



Having an EfECT: Professional development for teacher educators in Myanmar

Simon Borg^{a,*,1}, Ian Clifford^{b,2}, Khaing Phyu Htut^{b,3}

^a Western Norway University of Applied Sciences, Kronstad Campus, 5020 Bergen, Norway

^b British Council, 78 Kanna Road, Yangon 11182, Myanmar

HIGHLIGHTS

- National two-year project to develop teacher educator competence in Myanmar.
- English language, teaching knowledge, confidence, teaching and reflective skills targeted.
- Several baseline and exit measures collected from 1647 teacher educators.
- Impact of the project on teacher educator competence was varied but overall positive.
- Project's evaluation tools critically examined.

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ABSTRACT

As part of Myanmar's current educational reforms, the EfECT project aimed to improve the competence of pre-service teacher educators in Education Colleges across the country. Drawing on baseline and exit measures collected through questionnaires, tests, observations, interviews and written reflections, this paper examines the impact of the two-year project on 1647 teacher educators' propositional knowledge of teaching methodology, practical teaching skills, reflective abilities and professional confidence. Overall, but not exclusively, the outcomes of the project in relation to these issues were positive, and these results are analysed critically with particular attention to the tools used to measure project impact.

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1. Introduction

This paper examines the impact of the English for Education College Trainers Project (EfECT), a large-scale teacher educator development initiative in Myanmar. We begin by outlining the educational context for the project before discussing the dimensions of professional competence that it addressed. The design, objectives, implementation and evaluation of the project are then

described, followed by an analysis of its key results and a discussion of the kinds of impact it achieved. Overall, the account we present has implications for the design and evaluation of teacher and teacher educator professional development projects more generally.

1.1. Education in Myanmar

Strategically located between the economic hubs of China, India and the ASEAN countries, Myanmar is the largest country in mainland Southeast Asia. In 1948, at the end of the colonial period, Myanmar's education system was considered superior to many other neighbouring states, with adult literacy, at close to 60%, among the highest in the region (UNESCO, 2006). Following the military coup in 1962, however, the Myanmar education system went into long-term decline and by the new millennium it

* Corresponding author.

E-mail address: simon.borg@hvl.no (S. Borg).

¹ Permanent address: Klanec 21a, Kozina, 6240, Slovenia.

² Present address: British Council Thailand, 254 Chulalongkorn Soi 64 Phayathai Road, Pathumwan, Bangkok, Thailand 10330.

³ Present address: DFID Burma, British Embassy, 80 Strand Road, Rangoon, Burma.

languished at the bottom of the league table of ASEAN countries for educational enrolment, achievement and investment (Ministry of Education, 2015; UNESCO, 2015). The situation started to change with the reform process initiated by President Thein Sein, with the military government realising that improving educational access and quality was key to regaining domestic legitimacy (Pyoe Pin, 2014). In 2015 there was a smooth transfer of power to Aung San Suu Kyi's National League for Democracy Party (NLD), which prior to its election had already made education one of its priorities. (Myanmar National League for Democracy Party, 2014).

In terms of UNESCO's pillars of learning,⁴ the Myanmar education system focuses heavily on the first pillar, 'learning to know' (UNESCO, 2006), with a model of learning that is predominantly receptive (Carnell & Lodge, 2002), encourages dependency by the learner on the teacher, and where assessment focuses on the quantity of knowledge learned. A study of pedagogical practices in 23 primary school lessons by Hardman, Stoff, Elliott, and Ackers (2010), for instance, found that opportunities for collaborative learning, critical thinking and problem solving were rarely observed.

As part of its reforms, Myanmar has committed to child-centred approaches (CCA) to learning. Several initiatives have been implemented in recent years to promote CCA (an approach to learning that maximises children's active involvement, is grounded in their interests and needs, and promotes creativity and problem-solving skills)⁵ but, overall, the evidence from evaluations of these projects does not suggest they have had a major impact on changing established modes of teaching and learning in the country. For example, a summative review of the four-year JICA project 'Strengthening of Child-Centred Approach' found little positive change between baseline and end of project in the attitudes of teachers and students (JICA, 2007). From 2001, UNICEF's Child Friendly Schools and Early Childhood Care Development projects focused on school improvement planning and promoting CCA through in-service training. Again, an evaluation of these projects found that the interventions had limited impact on the quality of teaching and learning (Clarke, 2010). The National Education Sector Plan reached similar conclusions, noting that "the MOE rolled out child-centred approach trainings across the country and in education colleges from 2004 to 2011, yet these were found to have little impact" (Ministry of Education, 2015). Overall, the evidence suggests that CCA has failed to take root in Myanmar and a range of factors have been cited to explain this. In particular, logistical issues which are seen by teachers to hinder interactive and activity-based child-centred learning "such as high student-teacher ratios, lack of space, lack of teaching aids and lack of time" (Lall, 2010, p. 2) have been cited, as well as a "deep incompatibility between CCA ... and the exam system" (Lall, San, San, Myat, & Khaing, 2013, p. 1).

These conclusions suggest that educational reform in Myanmar has been either over-ambitious and/or contextually inappropriate. Evidence from elsewhere (Altinyelken, 2011; Song, 2015 in Turkey and Cambodia respectively) does in fact support the view that reforms which assume that pedagogies can be transferred unproblematically across contexts (on cultural resistance to pedagogical imports, see also Hu, 2002) and seek to replace a deeply-entrenched educational orthodoxy with a radically different alternative are unlikely to succeed. Reflecting on such issues more generally, Schweisfurth (2011: 425) concludes that "the history of the implementation of LCE [learner-centred education] is riddled

with stories of failure grand and small".

1.2. Initial teacher education in Myanmar

EFFECT took place in the context of initial teacher education in Myanmar, which is delivered primarily through 22 Teacher Education Colleges and two Universities of Education (Ministry of Education, 2015). These institutions prepare teachers for the state basic education sector which comprises five years of primary education (Kindergarten to Grade 4), four years of lower secondary and two years of upper secondary education. There are 47,363 basic education schools in Myanmar reaching approximately 9.26 million students (Ministry of Education, 2016). Each Education College is led by a principal and has three kinds of teacher educators. Academic teacher educators teach subject knowledge, Methodology teacher educators teach pedagogy (including for specific subjects), while Co-curriculum teacher educators teach agriculture, domestic science, music, fine arts, industrial arts, technical handicrafts and physical education. Teacher educators do not necessarily have teaching experience in schools themselves and most will have not received any specific pedagogical training.

There has been limited research into teacher educators' practices in Myanmar but the evidence available suggests that it reflects the knowledge-accumulation model described above. For example, Aung, Hardman, and Myint (2013) conducted observations of initial teacher education sessions in four Education Colleges, reviewed curriculum documents and carried out semi-structured interviews with principals and focus group interviews with teacher educators and students. Their analysis concluded that in initial teacher education in Myanmar there was a dominant emphasis on transmitting theoretical knowledge about teaching and that student teachers were lectured to in large groups much of the time.

Overall, then, despite reform efforts, education in Myanmar is characterised, in both state schools and Education Colleges, by the continued dominance of a learning paradigm that emphasises knowledge accumulation, memorisation and reproduction.

2. Teacher competence

The goal of EFFECT was to enhance the competence of initial teacher educators in Myanmar. As noted earlier, though, many of these individuals had limited or no teaching experience in schools and had not had opportunities to develop their own core instructional and more broadly professional skills. Thus while the project team were aware of the literature on teacher educator development (e.g. Bates, Swennen, & Jones, 2011; Knight et al., 2014; Loughran, 2014; Lunenberg, Dengerink, & Korthagen, 2014), it was felt that, before more advanced work on teacher educator competences (such as, for example, how to observe and give feedback on teaching) would be feasible, it was first necessary to develop the more fundamental areas of teacher educators' work – i.e. their competence as teachers.

Teacher competence is multi-faceted (Campbell, Kyriakides, Muijs, & Robinson, 2004; Goe, Bell, & Little, 2008) and is defined through complex interactions among a range of behavioural, cognitive, metacognitive, interpersonal, attitudinal and affective attributes. It was therefore necessary to make decisions about which core aspects of teacher educators' work to target. These decisions were informed by various sources, both theoretical and practical. One was the literature on instructional effectiveness (for example, Coe, Aloisi, Higgins, & Major, 2014; Hattie, 2009) and various widely-cited frameworks of competences (such as Danielson Group, 2013; Marzano & Toth, 2013) and standards (Department for Education, 2011; National Board for Professional Teaching Standards, 2016) that define what teachers should know

⁴ The four original pillars (Delors, 1996) are learning to know, learning to do, learning to be, and learning to live together, with a fifth pillar - learning to transform oneself and society - added later.

⁵ See <https://www.jica.go.jp/myanmar/english/activities/activity01.html>.

and be able to do. Collectively, such sources repeatedly note that effective teaching is underpinned by sound knowledge and skill in domains such as planning, classroom management, explanations and instructions, questioning techniques and assessment for learning. Extensive needs analysis prior to the project, including observations of teacher educators' practices (in 29 classes across 15 Education Colleges), confirmed that a focus on such core instructional skills and the theoretical knowledge underpinning them would be beneficial. Both the propositional and practical dimensions of teacher knowledge (see Fenstermacher, 1994) were thus targeted.

Decisions about the specific instructional skills to focus on in the project were also influenced by evaluations of previous reform efforts in Myanmar, particular those discussed earlier in relation to the CCA. One explanation for the limited success of such initiatives was that they sought to radically change educational practices rather than to build on these in a contextually appropriate manner. For example, class sizes in Myanmar (in both schools and Education Colleges) are large and whole-class teaching is common. Hardman, Stoff, Aung, and Elliott (2016) advocate, therefore, an approach to educational reform that builds on the traditional model of teaching in Myanmar by helping teachers broaden the repertoire of practices used within whole-class teaching. More specifically, the authors recommend training for teachers around specific classroom practices such as question and answer routines, open-ended questions; 'thinking time', 'think-pair-share', effective follow-up to questions, setting learning outcomes and effective use of plenary sessions. Thus, while UNESCO argues for the importance of reforming teacher education through a move away from "a rigid chalk-and-talk, teacher dominated, lecture-driven and rote-learning pedagogy" (UNESCO, 2015, p. 208), an approach which builds on these existing features of educators' work, and which promotes cultural continuity (Holliday, 2001), is more likely to be effective than one which seeks to dismiss existing practices and to replace them with a wholly new pedagogy.

This approach makes even more sense given recent analyses of effective teaching which have questioned the rigid dichotomy between learner-centred and teacher-centred strategies that the CCA is based on and which support an approach where teachers use a mix of traditional and reform-oriented practices (Hardman et al., 2016; UNESCO, 2015). Westbrook et al. (2013), in a review of best pedagogical practice in the developing world, suggest positive outcomes are evident where teachers "... used in practice a judicious combination of both student- and teacher-centred pedagogical practices, integrating newer pedagogies with more traditional ones" (p. 37). This involves

... a performance model, led by the teacher, who remains an authoritative figure, with strong framing of lessons, visible pedagogies and collective ways of behaving and standardised outcomes, but informed by a competence model where students' needs are responded to by the teacher. (p. 38)

Even outside developing contexts, though, there is growing evidence that direct instruction can be more effective than approaches such as learning through discovery (Gauthier, Dembélé, Bossonnette, & Richard, 2004; Hattie, 2009; Kirschner, Sweller, & Clark, 2006). For example, Coe et al. (2014: 23) conclude that "although learners do need to build new understanding on what they already know, if teachers want them to learn new ideas, knowledge and methods they need to teach them directly".

Clearly, then, while instructional skills and teacher knowledge needed to be a key focus in efforts to improve the competence of teacher educators in Myanmar, it was also essential that the input delivered on EfECT provided some continuity with teacher

educators' existing practices. One key objective in the study we report here was to assess the extent to which such an approach did in fact increase teacher educators' practical and theoretical understanding of the innovative pedagogical strategies introduced during the project.

Teacher competence, though, is not limited to performance in the classroom and the knowledge that underpins it. As, Darling-Hammond (2010) notes, it is also influenced by a range of broader professional and affective attributes. Two of these – reflective practice and teacher confidence – were also addressed in this project and we consider them below.

Various conceptualisations of reflective practice are available in the literature (see, for example, Hatton & Smith, 1995) but in its most basic form, it can be seen as the capacity in teachers to "analyze, discuss, evaluate and change their own practice, adopting an analytical approach towards teaching" (Calderhead & Gates, 1993, p. 2). While by no means an uncontested concept (see, for example, Akbari, 2007), it is, however, widely acknowledged that reflective practice can contribute positively to teacher competence and professional development (Sellars, 2017); introducing teacher educators in Myanmar to reflective practice was thus seen to be a valuable element in a gradual move towards more critical and autonomous teacher educator practices. Accounts of attempts to promote reflective practice in developing contexts (for example, Minnis, 1999; O'Sullivan, 2002; Sangani & Stelma, 2012) do, though, highlight challenges that often arise as a consequence of conditions – such as hierarchical educational systems, a lack of teacher autonomy and lack of analytical skills in teachers – that are not conducive to teacher reflection. Such issues were likely to be equally pronounced in Myanmar and another objective of this study was to evaluate the extent to which EfECT did foster reflective practice among the teacher educators in Education Colleges.

Though much less widely discussed, confidence is also recognised in the literature as a vital professional attribute (Nolan & Molla, 2017) and one that affects teacher behaviour (Murphy, Neil, & Beggs, 2007). The belief that one can successfully complete a specific activity, often discussed under the heading of *self-efficacy* (Bandura, 1997), influences how much effort a teacher invests in teaching (Tschannen-Moran & Hoy, 2001). Teachers are also more likely to engage in behaviours they feel they can fulfil competently. For all these reasons, boosting teacher confidence is a legitimate goal in efforts to enhance teacher competence, although it must be acknowledged that confidence alone is not an indicator of competence. For example, a study of primary school teachers in six African countries found that teachers were confident in their ability to teach effectively even though this was not reflected in their observed practices (Akyeampong, Lussier, Pryor, & Westbrook, 2013). How confidence relates to competence remains an interesting empirical issue and the extent to which EfECT did enhance teacher educators' confidence as professionals was a further objective of this study.

In summary, then, EfECT sought to impact on Myanmar Education College teacher educators' competence, particularly their propositional knowledge of teaching methodology, their practical teaching skills, their reflective abilities and their professional confidence. Decisions about the content of the project were informed by a range of theoretical and practical concerns, including that EfECT be congruent with teacher educators' needs, their prior knowledge and the prevailing educational culture. We now move on to describe the project in more detail.

3. The English for Education College Trainers project

In response to a growing awareness of the need for reform at all levels of education, including in Education Colleges, in 2013 the

Myanmar Government initiated the Comprehensive Education Sector Review (CESR). Within the CESR, improving the quality of teacher educators is a key goal and the EfECT project supported this goal. It was a two-year initiative co-funded by the British Council and the UK's Department for International Development (DFID) and had four objectives:

- to improve the English language proficiency of teacher educators in Myanmar's state training colleges;
- to develop the classroom teaching skills of Myanmar's teacher educators;
- to develop the teacher training competence of Myanmar's teacher educators;
- to give teacher educators in Myanmar greater access to and a better understanding of how to utilise modern training resources and materials.

Twenty teacher education colleges (ECs) across the country participated in EfECT, together with the two universities of education, the National Centre for English Language and another teacher training institution under the Ministry of Border Affairs. The goal of EfECT was to include all teacher educators (TEs) in these institutions (see Participants below for more details).

Expatriate trainers were recruited by the British Council and Voluntary Service Overseas (VSO) and two trainers lived and worked on campus in each participating institution. Trainers varied in their profiles; those provided by the British Council were experienced and qualified teachers of English as a foreign language, several of whom also had some previous experience of training teachers. The VSO teachers tended to have a broader range of backgrounds and experience in different education and development contexts but were not normally specialists in English language teaching. In response to these varying profiles, all trainers attended induction sessions and three additional trainer training events (focusing on project content, training methodology and evaluation) were delivered over the course of the two years. Trainers were also supported by project cluster managers who visited every EC several times each year, observed trainers and provided developmental feedback.

Baseline measures consisted of the English proficiency testing⁶ of all TEs, observations of all TEs' classes, and surveys of all TEs' self-reported confidence in both their English and general methodological competence. Low entry levels of English (almost 88% were at elementary level – a figure that was reduced to just over 40% by the end of Year 1) suggested that it would be desirable to begin with a focus on English language proficiency before starting to examine teaching methodology (all components of EfECT were delivered in English). Thus, in Year 1 TEs received 8 h a week of English classes, while in Year 2 6 h weekly were devoted to teaching methodology and 2 h a week to English language classes (each year of the project provided a total of 240 h of study time). In terms of materials, a commercial general English coursebook was used for the English proficiency work, while for the methodology work a programme of eight modules (called *Foundation in Teaching*) was written especially for the project (materials writing consultants were engaged for this process). Given that TEs taught a range of disciplines, the following generic themes, informed by the theoretical and practical considerations discussed earlier, were covered:

1. Introductory module (an overview of the whole programme)

2. Effective whole class teaching
3. Questioning skills
4. Classroom management
5. Effective interactive teaching
6. Planning and preparation
7. Assessment
8. Critical thinking

In its overall design and implementation EfECT was also influenced by the literature on the characteristics of effective professional development and which emphasises the value of extended, ongoing, inquiry-driven, reflective, job-embedded and collaborative strategies for enhancing teachers' knowledge and practices (for example, [Borko, Jacobs, & Koellner, 2010](#); [Broad & Evans, 2006](#); [Martin, Kragler, Quatroche, & Bauserman, 2014](#); [Timperley, Wilson, Barrar, & Fung, 2008](#); [Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009](#); [Zepeda, 2012](#)). Later in the paper we reflect briefly on the extent to which EfECT was successful in incorporating such features.

4. Methodology

4.1. Research questions

The project was evaluated against a series of key performance indicators (KPIs - [Appendix 1](#)). Drawing on these, this study focused on the development of teacher competence and our research questions were as follows: to what extent did EfECT have an impact on Myanmar teacher educators': (a) propositional knowledge of teaching methodology; (b) professional confidence; (c) teaching skills and (d) reflective skills?

4.2. Participants

The data analysed for this study come from 1647 Myanmar TEs who engaged consistently with the project over its lifetime. An analysis of the demographics of these TEs shows that:

- 85.1% were female
- 58.7% were between 40 and 59 years old, with 40.7% between 20 and 39. The average age (N = 1640) was 41.2
- For 51.5% the highest qualification was a Bachelor's degree while for 43.6% it was a Master's
- The average length of teaching experience was 15.6 years (range 1–42).

TEs were not given any remission from their normal duties to take part in EfECT. The 240 h of study required in each year of the project were, therefore, completed on top of TEs' normal teaching workloads and alongside the various other extra-curricular responsibilities they had on campus, where TEs also resided. All EfECT participants consented in writing to the use of their data for monitoring, evaluation and research purposes when they joined the project.

5. Data collection

In this section we describe the different forms of data that were collected to evaluate the impact of EfECT (we comment more critically on some aspects of the data collection tools later in the paper). As recommended in the literature on assessing the impact of professional development (for example, [Goodall, Day, Lindsay, Muijs, & Harris, 2005](#)), data collection took place longitudinally over the life of the project and utilised multiple methods.

TEs' propositional knowledge of teaching methodology was

⁶ English was assessed using the British Council's Aptis test. This generates scores for different language skills and an overall score reported as a band on the widely-used Common European Framework of Reference for Languages.

assessed using the Teaching Methodology Questionnaire (TMQ) at mid-project (before the methodology component started) and end-project. This instrument was designed by the project team and consisted of eight sections (one for each module on the *Foundations in Teaching* course), and in each section TEs had to match a list of six concepts to a corresponding list of six statements.

TEs' confidence in relation to their use of English, teaching methodology and use of resources was measured (in common with several studies of teacher self-efficacy – see Wyatt, 2014 for a critical analysis though) using a questionnaire administered at baseline, mid-project and end of Year 2. The instrument (also developed by the project team) contained 26 items, divided into four sections (general English proficiency, English for teaching, teaching methodology and using resources). Each item described a target activity directly related to the objectives of EfECT and TEs responded on a five-point scale where 1 = not at all confident and 5 = very confident.

For the assessment of teaching skills and reflective practice, the instructional practices of EfECT participants (during their regular teacher education classes with Myanmar student teachers) was rated using an observation instrument (included as Supplementary Material) which consisted of thirteen indicators under the six headings below (again, these reflected the content of the *Foundations in Teaching* materials):

- Reflective Practice
- Questioning
- Interactive teaching
- Resources
- Planning
- Assessment

TEs were observed by their trainers at the end of Year 1, middle of Year 2 and end of Year 2, with teaching rated against each item on a scale of 1–4 where 1 means a behaviour was never observed, 2 rarely, 3 occasionally and 4 consistently. Prior to observations, TEs discussed their lesson plan with the trainers and were also encouraged to reflect on the lesson during a post-observation discussion. While inter-observer variability is difficult to eliminate entirely (e.g. Ho & Kane, 2013), the project worked to standardise trainers' ratings. An observation manual specified the performance required at each level on the rating scale and training using videos was organised to give trainers practice in using the observation tool. Additionally, EfECT cluster managers co-observed a number of TE classes with trainers and the discussion subsequent to these sessions further helped to moderate trainers' ratings.

In addition to the quantitative data described so far, supplementary qualitative data were collected through focus group interviews and Most Significant Change (MSC) written accounts. Both these sources provided further insight into the impact of EfECT on TEs' confidence and teaching practices and we discuss them briefly below.

The focus group interviews (see Newby, 2010) were conducted by a monitoring and evaluation consultant towards the end of Year 2, lasted on average 40 min each, and involved a non-probability sample of 73 TEs (in groups of around 12 people) from six urban and rural ECs. Focus group participants were selected by trainers, who were asked to identify, from the EfECT classes that were available on the day of the interviews, TEs from a range of disciplinary backgrounds who were willing to take part. Conducted in English with interpreter assistance where required, the interviews (which took the form of discussions) focused on TEs' perceptions of the impact of the project on them and they were asked, for example, to give specific examples of how their teaching had changed (if it had) during the project. TEs' responses were captured

through written notes made by the interviewer and from which recurrent themes were later extracted.

Most Significant Change (MSC) is a participatory monitoring and evaluation technique in which individuals write accounts detailing the learning they experience during a project (see Davies & Dart, 2005 for a detailed description). On EfECT, a simplified form of MSC was used towards the end of each year and TEs were asked to write about the one most significant change they had experienced in that year. In Year 1, 872 accounts written by TEs in 17 ECs were collected, while in Year 2 there were 1376 written accounts from 23 ECs. These were read, key themes were extracted, and the frequencies of occurrence for each theme calculated.

All three authors of this paper worked on EfECT. The first author was an external monitoring and evaluation consultant, while the second and third authors were part of the British Council team in Myanmar that managed the project.

6. Results

We will now address the research questions in turn by examining the extent to which EfECT had an impact on the different areas of teacher competence discussed earlier.

6.1. Teacher knowledge

The Teaching Methodology Questionnaire (TMQ) consisted of eight sections each containing six items. The maximum possible score per section was thus six marks and for the whole instrument the maximum was 48. The results showed that 81.2% of TEs ($N = 1565$) achieved a better overall score on the TMQ at end-project compared to baseline. A paired samples t -test ($N = 1618$) comparing overall TMQ scores at baseline ($M = 25.0$, $SD = 8.6$) and end-project ($M = 32.3$, $SD = 8.6$) showed a statistically significant difference ($t(1617) = 35.6$, $p = .000$) with a large effect size ($\eta^2 = 0.44$).⁷

Table 1 presents the results for each TMQ section at baseline and end-project. This shows statistically significant increases at end-project on all sections of the TMQ. Effect sizes were large on all modules except for Module 1 and Module 8. Overall, then, pre- and post-intervention comparisons of TEs' performance on the TMQ showed that EfECT did have a significant impact on TEs' propositional knowledge of teaching methodology. This does not imply, of course, that high exit levels of knowledge were displayed across all modules; at end project, the mean scores (out of 6) on questioning (2.8) and assessment (2.9) were still relatively low.

6.2. Teacher confidence

As explained earlier, the teacher confidence questionnaire consisted of 26 items and (on a scale of 1–5) the maximum possible score was 130. The confidence questionnaire was completed at both baseline and end-project by 936 TEs. The internal reliability of this instrument was good, with a Cronbach's alpha of 0.94 on both administrations of the test. A paired samples t -test was conducted to compare overall confidence scores at baseline ($M = 81.1$, $SD = 16.2$) and end-project ($M = 93.5$, $SD = 12.2$) and the difference was statistically significant ($t(935) = 20.9$, $p = .000$) with a large effect size of 0.32. An analysis of the four sections of the confidence questionnaire at baseline and end-project is presented in Table 2; here again the differences are significant in each case.

⁷ The effect size is a measure of the strength of a difference between measurements. An effect size of .01 is considered small, .06 moderate and .14 large. See Pallant (2013).

Table 1
TMQ baseline and end-project.

Module	Topic	N	Baseline Mean	End-Project Mean	t	p	Effect size
1	Introduction to Methodology	1590	4.0	4.5	10.2	.000	0.06
2	Direct Instruction	1590	3.0	4.1	20.8	.000	0.21
3	Questioning	1589	1.6	2.8	21.3	.000	0.22
4	Classroom Management	1590	3.2	4.3	22.7	.000	0.24
5	Interactive Learning	1590	4.2	5.0	16.6	.000	0.15
6	Planning and Preparation	1588	3.5	4.4	15.9	.000	0.14
7	Assessment	1586	2.0	2.9	19.6	.000	0.20
8	Critical Thinking	1567	3.9	4.4	9.9	.000	0.06

Table 2
Teacher educator confidence – baseline and end-project scores.

Confidence in	Max	N	Baseline Mean	End-Project Mean	t	p	Effect size
1. General English Proficiency	20	988	10.9	13.5	22.8	0.000	0.34
2. Using English for teaching	25	993	11.7	15.3	24.5	0.000	0.38
3. Using interactive teaching methodology	60	987	43.1	46.7	10.6	0.000	0.10
4. Using resources	25	946	15.6	18.0	16.9	0.000	0.23

The confidence results presented so far indicate that EfECT had a positive impact on this aspect of teacher competence. However, the comparison of baseline and exit mean scores for the whole group does not disclose variations in the extent to which TEs did actually report increased confidence at the end of the project. Table 3 thus presents the percentages of TEs, on each of the four areas of confidence measured, whose exit scores were the same, lower or higher than at baseline. This analysis shows that 76.5% of the TEs reported a higher global exit confidence score. However, across the four individual areas of confidence, the proportions of TEs achieving improved exit scores ranged from 76.3% (using English for teaching) down to 60.0% (using interactive teaching methodology). The proportions of TEs whose reported confidence was lower at end project than baseline are also insightful: for example, 32.6% said they were less confident about using interactive teaching methods at end project than they were at baseline. We discuss lower end of project confidence and how it might be interpreted later in the paper.

As explained earlier, to complement the quantitative data TEs were also asked to write short accounts (typically some 300 words in length) about the one most significant change they experienced during each year of the project (see Appendix 2 for an example from Year 2). The MSC was conducted as a writing task for the TEs during an EfECT class. Table 4 summarises the themes evident in the Year 1 MSCs and these provide further insight into the extent to which EfECT impacted on TEs' confidence.

Four changes TEs felt they had experienced in Year 1 stand out here:

- a. improved speaking ability
- b. general improvement in English
- c. improved English writing
- d. improved confidence in English.

Table 3
Teacher educator confidence – changes from baseline to end -project.

Section	N	Down	%	Same	%	Up	%
1. General English Proficiency	988	185	18.7	107	10.8	696	70.4
2. Using English for teaching	993	168	16.9	67	6.7	758	76.3
3. Using interactive teaching methodology	987	322	32.6	73	7.4	592	60.0
4. Using resources	946	214	22.6	109	11.5	623	65.9
Overall	936	199	21.2	21	2.2	716	76.5

Table 4
Most significant change in Year 1 (N = 872).

Change	N	%
Improved English speaking	185	21.2
General improvement in English	159	18.2
Improved English writing	130	14.9
Improved confidence in English	114	13.1
Improved English listening	61	7.0
Increased awareness of teaching methodology	50	5.7
Improved motivation to learn English	44	5.0
Improved English reading	36	4.1
Improved ability to use teaching methodology	26	3.0
Improved vocabulary	21	2.4
Improved grammar	17	1.9
Other	16	1.8
Increased confidence in teaching	7	0.8
Improved ability to use English language teaching resources	6	0.7

The emphasis on English language here is not surprising given that it was the focus of Year 1 of the project.

Table 5 presents the corresponding figures for Year 2. Improved (perceived) ability to use teaching methodology and improved confidence to plan coherent lessons account for 37.7% of all the changes mentioned in the accounts. Only two of the categories of change related to language (improved confidence in English and improved motivation to learn English), which is not surprising given the focus on teaching methodology during Year 2 of the project.

6.3. Teaching and reflection

The teaching of EfECT participants was assessed using an observation instrument which consisted of thirteen indicators organised under six competency headings relating to areas of focus

Table 5
Most significant change in Year 2 (N = 1376).

Benefit	N	%
Improved ability to use teaching methodology	300	21.8
Improved confidence to plan coherent lessons	219	15.9
Increased awareness of teaching methodology	142	10.3
Increased confidence to use group work and pair work to encourage active participation	135	9.8
Improved ability to use questioning skills	109	7.9
Improved confidence in English	104	7.6
Improved ability to assess learners in class	86	6.3
Increased confidence in setting up activities and giving instructions	82	6.0
Improved critical thinking skills	68	4.9
Increased ability to give effective feedback to learners	37	2.7
Improved ability to include all learners and call on individual learners to answer questions	33	2.4
Improved motivation to learn English	19	1.4

on the *Foundation in Teaching* materials studied in Year 2.

Of 1321 TEs who completed both baseline and end-project observations, 1278 or 96.7% improved their overall score. A paired samples *t*-test was conducted with this group to compare overall observation scores at baseline ($M = 24.5$, $SD = 6.8$) and end-project ($M = 38.9$, $SD = 6.7$) and the difference was statistically significant ($t(1320) = 71.1$, $p = .000$) with a large effect size ($\eta^2 = 0.79$).

Table 6 and Table 7 provide further analyses of how TEs performed when baseline and exit measures of their teaching and reflective skills are compared. Table 6 shows that while 77% of the TEs achieved a better score at end project on at least four competencies, only 27.5% improved on all six. Table 7 examines the proportions of TEs who received higher ratings at end project compared to baseline on each competency and the figures range from 90.4% for interactive teaching down to 67.2% for assessment. Again, high figures here reflect improvement but not necessarily high exit levels of performance; for example, across the five items for interactive methodology TEs' mean overall rating was 2.94 (on a scale of 1–4, where 3 means a behaviour was observed occasionally). In terms of reflective practice, as measured through pre-observation and post-observation discussions between TEs and their tutors, only 68.2% of obtained an improved score at end-project compared to baseline.

Additional insight into the impact of EfECT on TEs' practices emerged from the focus group interviews conducted towards the end of Year 2 of the project. When asked about whether their teaching had changed as a result of the teaching methodology focus in Year 2, every TE who attended the focus groups agreed that:

- their teaching had changed as a result of the methodology course
- they were more effective teachers than they were in the previous year
- their trainees enjoyed their lessons more.

TEs were asked to give examples of how their teaching had

Table 6
Number of different competencies individual TEs improved on (N = 1296).

Competencies improved on	Number of TEs	% of TEs	Cumulative % improved on
6	361	27.9	27.9
5	371	28.6	56.5
4	266	20.5	77.0
3	155	12.0	89.0
2	81	6.2	95.2
1	56	4.3	99.5
0	6	0.5	100

Table 7
End-project compared to baseline observation ratings by competency.

Competency	N	Lower		Same		Higher	
		N	%	N	%	N	%
1. Reflective Practice	1072	78	7.3	263	24.5	731	68.2
2. Questioning	1284	66	5.1	196	15.3	1022	79.6
3. Interactive Teaching	1203	59	4.9	57	4.7	1087	90.4
4. Resources	1231	80	6.5	170	13.8	981	79.7
5. Planning	1223	50	4.1	101	8.3	1072	87.7
6. Assessment	1282	73	5.7	347	27.1	862	67.2

changed; to make this more concrete, they were encouraged to talk in terms of 'last year I did X' and 'this year I am doing Y'. This allowed them to describe changes in their work more clearly and Table 8 paraphrases and summarises the range of changes that TEs said they had made to their work as a result of the Year 2 methodology work.

There is no suggestion here, of course, that any one TE made all of these changes and no claims can be made about the depth or quality of change; but collectively this evidence does add to the quantitative observational data already presented in indicating that the teaching methodology work on EfECT did have a concrete impact on TEs' practices.

TEs were also asked about any challenges they faced in trying to implement some of the ideas learned during the methodology course. Recurrent points they made were:

- they were required to follow a centrally-defined scheme of work and this limited how much they could innovate
- asking open-ended questions made teaching less predictable and required them to be more flexible in class.
- group work was sometimes hard to manage with 60–70 students
- the availability of additional resources (i.e. beyond the prescribed textbook) in the ECs was limited
- equipment, such as computers and projectors, was not widely available (e.g. one projector per EC or 20 computers for a class of 60 students).

7. Discussion

Against the project KPIs (Appendix 1), EfECT was successful in improving TEs':

- English proficiency
- overall confidence in their use of English and their teaching ability
- theoretical knowledge of teaching methodology

Table 8
Reported changes in teacher educators' practices.

Last Year	This Year
<ul style="list-style-type: none"> • Reliance on textbook • Mainly lecturing and explaining • Only teacher-class interaction • Treated all students the same • Difficult to maintain student attention 	<ul style="list-style-type: none"> • A wider range of resources, adapting textbook where needed • A range of activities to help students discuss and understand • More interaction among students and between teacher and students • Cater more for students' needs • Strategies (e.g. nominating) and activities (e.g. games) to keep students attentive
<ul style="list-style-type: none"> • Basic lesson plans, lacking stages • Did not check student understanding • Hard to manage large classes • Not all students were involved • Did not think about the purpose/objectives of activities during lessons • Had theoretical knowledge of ideas (e.g. student centred teaching or Bloom's taxonomy) • Only used whole-class questioning • Students used to listen • Taught entirely in Myanmar (translating when texts were in English) • Only asked lower-order questions • Did not manage time effectively • More formal/strict relationship with students 	<ul style="list-style-type: none"> • More systematic lesson plans • Checking student understanding through questions and activities • Use group work to manage large classes • Use activities to involve all students • When planning think about the purpose/objectives of each activity • Know how to apply these ideas in practice
	<ul style="list-style-type: none"> • Use a variety of questioning techniques • Students listen and think • Make greater use of English while teaching • Make use of higher-order questions too • Use strategies to manage time during lessons • More relaxed/friendly relationship with students

Table 9
Facilitative conditions on EfECT.

Area	Issue
Scale	National coverage
Support	Project endorsed by the Ministry of Education Trainer induction, training and monitoring Co-operative ECs
Context	Project coincided with national democratisation process
Content	English only in Year 1 Focus on a set of generic and specific instructional strategies in Year 2 Balance of theoretical and practical knowledge
Design	Duration (2 years) Embedded trainers Favourable trainer-TE ratios Building on existing practice of whole-class teaching
Resources	Adequately funded
Participants	Specially designed methodology modules Motivated TEs

- observed classroom competence, overall, and specifically related to questioning, interactive teaching and using resources.

In contrast, the project did not meet three KPIs related to improving TEs':

- confidence in using interactive teaching methodology
- confidence in using teacher and teacher training resources
- ability to reflect on their teaching.

Overall, then, when the project is assessed against its KPIs, EfECT was largely successful. Table 9 identifies a number of conditions that contributed to this success and which will be broadly relevant to the implementation of similar development projects elsewhere.⁸ In discussing the outcomes of the project, we will now focus on the domains of teacher competence defined earlier in the research questions for this paper: propositional knowledge, confidence, teaching skills and reflective skills.

7.1. Knowledge

EfECT assessed TEs' knowledge of teaching methodology through the teaching methodology questionnaire (TMQ) and over 81% of the TEs improved their TMQ score at end-project compared to the start of Year 2. This result, though, should be interpreted cautiously. The TMQ required TEs to match concepts (for example, 'assessment for learning') to explanations. Thus, while teacher knowledge is recognised as a key element in teacher competence (Hammerness et al., 2005), it is a complex and multi-faceted phenomenon and several different kinds of propositional and procedural teacher knowledge have been identified (Shulman, 1987; Verloop, Van Driel, & Meijer, 2001). It must be acknowledged, then, that the kind being assessed here – receptive factual knowledge demonstrated through a matching exercise – was rather basic. Also, given the complex relationships that exist between propositional and practical teacher knowledge (Fenstermacher, 1994) and the challenges teachers face in translating inert knowledge into practical action, it is very likely that TEs would have required repeated opportunities to make productive use of these concepts (e.g. in lesson plans or post-lesson reflections) before deeper levels of understanding could be achieved. Furthermore, because of the range of disciplines that TEs' taught, EfECT was not able to promote subject-specific knowledge, including pedagogical content knowledge (how to represent specific content to

⁸ We do not want to ignore the challenges that arose during EfECT, though these are, we feel, fairly typical for large-scale development projects of this kind – e.g. heavy workloads for the TEs, low levels of English among TEs and low-resource working environments. EfECT was designed with an awareness of these challenges.

students in meaningful ways - [Shulman, 1986](#)). These are not criticisms of the project itself, but an acknowledgement of the rather proscribed notion of teacher knowledge that it was able to promote and of the boundaries that must be consequently applied to any interpretation of the improvements TEs' achieved when their knowledge was measured at the end of the project. Additionally, it must always be remembered that improvement and proficiency are distinct measures; thus, while TEs did improve their propositional knowledge of teaching methodology as measured on the project, this does not mean that high levels of knowledge were achieved across the cohort.

7.2. Confidence

On EfECT, teacher confidence was measured via a questionnaire in which TEs indicated how confident they were in their ability to perform a range of tasks such as using English for teaching and applying interactive teaching methodology. At end-project, TEs as a group reported being more confident than they were at baseline. In the qualitative data, TEs also consistently reported feeling more professionally confident. These positive self-ratings occurred alongside objectively measured improvements in their theoretical knowledge of teaching and English proficiency and, while we cannot demonstrate causality in the relationship between confidence and knowledge, evidence is available to suggest that feeling knowledgeable does influence teacher confidence ([Murphy et al., 2007](#)). We think it is reasonable to conclude that EfECT enhanced TEs' confidence by providing sustained opportunities (almost 500 h of study time over two years) to develop and use their knowledge of teaching and their English proficiency.

One question that arises in the context of TEs' self-assessed confidence is the validity of such measures. [Akyeampong et al. \(2013\)](#), cited earlier, did not find a correlation between reported confidence and the quality of observed teaching, but otherwise this is not an issue that has been widely studied in education. Elsewhere, though, [Davis et al. \(2006\)](#) did also conclude from a comparison of self-ratings and external measures of performance that health professionals were limited in their ability to self-assess accurately. Such concerns were highlighted early in EfECT; for example, at the start of the project, TEs assessed very positively their knowledge of and ability to use a range of instructional strategies; but needs analysis work prior to the project, and subsequent evidence of teachers' knowledge and actual teaching did not support these positive self-assessments. Effective self-assessment assumes a level of self-awareness that TEs may not have possessed at the start of EfECT; in fact, self-assessment will have been an entirely novel activity for the TEs.

The extent to which a lack of precision in teacher self-assessment can be tolerated depends to a large degree on the purposes of the assessment. In high-stakes contexts, where results have serious consequences for teachers, accuracy is essential and it has in fact been argued that in such contexts teacher self-assessment (because it risks being imprecise) should be avoided ([Taut & Sun, 2014](#)). However, where self-assessment by teachers has a formative purpose – for example, when it is meant to stimulate reflection or enhance teachers' sense of agency – then, as discussed by [OECD \(2013\)](#), imprecision in how teachers rate themselves is less critical. This is even more the case when (as in EfECT) multiple sources of information about the impact of a professional development initiative are available and excessive reliance is not being placed on self-assessments by participants.

Several of the EfECT KPIs targeted improvements in TEs' reported confidence, and most of the KPIs that were not met were confidence-related. In interpreting this outcome two factors are particularly relevant. First, high self-confidence ratings at baseline

limited the improvement that could be achieved at end project (for example, TEs' mean level of confidence in using innovative instructional strategies at baseline was 3.6 out of 5 – where 5 is 'very confident'). Second, and perhaps more importantly, though, the assumption embedded in the KPIs that learning will be accompanied by improved confidence can be challenged. In fact, it can be argued that lower confidence is a natural outcome of increased awareness and knowledge. The awareness that TEs developed during Year 2 may have led them to feel that there was still very much for them to learn, resulting in perhaps more realistic assessments of their ability at the end of the project. The same may have been the case for TEs' confidence in using English generally. Thus, the process of becoming more confident may be U-shaped rather than linear, with initial self-efficacy judgements first giving way to more critical and less positive assessments before, in time and with continued support, once again steadily increasing. Lower confidence, then, should not necessarily be seen as a negative outcome, particularly if it is accompanied by objective measures of improvement (in knowledge or skill) and implies a more realistic knowledge of self.

7.3. Teaching and reflection

Earlier in this paper we commented on how projects attempting to promote child-centred pedagogical approaches had not met with much success in Myanmar (e.g. [Clarke, 2010](#)) and further afield ([Schweisfurth, 2011](#)). One reason for this failure, we suggested, was that previous reforms had attempted to supplant deeply embedded educational practices with radically different alternatives. One design feature of EfECT was that it sought (as suggested by [Hardman et al., 2016](#)) to build on TEs' existing pedagogical repertoires, particularly by helping them to teach large classes of student teachers in more engaging ways, including through effective plenary sessions. Interactive strategies such as pair work and group work were thus introduced as part of the Year 2 methodology work, but the focus throughout was on specific instructional strategies, relevant across disciplines, and on how such strategies might be judiciously incorporated into the existing ways in which TEs worked with their trainees. There is support for such an approach in the literature on pedagogical practices in developing contexts ([Westbrook et al., 2013](#)) and we feel it was a factor that contributed to TEs' positive reactions to the new pedagogical strategies promoted on the project and facilitated the extent to which TEs were willing to experiment in their own classes with these strategies.

There is much that was positive about the way TEs' teaching skills were assessed on EfECT. An observation tool was designed by the project team and linked very specifically to the content of the Year 2 methodology course. An attempt was made to define observation criteria in a descriptive manner, guidelines for using the tool were written, and, to improve the reliability of their assessments, trainers took part (as suggested by [Pianta & Hamre, 2016](#) in their discussion of effective teacher observations) in standardisation sessions. Assessments were also moderated by EfECT managers to minimise any bias that may have stemmed from the fact that TEs were observed by their own trainers. Observations were carried out at three points in Year 2, allowing for comparisons over time and conclusions about the extent to which TEs' classroom practices had changed by the end of the project. Additional qualitative data from focus groups provided further insights into the impact EfECT was felt to have on TEs' practices.

More critically, though, the observation instrument itself was somewhat imbalanced; for example, areas such as 'reflection' and 'assessment' were each represented by one indicator, whereas for 'interactive classroom management and feedback' there were five. These variations will have influenced the extent to which change

might be detected when baseline and end-project assessments were compared; assessments based on single-item descriptors also carry with them the risk of being less trustworthy. The choice of a four-point rating scale for measuring teaching (though common in some widely used observational tools – see, for example, Danielson Group, 2013; Mihaly & Mccaffrey, 2014; Van De Grift, Chun, Maulana, Lee, & Helms-Lorenz, 2017) also had implications for the degree of change that could be detected (debates in the research methodology literature suggest that a seven-point scale may be best when Likert-scale instruments are being designed, though it is unclear whether the same argument would apply to observation tools of this kind – see De Vaus, 2014).

In response to the range of design issues highlighted above, though, it must be noted that in the context of monitoring and evaluation on development projects there will always be a trade-off between rigour and practicality; for example, while in technical terms it may have been preferable for trainers not to assess their own TEs, in practical terms this was not feasible given the geographical spread of ECs across Myanmar and considerable efforts were made to standardise trainers' ratings. And while a four-point rating scale may have limited the discriminatory power of trainers' observations, it was easier to grasp and use than a system with a larger number of response categories would have been. Overall, though, we feel that there is scope for the EfECT observational tool to be developed further with reference to some of the design issues we have noted here.

The observational ratings at end-project showed that almost 97% of TEs improved their overall teaching competence compared to baseline. While this is positive, it does not provide any insight into the extent to which TEs were adopting new teaching practices in a consistent manner. The design of the project prioritised input through formal classes over practice-based learning (see Lieberman & Miller, 2014 for a discussion of this distinction), and thus while TEs were able to demonstrate target teaching behaviours when they were formally observed, their practices at other times remained undocumented. In the focus group interviews in Year 2, TEs described many examples of the kinds of changes they were attempting to implement in their classes; however, there was a lack of extended direct evidence of TEs' classroom practices and questions therefore remain about the quality and sustained nature of any changes the TEs were making. The realisation that trainers needed to support more closely TEs' emerging classroom practices impacted significantly on the revised project model adopted in the Extension phases of the EfECT that ran from September 2016 to August 2017 and in which micro-teaching, teaching practice and professional portfolios were key elements.

TEs' reflective abilities were also assessed as part of the analysis of their teaching skills. Reflection has been conceptualised in various ways, with distinctions commonly made between critical perspectives, in which reflection is a means of challenging prevailing educational norms (Morgan, 2017), and more technical and practical perspectives which are concerned with improving instruction and explicating the assumptions that underpin it (Zeichner, 1994). The notion of reflection promoted on EfECT was (justifiably, given TEs' prior knowledge) largely technical, with a focus on the ability to identify strengths, weakness and solutions after a lesson.

The end-project assessment of reflection showed that just over 68% of TEs achieved an improved rating compared to baseline. This fell short of the target of 75% defined in the KPIs but this outcome should not be judged too harshly given the novelty that reflection comprised for the majority of the TEs and the limited structured opportunities that EfECT provided for TEs to develop their reflective skills. In relation to the novelty factor, reflective practice is not a feature of professional practice in Myanmar, a natural consequence

of the educational paradigm which has been dominant in the country for many years. Learning is conceived of as the accumulation and reproduction of knowledge; the critical examination of experience is not part of this equation. At the start of EfECT, then, TEs' will have generally lacked awareness of the concept, and in Year 2 they were introduced to it together with strategies through which they could reflect on their teaching. Opportunities to apply those strategies in a scaffolded context were, however, limited. The project model meant the bulk of study time was dedicated to formal classes (English language and teaching methodology), and, although there were regular opportunities for two-way reflective discussions between trainers and TEs about the changes the latter were making in their classrooms, trainers were not able to visit TEs' classes and to support in a more structured way the development of their reflective skills. Given the project model, the prevailing pedagogical tradition which mitigated against reflection and the historical and political context in which the project was set, it could be argued that more reflective behaviour at end-project in 68.2% of the TEs compared to baseline is a considerable achievement.

8. Conclusion

In concluding this paper, we do want to reiterate (despite the robust critique we have offered in places here) that EfECT was a successful project and very positively regarded by all stakeholders. Relative to their position at baseline, TEs across Myanmar made measurable and visible progress in their English proficiency, knowledge of teaching methodology, confidence, teaching skills and basic reflective competence. Their entry levels of English were particularly modest, and the fact that they performed as well as they did over the two years on a programme taught entirely in English is further evidence of EfECT's achievements. And although this was not, unfortunately, captured in the way the project was evaluated, EfECT did create a very strong sense of positivity, motivation and appreciation in ECs across Myanmar. At the end of Year 2, all stakeholders expressed a strong desire to continue supporting the professional development of TEs, leading to a one-year project extension which, in response to many of the issues highlighted in this paper, adopted a substantially different project model.

For example, earlier in this paper we noted that the literature identifies various characteristics of teacher professional development that works (Martin, Kragler, Quatroche, & Bauserman, 2014; Wei et al., 2009; Zepeda, 2012). Our assessment of EfECT is that while in some respects it did successfully incorporate these facilitative factors, in others it was less successful. Thus, on the positive side, EfECT provided extended professional learning, fostered collaborative learning groups, was embedded in TEs' workplace, encouraged reflection, modelled effective pedagogy (in the way EfECT trainers worked), had a practical orientation, focused on specific instructional strategies, and was context-sensitive. However, the project was largely input-based, provided modest structured opportunities for TEs to gain mastery experiences of the instructional strategies they were learning and did not scaffold in a substantial manner the development of TEs' capacity for reflection and inquiry. In response to such concerns the model adopted in the project extension placed much greater emphasis on regular mentored teaching practice for TEs.

Our analysis has highlighted factors which facilitated the positive impact of the project. We believe there are insights here which readers involved in the design and delivery (in English or other languages) of similar large-scale development projects with teachers or teacher educators can benefit from. The various positive outcomes of the project suggest that promoting teaching which combines direct instruction and specific interactive classroom practices can effectively and sensitively bring about change whilst

building on a local pedagogical culture of whole-class teaching. Similarly, our frank analysis of some of the design limitations of the evaluation tools used on the project is also more broadly instructive. One of the most significant learning points for us is that, while having a set of quantifiable KPIs provided a concrete focus for project evaluation, the lack of qualitative measures meant that we were not able to provide fine-grained, contextualised narrative accounts of TEs' experiences, especially during the early stages of the project. Qualitative data were collected, but the resource implications of analysing a large volume of written texts were somewhat underestimated, making it less likely that they would be a prominent part of the project. The learning point here, for delivery agencies and donors alike, is that, while qualitative data can undoubtedly provide added insights into the impact of a change project, they need to be fully integrated into the evaluation framework and it must be ensured that the expertise and capacity to analyze these data exist. In future projects, we would argue very strongly for the importance of ensuring a more optimal balance of quantitative and qualitative measures of success, and from this perspective recent work on qualitative approaches to project monitoring and evaluation (e.g. Bell & Aggleton, 2016) is particularly relevant.

Finally, we also want to acknowledge that while development projects such as EfECT will always have a fixed duration (often determined by the funding available), sustained educational change on a national scale can only be achieved over several years; EfECT's achievements over two years, therefore, should be seen as a strong basis for changing pre-service teacher education in Myanmar on which future projects will need to build.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.tate.2018.02.010>.

Appendix 1. EfECT KPIs

When end-project and baseline results are compared, 75% of TEs will improve their:

- English score by one CEFR level
- Overall confidence
- Confidence using English generally
- Confidence using English for teaching
- Confidence in using interactive teaching methodologies
- Confidence in using teacher training/teaching resources
- Theoretical knowledge of teaching methodology
- Observation score on four of six competency indicators
- Observation score on reflecting on their teaching
- Observation score on questioning skills
- Observation score on interactive teaching
- Observation score on using resources

Appendix 2. Sample MSC account

My name is XXXXX. I teach Agriculture subject at XXXXX Education College. I have been teaching for 8 years. I got a big chance that is to attend as a participant in EfECT project in September 2015. My most significant change is questioning to develop my students'

thinking skills.

Before the project began, I didn't know how to ask questions to develop HOT [higher order thinking] skills. I was disappointed because my students didn't get a chance to think critically and to expand their answers.

During the EfECT project I have thought about questioning. I started pre-preparing questions which are LOTS [lower-order thinking skills] and HOTS [higher-order thinking skills] including thinking time and planned which activities I should use. For example, think-pair-share is good for HOTS students can think individually without other dominance and in pair-work, they can check their answers with their partner. Then they can consider when they share their answers.

As a result of this, I have improved my questioning. Now I can ask questions them to develop their HOT skills. For example, in my last observation, I asked the whole class for closed recall questions and for open questions. I give thinking time to discuss answers in pairs and nominating individual students to answer. I am really satisfied that I have been able to improve my questioning.

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