaching practices to be embedded (internalisation), those involved in the implementation need time to discuss the practice and understand the importance and potential benefit. In the context of educational change, we suggest that achieving coherence involves examining the ideas, values and beliefs that underpin the proposed change, alongside existing beliefs, structures and processes. Often the beliefs that underpin existing practices go unchallenged and are not made explicit. This means that differentiation needs to take place at multiple levels within the system. In Ghana, TESSA OER were incorporated into the timetable at a College of Education and are now embedded in the work of that College. Understanding and appreciation of the ideas that underpin TESSA led to new structures being devised (timetable changes). Individual specification by those with sufficient power to change the timetable, but still involved in the day-to-day work of teaching, led to modelling of the change, and communal specification followed as the enthusiasm for TESSA OER from student teachers became apparent. It was noticed that those engaging with TESSA OER performed better on teaching practice, and the timetable changes became embedded.

In Uganda, the project team used workshops for representatives from the Primary Teacher Colleges (PTCs) to demonstrate coherence between TESSA and the thematic curriculum, supported by some enthusiastic individuals from partner institutions but communal specification was never achieved, as the changes required to existing structures and processes (opportunities for student teachers and lecturers to use the OER) were not made (Buckler et al., 2021).

Learning from this experience, when the opportunity to work with the Colleges of Education in Zambia arose, the project team worked with the Principal Officer at the Ministry of Education with responsibility for the colleges, to identify existing structures and to work out how they might be used to promote the use of TESSA OER. New requirements for teaching practice, including more preparation in college, were identified as a ‘way in’. The result was the co-production of a ‘School Experience Supervisors Toolkit’, which is now being actively promoted by the Ministry of Education. Communal specification was achieved through the process of being involved in the co-production process. As a result, student teachers are using TESSA to plan lessons, and it has been reported that new teachers joining ZEST schools in Zambia are already familiar with TESSA materials, as they have been using them in the Colleges of Education.

In Kenya, at a partner university, internalisation was not achieved, despite enthusiasm from key individuals, and clear alignment of TESSA with the ideas expressed in Government documentation. A lack of collaborative space – both physical and intellectual – meant that they struggled to achieve communal specification (Stutchbury, 2019).

Our experience suggests that achieving coherence is a non-linear, complex process. It has been helpful to draw on Scott’s (2010) definition of social structures and to consider coherence with respect to the discursive structures (the ideas that underpin the collective activity), the embodied structures (those which resist change such as the curriculum and examination system) and the institutional structures (roles and resources). We found examples whereby coherence with the discursive structures, for example, was achieved, but embodied and institutional structures prevented action. Also, coherence with embodied and institutional structures (e.g. timetable changes in OLA college in Ghana) can often bring about subsequent alignment of the discursive structures and the ideas underpinning the intervention.

The key learning is that individual specification is meaningful when the individuals concerned have authority but remain active in daily business of teaching students. Opportunities for discussion are required, alongside a detailed understanding by project teams of the social structures and processes in place. Where the uptake of new ideas and new resources has not been achieved, lack of coherence means that actors have not collectively invested meaning in the new practice in their context. Attention as to how they might do this is required from the outset.

4.2. Cognitive participation

In the language of NPT, cognitive participation in international development supporting pedagogic change requires the identification of actors who are genuinely invested in the ideas that underpin the change – learner-centred education, active learning and a commitment to inclusive classrooms. Once key actors are initiated, they will enrol others, and together they will legitimise the new practice. The aim is to achieve a ‘critical mass’ of buy-in to the ideas, so that they take hold and become embedded – although that often involves structural change as well. In TESSA, the way in which the projects set out to achieve ‘cognitive participation’ was through a process of ‘versioning’ of open educational resources. After the initial production of a ‘pan-Africa’ set of resources, university colleagues from nine different countries were invited to form a team (enrolment) to adapt the resources for their own country. The result is that, on the TESSA website, users can select contextualised materials in their own country/language. The OER have a clear template, so guidelines were provided about what could and could not be changed, ensuring that the final versions retained the integrity of the originals yet felt authentic in that context (legitimisation). The intention was that the versioning team would represent a group of professionals who had bought into the ideas (cognitive participation) and would work together to integrate the ideas and the resources into teacher education.
In some cases, this was very successful. The open universities of Sudan and Tanzania, UNISA and The National Teacher’s Institute (NTI) in Nigeria, incorporated TESSA OER and tasks for students into their programmes, providing students with access to tools which they can use in their own practice. In some partner institutions, however, TESSA has not become embedded, despite aligning with National policy aspirations. When asked in 2015 what he would do differently in TESSA, Professor Bob Moon highlighted the link between the versioning process and the integration of TESSA into programmes and suggested that more needed to be done to support what NPT terms ‘cognitive participation’.

The importance of cognitive participation and the challenge of implementation in University teacher education is illustrated in an example from TESSA Secondary Science (Stutchbury, 2016).

The brief for TESSA Secondary Science was to co-create 15 units of work to support secondary science teaching. The team comprised five senior university-based teacher educators (one each from Ghana, Zambia, Kenya, Uganda and Tanzania), led by two teacher educators from the Open University (fund holders). To pay attention to ‘cognitive participation’, initial discussions with the team focused on reaching a shared understanding of how students learn science. This was straightforward; everyone in the team was committed to social constructivism and the units reflect this shared understanding. However, as we planned for implementation, the project leaders realised that although this shared understanding was helpful in writing units, it was not what ‘cognitive participation’ meant in the context of this project.

Teacher education is complicated because the medium is the message. It was realised that ‘cognitive participation’ required a shared understanding of teacher learning and an appreciation of the importance of modelling new pedagogies rather than simply talking about them. The successful implementation of TESSA Secondary Science in pre-service teaching courses required teacher educators to change their practice. Without it the units would never be more than an ‘add on’ and would certainly not produce lasting pedagogic change beyond a few committed individuals.

Further work (Stutchbury, 2019) concluded that achieving the shifts in pedagogy for teacher educators requires a deeper shift: a shift away from the notion that knowledge about teaching is fixed, and unproblematic, to the realisation that knowledge about teaching is subjective and socially constructed within a particular context. Learning to teach is about exploring possibilities rather than learning a set of rules. That is not the premise on which teacher preparation and in-service courses in many parts of Africa are constructed.

This realisation – that cognitive participation is about ‘knowledge’ rather than ‘learning’ – has informed all work since 2016. We have not engaged in philosophical discussions about the nature of knowledge about teaching but have made the contested nature of the knowledge explicit, and designed activities which are rooted in examples of practice.

4.3. Collective action

Collective action involves actors working together to operationalise a new idea. ZEST is a project to support school-based continuing professional development in Zambia. Collaboration between teachers is actively promoted through the provision of regular meetings (already part of the system in Zambia) and of contextualised resources which support pedagogic change and the implementation of the revised school curriculum. The roles and structures are already in place in Zambia, with each school having a ‘School Inservice Co-ordinator’ (SIC) and regular Teacher Group meetings (TGMs). The system was not working as effectively as it could, owing to a lack of access to resources to help teachers develop the skills required to teach the revised school curriculum. Evidence from project evaluations suggests that ‘collective action’, in the form of productive TGMs in which learning and teaching are discussed, is supporting more collaboration between teachers, improving working relationships and encouraging more inclusive classrooms (Gaved et al., 2020). The ‘collective action’ extends beyond the schools, with District and Zonal Officers using the same resources to support TGMs across geographical areas and to facilitate the sharing of good practice between schools.

A similar pattern was observed in Kenya in a primary school where TESSA OER were introduced in 2012. Led by an inspirational head teacher, teachers put much more emphasis on classroom discussion and active learning. As a result, they came to know their students better. They identified poor literacy as restricting access to the curriculum in Grade 4 and launched a library project to support reading. An evaluation in 2016 revealed that collective action with respect to pedagogic change had not ‘solved’ the school’s problems but had changed the trajectory, creating ownership of the problems and therefore of the solutions (Stutchbury et al., 2018; Wambugo et al., 2019).

Much of the work of TESSA has taken place in the field of Teacher Education and was a response to the observation that ‘within the teacher education community there is … a resistance to change’ (Moon and Umar, 2013, p234). ‘Collective action’ has been difficult to achieve in Universities and Colleges of Education. In one Kenyan University, for example, TESSA is not embedded in teacher preparation and in-service courses (Harley and Simiyu Barasa, 2012; Stutchbury, 2019) despite ‘buy in’ to the ideas from a senior academic. Navigating the social structures to implement new pedagogies was difficult, with the result that the individual concerned looked outwards, using their reputation established through TESSA to advise the Government on the development of a new school curriculum for the 21st Century. This is consistent with another observation from Moon (p133) (2010), that because ‘a certain form of individualism that can mitigate against creative use of external supports such as represented by TESSA, the prospect of pedagogic change amongst this professional group seems limited’.

On going reflexive monitoring (see below) highlighted these issues, with the result that much of the work of the projects in the period 2016 – 2020 was aimed at creating networks and supporting collaboration through the use of free online courses, contextualised for an audience of teacher educators (Stutchbury et al., 2019; Wofenden et al., 2017). Course activities specifically encouraged collaboration and a facilitation model was developed in which groups of colleagues in the same institutions were encouraged to study together. Evidence from the TESSA MOOC (Stutchbury et al., 2019) suggests that participation in the MOOC created more awareness of the benefits of collaboration and therefore the circumstances for collective action to take place. One successful TESSA MOOC participant commented in the end-of-course survey that she had installed a kettle, some mugs and some tea bags in an empty office in her building in order to encourage colleagues to gather and talk about their work.

4.4. Reflexive monitoring

Reflexive monitoring involves analysing what is happening as a new practice is introduced. It involves collaborative and individual appraisal by those familiar with the context. It may lead to modifications in the practice (reconfiguration). Attention needs to be paid at this stage to the earlier ‘meaning-making’ (coherence and cognitive participation). In the work described above, this has involved the explicit identification of ‘programme theories’ (Pawson et al., 2005) which set out the reasons why those involved think certain actions will work. By collecting early evidence about the appropriateness (or not) of these theories, shared understandings are consolidated, and changes can be made to ensure that implementation is more likely to be successful. There is a danger that, without a shared understanding of the new practice in the context, implementation as intended will fail.

This approach has been productive ZEST. Through three cohorts of teachers in 600 schools, programme theories were tested and modified resulting in a contextualised, flexible programme which differed from
the original vision (Stutchbury et al., 2019). The final evaluation of this work is still on going, but evidence is emerging of more frequent TGMs with more collaboration and more harmonious working relationships.

It is perhaps interesting to note that the system which ZEST has replaced was based on a Japanese model of ‘Lesson Study’. The structures, processes and practices of ‘lesson study’ are embedded in Zambia, but ‘cognitive participation’ has been challenging in a culture which is completely different from the one in which the approach was developed. Also, the ideas that underpin lesson study (which assumes that there is a ‘right way to teach X’) have been discredited (Cochran-Smith and Lytle, 1999; Putnam and Borko, 2000), making cognitive participation in lesson study counter to what is known about learning to teach, and therefore difficult to achieve. In ZEST, the facility for ‘collective action’ has been strengthened and has brought in an underpinning philosophy which is based on evidence from practice, making cognitive participation more likely. Thus, the concepts of NPT are guiding the design of the project, but also providing insights to understand what works and why.

Reflective monitoring also informed a productive change in direction in a project in Zambia to promote the use of TESSA in schools and colleges. Three activities were planned: a workshop to map the OER to the Zambian Revised Curriculum; a workshop to train 30 ‘MOOC facilitators’ (which resulted in 532 MOOC participants from Zambia over two presentations); and a workshop introducing TESSA to Provincial Education Officers. As a result of reflexive monitoring after the first two activities with Government Officers and the realisation that cognitive participation and collective action would be difficult to achieve with the resources available, an opportunity was identified (as described above in the ‘coherence’ section) to make a greater impact by targeting teaching practice. So, plans were changed and the ‘School Experience Supervisors Toolkit’ was developed.

5. Discussion

The poor record of implementation of many expensive interventions in the field (resulting in persistently low educational outcomes (Bold et al., 2017)) matters and deserves critical interrogation. This paper has argued that theorisations of the implementation process developed in healthcare can helpfully be applied to the field of International Educational Development. It is argued here that NPT provides tools to support that process at grassroots level. NPT provides fund-holders, NGOs and those driving projects with concepts and tools with which to engage those on the ground. We have demonstrated how the four concepts have been used to plan projects, to evaluate progress and to explain situations where the outcomes have been challenging to achieve. NPT provides a framework and a set of questions that could be applied widely in the field of Educational Development. Implementers can ask:

- How can ‘coherence’ be achieved in this situation?
- What does ‘cognitive participation’ look like in this context?
- How can ‘collective action’ be encouraged and supported within existing social structures? What new structures are required?
- How are we doing? Why did we think this idea would work? Do we need to change what we are doing?

The evidence from our work is that pedagogic change is a gradual process. Our argument is that by paying attention to the processes of implementation, it is more likely to be successful and sustainable.

5.1. The case for NPT

‘Implementation’ as a process is explored extensively in the field of healthcare but less so in the field of Education. However, educational ‘change’ attracts a great deal of interest and there are synergies with the concepts of NPT. The difference perhaps is that traditional educational processes rarely include the explicit linking of theory and practice that NPT brings. Wedell (2009) uses a wide range of practical case studies to highlight principles to guide those involved in implementing change. However, the lack of an over-arching theoretical framework means that these principles are difficult to retain. Fullan (2003) uses complexity theory to provide a conceptual framework and translates the major tenets for practitioners.

- Start with the notion of moral purpose, key problems, desirable directions, but don’t lock in.
- Create communities of interaction around these ideas.
- Ensure that quality information infuses interaction and related deliberations.
- Look for and extract promising patterns, i.e., consolidate gains and build on them (Fullan, 2003, p23)

The concepts of NPT are clearly recognisable within these principles but their usefulness in an empirical situation is limited by the fact that they are neither instantly memorable nor easy to operationalise. We have found the concepts of NPT to be both memorable, recognisable and useable in the field.

David Scott (2010) works on the premise that in order to exercise agency (and hence bring about change) actors are both empowered and constrained by social structures. His typology of social structures includes ‘institutional structures’ and ‘discursive structures’. ‘Institutional structures’ include the roles, norms, values and relationships that underpin action and ‘discursive structures’ refers to the framework of ideas that underpin the actors’ activities. This is particularly significant in educational settings where ideas about how teachers learn, how learners learn and the nature of knowledge about teaching are contested yet manifest themselves in policies and in actions. The failure of many educational initiatives arises as a result of a lack of coherence of the ‘discursive structures’ with the beliefs and values held by those making policy different from those held and experienced by those working in classrooms. These ‘structures’ – institutional and discursive - are consistent with the notion of collective action and cognitive participation. Understanding the nature of these structures in a particular context will increase the chance of successful implementation (Stutchbury, 2019).

Hence, there is evidence elsewhere in the field of education to support the tenets of NPT. The strength of NPT is that they are presented in such a way that they support practical theorising, rather than introducing new and novel ideas.

5.2. The limitations of NPT

As we would expect, NPT is not without its critics. The first critique which emerged from a systematic review was that the theory places undue emphasis ‘on the agency of those involved in implementation, as opposed to those who experience the effects of that agency’ (May et al., 2018, p19). In the context of healthcare this perhaps means that not enough consideration is given to patients. In the case of the projects described above, this is perhaps a strength. The ‘implementers’ in TESSA and ZEST are our African colleagues working in schools, district offices, colleges and universities to implement new curricula and meet Government policy aspirations which are calling for more active participation in learning. Our role is to support implementation and having a set of tools with which to do so, is helpful. The individual and collective agency of the implementers is crucial if sustainable change is to be achieved and this focus within NPT is helpful. In the context of introducing LCE, commitment to the ideas, and the ability to exercise their professional agency by teachers, are essential if implementation is to be successful. The concepts of NPT have helped us to articulate this and to plan how to secure that commitment.

The second critique suggests ‘NPT presents a normative model of implementation with insufficient attention paid to idealised temporal aspects of NPT’ (May et al., 2018, p19). This is perhaps suggesting that
Learner-centred education is a challenging concept that was conceptualised as a set of attitudes and values towards learners. The implementation of new curricula is not as effective as it could be as it is result is that much training (designed by curriculum developers) in the curriculum developers, is that it is a set of teaching approaches such as common misconception that we have experienced when working with new equipment). A backdrop to this work has been the contested over-arching concepts which can be explored at each level of the system. Interventions often fail because those at the ‘top’ of the system (policy makers) make assumptions about teachers and classrooms which are not necessarily applicable to practice. The argument here is that because NPT is a meta-level theory, it provides over-arching concepts which can be explored at each level of the system. A common issue in educational change is a lack of ‘coherence’ (Pritchett, 2015) between the layers and LCE is a good example of this. Policy documents ask for more LCE without defining what it means and a common misconception that we have experienced when working with curriculum developers, is that it is a set of teaching approaches such as group work. Badly organised group work is not learner-centred. Likewise, a well-crafted lecture is not necessarily, not learner-centred. Teachers, however, are quick to appreciate the LCE is most helpfully conceptualised as a set of attitudes and values towards learners. The result is that much training (designed by curriculum developers) in the implementation of new curricula is not as effective as it could be as it is not based on assumptions that reflect classroom realities. Attention to the concepts of NPT by actors in each level of the system provides a mechanism for surfacing and discussing underlying assumptions across the different layers of the system. NPT is not a prescription setting out what to do, but a way of thinking about the problem that is likely to be productive as the concepts are shaped for the actors concerned and their context.

When implementation is deemed not to have worked, people often cite examples of ‘barriers’ to change. Indeed, Huddlestone et al. (2020) suggest that NPT seeks ‘to assist the understanding and evaluation of factors that act as barriers or enablers for routine incorporation of complex healthcare innovations into practice’ (p2). It was suggested in the introduction that the concept of ‘barriers’ is unhelpful, as the implication is that they are rigid, they can provide excuses and often mask underlying social realities (Checkland et al., 2007). We would suggest that ‘constraints’ is perhaps more helpful and can be interpreted in terms of the concepts of NPT.

In her 2011 paper, Schweisfurth lists possible barriers to the implementation of pedagogic change:

- an over-ambitious and under-resourced reform process;
- local conditions (large classes and a lack of resources) which make it very demanding for teachers;
- inadequate teacher education and a lack of motivation from teachers;
- contradictions in the form of attitudes and values which see teachers as ‘experts’ and learners as ‘empty vessels’;
- an inappropriate curriculum and examination system.

In terms of the concepts of NPT the ‘barriers’ listed above are a combination of a lack of ‘coherence’ and a lack of ‘cognitive participation’. A lack of ‘coherence’ and ‘cognitive participation’ mean that ‘collective action’ is difficult and unlikely to lead to sustained change. By seeing the ‘barriers’ in these terms they perhaps become less rigid. How to achieve ‘coherence’ and ‘cognitive participation’, for example, in the context of educational development projects could be a useful question to ask (more useful perhaps than trying to identify all the possible variables to consider (Wedell, 2009)) and deserves consideration. ‘Coherence’ for example encourages actors to evaluate current practice and to identify changes that are feasible and would contribute towards the final vision. So what appears to be very ambitious can be broken down into smaller steps.

5.3. Towards a theory of change

All international education development projects are underpinned by a theory of change. Within the International Teacher Education Development Programme at the Open University, we have grappled with the notion of a theory of change that is relevant across multiple projects and multiple contexts for many years. All our projects are based on the intention to improve the quality of teaching (and therefore student outcomes), in line with Government aspirations, through the provision of supported open learning, making use of readily available educational technology. NPT has provided a possible theory of change which is described in Fig. 1 below.

This recognises that professional practice is on-going. A new policy stimulates new activity, but that activity needs to be integrated into the current situation. The model reflects the fact that, based on our empirical observations, ‘cognitive participation’ and ‘collective action’ are inextricably linked. Sometimes, individual cognitive participation by people in key roles, leads to collective action, which in turn supports collective cognitive participation. We can also cite examples where individual actions – small changes in practice – produce new responses from learners, which encourage more action and, over time, leads to new attitudes and values which place the learner at the centre of the learning process (cognitive participation) and eventually lead to collective action.

The result is that overtime, practice evolves. A particular challenge is how to measure such changes, because where TESSA OER has been successful, new practices have become normalised. Problems are never solved, as new ones emerge. But a claim that we can make (Stutchbury et al., 2018) is that using TESSA OER can lead to a change in trajectory, with problems better understood and owned by the people in their context.
The overall finding is that the use of TESSA OER can lead to improvements in teaching (with reports of improved attendance and achievement) and increased collaboration amongst teachers (Stutchbury et al., 2019). We have learnt however, that the OER need to be mediated for teachers and teacher educators, and have tried various ways of doing that (Stutchbury et al., 2019, ZEST resources). But success is highly dependent on the interplay of cognitive participation and collective action. There need to be a few key individuals who ‘buy into’ the thinking behind the OER (CP) alongside a critical mass of support (CA). Where both are present, TESSA becomes normalised and becomes ‘part of the way we do things’ (Stutchbury et al., 2018). The concepts feed off each other. CP can lead to CA – but often hierarchical social structures prevent this from happening or limit the sphere of influence of the proponents. Likewise, over time, CA can lead to CP. This has become apparent in ZEST as we approach the end of the project. As a result of collective action over time, the Provincial and District officials have ownership and have led the implementation in new Districts.

6. Conclusion

In common with Wood (2017), we have argued that NPT provides a conceptual framework through which to understand the processes of implementation in the context of education. We have shown, using examples from the field of International Teacher Development, how the concepts have helped to plan for sustainable pedagogic change and to explain the situations in which implementation has been less successful. The on-going challenge in this work is how to demonstrate impact as changes in teaching practice are, by their very nature, often gradual and difficult to measure: a randomised controlled trial is not possible, although the conclusion from a recent systematic review that LCE brings ‘positive impacts on student motivation and confidence, as well as enhanced relationships’ (Bremner et al., 2022, p9) is consistent with our experience. The concept of reflexive monitoring has been particularly helpful and we are making increasing use of the notion of on-going realist evaluation (Pawson et al., 2005) to examine impact and to ensure that the identified ‘collective actions’ are the right things to be doing, and that what is assumed by ‘cognitive participation’ is helpful. This is consistent with a call by Tikly (2015) to recognise that quantitative measures alone are not necessarily evidence of sustained impact and that these lose sight of other potential gains. Although we have drawn on a specific body of work and demonstrated that we have evidence of impact (or not) of individual projects, this paper is intended to show more broadly how this toolkit of ideas provided the opportunity to also learn about the processes of implementation and potentially make an even bigger contribution than any individual project can do.

Acknowledgements

During the time that this work was being done, TESSA was funded by a grant from the Allan and Nesta Ferguson Charitable Trust. ZEST is being funded by a grant from the Scottish Government.

Author statement

The authors of this article declare that there are no competing interests of any type which affect the objectivity of this work.

References


