

Exploring Cognitive Teaching Approaches for Inclusive Translation Online Classes: A Case Study During the COVID-19 Pandemic

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Abstract—This study explored teachers' lived experiences of teaching translation inclusively online for the first time during the lockdown of the COVID-19 pandemic. The participants teach English and translation in the English Department, College of Languages and Translation, at Imam Mohammed Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia. Data were collected using a 5-point Likert questionnaire and semi-structured interviews. The study delved into the teaching approaches that teachers used to achieve course objectives, and the technology tools they embedded into the Learning Management System (LMS). The results indicated (73%) positive experiences, with (86.8%) finding the LMS effective for delivering instructional plans and (78.5%) reporting an increase in awareness of continuous technology education. The emergent themes of cognitive approaches included project-based instruction (89%), collaborative techniques (71%), conference-based strategies (64%), and constructivist approaches (50%). The results also showed improvements in students' translation skills (80.7%), linguistic abilities (83.2%), social skills (78.5%), communicative skills (65.1%), and psychometric abilities (78.3%), indicating the positive effects of technology on cognitive domains. The findings illustrated that adopting effective instructional methods and integrating operative technological tools can significantly contribute to delivering enriched online content. The study recommends integrating Cultural Translation and Interpretation Studies (CTIS) and Cognitive Translation Studies (CTS) into professional development programs to enhance innovative teaching approaches for online settings. Consequently, the study contributes to language and translation education and technology by presenting an inclusive model that emphasizes the importance of incorporating translation theories, teaching methodologies, and appropriate technologies for effective online teaching.

Index Terms—cognitive approaches, COVID-19 pedagogy shift, teaching translation online, translation technology

I. INTRODUCTION

One of the most profound experiences that teachers at higher education lived was shifting teaching from face-to-face classrooms into fully online settings during the COVID-19 pandemic. Online teaching has dominated as the essential mode in response to the pandemic crisis, impacting teacher experiences, opportunities, and challenges (Alwazna, 2021; Aldossary, 2021; Chen et al., 2020; Dhawan, 2020; Didenko et al., 2021). The sudden shift required teachers to not only design appropriate instructional plans, but also acquire technological skills to use Learning Management Systems (LMS) platforms, such as Blackboard, Microsoft Teams, and Zoom. Teachers needed to incorporate audio and video materials, online resources, and computer-aided tools into their teaching methods to ensure effective lesson delivery. Previous studies (Akmaliyah et al., 2020; Di Pietro et al., 2020; Pikhart & Al-Obaydi, 2023; Rapanta et al., 2020) highlighted challenges that encompass disparities in accessing reliable internet connections, insufficient technical support, deficiency in technology training, absence of social physical presence, as well as pedagogical issues pertaining to the adjustment of curriculum and instruction to conform to online environments. Consequently, it became necessary to enhance knowledge while acquiring online management skills, and incorporate virtual thinking methodologies, and innovative pedagogies while exploring virtual reality technology (Aroles & Kippers, 2021; Basilaia et al., 2020; Xiao & Muñoz, 2020). In other words, determining the most appropriate approaches for teaching translation in inclusive online contexts was a persistent challenge, especially for teachers who made this transition for the first time, including teachers in the English Department, College of Languages and Translation, at Imam Mohammed Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia. While previous research focused on examining the technological and social conditions of higher education during the pandemic, and the impact of online settings on students' perception and satisfaction, research on the initial experiences of teaching translation online, and the approaches adopted to deliver instructional plans remains scarce. Transitioning from traditional classrooms to online settings necessitates planning that goes beyond

just using LMS platforms. The current study aimed at exploring these experiences, probing into the cognitive approaches that teachers used for inclusive online teaching. Thus, this study adds to the body of knowledge concerning the worldwide investigation of pedagogy shifts that occurred during the COVID-19 lockdown.

II. LITERATURE REVIEW

A. *Translation Theories and Practices*

Early theories of translation (Nida, 1964; Catford, 1965; Vinay & Darbelnet, 1958, 1995) are rule-based, focusing on linguistic aspects for achieving formal equivalence and accuracy in translation. In contrast, contemporary theories are communicative, and socio-cultural-based, for achieving functional equivalence and quality translation (Munday, 2016). Contemporary theories focus on connecting translation practices to real-life, exploring cultures as polysystems, while emphasizing translation purpose and quality (Pym, 2014). Since the publication of Holmes' (1972, 2000), research evolved around Cultural Translation and Interpretation Studies (CTIS), and Cognitive Translation Studies (CTS). These studies highlight the role of translators in communicating information in various socio-cultural contexts, and the utilization of technology for enhancing translation quality. Scholars introduced new perspectives of translation theory. For example, Holz-Mänttälä (1981), Lefevere (1992), Nord (1997, 2018), Reiss (1977, 1989), Snell-Hornby (1988), Vermeer (1989) examined translation as human activities with specific communicative goals, that can be achieved through the texts. In these theories, translation is viewed as communicative performances that aim to establish a functional relationship between the source text (writer) and the target text (reader), emphasizing a 'skopos', i.e., a purpose for the messages across cultures. In the same light, Venuti (1995) proposed a translation theory, centered on a specific purpose, which is the reconstruction of the text from a cultural perspective, using domestication strategies, for making the text closely conform to the culture of the reader, or foreignization techniques for retaining information from the text, by intentionally breaking the conventions of the text to preserve its meaning.

In this context, previous research (Alves & Jakobsen, 2020; Chesterman, 1997; Liu, 2017; Schäffner, 2012; Wang, 2018; Wang & Gu, 2023) adopted interdisciplinary approaches to translation, highlighting the role of translation in enacting realities, representing historical, political, financial, socio-cultural, and media aspects. Additionally, utilizing technology in teaching translation has played a major role in developing computational translology, emphasizing the automated aspects of the translation process, such as machine translation, translation memory systems, and computer-aided translation tools (Muñoz Martín & Martín de León, 2020). Teachers use different concepts to help students understand the connection between theory and practice, bridging the gap between the text and its receiver in different social contexts. Teachers help students learn that translators serve as intermediaries when differences in language, knowledge, and viewpoints hinder effective communication. Therefore, in their online instruction, teachers need to enhance social presence through selecting diverse teaching materials, allowing students to search for information, discuss, identify and solve translation problems, in real-time environments. In this respect, previous studies (Guerberof & Moorkens, 2019; Hao & Pym, 2023; Malenova, 2019) found that utilizing machine translation, and cloud technology, while integrating translation theories into teaching, helps students develop competences for reconstructing discourses across different contexts. Research (Alves & Jakobsen, 2020; García & Giozza, 2019; Jakobsen & Mesa Lao, 2017; Kairong & Muñoz, 2020) examined the cognitive aspects of CTS, encompassing communicative production, reception and interaction of different contexts, indicating that CTS are centered on the translation process, translation contexts, and translator behavior and attitudes. Thus, the cognitive-oriented interdisciplinary approach connects translation with fields such as language studies, psychology, sociology, and technology, making it an effective method for teaching students to become professional translators, meeting the profession requirements.

B. *Cognitive Approaches for Teaching Translation*

While some translation instructors adhere to conventional methods centered around standardized practices to enhance linguistic competences, others adopt cognitive approaches employing innovative techniques that emphasize intercultural communicative competences. Cognitive approaches encompass socio-cultural methods, and technology-based strategies. Cognitive approaches use socio-cognition, computer information processing, and neural networks to teach how translators carry out translation tasks. In other words, cognitive approaches often integrate technology and real-world texts, fostering a dynamic and adaptive translation process that goes beyond mere linguistic accuracy to ensure effective and contextually appropriate communication. Therefore, cognitive teaching approaches encompass project-based instruction, collaborative, constructivist, and interactive techniques. They also include lab training, incorporating audio and video tools, modeling (role-playing), conference-based approaches, and cognitive apprenticeship. In this regard, Venuti (2016) found that the less standardized methods used, the more innovative and humanistic approaches to teaching translation are employed. The advantages of cognitive teaching approaches stem from motivating students to fully use their mental abilities to perform the translation tasks in different socio-cultural contexts. In this respect, Xu and Ouyang (2023) examined the integration of social constructivist approaches (e.g., Braun et al., 2020; Chan, 2014; González-Davies & Enríquez-Raño, 2016; Kiraly, 2000; cited in Xu & Ouyang) and translation/ interpreting skills and competences (e.g., Kalina, 2000; Motta, 2016; Wang, 2015; cited in Xu & Ouyang). The study revealed that teaching translation as a process of transferring meaning from one linguistic and cultural code to another, contributed to the understanding of translation as a complex and multifaceted task. In other words, applying code theory in instructional

designs is effective since it encompasses understanding the linguistic, communicative, socio-cultural, and media symbolic representations. In this respect, Madkour (2018) argued that when emphasis is placed on constructing new knowledge while acquiring social skills, students develop mental capabilities to understand different cultures in various types of texts. Furthermore, previous studies (Chen et al., 2022; Chen et al., 2023; Ge et al., 2020; Lin et al., 2021; Murillo-Zamorano et al., 2019) investigated the effectiveness of the constructivist approaches used in flipped translation classroom, revealing better learning outcomes in the flipped classes through enhancing pre-class activities, critical thinking, and self-efficacy strategies. Li (2023) investigated the use of cognitive approaches within a project-based teaching, indicating that this approach, which is based on interacting with actual translation projects, produced better performance and quality achievements. Madkour (2015) applied the project-based methodology in teaching machine translation by transforming the classroom into a workstation equipped with computers where students collaborated, using technology tools, to create translation projects while exploring the benefits of machine translation. In Madkour's study, students' projects included concordance tools, barcodes, web translation, translation memory, and cultural learning. The study found that students in the experimental group developed better skills for translation analysis and quality production. Additionally, Bilić (2020) found that an online Computer-Assisted Translation (CAT) classroom enables students to utilize translation technology, gaining hands-on experience with remote software. In this virtual setting, students can collaborate with their peers, resulting in the production of high-quality translations. In this context, cognitive apprenticeship approach combines cognitive and metacognitive domains, changing the classroom environment from teacher-centered to students-controlled learning, emphasizing practice in a variety of situations to enhance intrinsic motivation, collaboration, and culture differences (Collins et al., 1991; cited in Schunk, 2019). In this approach, teaching materials are selected from real-world, including documents from local and international organization, and multinational agencies that need translation services.

C. *Difficulties of Using Technology in Online Teaching Translation*

The difficulties of using technology in teaching translation online increased during the pandemic due to additional complications of the LMS platforms. Previous research (Akmaliyah et al., 2020; Alwazna, 2021; Di Pietro et al., 2020) found that teachers were required to teach and communicate through a digital medium, while maintaining a strong sense of presence despite physical separation. About 54% of teachers had difficulty implementing online teaching (Mazlan et al., 2022). Teachers faced difficulties regarding inadequate technology training, limited technical assistance, and unreliable connectivity. Previous studies (Basilaiia et al., 2020; Didenko et al., 2021; Enbaeva & Plastinina, 2021) indicate that teachers need more than just basic technological skills, they must also develop competences to create effective teaching methods, aligning course materials, content, and assessments, and designing customized environments for students. In other words, the online setting is not a single structure but rather a collection of online modes and technologies, and that online courses should be designed with certain characteristics of dynamism, engagement, and interactivity (Dhawan, 2020). Furthermore, research (Abbas et al., 2021; Alsager & Omar, 2019; Chen et al., 2022; Tao & Wang, 2022) found that while technology offers benefits to teaching translation such as increased efficiency, learner autonomy, and technological competence, but it also presents challenges related to teachers' authority, knowledge organization, and the need for a well-defined teaching philosophy and positive attitudes towards using technology. According to Perramon and Ugarte (2020), a complex problem in teaching translation/ interpretation involves the modification of online teaching approaches to accommodate larger classes, which required using collaborative approaches. The study found that teachers need to adjust the content and the methodologies to be in alignment with the changing demands of the profession in real-world practices. Additionally, Pym and Torres-Simón (2021) argued that increased automation involves an expansion of skills to blending translation with other communication forms to give authority for human inference to automated outcomes. In this regard, Bilić (2020) discussed the challenges associated with using Computer-Assisted Translation (CAT) tools, specifically addressing students' concerns about translation memory and segmentation, which necessitated a step-by-step approach to teaching CAT technology with a focus on terminology management. This approach motivated students to collaboratively proofread and edit the final outputs, producing high quality translation. Thus, despite the technological challenges such as complexity, accessibility, and adaptability, improving the training of both teachers and students can be a potential solution to address these issues.

III. METHODOLOGY

A. *Research Questions*

1. What were teachers' lived experiences with first-time inclusive online teaching during the pandemic?
2. What are the cognitive approaches teachers employed while using the LMS platforms?
3. What are the difficulties teachers faced while using technology?
4. How did translation technology influence students' performance?

B. *Participants*

83 teachers participated in this study. They are staff members in the English Department, College of Languages and Translation, at IMSIU. The participants' age ranges between 25 to 65 years old. They are all female, with teaching

experience ranges between less than 5 to more than 10 years. They teach language and translation courses that focus on helping students acquire translation skills, preparing them to become proficient translators, capable of performing high quality translation/interpreting in local and international organizations. The instructional approaches they used before the pandemic were based on traditional methods, supported by 20-25% blended learning. They were not involved in inclusive online teaching prior to the pandemic lockdown.

C. Instruments

A 5-point Likert questionnaire was used to collect quantitative data to identify the participants' demographic information, the LMs platforms they used for online teaching, and the technology applications they integrated into the platforms to carry out their instructional plans. A semi-structured interview was used to collect non-random data from 28 teachers, selected purposively from the total sample of 83, based teaching experience. This non-random purposive selection was employed to explore the participants' online experiences and gain insights to address the research questions.

D. Procedures

The questionnaire and the interview were validated by pilot studies before collecting the data. IBM-SPSS® (version 28) was employed for statistical analysis, and statistical measures were computed, including: frequencies and percentages to responses to questionnaire items; Pearson correlation coefficient to assess the internal consistency and validity of the study tool; Cronbach's Alpha coefficient to determine the reliability of the study tool's different dimensions; and mean and standard deviation to examine the responses across study sections. NVivo (version 14.0) was used to analyze the qualitative data, which resulted in obtaining the emergent themes and invariant constituents of each theme.

E. Research Limitations

The results of the study do not include teachers who teach in other universities or different courses. The study time span was only one semester, during the pandemic lockdown. The study purpose focused only on exploring the cognitive teaching approaches they used for achieving translation course objectives. Further studies may include different universities, and different courses with different technology applications.

IV. RESULTS

Pearson correlation coefficient showed a significant (0.01) level. Cronbach's alpha indicated a value of (0.869), referring to high reliability. Pearson correlation coefficient also showed that variables exhibit statistically significant correlations at (0.001) level, reflecting notable validity, significantly at (0.01) level.

A. Demographic Results

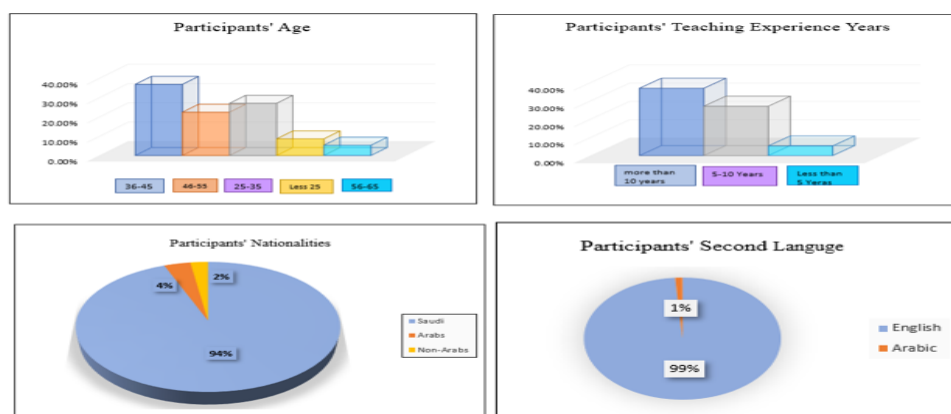


Figure 1. Participants' Demographic Data

Figure 1 illustrates the age distribution of the participants: (61.4%) fall within the 36-45 age range, (19.3%) within the 25-35 age range, (8.4%) within the 46-55 age range, and (4.8%) within the 56-65 age range. Approximately (6.0%) of participants are below 25 years old. Moreover, (61.4%) of participants have more than 10 years of teaching experience, (30.1%) have 5-10 years of teaching experience, and (8.4%) have less than 5 years of teaching experience. Regarding languages, (97.6%) of participants speak Arabic as their native language, while (2.4%) speak English as their native language. In terms of nationality, (94.0%) are Saudi nationals, and (6.0%) are non-Saudi.

B. Answering Study Questions

Q1. What were teachers' lived experiences with first-time inclusive online teaching during the pandemic?

Approximately (78.3%) of participants, comprising (22.9%) who *always* had positive experiences and (50.6%) who *often* had positive experiences, reported positive encounters while teaching translation online for the first time. In contrast, (2.4%) referred to *rarely*, and (0.0%) pointed to *never*, with mean score (*M*) of (4.27) and standard deviation (*SD*) of (0.857), highlighting teachers' positive experiences of teaching translation online for the first time. A rate of (73.5%) indicated that the LMS helped them deliver the course objectives, comprising of (22.9%) *always*, and (50.5%) *often*, in contrast to (1.2%) for *rarely* and *never*, with (*M*) score (3.93), and (*SD*) is (0.793). Commenting on their lived experiences, one participant stated, "It was a sudden shift to an inclusive online environment, and it was quite challenging. The technology support we received helped a lot; I also considered students' preferences for the online resources they suggested, providing activities based on personalized choices." Another participant noted, "In spite of the difficulties of losing connection and not seeing my students' reactions and level of understanding face-to-face, my experience was positive." A third comment stated, "On the positive side, teaching translation online provided me with flexibility and accessibility to many materials. Actually, the multidimensional setting offered diverse learning opportunities, enriching discussions and exposing my students to various cultural contexts." However, one participant expressed a different view, stating, "Online teaching presents challenges, one of which is the loss of face-to-face interaction. I found it hard to build rapport and provide personalized feedback to my students." Furthermore, the results revealed that (78.5%) of participants increased their awareness of the importance of regular technology training. About (62.7%) observed better results in final exams among students, highlighting the positive effects of technology on students' performance. Table 1 displays the results.

TABLE 1
PARTICIPANTS' FIRST EXPERIENCES TEACHING ONLINE DURING COVID-19 (N=83)

	Always	Often	Sometimes	Rarely	Never	Mean	SD
1. The Learning Management Systems (LMS) I used during COVID 19 was helpful in achieving course objectives.	22.9%	50.6%	24.1%	1.2%	1.2%	3.93	0.793
2. The Learning Management System (LMS) I used during COVID 19 did not require any additional technology to deliver my teaching materials.	14.5%	32.5%	39.8%	9.6%	3.6%	3.45	0.978
3. I had many difficulties in using LMS technology during COVID-19, and training was not adequate.	7.2%	14.5%	36.1%	30.1%	12.0%	2.75	1.08
4. Technical support was provided during COVID-19, for using LMS technology for teaching online.	27.7%	28.9%	22.9%	14.5%	6.0%	3.58	1.211
5. I received adequate training for using educational technology in teaching.	13.3%	27.7%	33.7%	19.3%	6.0%	3.23	1.097
6. The experience of COVID 19 raised my awareness that regular training in using new technology must be provided for teaching and learning.	50.6%	27.7%	19.3%	2.4%	0.0%	4.27	0.857
7. The results my students achieved in online classroom are the same as that of traditional classrooms during COVID-19.	8.4%	6.0%	27.7%	36.1%	21.7%	2.43	1.15
8. Based on the results of the final exams, using technology had positive effects on my students' language and translation proficiency, consequently performance.	6.0%	18.1%	38.6%	32.5%	4.8%	2.88	0.968

As displayed in Table 1, the results revealed that the participants encountered difficulties using the Learning Management System (LMS), with (57.8%) indicating inadequate training. However, (74.7%) reported receiving sufficient training in educational translation technology, suggesting that some participants successfully integrated technology into their teaching practices. Approximately (62.7%) stated that technology usage contributed to improved student performance, as evidenced by final exam results. Moreover, emergent themes from the qualitative data highlighted the challenges in managing the LMS platform (71.4%), the importance of integrating effective technological tools, and the impact of technology on translation students' performance (both reported by 78.5%). All participants (100%) noted the themes of enhancing online social presence and providing technology tutorials. Additionally, (89.2%) reported themes related to designing effective instructional plans, while using cognitive approaches, suggesting that only (10.8%) used traditional teaching strategies for online translation. Table 2 provides an overview of these themes.

TABLE 2
EMERGED THEMES OF PARTICIPANTS' INTERVIEW (N=28)

Emergent Theme	Number of Participants	Percent
Managing the LMS platform	20	71.4%
Integrating effective technological tools	22	78.5%
Enhancing online social presence	28	100%
Designing effective online instructional plans	25	89.2%
Using cognitive teaching strategies for online translation	25	89.2%
Integrating online translation learning activities	23	82.1%
Providing technology tutorial for students	28	100%
Influence of technology on translation students' performance	22	78.5%

As displayed in Table 2, the theme of integrating online translation learning activities was reported by 23 participants, representing (82.1%), and the theme of providing technology tutorial for students, was reported by all 28 participants, representing (100%). Qualitative results also showed the theme of employing remote assessment, reported by (64.2%). Reporting on their lived experience, one participant stated, “I encountered some challenges in using the platform such as uploading the teaching materials, recurring internet disconnection, and taking students’ attendance.” Another participant stated, “I faced technical challenges using Zoom, while Telegram was more user-friendly for specific tasks, specifically, recording verbal responses.” Figure 2 shows the utilization of LMS platforms, indicating that (42.2%) used Microsoft Teams, and (39.8%) used Blackboard, while (13.2%) used Zoom. About (6%) reported using other platforms. Figure 3 shows Telegram as the most frequently used application for communication with (34.9%), followed by WhatsApp with (14.5%), Twitter (renamed X) by (8.4%), and emails by (7.2%). The results also revealed that (9.6%) of the participants used video conferencing to enhance communication with low-proficiency students.

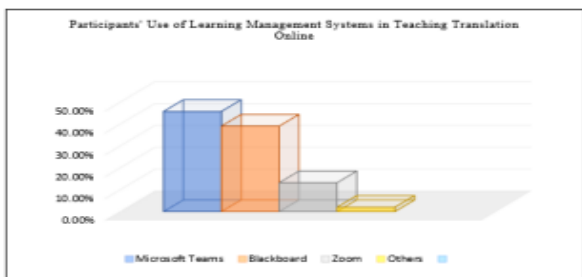


Figure 2. Results of Participants' Use of LM Teaching Translation Online

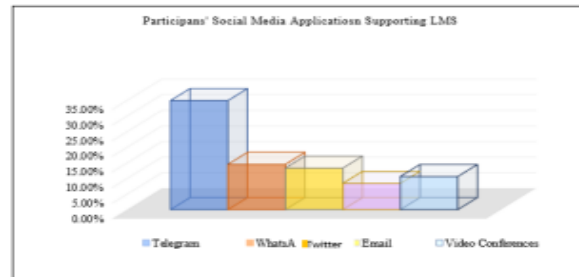


Figure 3. Results of Participants' Use of Social Media to Support LMS

Q2. What are the cognitive approaches teachers employed while using the LMS platforms?

The results revealed that the participants employed various cognitive approaches when using technology for teaching translation online. These approaches included project and problem-based instruction, collaborative techniques, and constructivist approaches. The emerged themes are presented in Table 3, indicating that the project-based approach was adopted by (82%), followed by the collaborative approach at (75%). Both the constructivist approach and lab training were employed by (68%) each. The taxonomy of cognitive skills, and conference-based approach were used by (64%) each, while the cognitive apprenticeship was used by (54%). The results also identified some participants’ responses regarding the employment of the cognitive apprenticeship approach. One participant stated, “I couldn't apply cognitive apprenticeship because it involves mentoring and guiding students in a real-world context, and the online platform made face-to-face interaction difficult for them.” Another participant noted, “It requires mentorship for a small group to understand the practices and methods used in this approach, and students weren't ready for it yet.” Table 3 provides an outline of these themes.

TABLE 3
EMERGING THEMES IN COGNITIVE APPROACHES (N=28)

Emerged Theme	Number of Participants	Percent
Project-based instruction	23	82%
Collaborative approach	21	75%
Constructivist approach	19	68%
Lab training	19	68%
Taxonomy of cognitive skills	18	64%
Conference-based approach	18	64%
Cognitive apprenticeship	15	54%

The results presented in Table 3 indicate that participants most commonly utilized the project-based approach, underscoring its suitability for teaching translation online. This approach involves student collaboration, proving beneficial for acquiring translation skills in cooperative environments. Table 4 shows the invariant constituents of project-based teaching approach.

TABLE 4
INVARIANT CONSTITUENTS FROM PROJECT-BASED APPROACH THEME (N=28)

Invariant Constituents	Number of Participants	Percent
Instructor provides ideas for translation projects	17	60%
Students suggests project materials	11	40%
Discuss /brainstorm the problems (link translation theory to practice)	18	64%
Explain translation problems	10	36%
Use audio/video resources for demonstration	25	89%
Ask students to search for additional information	22	78.5%
Use critical/ analytical thinking to review suggested solutions	21	75%
Allow collaboration	19	68%

Table 4 outlines the specific components employed to implement the project-based approach. Instructors contributed ideas (reported by 60%), while students made suggestions (reported by 40%). The consistent elements include brainstorming and explaining ideas, reported by 64% and 78%, respectively. Moreover, components involving critical and analytical thinking (75%) and audio/video resources (78.5%) were consistently applied. The invariant constituents also encompassed collaboration, as indicated by (68%). Participants shared their perspectives on the effectiveness of the project-based approach. One participant stated, “The project-based approach was suitable for helping students solve translation problems, encouraging critical thinking to develop essential problem-solving skills.” Another participant mentioned, “I asked my students to compare their translations with professional translations or other students' work, which helped them identify areas for improvement and gain a deeper understanding of translation choices”. A third participant noted, “The project-based approach was appropriate for the rubric assessment I used, as students knew in advance the requirements for assessing their translation, including identification and solution of translation problems”. Furthermore, in the context of assessment methods, quizzes and exams ranked first, with unanimous support from all 28 participants (100%). The second theme highlighted instructor feedback, reported by (82%). Other themes included the use of portfolios and rubrics (each reported by 71%), ongoing assessment and self-assessment (each reported by 64%). Commenting on the assessment they use, one participant stated, “I used cognitive teaching methods and I tried to integrate into them authentic such as rubrics and portfolios, but I had also to use quizzes and exams because they were compulsory in the syllabus, and I did not mind since they serve as effective tools for assessing students' comprehension and retention of course material”. Another participant noted, “I am an advocate for portfolio assessment, because it helps me monitor students' progress, providing a holistic view of their learning and growth over time, as well as encouraging students to practice self-reflection, helping them develop a deeper understanding of their progress and achievements”. In general, the results showed that the participants used appropriate assessment methods for their cognitive teaching approaches.

Q3. What are the difficulties teachers faced while using technology?

The responses revealed various difficulties, including the complexity of technological tools, disparities in accessing reliable internet connections and devices, glitches or server crashes, technical challenges in navigating the Learning Management System (LMS) or resource websites, lack of proficiency in using appropriate technology, inadequacy of training, and the high cost of software or website access. Providing details about these challenges, one participant stated, “I felt the need to invest extra time in teaching digital literacy to cope with the advancement of technology”. Another participant noted, “As translators, students often work with physical texts such as books, documents, or handwritten notes. Therefore, online environments may not adequately replicate the tactile experience of working with physical texts”. A third comment highlighted “the prevalence of machine translation tools that students can sometimes rely on excessively, potentially hindering their language skills and translation abilities. Many students do not assess translation assignments done by machines, and I am always concerned about issues of academic integrity and preventing plagiarism”. The results identified themes related to the difficulties of using technology, including integrating effective technological tools (reported by 16 participants, 57%), managing the LMS platform (indicated by 50%), the high cost of software or website access (reported by 54%), inadequacy of professional development programs (represented by 42.85%), and disparities in accessing reliable internet connections and devices (indicated by 39%). Thus, the results indicated a high frequency for the theme of integrating effective technological tools into cognitive teaching strategies. Figure 4 displays the frequencies.

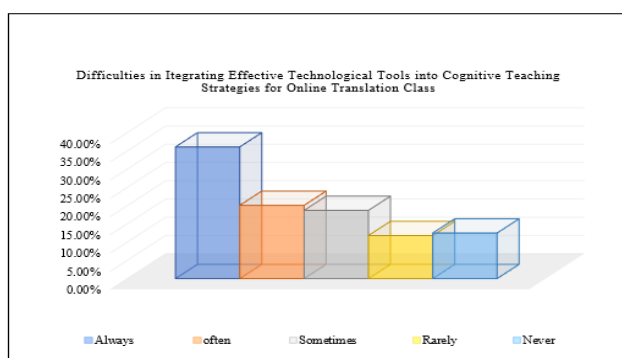


Figure 4. Results of Participants' Difficulties in Integrating Effective Tools Into Cognitive Teaching

As illustrated in Figure 4, the frequency for the theme of difficulties in integrating effective technological tools into cognitive teaching strategies was found to be (75.7%), with a breakdown of (36.1%) *always*, (20.9%) *often*, and (18.7%) *sometimes*, in contrast to (11.80%) *rarely* and (12.50%) *never*. These results emphasize the significance of providing continuous technology training.

Q4. How did translation technology influence students' performance?

Both quantitative and qualitative data highlighted the positive influence of technology on students' performance, equipping them with effective tools to significantly enhance their translation capabilities. The quantitative data indicated that (62.7%) of students achieved better exam results when using technology in translation (see Table 1). The qualitative data revealed emerging themes, such as technology providing more learning opportunities beyond the classroom, allowing exposure to diverse socio-cultural settings, enabling collaboration that enriched students' learning experiences, offering various sources for feedback, and enhancing independent learning. One participant noted, "I used advanced computer-assisted translation (CAT) software, terminology databases, and machine translation systems, which helped my students increase their efficiency and accuracy." Another participant stated, "I believe that technology plays a dual role in shaping the performance of translation students. Full reliance on it can decrease their mental abilities, but when used properly, it can help them in various ways. This happened with my students who were empowered, using effective resources, software, combined with collaboration opportunities that enhanced their skills and improved their performance". Moreover, a rate of (62.7%) indicated that the results of final exams showed positive effects of technology on students' performance, evident in language and translation proficiency, in contrast to the lower rate of (37.3%). A significant rate of (83.2%) indicated that technology positively impacted students' linguistic levels. About (80.7%) believed that technology improved students' translation skills, and (78.5%) pointed to improvements in social skills. A rate of (65.1%) reported that technology aided in acquiring communicative skills. A percentage of (78.3%) indicated positive impacts of technology on students' psychometric abilities, enhancing motivation, self-assessment, and self-efficacy. Figure 5 shows the results.

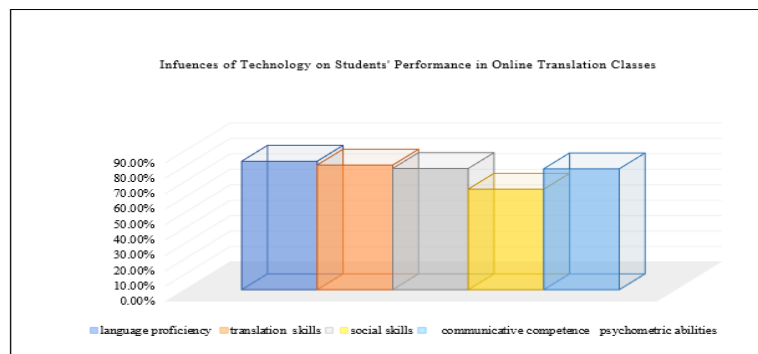


Figure 5. Results of Influences of Technology on Students' Performance in Online Translation Classes

V. DISCUSSION AND FINDINGS

The findings unveiled positive experiences among participants in teaching translation online, as indicated by (78.3%). About (73.5%) of the respondents, comprising (22.9%) *always* and (50.6%) *often*, reported that the (LMS) platforms, including Blackboard, Microsoft Teams, and Zoom, assisted them in delivering course objectives, despite encountering difficulties (see Figure 2). Approximately (78.5%) reported that online experiences raised their awareness of the necessity for ongoing technology training (see Table 1). The findings emphasize the rate of (78.57%), corresponding to the theme of integrating effective technological tools into cognitive teaching approaches (see Table 2). Furthermore, the findings revealed that using social media, including Telegram, WhatsApp, and Facebook, enhances social interactions among teachers and students, compensating for the loss of physical presence (see Figure 3). In alignment with these findings, Alwazna (2021) reported that (40%) of the participants evaluated their online translation teaching experience during the COVID-19 outbreak as meaningful and enjoyable, despite the difficulties they faced. Similarly, Akmaliah et al. (2020), Chen et al. (2020), Di Pietro et al. (2020), and Mazlan et al. (2022) asserted that teachers had positive experiences playing their roles in fostering virtual classroom interactions, dealing with learners' psychological problems, and solving technical problems that occurred during online sessions. Consistently, Basilaia et al. (2020) found that LMS platforms are advantageous for enhancing teacher workflow due to their technical features and time-saving capabilities. Akcil and Bastas (2021) indicated that the effectiveness of online teaching/learning can be interpreted through individuals' social-psychological perspectives on how their experiences are reflected in reality and the impacts of technology on their outcomes. In alignment with this research, the present study's findings revealed that students' translation, linguistic, social, and psychometric abilities significantly improved while engaged in online translation classes. Another finding of the present study is the revelation of cognitive teaching approaches employed by teachers in online translation instruction. These approaches include project-based instruction (82%), the collaborative approach (75%), the constructivist approach, and lab training (68%). Additionally, teachers incorporated various technology tools such as computer-assisted translation (CAT), audio/video materials, online dictionaries, electronic/interactive textbooks, Google tools, and translation websites (see Table 3, Table 4, & Figure 4). Teachers reported that cognitive teaching approaches highlight the importance of achieving a profound understanding of the source text, aiding students in comprehending the contextual messages and leading to more accurate translations. The implementation of these approaches helps students develop critical thinking and problem-solving skills, enabling them to effectively tackle

complex linguistic and cultural challenges. In alignment with these findings, previous studies (Bilić, 2020; Chen et al., 2023; Ge et al., 2022; Kairong & Muñoz, 2020) indicate that researchers and teachers have endeavored to construct models illustrating various facets of translational cognition. They primarily draw upon concepts and theoretical foundations adopted from linguistics, neuroscience, sociology, psychology, and technology. The incorporation of these concepts and models helps teachers in delivering effective instruction, including the employment of the project-based approach and social constructivist approaches. In this respect, Kiraly (2018) found that cognitive approaches emphasize context and the impact of cultural and linguistic factors, enhancing the contextual accuracy of translations. Applying social constructivist approaches, for instance, helps students construct new knowledge, enhancing cultural values and competencies, with the maximum use and development of their cognitive, affective, psychomotor, and experiential potentials. Madkour (2015) found that using a project-based methodology is a constructivist authentic approach for teaching machine translation, which significantly improved students' performance while enhancing their creative thinking. In this regard, Schunk (2019) emphasized the importance of meaningful instruction, authentic context, and collaborative interactions, especially when incorporating computer-aided translation tools, in enhancing translator skills. Additionally, Xu and Ouyang (2023) affirmed that the constructivist approaches empower students with meta-knowledge of translation and interpreting, beneficial for their training, enabling them to effectively handle and transfer information across languages in diverse socio-cultural settings. Li et al. (2023) concluded that the effectiveness of cognitive approaches to teaching translation stems from focusing on achieving the translation skopos (purpose) while using technology and psychological resources to train students how to identify translation problems embedded in texts and implement appropriate translation strategies to solve them.

Other findings of the current study point to the difficulties that teachers face while using technology in teaching translation online, highlighting the complexity of the technological tools, disparities in accessing reliable internet connection and devices, technical problems of navigating the LMS, inadequacy of training, and the high cost of software or website access, as expressed by the percentages of (75.7%) (see Figure 4). In alignment with these results, previous research (Bilić, 2020; Enbaeva & Plastinina, 2021; Tao & Wang, 2022) asserted that while technology has many advantages for facilitating the teaching/learning process, however, it also involves some difficulties concerning teachers' authority, knowledge, competences, and philosophy and attitudes towards technology integration. In this respect, Wenchao and Defeng (2023) found that despite the effectiveness of CAT tools, some reservations were detected regarding its complex navigation, inaccurate segmentations, and inconsistent memory management. However, the present study findings revealed the positive effects of using translation technology on students' performance, indicating that technology expands their learning opportunities, fostering socio-cultural interactions, promoting collaboration for enriched educational experiences, offering multiple feedback sources, and strengthening independent learning, as reported by (62.7%). The results found that students' performances were better in online classes, based on the final exam results (see Table 1). These findings highlight students' development in language and translation proficiency by (83.2%), as well as improvements of (78.5%) in linguistic abilities, (78.5%) in social skills, (65.1%) in communicative skills, and (78.3%) in psychometric abilities (see Figure 5). These findings are in harmony with previous research (Aroles & Küpers, 2021; Chen et al., 2023; Ge et al., 2020; Gu & Zhao, 2021; Li et al., 2023; Wang, 2023), affirming a positive relationship between the use of technology and students' performance, as revealed in their final exams, assignments, and instructor feedback. In this context, Guerberof and Moorkens (2019) asserted that using machine translation for post-editing resulted in improved performance in students' assignments. Chen et al. (2023) further affirmed that students in flipped classrooms based on cloud computing outperformed students in traditional classrooms. Abbas et al. (2021) found that emerging technologies for innovative pedagogies contribute to teacher competency development.

VI. RECOMMENDATIONS AND CONCLUSION

The present study has several implications, highlighting the benefits of teaching translation online and adopting cognitive approaches suitable for the features of the LMs platforms. These platforms offer a wide range of opportunities to enhance students' learning beyond the traditional classroom setting. Incorporating technology into language and translation education allows teachers to emphasize the relationship between translation theory and its practical implementation. Another implication is that teachers struggling with limited technology proficiency may benefit from professional development programs to assist them in implementing innovative approaches to foster students' critical and creative thinking. This study reveals that relevant implications of instructional pedagogy and the appropriate integration of technological tools are crucial for ensuring continuous success in delivering translation content using online settings. Technology also enhances the employment of authentic assessment, engaging students in self-assessment and motivating them to develop self-efficacy. However, using technology requires the development of technological competences. Therefore, the study recommends providing ongoing technology training, incorporating translation technology resources into language and translation curriculum and instruction. In conclusion, this study explored teachers' initial experiences of using inclusive online settings to teach translation during the COVID-19 lockdown at IMSIU in Saudi Arabia. The study delved into the cognitive teaching approaches implemented to achieve course objectives and the assessment tools that helped evaluate students' learning outcomes. The findings revealed that the social, technological, and pedagogical challenges teachers encountered were intertwined; however, with their

perseverance and technical support, they managed to overcome these difficulties. The use of translation technology, such as CAT tools, online dictionaries, memory databases, and website resources, helps teachers design learning environments that empower students to process information and use translation theories to identify and solve translation problems in real-time practices. Consequently, the study contributes to emphasizing the integral relationship between translation, cognition, and technology. Additionally, the study contributes to global reports on higher education conditions during the pandemic lockdown.


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