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Exploring Open Digital Badges in Teacher Education: A Case Study from India

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Abstract: This case study concerns findings from a workshop with senior teacher educators from three Indian states as part of the TESS-India teacher professional development initiative. The workshop explored how open digital badges might be used to support, capture and validate changes in teachers' classroom practice. Workshop participants drew on the TESS-India OER to design short online in-service teacher professional development courses to support movement towards the more participatory approach advocated in education policy. As part of this course design process, participants were encouraged to propose digital badges to recognise changes in teachers' pedagogic practice. Analysis of the workshop discussions and outputs indicated enthusiasm for digital badges, while also revealing that the process of defining digital badges may be helpful in prompting disruption of deeply embedded cultural scripts about ways of being and knowing that shape teacher educators' practice and helping them to recognise what the work of quality teaching entails.

Keywords: Digital badges, teacher professional development, TESS-India, pedagogic practice.

Introduction

Improving the quality of classroom teaching and learning is a strategic focus across many low- to middle-income countries, including India. Large numbers of teachers across the country need pedagogical support to move towards the child-centred practices advocated in national policy (GoI, 2012; NCERT, 2005; NCTE, 2009). We contend that such pedagogic change in school classrooms requires relational change in professional learning for teachers (Murphy & Wolfenden, 2013). How teachers come to understand participatory pedagogy through their professional development experiences will be shaped by how it is understood, appropriated and modelled by the teacher educators who design and facilitate these experiences. Hence, support for pedagogic change will be dependent on teacher educators' conceptions of teacher learning, knowledge and assessment.

Dissonance between policy and enacted pedagogy pervades India's education system. Numerous government reports note that this is exacerbated by the continuing low importance given to "teaching practice" in teacher education programmes (GoI, 2012; MHRD, 2013) and that large numbers of teacher educators have limited understanding of the policies, their underlying theoretical assumptions, and the implications of these for practice.

Established in 2013, the TESS-India initiative (www.tess-india.edu.in) brought together UK and Indian researchers and practitioners to collaboratively create a large set of Open Educational Resources (OER) for teacher education (Wolfenden, 2015). These OERs bring the participatory pedagogy of Indian national curriculum documents (NCERT, 2005; NCTE, 2009) into the classroom through structured activities to be undertaken by teachers with their pupils. The TESS-India approach

considers teachers' practice to be deeply influenced by the contexts in which they work, the resources they are able to draw on and the institutional demands they attempt to meet. Thus, the original suite of OER was localised (translated and adapted) by state educators (Wolfenden & Adinolfi, 2019), creating multiple versions in different Indian languages appropriate for use in ways which meet teachers' practice-based starting points and local education priorities (Wolfenden, Adinolfi, Cross, Lee, Paranjpe & Safford, 2017).

This case study focuses on a workshop in which senior state teacher educators, familiar with the TESS-India approach, designed short in-service teacher online courses — or learning pathways — utilising the appropriate state version of the TESS-India OER. Such activity had occurred previously within the TESS-India initiative but this workshop was unique in its focus on how teacher learning using OER might be evidenced, assessed and recognised through the use of open digital badges. Few teacher in-service programmes in low- to middle-income countries attend to this dimension. Rather, teacher engagement in in-service programmes is usually acknowledged merely through certificates of participation or completion. In introducing the concept of digital badges to teacher educators involved in the TESS-India initiative, our intention was to explore how such artefacts might help to address the linked challenges of teacher motivation and personalisation in teacher education. However, as we describe here, the exercise provided these teacher educators with a valuable opportunity to engage in a consideration of their conceptualisations of knowledge, knowing and teacher learning — all critical to transformation of teacher education.

Digital Badges

Open digital badges are symbolic representations of skills, accomplishments, status, activities or identities that are commonly awarded by an issuer and embedded with a link to evidence that supports the learner's claim to the badge.

The mechanics of awarding a digital badge consist of three stages. First, articulation of the success criteria which the badge represents, and creation of an accompanying graphical badge symbol. The badge is most commonly developed by an educator or instructional designer, though some implementations have sought greater involvement of learners. A badge structure — a conception or mapping of how each badge relates to another and the associated award criteria, and a categorisation of badges (e.g., activity-based, grade-based or hierarchical — there is currently no standard) — may also be made (Facey-Shaw, Specht, Van Rosmalen, Boerner & Bartley-Bryan, 2018). The badge and criteria are typically set up on an online issuing platform that is compatible with open standards.

Issuing of the digital badge involves the learner submitting evidence that demonstrates they meet the award criteria to the online platform. Subsequently, an assessor (e.g., a teacher educator or expert) verifies this evidence and approves the award (in cases of computer marked assessments, such as a quiz, this approval may be automatic). The third stage involves the ongoing management and use of the digital badge. Learners can store badges in digital backpacks, export the images (with an embedding link to evidence attached), and share these on social networks and in their CVs.

Since their advent, digital badges have been proposed as a vehicle for lifelong learning (MacArthur Foundation, 2013; Finkelstein, Knight & Manning, 2013) and there are numerous examples of how badges have been used in different disciplines and fields to enhance learner motivation and promote goal setting (Aberdour, 2016; Gibson, Ostashewski, Flintoff, Grant & Knight, 2015; Botha, Salerno,

Niemand, Ouma & Makitla, 2014). In the US, a number of states are using digital badges as micro-credentials in school-based professional learning to make visible improvements in teachers' classroom practice (DeMonte, 2017).

Each micro-credential is linked to a discrete set of educational practices. Teachers demonstrate mastery of the associated competencies for each set through submission of samples of pupil work, videos of their classroom teaching, and other artefacts, working at their own pace on a personalised learning pathway. Their submissions are vetted, scored and either approved (awarded a digital badge) or returned with a request to revisit their practice and "dig deeper" (DeMonte, 2017). Studies indicate that these micro-credentials give focus and coherence to professional learning (Acree, 2016). Teachers like the approach and the way it enables them to choose what to focus on in their learning trajectory (Digital Promise, 2016).

However, there is little evidence of open digital badge research from the Global South for learners in general or teacher professional development, in particular (Liyanagunawardena, Scalzavara & Williams, 2017), and it remains unclear whether findings clearly linked to particular geographic contexts are applicable to educational systems in low to middle-income contexts. In a rare study from outside the Global North, the Technology for Rural Education programme in South Africa developed a highly linear learning path composed of 18 badges aimed at building proficiency in teachers' use of technology. Feedback on the badges was overwhelmingly positive (Botha et al, 2014).

Method

This case study draws on data from a three-day workshop held in India in January 2019. The event was attended by 14 delegates from three Indian states who had, in some capacity, been involved in the TESS-India teacher development programme (Wolfenden et al, 2017). Participants were senior educationalists and included State Directors of teacher education. The workshop was led by researchers from the UK and India.

During the workshop, participants were introduced to the concept of open digital badges, their creation and use, before reviewing examples of open digital badges and then designing an outline of a "badged" course for teachers, drawing on the TESS-India OER. Participants were free to decide which area of practice to focus on and which competencies would be badged, as well as the parameters of their course, such as its length and study time requirements each week.

All physical outputs produced during the workshop were collected, including presentation slides, proposed course plans, and photographs of post-it and flip-board activities. Audio recordings were made of key discussions and plenary sessions. The study adheres to British Educational Research Association (BERA) guidelines for ethical investigative conduct in generating, storing and using the associated data.

Results

We start by interrogating the OER course designs generated during the workshop. The exercise of mapping learning outcomes against learning activities, means of assessment and types of badge is commonplace in learning design but was new to these teacher educator participants. They found it easier to propose how to assess, and "badge", some outcomes but struggled with others.

Group 1: Pair Work with Pupils

Group 1 chose to focus on improving the use of pair work in the classroom. They identified three learning outcomes for teachers: i) to gain an understanding of pair work as a classroom strategy; ii) to develop skills in organising pair work in different curriculum areas; and iii) to achieve involvement of all pupils in pair work. A key feature of this course was learner choice. Teachers would be offered a large number of activities to select from, each with an assessment and digital badge. Figure 1 shows an excerpt of their course mapping, including the type of digital badge proposed for each activity.

Learning Outcome	Example Activity Linked to Achievement of Outcome	Assessment Method	Badge Category
Understand concept of pair work as a classroom approach	Read theoretical background and understand concept	Questionnaire or assignment	Knowledge badge
Develop skills in using pair work in different contexts	Demonstrate classroom use in four curriculum areas	Video of classroom practice	Practice badge
	Produce reflective case study about the challenges of using pair work	Audio recording of reflections	Reflective badge
		Written notes of reflections	Reflective badge
	Discussion with colleagues	Unspecified	Unspecified

Figure 1. Outline excerpt of proposed course structure for Group 1.

Of interest here is the way in which this group's design has disaggregated the complex skills required to successfully use pair work with pupils into theoretical study, classroom use, reflection and discussion with peers, each associated with a different type of digital badge: knowledge, practice, and reflection. The badges are linked to a range of assessment methods, including direct observation of teachers' classroom practice. The group proposed that teachers would be motivated to study this course through the award of digital and *non-digital* (conventional) badges and the sharing of their practice in online spaces and during teacher meetings or seminars.

Group 2: Using Local Resources in the Classroom

Group 2 focused on teachers' use of resources found in the local environment. Four learning outcomes were identified: i) to explore and integrate local resources, ii) to forge connections between the curriculum and pupils' lives, iii) to make the classroom an interesting and attractive place to learn, and iv) to integrate and adapt local resources for the classroom. This group choose to use three different types of badges: use of local resources in teaching practice, achievement of specific course tasks, and knowledge of relevant resources related to their own teaching (Figure 2). These were all

described by the group as "formative badges". The assessment approach for each badge was not specified but this may have been a result of insufficient time to agree on these during the workshop.

Learning Outcome	Example Activity Linked to Achievement of Outcome	Assessment Method	Badge Category
Explore and make use of resources	Identify what local resources are available	Unspecified demonstration of practice	Knowledge badge
	Use appropriate resources in teaching		Practice badge
Connect curriculum with pupils' lives	Make use of the outside environment	Not specified	Practice badge
	Invite a local expert into the classroom		Task badge
Adapt and adopt local resources	Adapt a local resource	Not specified	Practice badge
Make classroom interesting and attractive	Culmination of activities outlined above	Not specified	Task badge

Figure 2. Outline excerpt of proposed course structure from Group 2.

Group 2 spoke of teachers using the badges as evidence for becoming local teacher advisers (Cluster Resource Coordinators and Block officials), reflecting their concern that such badged courses should align with existing structures and other teacher education interventions.

Group 3: Multilingualism in the Classroom

Group 3 focused on the challenges faced by teachers working in multilingual classrooms. Their course was designed to encourage teachers to value the languages spoken by their pupils and draw on their linguistic resources in learning activities. Their design differed from those of the other two groups in that they drew a clearer distinction between broader conventional summative assessment tasks (writing a short reflection on their experience, using audio-visual material with pupils, and classroom practice in a multilingual setting (video), leading to badges "of learning" (external symbols), on the one hand, and formative badges "for learning" to recognise completion of smaller practice-based tasks, on the other. The latter were intended to provide motivation for teachers as they progressed towards the summative tasks. This distinction between badges "of learning" and badges "for learning" was important in recognising different starting points and individual learning pathways for teachers.

Narratives of Teacher Motivation and Reward

Understanding what motivates teachers to select and engage with particular types of professional learning is essential to deciding if, when, and how digital badges might be used. Carey and Stefaniak (2018) quote one open-badge expert as noting that a critical question is "How will what I'm designing mesh into the world that this person is going to move into?" (p. 1224). Analysis of workshop discussions identified four related themes important to teachers: (i) external recognition of personal

achievement, (ii) encountering inspiring practice, (iii) sharing their own practice, and (iv) alignment with policy and governing structures.

With respect to the first theme, certification at the state or national level was most commonly mentioned but awards and badges were also suggested as means to motivate. One participant observed that having "… just a little appreciation would be good" and another mentioned monetary benefit or promotion as an incentive. Teachers were also described as being motivated by witnessing the inspiring practice of peers first-hand or by reading or viewing case studies featuring local teachers. Motivation derived from social engagement was frequently mentioned and included having the opportunity to showcase their own success within the teaching community in physical spaces or online communities. Such exchanges and support could "create a fellowship of engaged teachers".

Unsurprisingly, alignment with policy and government structures was also considered to be an important motivational driver for teachers, perhaps reflecting the significance of formal qualifications in academic and professional life in India. This was seen to be necessary at all levels: "State and country support is essential but I think at the ground level [as well]". State government endorsement — and financial support — were seen as necessary to "percolate deeper into the [local] system", whilst support from headteachers, state administration, state education directors and education officers was also mentioned.

Discussion

Our interrogation of workshop outputs including participants' nascent conceptions of digital badges structures suggests that this exercise was useful in prompting teacher educators to pay attention to their understanding of teacher learning and practice in several ways.

First, all groups emphasised teachers' own classroom as a site of professional learning and included activities for teachers to undertake with their own pupils. This may have been encouraged by the activities and case studies within the TESS-India OER, which model pedagogy in school classrooms. There were multiple mentions of support sessions outside the school but the focus on learning through classroom practice is nevertheless an important shift away from traditional cascade-type training and off-site workshops commonly seen in India.

Second, within the learning designs, there was movement towards involving teachers in taking responsibility for their learning pathways, reflecting a recognition that teachers' practice is not homogeneous and that they have differentiated learning needs requiring distinct forms of support. Again, this represents a significant closing of the gap between the rhetoric of policy and enacted pedagogy in most current teacher education.

Third, and somewhat in tension with the first finding, we observed that discourse across the groups tended to isolate knowledge of learning strategies or concepts — seen as a form of disciplinary knowledge to be assessed by a "knowledge" badge — from pedagogic practice. National educational policy documents identify this theory-practice dualism as problematic for teacher education in India, reflecting as it does the valuing of abstract knowledge and a belief in its transferability across situations. Whilst we were encouraged by the equivalence given to these 'knowledge' and 'practice' badges in the designs, we argue that further shifts in these understandings are needed if teacher educators, and teachers, are to be able to enact pedagogy congruent with policies which view knowledge as developed through a constructive process. However, through the examples of

'reflective' badges, we can see teacher educators valuing reflection, as informed by theoretical (conceptual) tools and evidence derived from the analysis of practice. This has not historically been integral to the Indian teaching profession.

Lastly, assessing movement in teachers' classroom practice was recognised to require a greater range of authentic assessment methods than is currently being employed, such as video or audio recordings of classroom practice as evidence for teacher learning. How this evidence might be assessed at scale — whether through peer rating, random sampling by teacher educators or assessment by a trusted local educator (e.g., the headteacher) — was not resolved in the workshop. Mechanisms for sharing online video and audio recordings of classrooms could also raise ethical considerations with respect to children's rights and safeguarding, thereby, limiting how others can view and verify the evidence submitted for a badge and any subsequent sharing of the evidence, for example, on social media.

Conclusion and Recommendations

There was much enthusiasm for using digital badges in teacher learning in this initial exploration with potential issuers and viewers, and a perception that they could have high value to teachers through their alignment with combinations of motivational factors. Hence, we suggest that the concept of digital badges is worthy of further investigation with teachers themselves to understand whether, and how, earning them might influence changes in their classroom practice. Future research could also include how such courses could be integrated into existing and future teacher education strategies and linked to teachers' career structures.

Improvements in pupil learning, central to education policy in India, are commonly held to be dependent on teacher quality, where this is seen as what teachers know (i.e., the subject matter) and can do. As we indicated earlier in this article, the latter is acknowledged to be currently only weakly considered in teacher education in India. Our analysis indicates that the process of designing a badged course can be useful in prompting teacher educators to consider how teachers might move deeper into new forms of pedagogic practice and to start to articulate the kinds of changes to classroom practice that are associated with becoming a more competent professional. Although this case study was situated within the context of educational policy and practice of India, the challenges of teacher educator practice and teacher education discussed have wider application. We therefore recommend further investigation of this design process with teacher educators in other contexts.

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