

Internal and external forces: Technology uses among English language teacher educators in South Korea

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Surprisingly little has been written about the technology-related roles and practices of teacher educators. Even less is known about the adoption of technologies by teacher educators in the field of teaching English to speakers of other languages (TESOL), even in the technology-rich nation of South Korea. The purpose of the present in-depth instrumental multiple case study was to explore internal and external forces in the integration of digital technologies into the pedagogical practices of TESOL teacher educators at a university in South Korea. Data collected over 20 weeks included four rounds of semi-structured interviews and two sets of classroom observations for each of the five focal participants, interviews with an administrator, written reflections, field notes, photographs, and document review. Five key forces were identified that worked in tension with voluntary use of technologies to mediate their extensive use in the teacher educators' practice. This study contributes to research gaps on the roles and technology-related practices of TESOL teacher educators. TESOL program administrators and teacher educators will particularly benefit from the light shed on teacher educator cognitions and praxis in this study.

Background

Numerous studies have demonstrated diverse benefits from using digital technologies with language teacher trainees, including increased intercultural communication (Bauer, deBenedette, Furstenberg, Levet, & Waryn, 2006), greater turn-taking in discourse (Kamhi-Stein, 2000), reflectivity (Kim, 2011), noticing (de la Fuente, 2014), and enhanced access and autonomy (Walsh, Woodward, Solly, & Shrestha, 2015). Research on educational technology adoption has investigated the perceptions of teachers, of administrators, of trainees, and of programs as a whole (see reviews by Ertmer & Ottenbreit-Leftwich, 2010; Liu, 2013; and Mumtaz, 2000, for an overview of key issues and findings). Yet despite this focus on educational technology integration, digital technology use by teacher educators (TEs) has been largely unexplored (Hwang, 2014). Even less is known about the technology-related practices of TEs in teaching English as a second language (TESOL) programs in South Korea.

This gap in the literature is problematic for numerous reasons. First, the nation of South Korea is currently one of the most web-connected (OECD, 2015) and technologically advanced societies in the world. The availability of digital technologies for training in the country has brought about a common expectation that they could and would get used in teacher education (Jung, 2005). More importantly, decision-making has become more complex: TEs must now determine whether and how to use these technologies pedagogically, along with how they could teach others to use them.

Second, a competitive environment for English education in the nation, both within public schools and in the private after-school and weekend education system, has led to a rise in quality expectations for newly trained teachers working within and outside the K-12 sphere (Bray, 2013), including their familiarity with newer educational technologies. As TEs make key decisions about the design and delivery of TESOL training in Korea, their practices merit close examination.

Finally, TESOL-TEs serve dual or triple roles in training classrooms as teachers of content, as pedagogy trainers, and in many cases, as language instructors. Educators often integrate new technologies in their teaching if they have engaged with information and communications technology (ICT) and built up their technology skills as learners (Collins & Jung, 2003). Teacher education has both direct and indirect effects on teacher trainees' later technology uses (Liu, 2016). Therefore, TESOL-TEs' use of technologies in their

instruction may not only affect the learning of the teacher candidates they teach, but also are likely to make their way into those future teachers' own classrooms. TESOL-TEs who make curriculum and delivery choices may be relying on their own intuitions and influences (Lunenberg, Korthagen, & Swennen, 2007) regarding which current areas in technology should be incorporated into their teaching practice. These intuitions and their accompanying forces and tensions have been under-investigated in the literature (Davey, 2013).

The purpose of the present in-depth case study was to explore internal and external forces in the integration of digital technologies into the pedagogical practice of TESOL-TEs at South Korea's Central University (a pseudonym).

Theoretical framework

Two key strands of research frame this study: concepts about the roles of TEs and theory surrounding the integration of technologies into teaching practice. The research question is: What factors influence TESOL-TEs' decisions to integrate digital technologies into their practice? The focus is on the forces in TESOL-TEs' technology integration. The resulting framework fits under a wider-ranging model that depicts TESOL-TEs as consumers and individuals, organisational members and users, and pedagogical decision-makers: in essence, technology-using language teaching professionals.

Roles of TEs

There is a peculiarity to "teacher educating" (Goodwin et al., 2014, p. 284) that separates TEs from teachers of students. In their pedagogical role, their tasks may include selecting content and designing courses, developing tasks and modes of assessment, and providing feedback. The underlying pedagogical goal is not one of mere transfer or transition, but of transformation for better decision-making by trainees in their future classrooms (Middleton & Baartman, 2013).

Teacher educating also likely entails being a self-regulated professional (Hökkä & Eltäpelto, 2014). The moments of tension encompassed in professional learning are personally constructed and faced and may require creative coping (Solbrekke & Sugrue, 2014). Therefore, TEs can be conceptualised both as individuals with their own personal trajectories and as on-the-job learners (Boyd, Harris, & Murray, 2011).

Technology adoption: Internal and external tensions

Despite TEs' frequent roles as self-regulatory professionals, they nevertheless often work within institutions, and their technology acceptance and adoption reflects this position. The unified theory of acceptance and use of technology (UTAUT; Venkatesh, Morris, Davis, & Davis, 2003) is a synthesised technology acceptance model of human-computer interaction. The model's four core constructs are (a) performance expectancy, "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (p. 447), (b) effort expectancy, "the degree of ease associated with the use of the system" (p. 450), (c) social influence, "the degree to which an individual perceives that others believe he or she should use the new system" (p. 451), underpinned by compliance, internalisation, and identification, and (d) facilitating conditions, "the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system" (p. 453). Venkatesh et al. (2003) posit that the first three of these constructs influence a user's technology acceptance and behavioural intention, which in turn influences adoption. Facilitating conditions are deemed to be direct determinants of use behaviour. The mediating factors moderating the core constructs are gender, age, experience, and voluntariness of use.

Although the UTAUT applies in educational contexts, it primarily assumes mandatory-use contexts in organisations. However, in many cases, TEs take on both the roles of workers and of individual consumers. Although they may be employed within an organisation and are the recipients of outcomes from technological and pedagogical decisions made by the organisation, as consumers they may be free to make their own choices on technology adoption within their practice.

Since the original publication of the UTAUT, Venkatesh, Thong, and Xu (2012) have refined the model (referred to as UTAUT2) to adapt it to technology consumer behaviour rather than that of employees in organisations. Voluntariness was removed, and added to the core constructs were hedonic motivation, “the fun or pleasure derived from using a technology” (p. 161), price value, “when the benefits of a technology are perceived to be greater than the monetary cost” (p. 161), and habit, “the extent to which an individual believes the behaviour to be automatic” (p. 161). Because the TEs in the present study were simultaneously organisational employees and technology consumers, a blend of the salient constructs of both the UTAUT and UTAUT2 was employed in the analysis of forces. The constructs have been used only as themes by which to analyse the forces guiding TEs’ decisions rather than as direct indicators of causes and effects of behavioural intention and behavioural use. This study’s analysis therefore included the following factors in addition to the four core UTAUT constructs: hedonic motivation, price value, habit, experience, and to a certain extent, age. Gender, the fifth mediating factor, was not identified here as a salient influential factor.

Review of relevant literature

TEs as pedagogues and teaching models

A key identified role of TEs is as teaching models. This role matters because as Shulman (1987) notes, in-situ decision-making is at the core of virtually all teaching. Through modelling, discussion, reflective opportunities, and feedback, TEs can help trainees to identify areas of practical professional knowledge to apply to later decision-making (Lunenberg & Hamilton, 2008; Zeichner, 2005).

Moreover, unlike other kinds of trainers, TEs support learning while also acting as implicit or explicit models of teaching itself (Loughran & Berry, 2005). Doctors who teach medicine do not treat their students; TEs, on the other hand, do teach teachers, thereby effectuating a direct intervention (Lunenberg et al., 2007). As second-order practitioners, they must therefore think of the meta-practice of working with people who will eventually teach others, including teaching with digital technologies.

TEs as self-regulatory professionals

In addition to having a modelling role, TEs may form their own identities as self-regulatory professionals (Wood & Borg, 2010). As was the case for the participants in the present study, TEs frequently lack specific training for their roles as second-order practitioners (Karagiorgi & Nicolaidou, 2013). They face tensions regarding their identities (Williams, Ritter, & Bullock, 2012) that consequently influence their work. In university settings, TEs may be hired for their content or discipline knowledge, with little or no attention paid to their knowledge of teacher educating methods (Goodwin et al., 2014).

TEs and digital technologies

Empirical studies on digital technologies in education have typically focused only on training program implementation (Jung, 2005) or on the perceptions and experiences of trainees and not trainers (e.g., Hammond et al., 2009). Only very recently has the focus turned to the TEs themselves.

There are a few notable exceptions. In a key study, Drent and Meelissen (2008) discovered that despite government encouragement, available hardware and software, and positive attitudes, TEs in the Netherlands used ICT little in their pedagogical practice. ICT competence was deemed a necessary, but not decisive, pre-condition for adoption. Yang (2012) studied eight TEs in the United Kingdom and found that their pedagogical uses of ICT related strongly to their subject area. Jarvis (2015) discusses the tensions for TEs between a sage-on-the-stage instructive role versus a guide-on-the-side facilitative style.

A survey of 111 TEs (Goktas, Yildirim, & Yildirim, 2008) indicated a perception among them that trainees should take a general computer course before their methods course to build an applicable technological

knowledge base. Martinovic and Zhang (2012) discovered that a pre-service training program failed to enable graduates to use technologies for pedagogical purposes capably within a classroom.

Kalonde and Mousa (2016) surveyed 90 public school TEs and the range of affordances and barriers in technology modelling decisions included content, ease of use, availability, experience, and trainees' own interest. Burden and Kearney (2017) investigated how 46 UK- and Australia-based TEs employed mobile learning in their practice; however, the study did not explore the influential factors governing the TEs' adoption decisions. Becuwe et al.'s (2017) Delphi study on teacher educator design teams revealed ten conditions deemed important for implementation success in relation to ICT. At the team level these included a long-term view, technological pedagogical content knowledge (TPACK; Mishra & Koehler, 2006), innovation-mindedness, trust, openness to feedback, ownership, and flexibility. Institutional-level factors included involvement, time for participants, and time for coaches.

Research on TEs in a Korean context is extremely limited. However, Webster and Son (2015) did look at the technology-related practices of TESOL instructors (not TEs) at a university in Seoul and found that social influence and institutional facilitating conditions helped determine adoption.

Still, despite an emerging scholarly interest in TEs' practice, most extant studies of digital technology use in teacher training courses have ignored the TEs involved, despite the fact that these professionals' decisions were likely to influence the learning of teacher candidates.

Methods

As this study aimed to be highly illustrative, it followed instrumental multiple case study methodology (see Yin, 2009); the case units of analysis were the individual TEs themselves. Data were initially collected over a 20-week full run of a TESOL program for pre-service education and training of teachers in the fall of 2013. Member checking occurred from 2013 to 2016.

Participants and setting

The five key participants – Ben, Gina, Jeff, Luke (35–40 age range) and Ray (45–50 age range) – were all non-Korean native English-speaking TESOL-TEs at Central University (CU), which employed nine teacher educators (all non-Koreans). All held master's degrees in TESOL or a related field and had multiple years of experience as teacher educators. Dr Cho (55–60 age range), a South Korean, was the CU-TESOL Program (CU-TESOL) director. (People and program names are pseudonyms.) CU, located in a large city in South Korea, offered pre-service TESOL certificate programs for classes of 12–18 South Korean and international trainees within TESOL for adults and teenaged learners (General Program) and children (Young Learner Program) strands. The participants were unpaid volunteers recruited through purposive and snowball sampling. CU-TESOL was selected as the setting for this study due to issues of accessibility, program length, and overall fit for purpose as a teacher training university program that reliably offered regular runs of its pre-service programs. Access to digital technologies was assumed; however, CU-TESOL was not selected based on any prior knowledge of actual technology use within the program. Access to the program was gained through Ray, a friend of a colleague.

As described in Rubadeau (2017), the five focal participants all demonstrated high levels of TPACK (Mishra & Koehler, 2006), high self-efficacy in new technology use, and generally favourable views of the pedagogical efficacies and uses of digital technologies for learner-learner, learner-TE, and TE-TE interactions. Two participants had previously been employed in ICT: Ray as a technology coordinator and Ben as a university technology consultant.

CU-TESOL had no requirement to use a learning management system (LMS), nor did it provide one. Nevertheless, LMSs were used by all five focal participants. Ray had organised Google+ as the LMS for the General Program. In the Young Learner Program, Ben used a platform called ClassJump as an LMS while

Gina had built her own website. The participants also used mobile devices extensively within their classroom praxis; virtually all of the trainees had smartphones.

My observations of the TEs occurred in the lead-up to a blended learning program and online program beginning in spring 2014. The TEs were tasked with devising options for transforming a General Program face-to-face course to synchronous online and blended learning options. Ray, Gina, Jeff, and Luke investigated and piloted platforms to achieve these goals, while Ben served as a consultant.

Data collection procedures

The present research was a part of a larger study into TEs' cognitions and uses of digital technologies (Rubadeau, 2016). Methods included four rounds of one-on-one, face-to-face, 60- to 120-minute interviews per teacher educator ($N = 20$), two classroom observations of 60–120 minutes each per teacher educator ($N = 10$), post-observation interviews, TEs' written reflections, researcher's field notes, document review, photographs, interviews with the program's main administrator, and oral and written responses to a survey (Schmidt et al., 2009) on TPACK (Mishra & Koehler, 2006) and one on digital teaching skills (Kharbach, 2015), which were employed as prompts in the interviews. For the current study, the interview transcripts and observations notes were the primary basis of analysis, while the surveys and other data informed background knowledge on the participants and setting, and as prompts for the interviews. Audio-recorded interviews were transcribed verbatim. After an ethics review board had approved the study in spring 2013, participants' informed consent was obtained in the summer of 2013, and the participants were further informed of the technology focus of the research after one full round of interviews. Guidelines and regulations of the British Education Research Association (<http://www.bera.ac.uk/>) were strictly followed at all stages of data collection and storage.

Data were analysed using King's (2004) template analysis method and the data analysis software program Dedoose version 6.1.18. Initial a priori codes incorporated into the template were the variables of the UTAUT (Venkatesh et al., 2003) and UTAUT2 (Venkatesh et al., 2012). Ten interview transcripts were first loosely coded, and the template was distilled to more elegant categories, with a focus on the forces for this study. I discarded the variable of gender from the analysis, as the construct did not come up in the interviews with the TEs in relation to technologies. A second researcher provided feedback on the initial coded interviews and the template, and suggested that the number of categories of forces be reduced.

Findings

Five key forces

Educators may have varying degrees of autonomy in their roles (Rappel, 2015). In CU-TESOL, I observed numerous instances of forces adding to and detracting from the pedagogical integration of digital technologies. A closer analysis of the TEs' experience revealed five key forces mediating the ICT uptake practices of the focal participants in this study.

Force one: Perceived market pressure

An emphasis within higher education discourses on “innovation talk” and the inherent entrepreneurialism brings market forces into teaching and learning (Winslett, 2014, p. 163). The field of English language teaching (ELT) itself can be framed as a profession or service, but can also be conceptualised as a business (Pennington & Hoekje, 2014). Administrators may be forced to take a pragmatic orientation due to market forces such as enrolment numbers.

For CU-TESOL administrators with a stake in the running of the program, pressure to reach unsaturated markets and showcase innovation was an influential factor in decision-making (Dr Cho, interview 2, November 20, 2013). CU-TESOL needed to consider “the bottom line” (Luke, email, October 17, 2013). In

that light, efforts were made to control CU-TESOL's external image. In the program's opening ceremony, a sleek video on the university and program's mission ran before the TEs' speeches, declaring it the "best in Asia." Traditional scholarly artefacts (Bagley & Hillyard, 2011), such as a ceremonial tassel, were prominently displayed. In sharp contrast to the grey walls of the small teachers' lounge, the hallways on the classroom floors featured glass cabinets of trophies and gleaming merchandise bearing the CU-TESOL logo. In short, an attempt was made to show to stakeholders, including potential clients, the program's notable standing as a place of higher learning within ELT.

Budgetary restrictions for the main program had seen TEs devise their own free online methods using Google+. The blended learning program, however, was a new marketing endeavour that would require a polished look and high functioning features. In the end, a commercial partner was selected to provide the official learning management platform for the program.

Perceptions of market forces also figured at the individual level. Martín García, García Dujo, and Muñoz Rodríguez (2014) found that Spanish university professors chose to adopt a blended learning program based in part on social influence related to their own professional image. Ray and Jeff discussed the issue of getting their credentials online in order to be visible by peers and potential employers in the world ELT market. For Ray, who was approaching 50, the ageism in the ELT industry (Mahboob, 2011) afforded him limited time left to teach at a South Korean university and he had no doctoral degree; therefore, networking was important, and he 'need[ed] to be engaged in, in professional work' (Ray, interview 1, August 9, 2013).

Force two: Downward force from an accredited program

Several influences have jointly contributed to an emphasis in Asian ELT on transnational institutions for credibility and accreditation. These include burgeoning educational credentialism (Zajda, 2012); a discursive narrative of American strength (Green, 2015) or transnational strength in higher education (Hou et al., 2015; Ziguras, 2001); a growing tendency in Asia's tertiary education towards "glonacal" (local-national-global) quality assurance (Hou et al., 2015, p. 83); conceptions of TESOL expertise applied worldwide (Canagarajah, 2015); and the ingrained native-speaker ethnocentrism in much of the ELT industry (Mahboob, 2011). Although the CU-TESOL Program was organised, managed, and administered by the faculty in a large city in South Korea, the program was accredited by and observed by an American university. Two renowned ELT professors from the American university had been instrumental in determining the content and even the delivery style of the program. Though content could be adapted, adherence to a general curriculum and syllabus was compulsory; creating a course on technology use, for example, would require approval. Lightening the substantial academic load could endanger the program's accredited status. At several times through the research period, the TEs mentioned time constraints due to the amount of content that needed to be covered.

Force three: A hierarchy of program directors, coordinators, and TEs

Self-determination and autonomous motivation predict the intentions of educators to implement pedagogical innovations (Gorozidis & Papaioannou, 2014). In CU-TESOL all focal participants had some autonomy in the way they delivered lessons. Collegiality also positively affects ICT adoption (Deaney & Hennessy, 2007), and I noted a strong collegial atmosphere among the TEs. As I passed their open office doors I could observe a casual intermingling of TEs discussing pedagogical concerns. Participants referenced one another and used "we" statements during the interviews. They also helped one another: co-presenting at a conference, aiding another teacher in website set-up, and sharing technology ideas.

Nevertheless, it was clear that a keen awareness of the existing organisational hierarchy guided some of the technology adoption decisions in CU-TESOL. With the number of coordinators, Luke said he felt he had "four bosses" and that decisions did "trickle down" (Luke, interview 1, August 12, 2013). The positioning of each participant within the hierarchy likely impacted technology integration, in part because of the leadership styles and personalities of the participants.

With the blended learning program, the power of the hierarchies was highly visible. The TEs, even ones set to leave the program, expressed an interest in adding knowledge of teaching online to their skillset and indicated their eagerness to contribute to the online content. However, there were some mentions of disappointment by the TEs that they were being asked to design a new program with limited compensation and a perception that they were being required to work outside of the stipulations of their contracts and without training. Orlando (2014) notes how veteran teachers whose schools were undergoing ICT reforms were “protective of continuing to place time into something they did not have ownership over” (p. 232). While the TEs demonstrated willingness to invest the time, fatigue from perceived one-sidedness began to encroach on voluntariness. Porter, Graham, Bodily, and Sandberg (2016) found a high percentage of higher education instructors cited course load reduction (rather than financial incentives) as influential in their intentions to adopt a blended learning program.

Force four: TEs forcing trainees to use technologies

In technology-heavy teacher training contexts, teacher trainees are now generally asked to learn to use some new technologies (Martinovic & Zhang, 2012). In CU-TESOL, TEs adopted technologies that trainees were then required to use. A prime example included the requirement that trainees sign up for and use Google+ or ClassJump. Training time needs to be invested to ensure the effectiveness of blended learning options (Spanjers et al., 2015), and LMS adoption may require a top-down approach at times (Goncalves & Pedro, 2012). The TEs in this study used multiple rationales to choose the LMS, including perceived low effort expectancy for trainees and TEs. As Jeff stated, with a system like Google+, the trainees “don’t do any more work, but the work they do is more interactive, or more in depth, and we do less work. So, that’s kind of the sale for the initial learning of the tool” (Jeff, interview 4, December 7, 2013). Ray said, ““tech is a tool for autonomous language [development]” (Ray, interview 3, November 1, 2013).

The UTAUT-based literature reports mixed findings on the relative importance of performance expectancy and effort expectancy in new technology adoption. It is known that performance expectancy is important in teachers’ adoption of new technologies (Scherer, Siddiq, & Teo, 2015). However, studies have also found performance expectancy more influential on behavioural intention (Buchanan, Sainter, & Saunters, 2013; Petko, 2012). Others confirm the crucial impact of effort expectancy on behavioural intention (Oh & Yoon, 2014; Teo, 2011). Participants in the present study frequently adopted technologies with high performance expectancies despite perceived difficulties in effort expectancy. It is therefore conceivable that the factor of habit (Venkatesh et al., 2012) mediated behavioural use in instances where behavioural intention and facilitating conditions were present but where behavioural use was not evident.

Performance expectancy, effort expectancy, and habit intertwined, for example, in the TEs’ choices of LMS. It was notable that in neither case was a South Korean-designed platform (e.g., Naver or Kakao Groups) implemented by the TEs despite their familiarity with the tools. Rather, trainees were forced to adapt to a platform that the TEs themselves selected. In choosing platforms and technologies, the TEs mentioned linguistic accuracy and fluency objectives as a motivating “force.” Ray, for example, referred to getting trainees into “English mode” through Google+, claiming a non-Korean-produced platform would “force them to use English” (Ray, interview 4, December 7, 2013) and that they could learn “new alphabets” and “English-only habits” (Ray, webinar, May 26, 2013; interview 2, September 27, 2013). Similarly, in discussing whether TESOL-TEs should adopt the dominant platform of the local culture, Ben at first noted that “you could argue that both ways prodigiously” but then settled with, “No. Because it should be what the majority of everyone is using. Not just in Korea” (Ben, interview 2, October 3, 2013). However, when Ray and Ben were pressed further it appeared that habit and familiarity with certain products bore more heavily on behavioural use in some cases. Ben explained that using the Korean tools would mean “the barrier of entry switches to me” (Ben, interview 2, October 3, 2013), while Ray admitted that it was “organizationally” great for the TEs, stating that “any tool used by two parties has affordances and constraints on both parties” and that there was no need for TEs to be “altruistic” (Ray, interview 2, September 27, 2013). In some ways, the habits influencing TEs’ technology and platform choices reinforced the cultural-information imperialism of Silicon Valley (Ziguras, 2001).

Force five: Individual TEs forcing themselves to adopt a behaviour

A final salient force was TEs putting pressure on themselves regarding their practice and their adoption of digital technologies. This may have been related in some cases to perceived social influence (Venkatesh et al., 2003, Venkatesh et al., 2012) and market factors. However, there was also the added element of TEs' own self-perceptions about their roles and their need to motivate themselves (Hökkä & Eteläpelto, 2013). Participants stated appreciation for technology 'forcing' them to adopt behaviours deemed desirable.

All of the participants displayed a willingness to learn about new technologies and to share with a greater community, for example, through professional blog posts on digital technologies in language learning (Ray and Jeff), a webinar on Google+ for educators (Ray), and published on video-recorded microteaching reflections (Ray). Ben, a digital device enthusiast who said he "liked playing around with technology" (Ben, interview 4, December 12, 2013), published articles in technology magazines, while Ray said he was "familiar with a lot of tech tools for educators" (Ray, email, August 3, 2013). Gina and Ray were enrolled in massive open online courses about app making and online teaching and Gina was learning computer coding. Ben was pursuing a Google Certified Teacher qualification and had participated in a conference for Google apps. Jeff followed fellow bloggers' advice on online academic reading circles. Jeff and Luke were learning research-related technologies for doctoral work.

In brief, the TEs were busy employees (Solbrekke & Sugrue, 2014) who also recognised the importance of professional learning. Even in the absence of any mandatory continuing professional development from CUTESOL, they seemed to relish designing their workflow and workload in such a way as to force themselves to grow authentically (Rappel, 2015), reinforcing their position as professional practitioners possessing "personal innovativeness" (Tan, Ooi, Leong, & Lin, 2014, p. 198). Gina explained, that it was a "constant – though fun and rewarding – challenge to continue and improve" on her abilities (ICT and other) as a TE (Gina, email, October 17, 2013), while Jeff noted that individual faculty had their own responsibility to "get better" (Jeff, interview 3, November 26, 2013). Ray said he was constantly looking for ways to "contemporise and evolve and sustain the validity of" his approaches to teaching (Ray, interview 4, December 5, 2013). Context matters in ICT adoption (Ashrafzadeh & Sayadian, 2015). It has been argued that in workplace scenarios, social influence from supervisors affects intrinsic variables such as attitude towards use (Yoo, Han, & Huang, 2012). However, the special case of professional educators as both independent professionals and employees in a hierarchy means that the issue of force is somewhat more complex than in many organisational scenarios (Pynoo et al., 2011), with a constant interplay of intrinsic and extrinsic motivators (Prestridge, 2012). In educational settings, technology adoption may be the result of policy promoting a "shiny veneer that people are sort of sticking over the top of things to look good" (Ben, interview 3, November 15, 2013); however, the multi-directional flow of forces surrounding the TEs in this study are a reminder that policy and trends may stem from bottom-up and internal processes.

Implications, limitations, and further research

Several implications arise from this research. One important policy implication is that even in the absence of a costly commercial platform or any required measured continuous professional development (technology-related or otherwise), TEs who have low effort expectancy, high performance expectancy, and high facilitating conditions (including reliable Internet access, device-owning trainees, and the administrative freedom to impose on trainees the requirement to use digital technologies) can integrate technologies into teacher education voluntarily and program-wide. TEs working in programs outside of a university's main credit courses can implement technologies even with no official sanctioning from the university, such as in the creation of their own LMS.

However, in terms of internal and external forces, it was also found that to ease effort expectancy and reap the time-saving benefits of systemic integration, an administrator with a vocal, directive leadership style who believes in the value of technologies may be important, echoing findings from other studies (Park & Jeong,

2013; Tosuntaş, Karadağ, & Orhan, 2015). In this case study the strong gatekeeper (primarily Ray, with Dr Cho also taking on that role) pushed through the blended learning program, for example.

Some force may be beneficial (Park & Jeong, 2013) as was the case for Luke, who ultimately found Google+ helpful, but who said he might not have initiated such an LMS on his own without coordinator Ray pushing for the platform. However, the importance of TE buy-in must not be underestimated (Drent & Meelissen, 2008). It is crucial to note that just because TEs with high facilitating conditions can find individual and shared solutions without institutional support, it does not mean that this is an ideal path for administrators to follow (Boei et al., 2015). With the blended learning version of the General Program, for example, TEs had demonstrated personal entrepreneurship (Drent & Meelissen, 2008), investing much time into researching, trialling, and integrating new digital technologies into their pedagogical practice. They had also individually pursued time-consuming professional learning initiatives which were self-initiated and self-funded.

However, when will and skill (Petko, 2012) were requirements imposed from above with no remuneration, training, or extra time, and when effort expectancy became too high, some participants perceived being overworked, undercompensated, working outside the limits of their contracts, and frustrated with the lack of support. Program directors should not simply leave high-TPACK TEs to figure out “what works” (Webster & Son, 2015, p. 84). Moreover, for programs enforced from above like the synchronous component of the blended learning program, for example, TE burnout and employee resentment may increase in the absence of the mediating factor of hedonic motivation. Training and administration-faculty cooperation are still needed (Ashrafzadeh & Sayadian, 2015); with this study’s participants, the lack of communication between the office staff (all South Koreans) and the expatriate faculty (all non-Koreans) hindered some technology adoption.

A second important implication regards the force of TEs’ roles in relation to perceived trainee needs. The TEs in this study self-identified as teachers and referred to their trainees as students. They viewed their role primarily as related to the teaching of curriculum content and secondarily to the teaching of language skills. This was especially true for those working in the General Program, where the more academic, applied linguistics-focused curriculum could be used as a lead-in to the university’s master’s in TESOL program. However, even in the Young Learner program, explicit language accuracy was de-emphasised. With a focus on their role as teachers of content, including the teaching of TESOL techniques, the TEs in this research sought out and integrated technology applications that would help with these aspects of teaching and learning rather than technologies designed to focus specifically on language learning.

Three key limitations mark this research. First, as an instrumental multiple case study, it tracked only five focal participants and one additional participant over a 20-week period in a large city in South Korea. The conclusions that are drawn, while transferable (Pring, 2015), are not generalisable. Second, as a purposive volunteer-recruited study, this research lacks perspectives from all of CU’s TEs. Although a reduction in participant numbers enabled a greater depth of research, it is possible that there is something distinctive about the kinds of TEs who would volunteer their time and effort for an in-depth study. Third, this research focuses solely on TESOL-TEs. While English language education forms the bulk of second language teaching around the world and while it is frequent for TEs in many TESOL training programs around the world to be self-initiated expatriates (Froese, 2012) working with local trainees, trainers of teachers of different languages may find other factors influencing cognitions, practices, and uses. Future research would do well to address these issues. Despite these limitations, it is hoped understandings offered through the present research serve to inform the cognitions and practices of TESOL-TEs and program leaders and will ultimately strengthen research in this area as TESOL teacher education heads further into the 21st century and beyond.

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