Teachers' enactment of ICT affordances in rural ELT classrooms: A Q methodological study from Nepal[1]

Tirtharaj Dhungana[2*]

2 Department of Language Education, Kathmandu University School of Education, Lalitpur, Nepal

Received: 14 February 2026 | **Revised:** 08 June 2026 | **Accepted:** 08 June 2026

ABSTRACT

Information and Communication Technology (ICT) affordances offer various pedagogical possibilities for English language teaching (ELT) worldwide. This Q methodology study explores divergent viewpoints among English teachers about how they enact ICT affordances in secondary classrooms in rural Nepal. Q-sorting was conducted with 30 secondary-level English teachers from Grades 9 to 12 in three rural districts of Nepal. Participants sorted 45 statements on ICT use in rural ELT classrooms into a forced-distribution grid. Each Q sort was followed by a post-sort interview, and all Q sorts were analysed using Brown centroid factor analysis with varimax rotation. The findings reveal three divergent viewpoints of teachers on ICT affordances' enactment in the rural ELT context: (1) practical and accessible ICT, (2) collaborative and interactive ICT, and (3) adaptive and content-driven ICT. The viewpoints also highlight barriers to ICT access and use that continue to hinder the actualisation of the affordances identified in the study. The findings are discussed in light of the literature on ICT affordances in ELT. The findings imply that offline multimodal mobile tools, collaborative ICT platforms, and authentic learning resources can scaffold vocabulary, pronunciation, and listening skills among other language skills in rural ELT settings. In this study, both online and offline mobile-based, multimodal, and collaborative affordances of ICT tools and resources enable English teachers in rural contexts to ensure authentic and meaningful language learning experiences. Stakeholders should consider potential barriers in their infrastructural, technological, and pedagogical contexts before deciding to utilise ICT affordances to deliver effective ICT-based English language instruction.

KEYWORDS: Technology enactment; Secondary ELT; Q methodology; Affordances theory; Developing contexts

DOI: https://doi.org/10.29329/pedper.2026.175 | Vol. 5, No. 2 (2026) | pp. 382-405

1. Introduction

The integration of Information and Communication Technology (ICT) in English Language Teaching (ELT) has been a central concern in pedagogical and academic contexts worldwide (Abel et al., 2022; Hasumi & Chiu, 2024). Yet most previous studies have focused their attention on resource-rich urban contexts, overlooking the realities of ICT integration inherent in rural ELT classrooms. For instance, in developing countries with limited ICT infrastructure and resources, such as Nepal, ICT integration

[1] This article is derived from the author's MPhil dissertation, "Teachers' conceptualisations of using ICT affordances in English language teaching: A Q methodological study", submitted to Kathmandu University School of Education, Nepal, in February 2025.

Open access under CC BY 4.0 (https://creativecommons.org/licenses/by/4.0/)
Corresponding author: tirtharajdhungana84@gmail.com

remains in its infancy (Poudel, 2022; Rimal et al., 2025). Likewise, little has been explored on how a diverse range of ICT tools and resources afford possibilities for language learning and teaching in these pedagogical contexts. Despite the provisions made in the national curriculum frameworks to integrate ICT in the teaching of the four language skills (listening, speaking, reading, and writing) and aspects (such as grammar, vocabulary, and pronunciation) at the secondary level (Grades 9 to 12) (e.g., Ministry of Education, Science & Technology, 2019), such provisions are observed only in a few urban classroom contexts with sufficient digital resources and ICT-friendly teachers (Rana et al., 2020). Rural schools in developing contexts like Nepal face severe infrastructural challenges and deficits in technological skills (Rimal et al., 2025; Thapa & Sein, 2018). These disparities highlight the need to examine how teachers enact the ICT affordances inherent in rural ELT contexts.

Earlier studies have explored ICT integration realities in the ELT domain from diverse lenses, such as teacher experience or practices with ICT (K. R. Joshi & Poudel, 2019; Paudel, 2020; Saud & Laudari, 2023), integration, usage or impact of ICT (Bhandari & Bhandari, 2024; Bohara, 2024; Ghimire, 2022; Giri & Rana, 2022; Jora, 2019; Khadka, 2023; Shrestha, 2025), opportunities and challenges of ICT (K. R. Joshi & Ayer, 2024; Katel, 2024; Poudel, 2022), and perceptions or perspectives towards using ICT (Bhandari, 2020; R. Singh, 2019). Yet, these studies rely mainly on Likert-type questionnaires and (semi-structured) interviews. While valuable, none of these studies have utilised a holistic methodology such as Q and theoretical bases of established frameworks such as Gibson's (1977) affordances theory and F. D. Davis's (1989) Technology Acceptance Model (TAM) to illuminate how teachers enact the inherent ICT affordances in secondary ELT classrooms of Nepal.

To address these gaps, the current study employs Q methodology (hereafter referred to as Q) to capture participants' shared viewpoints through quantitative Q-sort rankings and post-sort interviews in a holistic, interpretive manner (Brown, 1980; Stephenson, 1953). Researchers prefer Q because it balances statistical factor analysis with qualitative data (Thumvichit, 2024). The study further adapts the conceptual ideas of Gibson's (1977) affordances theory and F. D. Davis's (1989) TAM to examine the possibilities of ICT tools and resources as actualised (or accepted) in rural ELT ecology. In particular, these theories guided the development of the Q sample and the interpretation of the identified factors. Moreover, they helped examine the actionable properties of ICT tools and resources, considering how useful and easy to use they were for teachers in rural ELT contexts. Against this backdrop, the study answers the research question: How do secondary-level English language teachers enact the affordances of ICT in rural ELT contexts?

2. Literature Review

In this study, theoretical insights from Gibson's (1977) affordances theory and F. D. Davis's (1989) TAM guided the identification of relevant concourse and the development of Q sample statements. A detailed theoretical exposition of these frameworks is beyond the scope of this study; instead, the literature review draws on studies that have employed these frameworks empirically in the domain of ICT affordances usage in ELT pedagogy.

2.1. ICT Affordances in ELT

Since Gibson's (1977) introduction of the concept, scholars have interpreted affordance in various ways to address its limitations and extend its applicability to broader pedagogical contexts (e.g., J. L. Davis, 2020; Moll et al., 2022). In the domain of language learning, citing van Lier (2000, 2004, 2008), Menezes (2011) describes how van Lier advanced the concept of affordances as a framework to comprehend the ways learners interact with the language learning environment, representing "a turn in the way we understand how languages are learned" (p. 60). Drawing upon Gibson (1977), van Lier

(2004) considered affordances as the emerging action potential of certain objects, surfaces, and mediums for the person within a certain physical and social world. Van Lier's (2004) conceptualisation presents affordances as relational and interactive, including features such as opportunity, immediacy, and possibility (Menezes, 2011) within specific language-learning environments. Building on this conceptualisation, the present study considers ICT affordances as actualisations of digital tools and resources by teachers and students to achieve their pedagogical goals in rural ELT contexts.

A growing body of ICT affordances research highlights the emerging potential or affordances of ICT for language learning, revealing that these technologies enhance learner autonomy, engagement, collaboration, and authenticity. Early conceptual contributions, such as Churchill et al.'s (2016) cyclical RASE (Resources, Activity, Support, and Evaluation) framework, demonstrated how resources, activity, support, and evaluation cycle to facilitate language learning in both independent and interactive contexts authentically and autonomously. More recently, Reinders and Chong (2024) proposed a conceptual CALL framework to facilitate formal and informal language instruction through offline and accessible multimodal learning tools and resources. On a similar note, Parsons et al. (2016) identified the multimodal and creative affordances of mobile phones for carrying out pedagogical activities in school classroom contexts and designing activities for a postgraduate course. Complementing these findings, Xue and Churchill (2019, 2022) highlighted several motivating and transformative potentials of mobile social media, such as WeChat, for both teachers and students of all levels, outlining affordances that include resource sharing, collaboration, evaluation, feedback, administration, and content generation for instructional purposes.

Other similar studies have explored how actualisation of ICT affordances varied across diverse pedagogical contexts. For example, Qin and Wei (2021) identified that the actualisation of technological affordances (such as the use of offline and online ICT tools) is fluid and varies according to diverse students' language-learning goals and contexts. Likewise, the multimodal, collaborative, and accessible affordances available within augmented reality (AR) devices and mobile apps (e.g., dictionaries) facilitate collaborative EFL writing and enhance vocabulary and pronunciation practice (Ilic, 2022; Xu, 2022). Similarly, McMinn (2023) outlined the metacognitive and structured language-learning potential of generative AI (GAI) tools for problem-solving and feedback.

In the Nepali context, Shrestha (2023) identified the technological and educational affordances of ICT in emergency ELT contexts for enhancing engaging and varied learning experiences for EFL learners using various tools and artefacts, such as Zoom and Mentimeter. Furthermore, examining the self-initiated, perceived, and actualised affordances of ICT training, Rana (2024) found that ICT tools were useful for teachers' professional growth and motivated students to learn the English language in rural primary EFL contexts. From an affordances theory perspective, these studies offer significant insights into the action potentials of ICT tools and their enactment in diverse ELT contexts, helping the researcher draft items for the Q sample.

2.2. Technology Acceptance Model (TAM) in ELT

Another model adapted in this study was F. D. Davis's (1989) TAM, which assisted the researcher in generating concourse for the study. TAM was initially developed to describe user acceptance of computer technology (Tuzahra et al., 2021). TAM comprises several constructs, each with a distinct role, such as perceived usefulness, perceived ease of use, behavioural intention to use, attitude toward using, and actual system use. Of these, only Perceived Usefulness (PU) and Perceived Ease of Use (PEU) were adapted in this study. Within TAM, PU refers to the extent to which a system enhances job performance, while PEU signifies the extent to which a system is effortless to use (F. D.

Davis, 1989, p. 320). These constructs were selected for their compatibility with affordances theory and for developing the methodological instruments, particularly for the initial drafting of the items in the Q sample.

In the domain of ELT, studies carried out using TAM and its subsequent models primarily noted the role of Mobile-Assisted Language Learning (MALL) or ICT-based instruction to enhance students' engagement, linguistic interactivity, and critical thinking skills (Alharbi, 2023; Rahman et al., 2021), as well as the benefits of mobile messaging apps in professional development (Dahya et al., 2019). Additionally, these studies highlighted the reality of ICT adoption: Ranjbaran et al. (2023) argued that carefully selected instructional ICT tools are less likely to be rejected and help mitigate implementation challenges. Likewise, Arif and Handayani (2022) indicated that students adopt ICT when they consider the tools to be both useful and easy to use for language learning. In the Nepali context, Parajuli (2024) emphasised the role of PU and PEU in technology acceptance, specifically the use of smartphones, in facilitating teachers' professional growth through networking and collaboration activities.

The discussion above provided brief but significant theoretical and empirical insights through the lens of Gibson's (1977) affordances theory and F. D. Davis's (1989) TAM. However, as identified in the previous section, the studies reviewed above failed to uncover the complex realities of the potential of using ICT tools in rural ELT contexts. Only a few studies drawing on affordances theory or TAM (e.g., Parajuli, 2024; Rana, 2024; Shrestha, 2023) have examined ICT in English language teaching and learning in rural areas of Nepal. Therefore, this study aims to fill the contextual gap of ICT integration in rural ELT and learning using the following methodology.

3. Methodology

This study employs Stephenson's Q methodology to examine English teachers' subjective viewpoints on enacting ICT affordances in Nepal's rural ELT context. William Stephenson introduced Q methodology in 1935 in a letter to Nature (Stephenson, 1935). Q methodology is a mixed research method that combines quantitative factor analysis and qualitative interviews to capture participants' subjective and self-referential viewpoints (Ramlo, 2016). The methodological steps included in this study were: developing the Q sample, obtaining the P sample, conducting Q sorting and post-sort interviews, analysing the data, and interpreting the results. Each of these steps is discussed in the following sections.

3.1. Developing the Q Sample

The initial step in Q begins with designing a data collection instrument called the Q sample, which is generated from a pool of all possible statements related to the topic under investigation. This pool, known as the concourse, reflects a broad spectrum of statements gathered from sources such as academic literature, newspapers, policy documents, focus group discussions (FGD), and interviews. Brown (1980) defines concourse as "the flow of communicability surrounding any topic" (p. 94). In Q literature, the Q sample is often obtained by merging the ready-made and naturalistic sampling sources. The readily available information in the form of secondary sources is referred to as ready-made sampling. In contrast, first-hand data collected from FGDs and participant interviews are referred to as naturalistic sampling (McKeown & Thomas, 2013).

In this study, the Q sample used a hybrid sampling approach, drawing on viewpoints from FGDs with English teachers and insights gained from a review of the academic literature. In the initial phase, the researcher conducted two FGDs, each with three to five community school English language teachers teaching at the secondary level. Before the FGDs, the researcher devised several prompts based on

themes such as rural English teachers' current ICT practices, the usability of mobile devices, collaborative and other ICT tools, and the pedagogical value of authentic ICT materials, drawing on affordances theory and TAM (see Appendix A). Subsequently, studies that drew on Gibson's (1977) affordances theory were consulted (e.g., Churchill et al., 2016; Ilic, 2022; McMinn, 2023; Parsons et al., 2016; Qin & Wei, 2021; Rana, 2024; Reinders & Chong, 2024; Tafazoli, 2021; Xue & Churchill, 2019, 2022; Xu, 2022). Initially, the researcher compiled a sample of 52 statements from the academic literature and FGD insights. These initial statements were refined into a set of 45 statements by consulting with experts, adhering to the Q sample design guidelines of Watts and Stenner (2012), and piloting with relevant participants.

Expert consultation involved three assistant professors specialising in ICT in education, whose feedback supported the refinement of the Q sample by ensuring statement relevance, clarity, and the elimination of redundancy. Watts and Stenner's (2012) guidelines further helped the researcher refine the statements by checking whether each conveys a single idea, avoids negatives or qualifications, is similar in length, and uses a consistent prefix. Finally, the researcher piloted the Q sample with three secondary English teachers (two males and one female), in accordance with Hertzog's (2008) recommendation for a pilot sample of 10% or fewer of the main sample (N = 30). Piloting helped remove highly correlated and overlapping statements that participants found less comprehensible or difficult to sort.

3.2. Obtaining the P Sample

In this study, participants were selected purposefully, considering alignment with the theoretical and strategic sampling approaches of Q (McKeown & Thomas, 2013; Watts & Stenner, 2012). Participants who had received basic ICT training and could offer significant insights into integrating ICT in rural ELT classrooms were selected as the P sample in this study. For this reason, the researcher consulted unpublished Teacher Personnel Records from the Education Development and Coordination Units (EDCUs) of Taplejung, Dhankuta, and Panchthar districts. These records revealed 258 secondary-level English teachers. Because these records did not include details on ICT training and ICT integration in ELT practices, the researcher consulted an INGO database that maintained records of ICT-trained teachers (Human Practice Foundation, 2024). Cross-referencing the INGO database with EDCUs' records revealed that 112 out of 258 (43.41%) had completed basic ICT training. From this group, 30 teachers – 10 from each of the three districts – were identified as actively integrating ICT into their ELT classrooms and therefore constituted the P sample. Table 1 below offers an overview of the P sample included in this study.

Table 1 ***Participants' demographics (N = 30)***

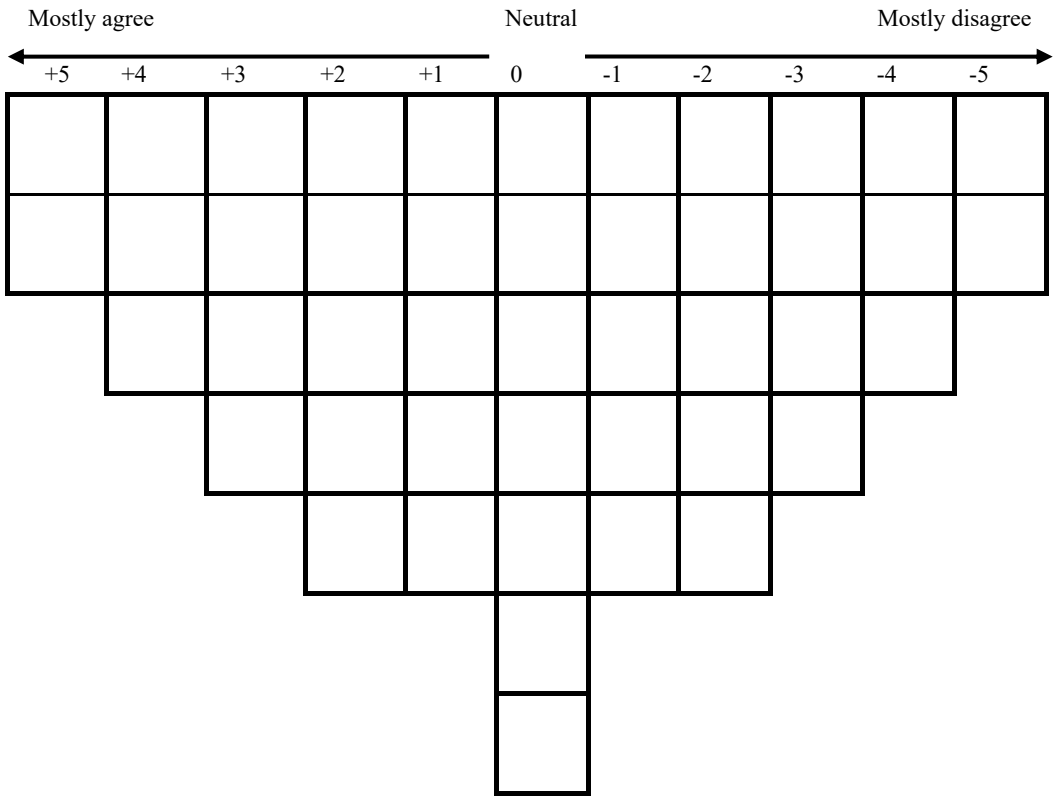
Category	Subcategory	Frequency (n)	Percentage (%)
Gender	Male	26	86.7
	Female	4	13.3
Academic Qualification	M.Ed. in English	20	66.7
	M.A. in English (only)	4	13.3
	B.Ed. & M.A. in English	2	6.7
	M.Ed. & M.A. in English	2	6.7

Category	Subcategory	Frequency (n)	Percentage (%)
	M.A. & M.Phil. in English	1	3.3
	B.Ed. in English (only)	1	3.3
Teaching Experience	5 years or below	7	23.3
	6–10 years	8	26.7
	11–15 years	5	16.7
	More than 15 years	10	33.3
Districts	Taplejung	10	33.3
	Dhankuta	10	33.3
	Panchthar	10	33.3

3.3. Q Sorting and Post-Sort Interviews

In Q studies, data are primarily collected through a card-arranging procedure called Q sorting, followed by a post-sort interview with each participant. During the Q sorting process in this study, participants were requested to arrange the items (printed on 2 × 2-inch cards) from the Q sample onto a predetermined grid, assigning values ranging from −5 (mostly disagree) to +5 (mostly agree), with 0 (neutral) (see Figure 1). Each participant received the cards in random order; the grid required most statements to be placed in the middle (near-neutral) columns and only a few at the extremes (+5 and −5). During the sorting procedure, participants could also rearrange the cards if they changed their minds. Soon after they completed the Q-sorting process, the researcher conducted an interview based on the statements that participants placed at the furthest extremes of the Q-sort grid. A semi-structured interview, with some questions prepared beforehand, was conducted with each participant for 10 to 20 minutes.

Figure 1 ***An empty Q-sort grid with space for 45 Q statements***



3.4. Data Analysis and Interpretation

A by-person factor analysis was conducted to group participants' shared viewpoints based on their Q-sort rankings. Each participant's Q-sort rankings were entered into the Ken-Q Analysis Desktop Edition (KADE) (Banasick, 2019) – a software package designed for Q analysis. The researcher adopted two baseline criteria to retain the factors for interpretation in this study: (1) factors with eigenvalues greater than 1.00 (McKeown & Thomas, 2013); and (2) factors with at least three significant Q sorts (i.e., sorts needed to load at 0.60 or higher on one factor and below 0.36 on any other factor). Brown centroid factor extraction with varimax rotation and limited manual rotations further revealed three meaningful factors.

Based on the flagging criterion of a loading of ≥ 0.60 on one factor and ≤ 0.36 on the others, 11 Q sorts (37% of the total) were identified as significantly associated with one of the three factors (see Table 2). The three extracted factors represented three distinct viewpoints, collectively accounting for 62% of the total variance. Table 3 summarises the factor characteristics, including eigenvalues, variance explained, number of defining sorts, and interpretive labels. Factor 1 correlated most strongly with Factor 3 (r = 0.60), followed by Factor 2 (r = 0.49); Factor 2 and Factor 3 showed the weakest correlation (r = 0.48). Each factor was interpreted holistically using a narrative approach (Watts & Stenner, 2012), drawing on factor arrays (see Appendix B) and participants' remarks from post-sort interviews. To illustrate the viewpoints characterising each factor, Table 4 presents the highest-ranked (+5/+4) and lowest-ranked (−5/−4) statements.

Table 2 ***Factor loadings***

Q-sort	Factor 1	Factor 2	Factor 3
P1	0.2715	0.6657 X	0.1580
P2	0.7528	0.4284	0.3456
P3	0.2784	0.2790	0.6020 X
P4	0.1401	0.6824 X	0.2251
P5	0.1664	0.6744	0.3944
P6	0.1699	0.6027 X	0.3012
P7	0.3001	0.2997	0.6226 X
P8	0.3313	0.1570	0.2874
P9	0.3840	0.0391	0.5970
P10	0.2654	0.3914	0.6623
P11	0.4611	0.1963	0.3340
P12	0.1943	0.0722	0.7253 X
P13	0.5186	0.4616	0.4174
P14	0.6130	0.3582	0.3814
P15	0.6581 X	0.3160	0.2256
P16	0.5938	0.5688	0.2261
P17	0.8007 X	0.2528	0.3204
P18	0.6876	0.2488	0.4059
P19	0.6691 X	0.2236	0.2957
P20	0.6825	0.0930	0.6252
P21	0.8207 X	0.2765	0.2819
P22	0.6445	0.3768	0.3956
P23	0.6522 X	-0.0763	0.3560
P24	0.4541	0.1660	0.5137
P25	0.6869	0.2148	0.4353

Q-sort	Factor 1	Factor 2	Factor 3
P26	0.6739	0.4627	0.3710
P27	0.2245	0.4307	0.1847
P28	0.5990	0.2802	0.3940
P29	0.6084	0.2854	0.4268
P30	0.6472	0.2121	0.6112

Note. X indicates a defining Q sort with statistical significance ($p < .05$).

Table 3 ***Summary of extracted factors***

Factor	Label	Eigenvalue	Variance Explained (%)	Defining Q Sorts (n)	Description
Factor 1	Practical and Accessible ICT Integration	8.65	29	5	Emphasises the use of mobile, multimodal, and authentic tools to build vocabulary and pronunciation.
Factor 2	Collaborative and Interactive ICT Integration	4.17	14	3	Highlights collaborative online tools and gamified apps to foster peer feedback and speaking fluency.
Factor 3	Adaptive and Content-Driven ICT Integration	5.67	19	3	Focuses on authentic resources, adaptive technology use, and contextualised language learning.

Note. The three factors collectively explained 62% of the total study variance.

Table 4 ***Key statements per factor: Highest- (+5/+4) and lowest-ranked (−5/−4) items***

S.N.	Statement	Score
	Factor 1: Practical and accessible ICT integration	
3	Mobile apps with audio recording and playback features might be useful tools for assessing student listening and speaking skills.	+5
31	Multimedia aids like PowerPoint presentations displayed in the classroom can facilitate vocabulary learning and develop other language skills.	+5
17	The initial set-up of online communication platforms for teaching may require some investment of time and technical skills.	+4
39	A mobile dictionary with offline pronunciation is a useful resource for students to practice pronunciation and develop vocabulary.	+4
42	Offline functionality in mobile apps can be beneficial in areas with poor or no internet access for learning the English language.	+4

S.N.	Statement	Score
20	School administrations and parents should start restricting mobile apps for language learning purposes.	−5
27	Unequal access to e-devices and the Internet poses minimal challenges for mobile learning.	−5
11	Students with limited access to ICT can still apply and enhance the digital skills they acquire in school.	−4
35	Online communication tools are complex and unsuitable for my English language teaching.	−4
38	I am comfortable with assessing students' online collaborative work despite the issues of ICT access and technical skills.	−4
	Factor 2: Collaborative and interactive ICT integration	
29	Collaborative online activities can enhance students' English-speaking skills when discussing with peers across the globe.	+5
31	Multimedia aids like PowerPoint presentations displayed in the classroom can facilitate vocabulary learning and develop other language skills.	+5
23	Online collaborative tools support students in developing project-based skills and interpersonal skills as envisioned in the curriculum.	+4
25	Collaborative writing activities can improve editing and revision skills through peer feedback.	+4
40	Educational games can make grammar practice more engaging, potentially increasing motivation.	+4
11	Students with limited access to ICT can still apply and enhance the digital skills they acquire in school.	−5
20	School administrations and parents should start restricting mobile apps for language learning purposes.	−5
14	Government support for ICT resources and authentic materials has minimal influence on my decision to use them.	−4
27	Unequal access to e-devices and the Internet poses minimal challenges for mobile learning.	−4
34	Limited access to technology and the internet presents only minor issues in incorporating authentic materials creatively in the classroom.	−4
	Factor 3: Adaptive and content-driven ICT integration	
32	Exposing students to authentic texts like news articles, blog posts, or online articles may be beneficial for developing reading comprehension skills.	+5
39	A mobile dictionary with offline pronunciation is a useful resource for students to practice pronunciation and develop vocabulary.	+5

S.N.	Statement	Score
9	The variety of features on mobile devices distracts and hinders focus during class activities.	+4
18	Software like E-Paath and Google Classroom might be useful for assessing multiple aspects of students' English language skills.	+4
30	Online communication tools may vary in suitability depending on students' language proficiency levels.	+4
4	It is better to use other means of communication tools in rural ELT contexts instead of modern ICT and internet connectivity.	−5
35	Online communication tools are complex and unsuitable for my English language teaching.	−5
1	I am confident in handling technical difficulties during online collaborative activities.	−4
28	Integrating email and internet tools is a great way for introverted students to develop digital literacy and interpersonal skills.	−4
38	I am comfortable with assessing students' online collaborative work despite the issues of ICT access and technical skills.	−4

Note. S.N. = statement number as listed in Appendix B. Each factor presents two statements ranked at +5, three at +4, two at −5, and three at −4, reflecting the forced-distribution grid constraints (Figure 1).

4. Results

4.1. Factor 1: Practical and Accessible ICT Integration

Five participants – four males and one female – were significantly associated with this factor. Their teaching experience varied; however, on average, they had 11.4 years of teaching English in rural ELT contexts. All participants held an M.Ed. in English, and one also held an additional M.A. in English. Factor 1 had an eigenvalue of 8.65 and explained 29% of the study's variance.

In this viewpoint, teachers acted upon various mobile, multimodal, and authentic affordances of ICT to facilitate ELT despite some infrastructural and technological challenges. For example, tools such as mobile dictionaries, chat platforms, and audio applications helped teachers build vocabulary, assess listening, and develop speaking fluency (39, +4; 3, +5; 10, +2). As P19 noted, “Mobile apps correct students’ pronunciation and enhance speaking and listening skills through continuous feedback.”

The Q sorts also revealed that teachers utilised different multimodal tools and resources such as PowerPoint slides, educational games and apps, and other audio-visual resources available on platforms like YouTube in their ELT (31, +5; 40, +3; 7, +2). In this regard, P19 emphasised, “PowerPoint slides with visuals attract students, making it easier to teach language functions like directions.” Likewise, P15 commented, “Students exposed to technology early benefit from poems and rhymes, enhancing vocabulary, confidence, and competence.” Teachers belonging to this factor also valued the usefulness of authentic ICT resources such as native speakers’ speech, texts, interviews, and documentaries to offer diverse listening experiences and contextualised grammar lessons (36, +2; 6, +3; 37, +1). P23 reflected, “Authentic materials help develop fluency and necessary phonological features, improving spoken language skills.”

However, despite acknowledging the benefits of offline tools and integrating ICT for ELT (42, +4; 12, +3), participants in this factor also recognised challenges such as limited and unequal ICT access, and restricted opportunities to practice digital skills at home and at school (11, −4; 38, −4; 27, −5; 20, −5) when navigating with ICT tools in rural contexts. Highlighting these constraints, P21 noted, "Students lack ICT devices and necessary technical skills, making these activities difficult in my classroom." Similarly, P17 remarked, "Lack of training and infrastructure creates barriers to utilising ICT affordances effectively."

4.2. Factor 2: Collaborative and Interactive ICT Integration

Three participants – two males and one female – were significantly associated with this factor. Their teaching experience varied; however, on average, they had 17.3 years of teaching English in rural ELT contexts. All participants held an M.Ed. in English. Factor 2 had an eigenvalue of 4.17, explaining 14% of the variance in the study.

Because the sorters' viewpoints in this group aligned somewhat with those of Factor 1, they expressed similar views on the engaging potential of multimodal ICT tools, despite infrastructural barriers. However, unlike Factor 1, participants in this group acknowledged the collaborative and interactive potentials of ICT (such as PowerPoint, collaborative online writing platforms, and mobile applications) for diverse language learning and instructional purposes. While teachers seemed to have enacted the multimodal and offline nature of ICT for optimising resources for their instruction, akin to Factor 1 (31, +5; 36, +3), they widely acknowledged the collaborative online and gamified tools for speaking fluency, learner engagement, and enhancing motivation (29, +5; 40, +4).

For example, highlighting the role of collaborative ICT tools, P1 stated, "Online activities allow students to share ideas and learn native speakers' pronunciation, thereby supporting the development of speaking skills, among other things." Likewise, participants in this group agreed that collaborative tools foster students' writing skills and help them develop interpersonal skills through peer feedback features of online sites, offline platforms like E-Paath, and captioned writing tutorials (25, +4; 23, +4; 24, +3). In this regard, P4 noted, "Writing tutorials with captions help students note ideas from videos, which they can later use in writing practice."

To some extent, teachers in this group also acknowledged that integrating online discussions, teacher support groups, and blended synchronous-asynchronous instruction via web and LMS platforms can foster students' critical thinking, support rubric design and assessment, and address diverse learner needs and interests (8, +2; 15, +2; 21, +2). However, setting up these ICT tools required teachers to invest time and master the required technical skills (17, +3). As P6 explained, "Keeping up with ICT advancements is challenging, especially as an experienced user adjusting to new software and functions." Like Factor 1, Factor 2 teachers also identified the issue of ICT access and its usage due to the inability of both teachers and students to implement the acquired digital skills creatively at home and at school (11, −5; 34, −4). Highlighting this issue, P1 noted, "Limited ICT access restricts students' potential by limiting practice opportunities for language skills." Like Factor 1, they also strongly rejected restricting mobile apps for language learning (20, −5). As P4 argued, "Parents and school administration should allow these devices since they are important tools for language learning if used judiciously." Additionally, teachers disagreed with the idea that government support has minimal influence on utilising digital resources effectively in their ELT classroom (14, −4).

4.3. Factor 3: Adaptive and Content-Driven ICT Integration

Three participants (two males and one female) were significantly associated with this factor. On average, participants had 11 years of experience teaching English in rural contexts. Two participants

held an M.Ed. in English, while one held an M.A. and an M.Phil. in English. Factor 3 had an eigenvalue of 5.67, explaining 19% of the variance in the study.

Participants in this group primarily focused on adaptive mobile tools and resources that deliver authentic content, support diverse language skills, and enable assessment in resource-constrained settings. For instance, participants acknowledged the role of a mobile dictionary as a useful resource for helping students practice pronunciation and vocabulary (39, +5). Likewise, they argued that exposing students to authentic texts, such as news articles and blog posts, helps develop their reading comprehension (32, +5). In this connection, P7 noted, “Offline dictionaries and apps are valuable for students without internet access at home, allowing them to practice pronunciation and other language skills.”

Participants loading on this factor also considered the usefulness of content-oriented software such as E-Paath and Google Classroom for assessing multiple aspects of students’ English language skills (18, +4). While participants doubted the suitability of online communication tools (30, +4), they found some features, such as YouTube’s playback features, useful for improving students' listening and speaking skills (44, +3). Meanwhile, they found mobile apps' offline functionality, including audio recording and playback features, useful for assessing students’ listening and speaking skills in areas with no or poor internet access (3, +3; 42, +2). As P12 remarked, “Offline content, once downloaded, lets students study easily, helping with vocabulary and pronunciation.”

As participants disagreed with favouring traditional ICT tools over modern ICT tools and resources (4, −5), they also rejected the idea that online communication tools are complex and unsuitable for ELT (35, −5). As P3 put it, “Online communication tools aren’t complex once basics are known. Available resources make these tools meaningful and suitable for ELT.” For this reason, participants might have considered authentic materials, English media, social media discussions, and educational games as contextual and engaging ways to teach grammar and vocabulary to some extent (6, 7, 33, and 40, all +2). As with the previous factors, participants in this viewpoint noted that the issue of limited and unequal access to ICT hinders students from practising digital skills (11, −3) and poses challenges for their learning (27, −3).

5. Discussion

The objective of this study was to uncover the viewpoints of secondary-level English language teachers regarding the use and enactment of ICT affordances in rural ELT contexts. The study revealed that English teachers enacted various affordances of ICT inherent in their rural instructional contexts. As noted in the earlier section, the findings uncovered three distinct viewpoints of teachers regarding the enactment of ICT affordances: practical and accessible ICT, collaborative and interactive ICT, and adaptive and content-driven ICT. The groups of English teachers representing these viewpoints perceived some of the ICT tools and resources as useful; however, they also found such tools and resources to be complex and difficult due to various infrastructural, technological, and pedagogical issues inherent in their rural ELT contexts.

The first factor reflects the viewpoints of English teachers who enacted ICT affordances through mobile, multimodal, and authentic digital tools and resources in rural ELT classrooms. For example, participants in this factor strongly endorsed the potential of mobile and multimodal tools, as well as their implied features, for building vocabulary and assessing learners. These findings corroborate the findings of Parajuli et al. (2024), who identified smartphones as flexible teaching tools for vocabulary development in classrooms with limited ICT infrastructures. Furthermore, the findings align with Metruk (2024), who found that learners have a positive attitude towards mobile learning to enhance

their L2 pronunciation, and Kayra (2024), who emphasised the effectiveness of gamified apps with audio-visual elements for pronunciation and vocabulary practice. This factor shows that authentic materials, in the form of multimodal resources, help develop language skills and grammar and motivate EFL learners. These findings align with Reinders and Chong (2024), who emphasised that technology-based multimodal resources provide EFL learners with access to target language materials. In this line, Widyaningrum et al. (2024) also noted that digital multimodal media, like PowerPoint presentations, films, and songs, effectively enhance English language learning.

Participants associated with Factor 2 considered using multimodal, collaborative, and interactive potentials of ICT to enhance students' diverse language skills, aspects, and interpersonal skills in engaging and motivating ways. Closely correlating with the findings of Factor 1, participants of this factor acknowledged that multimedia aids, such as PowerPoint presentations, facilitate vocabulary learning and the development of listening, speaking, reading, and writing skills (Meteab & Alquraishy, 2021; Saleem et al., 2020; Vanisree et al., 2024). Another finding was that online collaborative tools and activities can facilitate project work and peer interaction, fostering students' writing and speaking skills in rural contexts (23, +4; 25, +4; 29, +5). This finding aligns with Butarbutar et al. (2023) and Demissie et al. (2025), who found that collaborative online learning environments, such as Google Docs and other shared platforms, enhance students' writing and speaking skills through features inherent in these tools. Other scholars, such as Al-Yafaei and Mudhsh (2023), Fitriani and Irawati (2024), and Yingxin et al. (2024), have further confirmed these findings, emphasising the beneficial role of collaborative platforms in improving students' writing and speaking skills.

Participants associated with Factor 3 placed greater emphasis on the diverse features of mobile apps and digital learning solutions, as well as a variety of authentic texts for developing and assessing language skills and aspects. The usefulness of a mobile dictionary for developing pronunciation and vocabulary knowledge aligns with findings from Dan et al. (2024) and Maulida et al. (2023), who found mobile dictionaries effective in improving students' pronunciation skills and enhancing both receptive and productive vocabulary knowledge. This finding reflects the potential of offline mobile apps to develop and assess students' listening and speaking skills in rural contexts, as previous studies have emphasised (A. Raj & Tomy, 2024; K. A. Raj & Baisel, 2024). Another significant finding was that exposing students to multimodal authentic texts benefits the development of reading comprehension, among other language skills and aspects (Anggraini, 2024; Mukhalladun et al., 2020; Sayı, 2024). To address the limitations of online tools and mobile app distractions, participants endorsed software such as E-Paath, YouTube, and Google Classroom as effective for assessing and enhancing English language skills (Albashtawi & Bataineh, 2020; Ghimire, 2022; Nanthinii, 2020; Tiwari, 2024).

The factors discussed above highlighted distinct viewpoints among English teachers about enacting the positive affordances of ICT in diverse rural ELT contexts. Interestingly, however, all three factors revealed similar disabling conditions or barriers to actualising the affordances identified in those factors. These include infrastructural, technological, and pedagogical barriers such as unequal access to digital devices and the internet, limited government and institutional support, and a lack of technological skills or confidence in using online collaborative tools for ELT and assessment, among others. These barriers are explicitly noted in previous studies (Gyawali, 2023; B. M. Joshi & Khatiwada, 2024; Lamichhane, 2025; Paudel, 2022; R. B. Singh, 2024), highlighting issues such as a lack of technical knowledge and skills among teachers, limited access to digital devices, unreliable internet access and connectivity, inadequate ICT infrastructure, a lack of technical support, and inadequate monitoring of ICT implementation. Although this study did not directly investigate the relationship

between PU and PEU, the findings suggest that teachers were willing to engage with ICT tools when they perceived clear pedagogical benefits for language teaching and learning, despite the challenges involved in using them.

6. Implications

The findings reported in this study have several pedagogical and theoretical implications for secondary-level rural ELT contexts. First, the study confirms the potential of mobile apps and multimedia resources (audio, video, text, etc.) to support and assess listening, speaking, reading, and writing skills, as well as vocabulary and pronunciation. Educational games and offline apps, with their offline and multimodal capabilities, help learners acquire English language skills in engaging and motivating ways. However, using them in ELT classrooms requires practitioners to consider these tools judiciously, given their distracting influence on students during language-learning activities. In practice, teachers can manage such distractions by establishing clear device-use protocols before activities begin, assigning focused task-based activities with defined linguistic outcomes, and alternating between device-based and non-device tasks to maintain student attention. Structuring mobile tool use around specific language learning objectives – rather than open-ended exploration – can help teachers harness the motivational affordances of these tools while minimising off-task behaviour in resource-constrained classroom environments.

Secondly, integrating interactive offline and online collaborative tools (e.g., PowerPoint, E-Paath, Google Docs, YouTube, Google Classroom, chat platforms) into ELT classrooms provides meaningful opportunities for language learning. These tools should be integrated to support the development of students' four language skills, including vocabulary, grammar, and pronunciation. Nevertheless, training teachers in the pedagogical use of these tools is a prerequisite for implementing them effectively in rural classrooms. Likewise, teachers in more severely resource-constrained settings can begin building collaborative pedagogical practices incrementally – starting with offline peer tasks such as shared document editing on a single device, setting up an offline learning portal on a local school server (e.g., Dhungana, 2026), progressing to asynchronous communication via platforms like WhatsApp when intermittent connectivity allows, and moving toward fuller online collaboration as access conditions improve.

Thirdly, authentic materials and resources (in their multimodal form) should be deployed in rural ELT classrooms to develop students' reading comprehension, listening skills, pronunciation, and grammar. These resources can be realised through contextualised grammar lessons and by exposing students to the diverse accents and speech patterns of English. Godwin-Jones (2016), Schmid (2016), and Stockwell (2016) also highlight that authentic language materials presented through interactive technologies and mobile devices provide real-life linguistic exposure and support task-based learning in meaningful contexts. Lastly, the study contributes to affordances theory and TAM by introducing the instructional potential of ICT, including mobility, collaboration, multimodality, and authenticity. Meanwhile, the barriers reported in the study prevent these affordances from being fully actualised, thereby transforming some of these affordances into "dormant" ones. Hence, concerned authorities should take immediate action to mitigate the barriers related to limited access to digital devices and resources, internet connectivity, and technological and pedagogical literacy.

7. Conclusion and Limitations

The study examined the subjectivities of a group of English teachers regarding their enactment of ICT affordances in secondary classrooms in rural Nepal, using Q. The findings highlight that these teachers act upon the affordances of ICT differently, considering their ability to access such

affordances for their diverse ELT goals. Despite the barriers noted earlier, teachers' enactment of three sets of affordances – practical and accessible ICT, collaborative and interactive ICT, and adaptive and content-driven ICT – uncovered actionable potentials of ICT that can be considered for replication in rural ELT contexts. However, before replication, identifying and mitigating infrastructural, technological, and pedagogical barriers is pivotal to effectively implementing ICT in rural secondary English classrooms.

Although this study highlighted significant pedagogical insights and theoretical implications, it is not without its limitations. The study's findings are limited to community school teachers in three rural districts of eastern Nepal. As such, they may not transfer to private schools or to urban and international ELT settings with advanced ICT infrastructure and connectivity. Likewise, the researcher primarily adapted Gibson's (1977) affordances theory and F. D. Davis's (1989) TAM to develop the initial Q sample instruments, rather than to heavily inform the discussion of the findings. This was because relevant studies conducted using the two frameworks and Q methodology were scant. Therefore, the researcher relied on studies using other methodologies and also drew on studies published in Nepali local journals. These studies offered contextual relevance to the findings; however, their academic rigour and quality may still be questionable.

In conclusion, this study examined various aspects of implementing ICT affordances in rural ELT contexts. Nevertheless, future studies can adopt more robust approaches, methodologies, and theoretical frameworks to explore the domain of ICT integration in ELT and learning in secondary education contexts. Further investigation of intra-district variations in ICT access and connectivity as contextual variables may help explain the divergent viewpoints observed in this study. It would also be valuable to examine the interaction between PU and PEU in rural ELT contexts for deeper theoretical insights.

8. Declarations

8.1. Conflict of Interest

The author declares no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. For transparency, the author works as an ICT in Education Coordinator at Human Practice Foundation, whose ICT training records were used to identify eligible participants; the Foundation had no role in the study design, data analysis, interpretation, or the decision to publish.

8.2. Funding

The author confirms that no funding was received to support this research.

8.3. Author Contributions (CRediT)

Tirtharaj Dhungana: Conceptualization; Methodology; Investigation; Formal analysis; Writing – original draft; Writing – review & editing

8.4. Data Availability Statement

Data are available from the corresponding author upon reasonable request.

8.5. Ethical Approval and Informed Consent

This study was conducted as part of the author's MPhil research at the Kathmandu University School of Education, and the author's research supervisors approved its design and procedures. All participants provided written informed consent, participated voluntarily with the right to withdraw at any time, and have been anonymised (P1–P30).

8.6. Use of Artificial Intelligence (AI) Tools

The author used Grammarly and Claude (Anthropic), AI-assisted language tools, for proofreading, minor language refinement, and checking consistency between the text, tables, and appendices during manuscript preparation and proof correction. These tools were not used to collect or analyse the research data or to interpret the findings. The author reviewed all suggested edits and takes full responsibility for the content of this article.

8.7. Acknowledgements

I am deeply grateful to my MPhil supervisors, Asst. Prof. Siddhartha Dhungana, PhD, and Asst. Prof. Basu Prasad Subedi, PhD, for their guidance throughout this research, and to the English teachers who generously participated in this study. I also thank the Human Practice Foundation for granting access to its ICT training records.

References

Abel, V. R., Tondeur, J., & Sang, G. (2022). Teacher perceptions about ICT integration into classroom instruction. *Education Sciences, 12*(9), 609. https://doi.org/10.3390/educsci12090609

Albashtawi, A. H., & Bataineh, K. B. A. (2020). The effectiveness of Google Classroom among EFL students in Jordan: An innovative teaching and learning online platform. *International Journal of Emerging Technologies in Learning, 15*(11), 78–88. https://doi.org/10.3991/ijet.v15i11.12865

Alharbi, J. M. (2023). MALL as a language learning tool for Saudi EFL university learners: An empirical study with reference to TAM. *Journal of Language Teaching and Research, 15*(1), 271–280. https://doi.org/10.17507/jltr.1501.30

Al-Yafaei, Y., & Mudhsh, B. (2023). A review study on the impact of online collaborative learning on EFL students' writing skills. *International Journal of Linguistics Studies, 3*(3), 8–18. https://doi.org/10.32996/ijls.2023.3.3.2

Anggraini, N. Y. (2024). A comparative study of authentic and artificial text-based reading learning in improving English reading comprehension. *EDUJ English Education Journal, 2*(2), 58–63. https://doi.org/10.59966/eduj.v2i2.1411

Arif, T. Z. Z. A., & Handayani, R. (2022). Factors influencing the use of ICT for English language learning of Indonesian EFL university students. *ELSYA: Journal of English Language Studies, 4*(1), 24–33. https://doi.org/10.31849/elsya.v4i1.6882

Banasick, S. (2019). KADE: A desktop application for Q methodology. *Journal of Open Source Software, 4*(36), 1360. https://doi.org/10.21105/joss.01360

Bhandari, B. L. (2020). English teachers' perceptions and practices of integrating ICT in ELT. *Butwal Campus Journal, 3*(1), 87–102. https://doi.org/10.3126/bcj.v3i1.36509

Bhandari, B. L., & Bhandari, S. (2024). Use of ICT in English language teaching classroom. *Vox Batauli, 9*(1), 24–36. https://doi.org/10.3126/vb.v9i01.70397

Bohara, D. K. (2024). Teachers' perceived value of integrating ICT in transposing English language teaching in Nepal. *KMC Journal, 6*(1), 106–121. https://doi.org/10.3126/kmcj.v6i1.62332

Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. Yale University Press.

Butarbutar, R., Ruing, F. H., Basri, N., Tuharea, V. U., & Radja Leba, S. M. (2023). Unpacking online collaborative learning in teaching EFL speaking: Insights from three rural area case studies. *The Qualitative Report, 28*(12), 3379–3401. https://doi.org/10.46743/2160-3715/2023.6165

Churchill, D., Fox, B., & King, M. (2016). Framework for designing mobile learning environments. In D. Churchill, J. Lu, T. K. Chiu, & B. Fox (Eds.), *Mobile learning design: Theories and applications* (pp. 3–25). Springer. https://doi.org/10.1007/978-981-10-0027-0_1

Dahya, N., Dryden-Peterson, S., Douhaibi, D., & Arvisais, O. (2019). Social support networks, instant messaging, and gender equity in refugee education. *Information, Communication & Society, 22*(6), 774–790. https://doi.org/10.1080/1369118X.2019.1575447

Dan, C., Ismail, L., & Razali, A. B. (2024). Effectiveness of using mobile dictionary app to enhance vocabulary knowledge of EFL learners with different level of motivation. *International Journal of Academic Research in Business and Social Sciences, 14*(7), 202–222. https://doi.org/10.6007/IJARBSS/v14-i7/22022

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Davis, J. L. (2020). *How artifacts afford: The power and politics of everyday things*. MIT Press.

Demissie, G., Amogne, D., & Gashaw, A. (2025). The effect of using Google Docs on Ethiopian EFL students' collaborative writing improvement. *Australian Journal of Applied Linguistics, 8*(3), 102622. https://doi.org/10.29140/ajal.v8n3.102622

Dhungana, T. (2026). *Offline learning portal* (Version 1.1.0) [Computer software]. Zenodo. https://doi.org/10.5281/zenodo.23131009

Fitriani, S. N., & Irawati, T. (2024). Unlocking EFL collaboration: Transformative insights from Google Docs. *Jurnal Bahasa Sastra dan Studi Amerika, 30*(1), Article e87862. https://doi.org/10.20961/jbssa.v30i1.87862

Ghimire, S. P. (2022). Secondary students' learning English through social media: A case study in Nepal. *International Journal of Research in Education and Science, 8*(3), 529–544. https://doi.org/10.46328/ijres.2758

Gibson, J. J. (1977). The theory of affordances. In R. Shaw & J. Bransford (Eds.), *Perceiving, acting, and knowing: Toward an ecological psychology* (pp. 67–82). Lawrence Erlbaum Associates.

Giri, P. C., & Rana, K. (2022). Lessons learned from teaching English through Facebook Live for future. *International Journal of Technology in Education and Science, 6*(1), 14–31. https://doi.org/10.46328/ijtes.309

Godwin-Jones, R. (2016). Culture, language learning and technology. In F. Farr & L. Murray (Eds.), *The Routledge handbook of language learning and technology* (pp. 172–184). Routledge.

Gyawali, Y. P. (2023). Exploring dimensions of teacher education in Nepal: Perspectives, challenges, and reform opportunities. *Journal of General Education and Humanities, 2*(4), 285–298. https://doi.org/10.58421/gehu.v2i4.128

Hasumi, T., & Chiu, M. (2024). Technology-enhanced language learning in English language education: Performance analysis, core publications, and emerging trends. *Cogent Education, 11*(1), 2346044. https://doi.org/10.1080/2331186X.2024.2346044

Hertzog, M. (2008). Considerations in determining sample size for pilot studies. *Research in Nursing & Health, 31*(2), 180–191. https://doi.org/10.1002/nur.20247

Human Practice Foundation. (2024). *HPFN education datasheet: ICT in education* [Unpublished raw data].

Ilic, P. (2022). Leveraging smartphone affordances for EFL emergency remote teaching. In P. Kommers & T. Issa (Eds.), *Proceedings of the International Conferences e-Society 2022 and Mobile Learning 2022* (pp. 159–166). IADIS Press. https://doi.org/10.33965/es_ml2022_202202l026

Jora, M. B. (2019). ELT in Nepal: Exploring the paradigm shift. *International Journal of Scientific and Research Publications, 9*(1), Article p8597. https://doi.org/10.29322/ijsrp.9.01.2019.p8597

Joshi, B. M., & Khatiwada, S. P. (2024). Analyzing barriers to ICT integration in education: A systematic review. *The Third Pole Journal of Geography Education, 24*(1), 25–45. https://doi.org/10.3126/ttp.v24i1.73325

Joshi, K. R., & Ayer, R. (2024). Teachers' experiences and challenges of integrating ICTs in English language classrooms in rural schools of Nepal. *Journal of NELTA Gandaki, 7*(1–2), 28–42. https://doi.org/10.3126/jong.v7i1-2.70183

Joshi, K. R., & Poudel, G. P. (2019). Role of ICTs in promoting learner independence and motivation in English language classes. *Interdisciplinary Research in Education, 4*(1), 67–76. https://doi.org/10.3126/ire.v4i1.25741

Katel, K. P. (2024). Transforming ELT with ICT: Empowerment or encumbrance. *Solukhumbu Multiple Campus Research Journal, 6*(1), 36–53. https://doi.org/10.3126/smcrj.v6i1.74522

Kayra, Z. (2024). Enhancing English vocabulary learning through mobile apps: A new paradigm in educational technology. *Research Studies in English Language Teaching and Learning, 2*(2), 87–95. https://doi.org/10.62583/rseltl.v2i2.41

Khadka, B. K. (2023). Impact of e-pedagogy in English e-class in higher education of Nepal. *Bodhi: An Interdisciplinary Journal, 9*(1), 159–185. https://doi.org/10.3126/bodhi.v9i1.61845

Lamichhane, S. (2025). Challenges to implement technology-assisted English language teaching in Nepal: An explorative study. *Studies in ELT and Applied Linguistics, 2*(2), 156–170. https://doi.org/10.3126/seltal.v2i2.74087

Maulida, N., Sakhiyya, Z., & Rukmini, D. (2023). The utilization of U-Dictionary to improve students' pronunciation. *English Education Journal, 13*(3), 440–444. https://doi.org/10.15294/eej.v13i3.73158

McKeown, B., & Thomas, D. B. (2013). *Q methodology* (2nd ed.). SAGE Publications.

McMinn, S. (2023, November 7). *Pedagogical affordances of ChatGPT-4v(ision)* [LinkedIn article]. LinkedIn. https://www.linkedin.com/pulse/pedagogical-affordances-chatgpt-4vision-sean-mcminn-f4arc/

Menezes, V. (2011). Affordances for language learning beyond the classroom. In P. Benson & H. Reinders (Eds.), *Beyond the language classroom* (pp. 59–71). Palgrave Macmillan. https://doi.org/10.1057/9780230306790_6

Meteab, S. A. A., & Alquraishy, S. W. (2021). Vocabulary acquisition through multimedia in an Iraqi EFL context. *Psychology and Education Journal, 58*(1), 2492–2501. https://doi.org/10.17762/pae.v58i1.1125

Metruk, R. (2024). Mobile-assisted language learning and pronunciation instruction: A systematic literature review. *Education and Information Technologies, 29*(13), 16255–16282. https://doi.org/10.1007/s10639-024-12453-0

Ministry of Education, Science & Technology. (2019). *National curriculum framework for school education, 2019*. Government of Nepal.

Moll, I., Dlamini, R., Ndlovu, N., Drennan, G., Nkambule, F., & Phakathi, N. (2022). A developing realist model of the pedagogical affordances of ICTs. *South African Computer Journal, 34*(2). https://doi.org/10.18489/sacj.v34i2.1076

Mukhalladun, W., Nidawati, N., & Ar, M. (2020). EFL teachers' perceptions toward the use of authentic material in teaching reading comprehension. *Pedagogik: Jurnal Ilmiah Pendidikan dan Pembelajaran Fakultas Tarbiyah Universitas Muhammadiyah Aceh, 7*(2), 114–127. https://doi.org/10.37598/pjpp.v7i2.812

Nanthinii, M. (2020). A study of Google Classroom as an effective LMS to improve the LSRW skills of ESL learners. *International Journal of Scientific and Technology Research, 9*(6), 1116–1119.

Parajuli, K. P. (2024). Empowering teachers' professional growth: Harnessing smartphones for collaboration, self-monitoring, and learning. *English Language Teaching Perspectives, 9*(1–2), 1–14. https://doi.org/10.3126/eltp.v9i1-2.68714

Parajuli, K. P., Rana, K., & Laudari, S. (2024). Teachers' use of mobile devices in suburban under-resourced secondary schools in Nepal. *Distance Education, 45*(4), 606–626. https://doi.org/10.1080/01587919.2024.2379831

Parsons, D., Thomas, H. R., & Wishart, J. (2016). Exploring mobile affordances in the digital classroom. In *Proceedings of the 12th International Conference on Mobile Learning* (pp. 43–50). IADIS Press.

Paudel, P. (2020). Information and communication technology in foreign language classes in English: Roles and practices. *International Journal of Technology in Education and Science, 5*(1), 37–55. https://doi.org/10.46328/ijtes.179

Paudel, P. (2022). Challenges of using information and communication technology in teaching English in Nepal. *KMC Journal, 4*(2), 1–18. https://doi.org/10.3126/kmcj.v4i2.47725

Poudel, A. P. (2022). Information and communication technology in English language teaching: Some opportunities and challenges. *Journal of Comparative & International Higher Education, 14*(4). https://doi.org/10.32674/jcihe.v14i4.3874

Qin, L., & Wei, R. (2021). Investigating affordance in technology-enriched language learning environment through exploring students' perezhivanija. *Chinese Journal of Applied Linguistics, 44*(2), 187–202. https://doi.org/10.1515/cjal-2021-0011

Rahman, S. F. A., Yunus, M. M., & Hashim, H. (2021). Applying UTAUT in predicting ESL lecturers' intention to use flipped learning. *Sustainability, 13*(15), 8571. https://doi.org/10.3390/su13158571

Raj, A., & Tomy, P. (2024). An experimental study on the influence of instructional mobile applications in enhancing listening comprehension of rural students in India. *Frontiers in Education, 8*, Article 1280868. https://doi.org/10.3389/feduc.2023.1280868

Raj, K. A., Jr., & Baisel, A. (2024). Empirical study on the influence of mobile apps on improving English speaking skills in school students. *World Journal of English Language, 14*(2), 339–348. https://doi.org/10.5430/wjel.v14n2p339

Ramlo, S. (2016). Mixed method lessons learned from 80 years of Q methodology. *Journal of Mixed Methods Research, 10*(1), 28–45. https://doi.org/10.1177/1558689815610998

Rana, K. (2024). Rural primary teachers' perceived affordances of ICT training in Nepal. *Interactive Learning Environments, 32*(9), 5479–5493. https://doi.org/10.1080/10494820.2023.2216739

Rana, K., Greenwood, J., & Fox-Turnbull, W. (2020). Implementation of Nepal's education policy in ICT: Examining current practice through an ecological model. *The Electronic Journal of Information Systems in Developing Countries, 86*(2), e12118. https://doi.org/10.1002/isd2.12118

Ranjbaran, F., Al-Abri, A., & Al-Hashmi, S. (2023). Exploring ELT teachers' behavioral intention to continue using technology in the post-COVID-19 era: A case study of Oman. In D. Tafazoli & M. Picard (Eds.), *Handbook of CALL teacher education and professional development* (pp. 387–405). Springer. https://doi.org/10.1007/978-981-99-0514-0_23

Reinders, H., & Chong, S. W. (2024). Computer-assisted language learning as a pedagogical framework. In M. Sato & C. A. Chapelle (Eds.), *The encyclopedia of applied linguistics* (2nd ed.). Wiley-Blackwell.

Rimal, B., Neupane, S., & Lamichhane, B. (2025). Digital literacy among English teachers in Nuwakot: A spotlight on skills and challenges. *Siddhajyoti Interdisciplinary Journal, 6*(1), 1–18. https://doi.org/10.3126/sij.v6i1.77974

Saleem, K., Tahir, A., & Iqbal, A. (2020). Multimedia PowerPoint-based vocabulary acquisition: A case study of Pakistani ESL learners. *Journal of Development and Social Sciences, 1*(I), 42–52. https://doi.org/10.47205/jdss.2020(1-i)5

Saud, D. S., & Laudari, S. (2023). English language teachers' experiences of using ICT in ELT. *Journal of NELTA, 28*(1), 151–165. https://doi.org/10.3126/nelta.v28i1.61800

Sayı, B. (2024). English language teachers' perspectives on the integration of authentic materials in reading classes. *International Journal of Linguistics, Literature & Translation, 7*(6), 143–151. https://doi.org/10.32996/ijllt.2024.7.6.16

Schmid, E. C. (2016). Interactive whiteboards and language learning. In F. Farr & L. Murray (Eds.), *The Routledge handbook of language learning and technology* (pp. 281–295). Routledge.

Shrestha, S. (2023). *ICT in education in crisis contexts: An activity theoretical study of teaching and learning in Nepal during the COVID-19 pandemic* [Unpublished doctoral dissertation]. Dublin City University.

Shrestha, S. (2025). ICT use in English language classrooms in Nepalese schools. In R. A. Giri & L. Gnawali (Eds.), *The handbook of English language education in Nepal* (pp. 232–250). Routledge.

Singh, R. (2019). Students' perspectives on technology integration in ELT. *Journal of NELTA, 24*(1–2), 95–106. https://doi.org/10.3126/nelta.v24i1-2.27682

Singh, R. B. (2024). Navigating English language education challenges in resource-limited contexts. *KMC Journal, 6*(1), 135–152. https://doi.org/10.3126/kmcj.v6i1.62336

Stephenson, W. (1935). Technique of factor analysis. *Nature, 136*(3434), 297. https://doi.org/10.1038/136297b0

Stephenson, W. (1953). *The study of behavior: Q-technique and its methodology*. University of Chicago Press.

Stockwell, G. (2016). Mobile language learning. In F. Farr & L. Murray (Eds.), *The Routledge handbook of language learning and technology* (pp. 296–307). Routledge.

Tafazoli, D. (2021). Affordances of computer-assisted language learning in higher education: A qualitative inquiry. *Lenguas Modernas, 58*, 55–70.

Thapa, D., & Sein, M. K. (2018). An ecological model of bridging the digital divide in education: A case study of OLPC deployment in Nepal. *The Electronic Journal of Information Systems in Developing Countries, 84*(2), e12018. https://doi.org/10.1002/isd2.12018

Thumvichit, A. (2024). Illuminating insights into subjectivity: Q as a methodology in applied linguistics research. *Applied Linguistics Review, 15*(2), 531–554. https://doi.org/10.1515/applirev-2021-0205

Tiwari, H. P. (2024). English language teachers' awareness and practice of digital teaching. *Tamaddun, 23*(1), 164–176. https://doi.org/10.33096/tamaddun.v23i1.718

Tuzahra, F., Sofendi, S., & Vianty, M. (2021). Technology integration of the in-service EFL teachers: A study at a teacher profession education program. *Indonesian Journal of EFL and Linguistics,* 6(1), 317–339. https://doi.org/10.21462/ijefl.v6i1.396

van Lier, L. (2000). From input to affordance: Social interactive learning from an ecological perspective. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 245–259). Oxford University Press.

van Lier, L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Kluwer Academic Publishers.

van Lier, L. (2008). Ecological-semiotic perspectives on educational linguistics. In B. Spolsky & F. M. Hult (Eds.), *The handbook of educational linguistics* (pp. 596–605). Blackwell.

Vanisree, M., Mahitha, V., & Prasanna, S. S. L. (2024). Innovative approaches to LSRW skills development using PowerPoint presentations: A review. *Integrated Journal for Research in Arts and Humanities, 4*(3), 186–190. https://doi.org/10.55544/ijrah.4.1.27

Watts, S., & Stenner, P. (2012). *Doing Q methodological research: Theory, method & interpretation*. SAGE.

Widyaningrum, L., Fadhilah, M., Sholihah, N., & Rochmawati, P. (2024). Shaping the way to teach? Exploring the adoption of digital multimodal texts as instructional tools in EFL teaching practicum. *Language Circle Journal of Language and Literature, 18*(2), 248–254. https://doi.org/10.15294/lc.v18i2.49256

Xu, T. (2022). A comparative study of mobile tools and AR affordances on collaborative learning: From the perspective of enhancing college EFL academic writing skills. In *Proceedings of the 2022 7th International Conference on Modern Management and Education Technology (MMET 2022)* (pp. 57–67). Atlantis Press. https://doi.org/10.2991/978-2-494069-51-0_9

Xue, S., & Churchill, D. (2019). A review of empirical studies of affordances and development of a framework for educational adoption of mobile social media. *Educational Technology Research and Development, 67*(5), 1231–1257. https://doi.org/10.1007/s11423-019-09679-y

Xue, S., & Churchill, D. (2022). Educational affordances of mobile social media for language teaching and learning: A Chinese teacher's perspective. *Computer Assisted Language Learning, 35*(4), 918–947. https://doi.org/10.1080/09588221.2020.1765811

Yingxin, X., Singh, C. K. S., Singh, S. K. J. C., Bailey, R. P., Arivayagan, K., & Bamiro, N. B. (2024). The digital classroom: Systematic review of use of English as a foreign language (EFL) in teaching in collaborative online settings. *International Journal of Learning, Teaching and Educational Research, 23*(10), 1–26. https://doi.org/10.26803/ijlter.23.10.1

Appendix A: FGD Questionnaire for Concourse Generation

1. Can you share specific examples of how you currently use technology to support your English language teaching?
2. What features of technology, such as email or online platforms, do you find most helpful for facilitating communication among your students in English, both inside and outside of class?
3. In your experience, how do these communication features of email/internet platforms assist you in achieving your English language teaching goals?
4. How easy or challenging do you find integrating these communication tools into your lessons?
5. Do you use mobile apps or other portable ICT tools (e.g., tablet/smartwatch) to improve your students' language skills? If so, can you describe some specific examples?
6. What features of these mobile tools did you find particularly useful or not helpful for teaching various language skills?
7. Do you believe using these mobile tools improves the effectiveness of your teaching? Why or why not?
8. How comfortable are you using these mobile tools in your classroom setting?
9. Have you explored online collaborative tools like Google Docs, WhatsApp, and Facebook groups for students' language learning purposes?
10. Can you describe how these collaborative tools benefit your students' learning and interaction in your classroom?
11. How easy or challenging do you find managing and facilitating online collaborative activities for your students?
12. How do you utilise technology, such as online news articles or educational videos, to bring real-world contexts into your English language lessons?
13. In your view, how does integrating authentic materials through technology enhance student engagement and learning?
14. Do you find it easy or difficult to find and incorporate these authentic online resources into your lesson plans?
15. Are there any technology tools or platforms, such as games, pronunciation apps, or any websites, that you find particularly helpful for specific teaching methods in your English classes?
16. How do these tools support your chosen teaching methods and improve student learning outcomes in specific areas like grammar or vocabulary?
17. How easy or challenging is it for you to learn and use these pedagogical support tools effectively?
18. Is there anything else you want to share about your experiences using ICTs in your ELT classroom?

Appendix B: Statements and Factor Arrays

S.N.	Statements	Factor 1	Factor 2	Factor 3
1	I am confident in handling technical difficulties during online collaborative activities.	−2	−2	−4
2	Mobile apps offer students a high degree of autonomy and control over their English language learning.	+1	−1	−3
3	Mobile apps with audio recording and playback features might be useful tools for assessing student listening and speaking skills.	+5	+1	+3
4	It is better to use other means of communication tools in rural ELT contexts instead of modern ICT and internet connectivity.	0	−3	−5
5	Evaluating online resources for accuracy and appropriateness poses minimal barriers to integrating ICT into teaching.	−2	−3	−3
6	Authentic materials (e.g., native speakers' speech, text, video, etc.) might be useful for creating contextualised grammar lessons.	+3	+1	+2
7	Students can improve their English vocabulary repertoire by watching and listening to English movies, rhymes, chants, etc., in the classroom.	+2	+2	+2
8	Online discussions and presentations could stimulate critical thinking by encouraging students to analyze and respond to ideas.	−2	+2	+1
9	The variety of features on mobile devices distracts and hinders focus during class activities.	+2	0	+4
10	Chat platforms like Meta's WhatsApp and Messenger provide opportunities to improve students' speaking skills.	+2	−2	−1
11	Students with limited access to ICT can still apply and enhance the digital skills they acquire in school.	−4	−5	−3
12	Integrating ICT into existing teaching methods may impact instructional delivery, assessment, and learning outcomes.	+3	−1	0
13	Self-paced online courses and blogs might be an effective way to improve technology skills for teaching English.	+2	−1	+1
14	Government support for ICT resources and authentic materials has minimal influence on my decision to use them.	−3	−4	−2
15	Online teacher support groups may provide resources for designing rubrics and assessing individual/group performance.	+1	+2	−2
16	Sharing and working on documents through collaborative ICT tools may promote summarization and information synthesis skills during project work.	0	−2	0
17	The initial set-up of online communication platforms for teaching may require some investment of time and technical skills.	+4	+3	+3

S.N.	Statements	Factor 1	Factor 2	Factor 3
18	Software like E-Paath and Google Classroom might be useful for assessing multiple aspects of students' English language skills.	−1	0	+4
19	Collaborative online forums and chat functions offer a platform for peer-to-peer practice and the development of English language skills.	−1	+3	0
20	School administrations and parents should start restricting mobile apps for language learning purposes.	−5	−5	−2
21	Integrating synchronous and asynchronous instruction via web and LMS platforms can accommodate diverse learning needs and interests.	−1	+2	−2
22	The effectiveness of online interactive tools like polls and breakout rooms may promote participation and active learning environments.	−3	0	0
23	Online collaborative tools support students in developing project-based skills and interpersonal skills as envisioned in the curriculum.	−1	+4	−1
24	Accessibility of captioned writing tutorials (e.g., online/offline video) on laptops could enhance students' writing skills.	0	+3	+1
25	Collaborative writing activities can improve editing and revision skills through peer feedback.	0	+4	+1
26	Collaborating and exchanging ideas with peers on online platforms can decrease students' dedication and engagement towards their learning.	−3	−3	−2
27	Unequal access to e-devices and the Internet poses minimal challenges for mobile learning.	−5	−4	−3
28	Integrating email and internet tools is a great way for introverted students to develop digital literacy and interpersonal skills.	0	0	−4
29	Collaborative online activities can enhance students' English-speaking skills when discussing with peers across the globe.	−2	+5	0
30	Online communication tools may vary in suitability depending on students' language proficiency levels.	+3	−3	+4
31	Multimedia aids like PowerPoint presentations displayed in the classroom can facilitate vocabulary learning and develop other language skills.	+5	+5	+3
32	Exposing students to authentic texts like news articles, blog posts, or online articles may be beneficial for developing reading comprehension skills.	+1	+1	+5
33	Participating in authentic social media discussions could be a valuable way for students to learn English in a more contextual and engaging way.	−2	−1	+2

S.N.	Statements	Factor 1	Factor 2	Factor 3
34	Limited access to technology and the internet presents only minor issues in incorporating authentic materials creatively in the classroom.	−3	−4	−1
35	Online communication tools are complex and unsuitable for my English language teaching.	−4	−2	−5
36	Authentic materials (e.g., interviews, podcasts, and documentaries) can offer diverse listening experiences featuring various accents and speech patterns.	+2	+3	−1
37	Engaging students with offline versions of news articles and educational videos may expose them to authentic English used in the real world.	+1	+1	0
38	I am comfortable with assessing students' online collaborative work despite the issues of ICT access and technical skills.	−4	−2	−4
39	A mobile dictionary with offline pronunciation is a useful resource for students to practice pronunciation and develop vocabulary.	+4	+2	+5
40	Educational games can make grammar practice more engaging, potentially increasing motivation.	+3	+4	+2
41	Real-time feedback features in online collaborative tools may enable students to potentially receive immediate support and clarification.	−1	+1	+1
42	Offline functionality in mobile apps can be beneficial in areas with poor or no internet access for learning the English language.	+4	0	+2
43	Online communication tools like email and chat platforms are helpful for sharing resources and solving English language problems.	0	−1	−1
44	Adjustable audio/video playback features on YouTube and other apps may be a tool for improving listening and speaking skills.	+1	0	+3
45	The YouTube channel's videos, such as NCED Virtual, might offer instructional ideas for teaching English more effectively.	0	0	0