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Examining the Technological, Pedagogical and Content Knowledge of Nepalese Teacher Educators

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Abstract

Teacher-educators' TPACK profile suggests whether and/or to what extent they can help future teachers to develop competencies required to teach with technology. However, teachers-educators' digital competencies are not well understood because of the limited number of research studies. This study contributes to the existing body of knowledge by providing insights into the Nepali teacher-educators' competencies in the use of educational technology. The study collected data from 153 teacher educators from 63 teacher education campuses in Nepal using a TPACK questionnaire combined with an ICT confidence survey. The findings reveal that teacher educators were more confident about their pedagogical knowledge (PK) and content knowledge (CK) than their technological knowledge (TK) and technological, pedagogical and content knowledge (TPACK). The findings suggest that the teacher educators lacked competencies to teach and to demonstrate technology integration in educational practice. The implication of this finding is that pre-service teachers will miss the opportunity to gain the skills and knowledge required to use technology in their future practice.

Keywords: TPACK, ICT, educational technologies, teacher educators, Nepal

Introduction

Teacher educators are an important group of professionals because their behaviour about technology use in teaching and learning renders a substantial contribution to the development of pre-service teachers into digitally competent teachers. As teacher educators teach the future teachers, their practices influence the pedagogies of teachers in school (Murray & Male, 2005; Nelson, Voithofer, & Cheng, 2019). In other words, the way teacher educators use technology in their classes influences what pre-service teachers learn about technology use in their future practice. Therefore, it is imperative to explore teacher educators' readiness to teach with digital competencies in order to understand whether future teachers, in the teacher-education programmes, will learn the skills required to teach with technology.

For the purpose of this study, teacher educators refer to the faculty members who teach Bachelor of Education (B.Ed.) and Master of Education (M.Ed.) courses. Data for this study were collected using a five-point Likert scale survey with 39 items, combined with an ICT confidence survey which comprised fourteen items. Descriptive analysis was carried out to understand teacher educators' confidence in using a range of digital tools and perceived TPACK practices. The findings of this study contribute to addressing the gap in the knowledge area about teacher educators' technological, pedagogical and content knowledge (TPACK).

Background

Teacher education programmes in Nepalese universities are pre-dominantly face-to-face, and only a few institutions have managed to integrate technologies to blend their pedagogical practice (Laudari, 2019). Research (Maski Rana, 2018, Rana, Greenwood & Fox-Turnbull, 2019) has also suggested that many in-service teachers are ill-prepared to teach with technology because they did not experience technology use during their own pre-service courses. The lack of experience can be understood well when the curricula of teacher education courses are considered. Dhakal and Pant (2016), in a review of teacher education curricula, found that there was no dedicated course on technology use in the Nepalese universities. Inadequacies of the policy of ICT use in the teacher training faculties were also identified by Maski Rana (2018) and Laudari (2019).

Likewise, studies have also documented paucity in resources, policy-related issues, and lack of technology use training. For example, Laudari and Maher (2019) found that factors related to ICT policies, training for teacher education, and technological resources hindered technology use. Similarly, a study by Shields (2012) also argued that in addition to the paucity of resources, the policy on technology in education lacked clarity.

While there are myriad issues in technology use, government policies expect teachers and teacher educators to use technology in their practice. For example, the teacher competency framework (Government of Nepal, Ministry of Education, 2016) identifies the ability to use technology as a key competency of teachers. Furthermore, the policy on higher education (Government of Nepal, Ministry of Education, 2015) emphasizes on the use of technology. Whilst these policies are introduced to align with the global trend in the educational practices (Rana et al. 2019), they do not consider how pre-service and in-service teachers will gain those skills (Laudari, 2018). As B.Ed. and M.Ed. degrees are teacher preparation courses, teacher educators' technology-use related practices and ICT competencies influence the development of technology use knowledge and skills in future teachers. Therefore, teacher educators' digital competencies must be studied and inadequacies addressed.

This study aimed to provide a deeper understanding of teacher educators' readiness to teach with technology. It investigates their technological, pedagogical, and content knowledge (TPACK) profile and ICT confidence because they can predict teacher

educators' digital readiness (Albion, Jamieson-Proctor & Finger, 2010). This inquiry, therefore, addresses two research questions:

- What are the perceived ICT confidence and TPACK profile of teacher educators?
- What do the teacher educators' ICT confidence and TPACK profile suggest about their readiness to teach with technology?

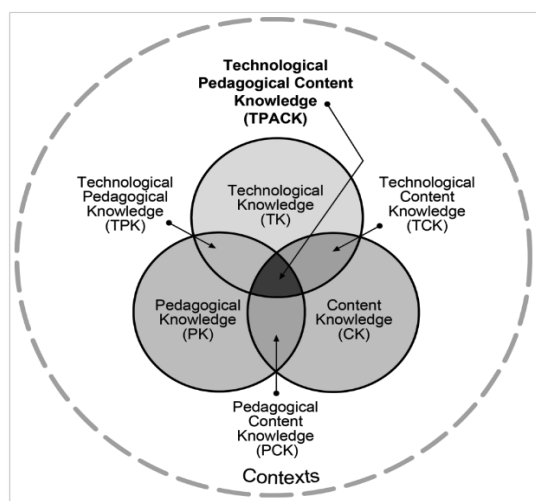
Technological Pedagogical and Content Knowledge (TPACK)

Developed by Mishra and Koehler (2006), TPACK has been founded on Shulman's (1986) construct of pedagogical content knowledge. TPACK characterises the knowledge base required to effectively teach with technology (Mishra & Koehler, 2006). The framework posits that teachers need to possess three different kinds of knowledge in order to effectively teach with technology (Blackwell, Lauricella, & Wartella, 2016). This is consistent with Koehler and Mishra's (2009) claim that "at the heart of good teaching with technology are three core components: content, pedagogy, and technology, plus the relationships among and between them" (p.62). Content knowledge is about knowledge of the subject matter, for example, the knowledge of English language grammar for English language teachers (Koehler, Mishra, & Cain, 2013; Mishra & Koehler, 2006). Pedagogical knowledge refers to the ability to devise lessons to present content and scaffold students' learning based on their previous experience. By the same token, technological knowledge relates to skills to use technology to maximise learning.

The TPACK framework models the interactions between technology, content, and pedagogy. The interactions between these three areas result in seven components (See Figure 1). They are pedagogical knowledge (PK), content knowledge (CK), technological knowledge (TK), pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological pedagogical and content knowledge (TPACK). These components describe the sets of skills that teachers need to develop to teach specific content using technology, which aligns with their pedagogical practice (Koehler & Mishra, 2009).

Figure 1

TPACK framework



Note. This figure is adapted from Mishra and Koehler (2006)

The TPACK is believed to be a comprehensive model in technology integration in teaching and learning in that it considers the complex relationships that shape the technology, content and pedagogical knowledge and how they interact when it comes to using technology in the classroom (Koehler et al., 2013). Further, while most technology acceptance frameworks do not consider the role of context, TPACK acknowledges the influence of contextual factors in the efficient use of technology in education.

However, there is dissonance on the definition of TPACK components as their boundaries are thought to be blurry (Angeli, Valanides and Chrisodoulou, 2016; Archambault, Wetzel, Foulger, & Kim Williams, 2010). Additionally, it is argued in the literature that knowledge and growth in each contributing knowledge base does not result in the growth of TPACK (Angeli et al., 2016). Therefore, for a balanced growth of skills in each of its components, explicit instructions need to be provided. This implies that teacher educators need to have very well-developed TPACK skills to help future teachers develop these skills in turn.

While a large number of studies have investigated pre-service teachers' (e.g., Nelson, 2017; Voogt & McKenney, 2017) and in-service school teachers' TPACK (e.g., Dalal, Archambault, & Shelton, 2017), only a few studies have actually measured teacher educators' TPACK. Studies have also explored how pre-service teachers have been supported through teacher education courses to enhance their TPACK (e.g., Baser, Kopcha, & Ozden, 2016; Drummond & Sweeney, 2016; Khine, Ali, & Afari, 2016; Nelson, 2017; Voogt & McKenney, 2017). Likewise, teacher educators' use and modelling of technology use have been studied from the perspectives of pre-service teachers (Baran, Canbazoglu Bilici, Albayrak Sari, & Tondeur, 2019) as well as from the perceptions of teacher educators themselves (Tondeur, Scherer, Siddiq, & Baran, 2019).

For example, Tondeur, van Braak, Siddiq, and Scherer (2016) examined how three teacher education institutes in Flanders promoted the TPACK knowledge in pre-service teacher training. The institutes were transitioning from an isolated ICT course to a technology-embedded teacher preparation course. However, pre-service teachers' TPACK was stunted because their teacher educators lacked the appropriate skills and knowledge of ICT relevant to the curriculum and their practices. Similar findings were also reported by Tondeur et al. (2019). By analysing the interview data from pre-service teachers, they concluded that some "teacher educators seemed to lack ICT-competencies themselves in order to provide clear examples" of TPACK (p. 15).

The lack of teacher educator's required competencies in technology use limits the development of TPACK elements in pre-service teachers (Albion et al. 2010; Krumsvik, 2014; Valtonen et al., 2017). Consequently, the pre-service teachers' also miss out on the opportunity to experience how technologies should be used in teaching practices (Krumsvik, Jones, Øfstegaard, & Eikeland, 2016; Røkenes & Krumsvik, 2016) and the pedagogical principles that underpin such practices (Krumsvik, 2014). Therefore, teacher educators' TPACK knowledge, which is an indicator of their digital competence, and their use of technology in teaching is significant.

The teaching of TPACK must go beyond the discussion on how to integrate the three separate knowledge bases; instructions need to target TPACK development specifically (Angeli et al., 2016). For such teaching to happen, teacher educators need to have these competencies themselves, be aware of the didactic underpinning of practices related to technology, and be able to explain those to the pre-service teachers (Krumsvik, 2014).

Whilst teacher educators' digital competencies are important, very few studies have explored their perceived abilities to use and model technology use (Foulger, Graziano, Schmidt-Crawford, & Slykhuis, 2018; McGarr & McDonagh, 2019; Uerz, Volman, & Kral, 2018). It is necessary to understand teacher educators' digital competencies as that reveals whether they can help pre-service teachers develop related competencies for their future practices (Nelson, 2017; Nelson et al., 2019). Hence, the findings of this study are significant in that they will contribute to the knowledge of teacher educators' TPACK and what this means to teach with technology.

Research Methodology

In order to understand the TPACK profile of teacher educators, this study surveyed 163 English as a Foreign Language (EFL) teacher educators from 63 teacher education campuses located in urban, semi-urban and rural areas of Nepal. The survey participants were selected using a snowball sampling method (Bryman, 2015), primarily because the researchers were unable to access the database of EFL teacher educators across the country. Furthermore, due to a limited number of studies in the related field in Nepal, very little information was available on whether any teacher educators use technologies in pedagogical practices in teacher education practices.

As we were interested in collecting data from teacher educators who used technology, it would be hard to identify an appropriate population without a snowball sampling. Therefore, the first author contacted a few teacher educators teaching at the Central Department of Tribhuvan University for the survey. Those teacher educators helped the author to identify potential participants, who were later contacted by the author. Each potential participant was also requested to help to find participants in their professional circle.

However, a snowball sampling carries the risk of recruitment of participants with similar interests to the initial group of participants (Babbie, 2014). To minimise that risk, teacher educators in different contexts, such as teacher educators teaching in private, government and community-owned teacher education campuses in rural, urban and semi-urban were contacted. In total, 425 teacher educators who were identified to use digital technology in their pedagogical practices were invited to participate in a survey; 163 teacher educators returned the survey. Table 1 below presents a demographic summary of the participants.

Table 1 - Participation information table

			Total
Respondents	Male	140	153
	Female	13	
Experience (in years)	0-5	34	153
	6-10	63	
	11-15	28	
	16-20	14	
	20 +	14	
Campus location	Rural	15	63
	Semi-urban	16	
	Urban	18	
	Unspecified	14	
Course	M.Ed.	61	153
	B.Ed.	64	
	Both	28	

Survey Design

The survey tool consisted of three distinct parts (see Appendix-1). Participants’ demographic information was collected in the first part. The second part was an ICT confidence survey, which was adapted from Albion et al. (2010). The ICT confidence survey was added because it measured teacher educators’ confidence in using different kinds of digital tools. Besides, it indicated how confident the teacher educators felt to facilitate ICT integration with their students (Albion et al., 2010). The third part of the survey was a TPACK questionnaire, adapted from Mishra & Koehler (2006) and Baser et al. (2016). The TPACK questionnaire consisted of 39 items measured on a five-point Likert scale.

Before distributing the survey to the survey participants, they were validated with five expert EFL teacher educators. Discussions were held with each of these experts to test that the questionnaire was context-sensitive, and that each of the items was unambiguous.

As the survey was intended to be delivered to a large group of teacher educators, it was designed on Google Form and distributed electronically, through email, Facebook messenger and WhatsApp. The survey was also made available in print, at the request of some participants.

The data was collected between December 2017 and April 2018. Upon the completion of the data collection, they were checked for completeness. Any data set with incomplete or erroneous information was dropped. Overall, 10 of the 163 survey responses were incomplete. Therefore, they were not included in the analysis. Thus, the final data set

comes from 153 teacher educators. The data was imported to SPSS version 24.0 for a descriptive analysis.

To measure the internal consistency of the items, i.e. “the degree to which the items that make up the scale hang together” (Pallant, 2013, p. 97), a reliability analysis was computed. The reliability score, which is reported as Cronbach’s alpha (α), was $\alpha=0.813$ for the whole questionnaire. This implies that the questions included in the survey were sufficiently reliable, the items in the survey had internal consistencies and were homogeneous in what they were intended to measure (Dörnyei, 2010).

Findings and Discussion

The findings from the survey and discussion are presented in this section. The discussion begins with an overview of the reliability score of the survey tool, which is followed by the results of descriptive analysis, such as mean, median and standard deviation. The analyses are used to comment on teacher educators’ self-reported ICT confidence and their TPACK profile.

ICT Confidence Survey

The first part of the survey consisted of an ICT confidence tool. The tool was designed to obtain information on teacher educators’ confidence in using different computer hardware and associated programs. This part of the survey, therefore, asked teacher educators to rate their confidence to use 14 different kinds of hardware and software (as shown in Table 1 below), on a four-point Likert scale, ranging from no confidence (1) to highly confident (4), for each application.

Some of the applications listed were related to using web-based tools (such as LMS and social networking sites), others were about using office-based applications, web-based search engine and different computer associated hardware. The results of the descriptive analysis are summarised in Table 1 below. The results of the descriptive test indicated that the mean scores ranged between 1.53 and 2.94.

Table 1

Results of the descriptive test for ICT confidence survey

Application	Mean	Median	Std. Deviation
Microsoft Word	2.64	3.00	.988
Microsoft PowerPoint	2.54	3.00	.950
Spreadsheets	1.70	2.00	.823
OneNote	1.40	1.00	.637
Email	3.03	2.00	.882

Photoshop & Graphic creation	1.49	2.00	.697
Digital Camera & Scanner	2.15	2.00	.934
Web browser (Chrome, Firefox & Safari)	2.69	3.00	1.06
Web searching engine (Google, Scholar, Bing, YouTube, etc.)	2.80	3.00	.913
Social networking sites (Facebook, Twitter, LinkedIn, ResearchGate)	2.90	3.00	.836
Kindle, iTunes, Amazon	1.68	2.00	.814
Learning management system (Moodle, Blackboard, etc.)	2.05	2.00	.975
Online Publishing (Blog, Podcasts, YouTube)	2.00	2.00	.915
iPad, iPod, MacBook	1.80	2.00	.847

The results in Table 1 suggest that the teacher educators’ ICT confidence, in general, was around or above midpoint (i.e. 2). The highest mean score was 3.03 for email, followed by 2.90 for the social networking sites (SNSs) and 2.80 for web search engines. The scores for Microsoft Word and PowerPoint were 2.64 and 2.54. Whilst web applications, such as email and social networking sites are related to communication, search engines are associated with information search and information processing, and Microsoft Office applications are related to productivity activities (Hughes, Liu, & Lim, 2016). Thus, the scores reported above suggest that the teacher educators had some confidence in using digital tools related to communication (e.g. E-mail), finding information (Google) and production (Microsoft Word). Email is a popular tool used in personal and professional communication and the Internet is used to find resources for personal and professional use, therefore the teacher educators may have displayed confidence in using them. As these tools are commonly used in day-to-day lives – not necessarily just in teaching and learning – the teacher educators may have shown higher confidence in using these tools.

Likewise, Microsoft applications (Words, PowerPoint and Excel) are some of the most frequently used tools in a computer. As all the teacher educators were computer literate, it can be reasonably assumed that they have seen and used these tools for different reasons. This is potentially the reason why they recorded higher confidence in the use of these tools.

As regards the tools related to content creation and publishing (e.g. YouTube and blog), and collaboration (e.g. OneNote), teacher educators’ self-reported confidence seemed to be below midpoint. For example, the mean score for OneNote use was 1.40 and for YouTube, it was 2.00. Teacher educators may have self-reported lowly regarding the use of those tools because they were not familiar with their use for content creation and publishing. This is because very few educational institutions use digital tools, such as OneNote, for collaboration, or own a YouTube channel to share self-created content (Laudari, 2019).

Unlike the common tools such as Word, PowerPoint and Excel, OneNote and video creation tools are primarily used in professional settings for file sharing, content creation and collaboration. None of these teacher educators had technology use experience as students, nor did they use these tools as teachers, so it was not uncommon to have low scores on the use of these tools. Because they lacked experience and did not have a need to use these tools in their practices, they lacked skills in using tools that are used in collaboration, content creation and sharing, which can be attributed as the reason for low scores in the use of digital tools related to content creation and sharing.

The scores in the confidence survey also need to be discussed in consideration of the context of the teacher educator. As stated in the introduction, most teacher educators had just started using digital technology in their practice. In the initial phase of technology use, it is common for teacher educators to use technologies to feature productivity tools more than creation and publication tools (Hughes et al., 2016). As observed by these authors, teacher educators in the study used productivity tools rather than creation and publishing tools (Gray, Thomas, & Lewis, 2010). Georgina and Olson (2008) argue that this is a common phenomenon when academics are new to technology or lack higher-order skills to use digital tools.

Therefore, the findings of the ICT confidence survey illustrate that the teacher educators' lack of confidence to use tools for content creation and collaboration was not uncommon given their context, relatively new experience with technology and lack of competencies (e.g. TPACK) required to use technology. When teacher educators lack these skills, it can be safely assumed that they fail to demonstrate the use of these tools in practice. As a result, pre-service teachers will miss the opportunity to learn how ICT tools could be used for the creation of the content and to enhance collaboration in their teaching.

Results of TPACK Survey

The third component of the survey consisted of questions related to TPACK measurement, assessed in 39 five-point Likert items. The results of the frequency test are presented in Table 2 below.

Table 2

Results of the descriptive test for TAPCK Survey

Components	Mean	Median	Std. Deviation
TK	3.5	3.555	0.607
CK	4.0	4.200	0.519
PK	4.0	4.000	0.527

PCK	3.8	3.800	0.579
TCK	3.46	3.666	0.612
TPK	3.72	3.857	0.686
TPCK	3.09	3.250	0.798

As the results in Table 4 demonstrate, teacher educators’ self-rated scores in TPACK are slightly above mid-range on a 5-point scale, with a standard deviation lower than 0.8, which suggests that there was some homogeneity in teacher educators’ TPACK profile.

Generally, the scores for most of the components of the TPACK ranged around mid-level. PC and CK have mean scores of 4.0. These scores suggest that the teacher educators had relatively higher confidence in their pedagogical and content knowledge. This result might have because all the teacher educators in the data set had at least five years’ experience of teaching EFL subjects. Additionally, they also studied the subject they taught as students in the teacher education courses. It is argued that the experience gained as students gives a higher confidence in practice as teachers (Bandura, 1997; Ross, 1994) which may have been the reasons for high ratings in PC and CK components of TPACK. Additionally, the EFL teacher education course in Nepal is highly theoretical and content-driven, which might have contributed to them believing that their content and pedagogical knowledge is robust.

Whilst the mean scores were above mid-range, of the seven components in the TPACK survey, the lowest scores were for TPCK (3.0) and TCK (3.4). Likewise, the scores for TK and TPK were also lower than those for PK and CK. Relatively lower scores for the TK and related components suggest that the teacher educators were not as confident in integrating technologies as they were in the pedagogical and content knowledge. While this finding is similar to that of Instefjord (2015) and Instefjord and Munthe (2017), ICT use and availability in higher education are much lower in Nepal (Internet World Stats, 2017) than in Norway, where Instefjord and Munthe’s (2017) study is based. So, despite having high ratings for PK and CK, their TK or TPCK is rated lowly. When the finding of this study is compared against those of Instefjord and Munthe’s (2017), it alludes to the fact that the availability of technology does not necessarily result in higher TPACK in teacher educators.

Furthermore, as TPACK represents knowledge and skills required to use ICT in teaching and learning (Albion, et al., 2010), a low score in TPCK suggest that teacher educators lacked knowledge required to integrate technology in their teaching to enhance content presentation and student engagement. Without such knowledge, teacher educators are not able to demonstrate and discuss the didactic underpinning of their technological practice (Krumsvik, 2014).

Moreover, from a contextual perspective, it is only recently that policy discussion on technology use in higher education started (Government of Nepal Ministry of Education, 2015). Therefore, not all teacher educators had access to the digital tools,

training and support required to use ICT tools seamlessly in their pedagogical practices or to demonstrate how technologies are used in their practice (Laudari & Maher, 2019). So, it is common for teacher educators to feel that they lack the necessary skills to use digital tools (Laudari, 2019).

Additionally, when the mean scores in the TPACK survey, especially for the technological knowledge (TK) and related components, is read in conjunction with the results of the ICT (technology) confidence survey, it demonstrated that their confidence in using collaboration and content creation tools was low. Tools used for collaboration and content creation require advanced skills than the tools used for productivity, such as email and Microsoft Word. So, having low confidence to use those tools suggests that they had limited technological skills.

Furthermore, it is argued in the literature (e.g. Angeli & Valanides, 2013; Angeli et al., 2016; Mishra & Koehler, 2006) that for teachers to be able to teach with technologies, they need to possess technological skills, as well as competencies in how digital tools can be combined with pedagogy and content. Such knowledge is developed when explicit instruction is provided (Angeli et al., 2016; Krumsvik, 2014). As teacher educators in Nepal have limited training opportunities on the pedagogical use of technology as teachers and students (Laudari & Maher, 2019), their TK, TCK or TPCCK may have been low. Unless teacher educators receive explicit instructions on technology use in teaching and learning, it is common for them to feel underprepared to use technology (Laudari, 2019).

Conclusions and Implications

The results of this study demonstrated that while many teacher educators possessed some ICT confidence around the use of the digital tools used for information search and communication, their skills in using tools related to information creation and publication was low. Likewise, the results of the ICT confidence survey showed that the teacher educators had low confidence in using digital tools that are used for collaboration. The results of the TPACK section also showed that the teacher educators had higher skills in pedagogy and content than in the technology domain. These results are similar to that of Tondeur et. al, (2016) and Tondeur et al. (2019). In addition, they suggest that teacher educators were not confident in how they could present content using technology and suitable pedagogical approaches.

The implication of the findings (i.e. teacher educators lacking ICT competencies) is that they cannot act as competent role models for their pre-service teachers when they cannot demonstrate how technologies should be used in teaching and learning (Krumsvik, 2014). Not experiencing technology use during teacher training course means that the pre-service teachers miss out on the opportunities to experience and develop competencies required to use technology seamlessly in their future practice (Krumsvik, 2014), in specific, their technology uptake and integration in their practice.

This will, in turn, influence the educational outcome of technology use in high schools (Ping, Schellings, & Beijaard, 2018).

Therefore, teacher educators have a need to enhance their digital competencies so that they can support pre-service teachers in developing their digital competencies (Laudari, 2019). Teacher educators could enhance their digital competencies by engaging in collaborative learning (Lindqvist, 2019). Likewise, teacher education institutes and policy-making bodies need to recognise that teacher educators may lack the skills to support the development of future teachers' digital competencies by providing professional development opportunities and technical support (Laudari & Maher, 2019; Laudari, 2019).

Also, more research attention should be directed towards teacher educators' digital competencies and their digital practices. With more dialogue and evidence-based empirical studies, we believe teacher educators' digital competencies, as a field, will gain more discussion as the field is suggested to have paucity of research (e.g. see Flores, 2018; McGarr & McDonagh, 2019; Ping et al., 2018).

Future research, in fact, should consider doing ethnographic research by collecting evidence from classrooms and digital spaces to understand teacher educators' actual practice. To understand the impact of teacher educators' digital practices, data may be collected from their students as well. Likewise, national and international policies on ICT in education and the prominence of teacher educators' digital competencies and practices need to be examined.

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Appendix-1

Section 1 - About You

University: _____ Campus (if applicable) : _____

Course: _____ Year/Semester: _____

How long have you been teaching? _____

Gender: Male _____ Female _____

Do you have an Email address? Y ___ N ___

Do you have a Facebook/Twitter account? Y___ N___

Do you have a Viber/Skype/WhatsApp account? Y_____ N_____

Section 2 - ICT Confidence Survey

Please rate your confidence in using each of the following ICT application. As shown in the example, please put a cross mark (X) under the answer that best matches your confidence.

Statement	Very confident
Example: Whiteboard	X

Applications	No Confidence	Some Confidence	Confident	Very Confident
Microsoft Word				
Microsoft Power Point				
Spreadsheets (Excel)				
Graphic creation (Adobe Photoshop)				
Digital image capture (Digital Camera & Scanner)				
Email (Gmail, Outlook, Yahoo)				
Web browser (Chrome, Firefox, Safari)				
Web searching (Google, Google Scholar, Bing, etc.)				
Social networking site (Facebook, Twitter, LinkedIn, ResearchGate)				
Kindle, iTunes Books, Amazon				
Learning management system (Blackboard, Moodle, etc.)				
Online Publishing (Blogs, podcasts, YouTube)				
Ipad, Ipod, MacBook				

Section 3 – Technological Pedagogical and Content Knowledge Survey

As shown in the example, please put a cross mark (X) under the answer that best matches your opinion

Statement	Very confident
Example: I own a smart phone	X

1 - Strongly Disagree 2- Disagree 3 - Neither agree nor disagree 4 - Agree 5 - Strongly Agree

Statements	1	2	3	4	5
Technology Knowledge					
I understand the meaning of basic technological terms (e.g. operating system, wireless connection, virtual memory, etc.) and can use them appropriately.					
I can adjust computer settings such as installing software and establishing an Internet connection.					
I can use devices such as a smart phone, laptops or iPad effectively.					
I need help to troubleshoot common computer problems.*					
I can use digital classroom equipment such as projectors and smart boards.					
I can use Office programs (i.e. Word, PowerPoint, etc.) with a high level of proficiency.					
I find it challenging to create multimedia (e.g. video, web pages, etc.) using text, pictures, sound, video, and animation by myself. *					
I use collaboration tools (wiki, OneNote, Google Doc, Dropbox, etc.) when I need them.					
I can learn software that helps me complete a variety of tasks more efficiently.					
Content Knowledge					
I find it hard to express my ideas and feelings by speaking in English. *					
I can express my ideas and feelings by writing in English.					
I can read texts written in English with the correct pronunciation.					
I find it difficult to understand texts written in English.*					
I can understand the speech of a native English speaker easily.					
Pedagogical Knowledge					
I can use teaching methods and techniques that are appropriate for a learning environment.					
I can design a learning experience that is appropriate for the level of students.					
I can support students' learning in accordance with their physical, mental, emotional, social, and cultural differences.					

I can collaborate with school stakeholders (students, parents, teachers, etc.) to support students' learning.					
I can reflect the experiences that I gain from professional development programs to my teaching process.					
I can support students' out-of-class work to facilitate their self-regulated learning.					
Pedagogical Content Knowledge					
I can manage a classroom learning environment.					
I can evaluate students' learning processes.					
I can use appropriate teaching methods and techniques to support students in developing their language skills.					
I can prepare curricular activities that develop students' language skills.					
I can adapt a lesson plan in accordance with students' language skill levels.					
Technological Content Knowledge					
I can take advantage of multimedia (e.g. video, slideshow, etc.) to express my ideas about various topics in English.					
I can benefit from using technology (e.g. web conferencing and discussion forums) to contribute at a distance to multilingual communities.					
I can use collaboration tools (e.g. Second Life, wiki, etc.) to work collaboratively with other persons.					
Technological Pedagogical Knowledge					
I can meet students' individualized needs by using information technologies.					
I can lead students to use information technologies legally, ethically, safely, and with respect to copyrights.					
I can support students as they use technology such as virtual discussion platforms to develop their higher order thinking abilities.					
I can manage the classroom-learning environment while using technology in the class.					
I can decide when technology would benefit my teaching of specific English curricular standards.					
I can design learning materials by using technology that supports students' language learning.					
I can use multimedia such as videos and websites to support students' language learning.					
Technological Pedagogical Content Knowledge					
I can use collaboration tools (e.g. wiki, 3D virtual environments, etc.) to support students' language learning.					
I can support students as they use technology to support their development of language skills in an independent manner.					

I can use Web 2.0 tools (animation tools, digital story tools, etc.) to develop students' language skills.					
I can support my professional development by using technological tools and resources to continuously improve the language teaching process					

Contributors

Dr Suman Laudari is a learning design and technology specialists at the University of Technology Sydney (UTS), Australia. His research interests include digital competencies, TPACK, digital leadership, instructional design, and digital competencies in higher education. Suman designs and delivers evidence-based resources & training to promote student-centred approaches to teaching with technology.

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