



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Yr Athrofa
Addysg a'r Dyniaethau
Education and Humanities

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**(Exploring Contemporary Issues in Education 2: applying critical skills,
contributing to knowledge: leading improvement)**

**An Exploration of Essential Digital Literacy needed for Translation
Students in China from the Perspective of Translators**

Student Name:	Chaoying Yang
Student Code:	2307764
Module Title:	ECDE
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Abstract: This research report explores the essential digital literacy needed for translation students in China, focusing on the perspectives of professional translators. The study aims to identify essential skills and competencies needed in the evolving translation industry. This study utilizes qualitative methodology, employing online interviews in conjunction with a life-history research approach for data collection. In addition, Braun and Clarke's thematic analysis framework is used to analyze data. Findings indicate a gap between existing training programs and industry requirements, highlighting the need for enhanced digital literacy education. The study concludes with recommendations for curriculum development to better prepare translation students for the digital age, supplying information on the current state of digital literacy instruction in translation education and establishing a framework for academics and practitioners to carry out additional research in this area.

Subjects: Education Technology; Translation Education

Keywords: digital literacy; translation education

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Chapter 1 Introduction

This section offers a thorough synopsis of the context, justification, goal, questions, and objectives of the research project concerning the subject of study.

1.1 Background

The rapid development of intelligent technologies has created a landscape where the traditional methods of translation are being continuously reshaped (Yang and Wang, 2023). The integration of the “Internet+” model, big data, and Artificial Intelligence Content Generation (AIGC) into the translation industry signifies a shift towards more intelligent, ubiquitous, and adaptable systems (Wang, 2023). These technologies not only enhance the efficiency and accuracy of translations but also redefine the roles and skills required for translators (Yang, 2022). Consequently, the professional environment for translators is evolving, necessitating a re-evaluation of the educational frameworks that prepare students for careers in this field. Understanding the implications of these technological advancements is critical for translation education. This research project aims to address this need by uncovering the core skills, knowledge, and competencies required in the modern translation landscape for translation students. By aligning the curriculum with the current and anticipated needs of the industry, educational institutions can better prepare students for successful careers.

1.2 Rationale

The rationale for this small-scale research comes from both the policy level and the researcher’s positionality.

1.2.1 The Policy Rationale

At the policy level, the rationale includes both international and national perspectives. Both the United Nations and the Chinese national government have issued documents aimed at improving digital literacy. The UNESCO issued *Action on Assuring and Improving Quality Digital Public*

Learning for All in 2023, and the national government released *Outline for Improving National Digital Literacy and Skills* in 2021.

At the international level, the *Action on Assuring and Improving Quality Digital Public Learning for All*, discussed at the United Nations' education transformation conference, is highly relevant to this research. It offers a global perspective on the importance of digital literacy in public education (UNESCO, 2023), emphasizing its role as a human right and public good. This statement emphasizes how important digital technology is to the advancement of lifelong learning and education (UNESCO, 2023), which resonates deeply for translation students in China, who must master essential digital skills. Content, capability, and connectivity, three elements mentioned in the paper (UNESCO, 2023), are essential for successful digital teaching and learning. This speaks directly to the necessity for translation students to receive instruction in digital literacy. Building capacity among educators and students is crucial to making the most of digital resources (UNESCO, 2023). This is true for translation students, who must use technology in their line of work. For their learning and skill development, it is also essential to guarantee connectivity and access to digital resources. Enhancing digital literacy in translation students not only helps them develop as individuals but also fits with the UN's goal of using digital technology to promote global education. A matrix representation of UNESCO's paper summary and its applicability to translation students' digital literacy training is presented in Table 1.

TABLE 1 Matrix representation of UNESCO's document summary and relevance to digital literacy training in China		
Aspect	Document Summary	Relevance to Training for Translation Students in China
Emphasis	- Digital revolution for quality education as a human right	- Importance of digital literacy training for translation students
	- Harnessing digital technology for education as a human right	- Capacity building for effective digital tool utilization
Key Factors	- Content, Capacity, Connectivity - Transforming education through digital technology	- Aligning with the need to equip translation students with essential digital skills
Commitments	- Establishing public digital learning platforms, enhancing digital literacy, ensuring connectivity for all	- Enhancing learning outcomes through effective digital tool utilization for translation students

The table demonstrates how the research is essential for advancing inclusive and high-quality education and is consistent with global frameworks and perspectives. The published *Outline for Improving National Digital Literacy and Skills* (CAC, 2021) has significance for the education and translation industries at the Chinese national level. In order to fulfil the demands of the digital age, advance national quality, and support holistic human development, the document highlights the significance of improving digital literacy and skills across the population (CAC, 2021).

Table 2 displays a matrix representation of the national document summary along with its applicability to China's digital literacy instruction.

TABLE 2 Matrix representation of national document summary and relevance to digital literacy training in China		
Aspect	Document Summary	Relevance to Training for Translation Students in China
Emphasis	- National directive to enhance digital literacy among the general population	- Focuses on equipping translation students with essential digital competencies
	- Importance of enhancing digital literacy and skills across the population	- Aligns with the need for translation students to handle digital tools and technologies
Key Factors	- Recognizes the significant role of digital literacy in building a skilled workforce and fostering societal development	- Acknowledges the necessity of technological proficiency for future professionals in translation
	- Outlines specific goals and measures to promote digital literacy, skills, and innovation	- Provides a road map for integrating digital literacy training into translation education
Commitments	- Alignment with the strategic vision of building a strong online presence and fostering digital innovation	- Contribution to advancing national digital capabilities and ensuring a skilled workforce
	- Recognition of digital literacy as a prerequisite for effective translation practices	- Direction for enhancing digital literacy among translation students in China

The table illustrates how various aspects of the national document align with and support the objectives and framework of digital literacy education initiatives in China.

1.2.2 The Researcher's Positionality Rationale

As a translation course instructor at a Chinese university, the researcher's positionality provides a unique and advantageous perspective to explore digital literacy training among translation students in China. This role involves several key aspects, as Figure 1 shows, that contribute to the depth and relevance of the research.

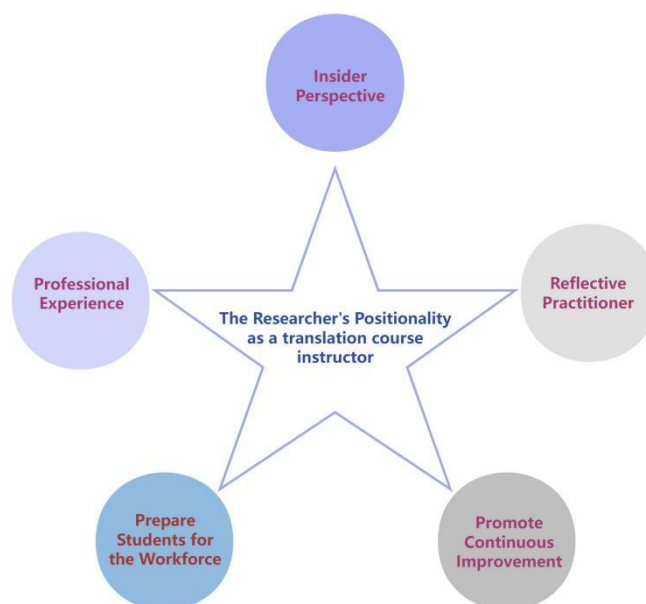


Figure 1. The Researcher's Positionality as a Translation Course Instructor

The researcher, who has extensive professional experience as both a translator and educator, leverages an insider's perspective on curriculum and teaching methodologies and engages in reflective practice to continually adapt strategies for better student outcomes. This dual expertise allows for a deep understanding of the translation industry's evolving demands and the educational requirements necessary to meet those demands. Additionally, the researcher's familiarity with the local educational context and cultural nuances allows for a more tailored and effective approach to curriculum development. As an educator, the researcher also focuses on preparing students for the workforce by equipping them with essential knowledge, skills, and competencies and is committed to continuous improvement through evidence-based recommendations, ensuring that educational practices remain relevant and effective. This combination of professional and educational experience makes the researcher well-suited to conduct this research.

1.3 Research Purpose

The primary purpose of this research is to delve into the perspectives of translators regarding the evolving demands of the translation industry. By understanding the barriers they face and the opportunities presented by new technologies, the research aims to provide a detailed exploration of the skills, knowledge, and competencies that are crucial for translators operating in a technology-driven industry.

Chapter 2 Literature Review

This chapter provides an overview of the literature, discusses important themes, examines the contributions and limitations of existing studies, and identifies gaps that this research aims to fill.

2.1 Introduction

A review of relevant literature from the past decade reveals an increasing demand for digital literacy skills in the translation industry. This demand is primarily driven by the integration of AI and other digital technologies, which are transforming the industry in China. Feng (2020) claims that the industry and profession of translation have undergone significant transformations as a result of the extensive use of translation technology, offering new opportunities and challenges for translation students in the rapidly advancing digital era. Kornacki and Pietrzak (2021) noticed while traditional translation skills remain essential, digital literacy is increasingly important. Given this shift, there is a growing need to reevaluate translation education, particularly in China, where the industry is rapidly expanding (Mu, Liang, and Liu, 2023).

2.2 Key Terms Definition

Definitions for two key terms, digital literacy and translation education, are given in this section.

Digital literacy: The ability to recognise, locate, and analyse information is what Zurkowski (1974, mentioned in Gutiérrez-Ángel, *et al.*, 2022) defines as the earliest instance of the notion. Nonetheless, as the digital world has changed, so too has the definition. Various academics provided varying definitions, each emphasising a different point. According to Wang (2023), digital literacy in the translation industry refers to a translator's total ability to support the translation process, create their own value, and pursue objectives in a digital environment through the use of digital technology. This competency set includes understanding, becoming proficient with, and using digital technology effectively; processing, evaluating, and making appropriate decisions based on data; and employing a range of digital technologies to continuously increase personal development. Two factors led to the

selection of Wang's definition for this review: first, it most closely aligns with the researcher's field; and second, it offers clarity, inclusivity, and simplicity.

Translation Education: The history of translation is long and illustrious, dating back to the earliest civilisations in Mesopotamia, ancient Egypt, and ancient China (Erton, 2022). Within the historical framework, the translation education approach has customarily focused on improving linguistic and cultural competency, emphasising textual material translation and language fluency. Initially, translation programs followed a theoretical structure and paid little attention to providing students with real-world experience (Venuti 2017). However, as the digital era has evolved, translation has seen significant changes due to the internet, big data, artificial intelligence, and other information technologies. The translation process and translators' identities are being altered by artificial intelligence (Li, Yan, and Li, 2023). Scholars like Wang & Liu (2023) and Lim & Newby (2021) have examined the effects of technology on translation education, taking into account current developments. This point of view is also supported by Wang and Li's research (2021), which notes that the translation industry has grown significantly as a result of the AI technology's rapid advancement. This has led to the emergence of numerous new technologies like translation memory, terminology management, and neural network machine translation, as well as a revolutionary shift in the way translation is produced. Kornacki and Pietrzak (2021) state that modern translation education equips translators with the knowledge, skills, and viewpoint needed to successfully handle the complexities of translation in the modern world. Khasawneh *et al.* (2023) state that translation has become more recognised as a distinct profession requiring both specialised knowledge and skills. Translation education has therefore taken on a more refined and professionalised approach.

2.3 The Review Processes

The procedures utilised to examine recent studies on digital literacy instruction in translation education conducted between January 2010 and June 2024 are outlined in this section. In this investigation, the researcher used the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis) paradigm developed by Miller *et al.* (2016) and Scott *et al.* (2018). The researcher performed the review based on a few keywords ("digital literacy" and "translation education"; "digital literacy" and "translation technology" and "literature review") using Google

Scholar and CNKI, two reputable and well-known databases. In July 2024, the systematic evaluation's four phases were finished (See Figure 2).

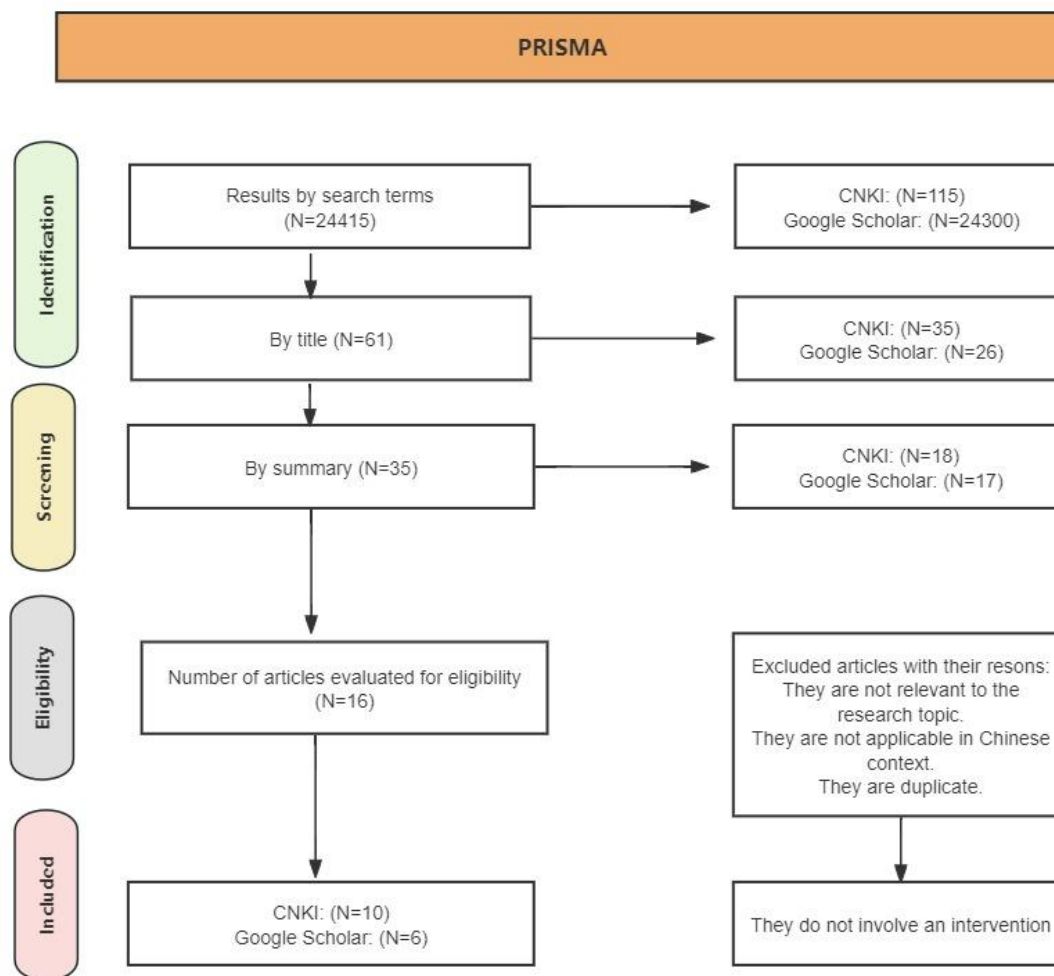


Figure 2. PRISMA Protocol Flow Chart

Stage 1 involved the researcher retrieving a total of 24415 articles from the two databases ($n = 115$ from CNKI; $n = 24300$ from Google Scholar) using the predefined keywords “digital literacy+translation education.” 3275, 150 relevant articles ($n = 155$ from CNKI; $n = 3274, 995$ from Google Scholar) arose from a search for “digital literacy + literature review,” while 18,200 articles ($n = 306$ from CNKI; $n = 17,894$ from Google Scholar) were discovered for the combination of digital literacy and translation technology + literature review.

Stage 2 involved screening 61 publications ($n = 35$ from CNKI and 26 from Google Scholar) based on their title, and 35 publications ($n = 18$ from CNKI and 17 from Google Scholar) based on their

summary; the articles that were excluded were determined by the inclusion and exclusion criteria (See Table 3).

TABLE 3 Criteria of Inclusion and Exclusion		
Criteria	Inclusion	Exclusion
Article title and content	An appropriate title that complied with the study's requirements	Did not match the requirements of the study and had an irrelevant title
Year of publication	Publications from 2010 to 2024	Publications outside the range specified
Type of publication	Solely journal articles	Reviews, editorials and non-empirical studies
Language	English and Chinese	Other
Field of article study	Digital literacy; translation education	Other
Accessibility	Full-text articles or open access	Preview articles or articles requiring a payment

Stage 3 involved a thorough inspection of the remaining articles. 25 items were chosen for additional scrutiny. Many reasons led to the majority of the articles being removed, including the fact that they were duplicates, that they weren't journal articles or conference proceedings, or that they didn't use the predefined keywords in the main body. At last, 16 (n = 10 from CNKI; n = 6 from Google Scholar) publications were chosen for the systematic review.

2.4 Key Themes Relevant to the Research Purpose

Despite the broad spectrum of digital literacy covered in the literature, this review will focus on two main themes that frequently appear in the analyzed material. The first theme is digital skills, knowledge, and competencies; the second theme is technology integration in translation education. Although these topics are discussed in various contexts within the literature, this research will primarily concentrate on digital literacy among Chinese translation students.

Theme 1: The Importance of Digital Skills, Knowledge, and Competence

The studied literature constantly highlights the significance of digital competence, knowledge, and

abilities within the framework of contemporary translation education. Digital literacy, according to Wang and Liu (2023), is an essential part of translation training since it helps translators to use digital technologies efficiently to improve workflow and guarantee the quality of their translations. They contend that as digital materials and software are becoming more widely available, it is essential that translation students learn how to use them effectively. The writers go on to say that increased productivity and improved translation accuracy are both benefits of digital literacy. The Chinese Translation Association's Translation Industry Annual Report for 2023 (TAC, 2024) emphasises the value of digital literacy in the translation industry. The report highlights the necessity for translators to consistently improve their digital abilities in order to keep up with the quickly changing digital world, given the extensive use of digital technologies in the translation sector. The report also emphasises how translators can improve translation quality and efficiency by using terminology databases, machine translation, and proofreading tools more effectively with strong digital literacy. Furthermore, digital literacy also help teams, clients, and translators communicate effectively, expanding the opportunities for cross-cultural interactions.

However, digital skills are more important than just using tools. Cui (2020) noted that being digitally literate also entails being aware of the moral and legal ramifications of digital translation techniques. When working with digital content, translators must be mindful of several ethical aspects such as data privacy, intellectual property rights, and other legalities.

Critiques of the literature show whereas digital skills are clearly necessary, opinions on the precise knowledge, competence, and skills that translation students need are less widely held. Scholars (Li, 2012; Lim and Newby, 2021; Massey, 2022) have typically stressed the need of digital literacy, but they haven't been specific about the abilities and proficiencies needed in the translation area.

Theme 2: The Integration of Technology into Translation Education

Another important theme that keeps coming up in the literature is the integration of technology into translation instruction. The use of digital tools, platforms, and applications to improve instruction and learning in translation programs falls under this issue. According to Zappatore (2024), the incorporation of technology into translation instruction represents a crucial shift rather than only a

fad. They contend that in the digital age, the conventional method of teaching translation, which frequently emphasises theoretical understanding and language proficiency, is insufficient. Rather, they support a more technologically advanced method that equips students for the opportunities and difficulties brought about by digital translation techniques. Giving students real-world experience is one of the main advantages of incorporating technology into translation education. Technology-enabled translation techniques, as noted by Xiao and Feng (2019), give students the chance to put their theoretical knowledge into practice and obtain real-world experience. This method raises student participation while preparing them for the challenges of the translation profession.

However, technological integration require more resources and teacher preparation. Doherty (2016) has pointed out that although technology integration has a lot of potential advantages, the process itself needs to be carefully planned and carried out. Furthermore, Doherty stresses the value of professional development programs for educators in order to guarantee that they possess the abilities and know-how needed to successfully integrate technology into their lesson plans.

After reviewing the literature, it is clear that a number of variables, such as the kind of technology being utilised, the instructional strategies being used, and the students' requirements, affect how well technology integration works. Translation students have a wide range of digital literacy levels and learning preferences, so a one-size-fits-all strategy might not work for them. Furthermore, because technology is advancing so quickly, technology integration tactics in translation education must be continuously evaluated and adjusted.

2.5 Contributions, Limitations of the Reviewed Literature and the Gap Identified

This evaluation of the literature advances knowledge about digital literacy instruction in translation education by concentrating on the growth of digital competencies among Chinese translation students. First of all, it offers a thorough examination of the state of digital literacy instruction for translation students in China, emphasising the scant focus on this field of research. Second, it highlights important obstacles to the growth of digital literacy instruction, such as students' lack of knowledge, the curriculum's lack of pertinent courses, and insufficient teaching materials. Thirdly,

the review emphasises how critical it is to address these issues in order to better prepare translation students for the needs of the contemporary translation market. Furthermore, the study provides information about the unique areas of emphasis within digital literacy training in translation education, especially the emphasis on translation technology, by combining the findings of 16 journal articles. All things considered, this review advances knowledge of the nuances surrounding digital literacy instruction in translation education and offers recommendations for further study and application in this area.

A number of limitations become apparent despite the studied literature's thorough treatment of the significance of digital skills in translation education. Firstly, the emphasis is mainly on the theoretical importance of digital literacy for translation students, with limited studies exploring the specific skills, knowledge, and competencies that constitute digital literacy. Second, there is still much to be learnt about the assessment and instruction of digital skills. Some academics (Zhang, Yu, and Cui, 2023) support project-based learning, while others (Wang and Li, 2021) support the inclusion of digital literacy courses in translation programs. On the other hand, there isn't much advice available for efficiently creating and carrying out these projects or courses in order to optimise learning outcomes. Furthermore, educators find it challenging to stay current with the newest tools and trends due to the quick growth of technology, which makes it challenging to maintain the relevance of their courses. It is also evident from this analysis that machine translation and translation technology are the key subjects of current research on digital literacy in the translation industry. There hasn't been enough focus on how digital literacy affects translation education.

After reviewing the literature, the gaps have been identified, highlighting the need for research that specifically addresses the core skills, knowledge, and competencies required by translation students. Additionally, there is a need to explore ways to enhance digital literacy training for these students. Although multiple limitations and gaps have been identified in the literature, this small-scale research will focus specifically on the first gap: the core skills, knowledge, and competencies required by translation students. Other limitations and gaps could serve as directions for future research.

Chapter 3 Methodology

The chapter explains the methodological choices, highlighting the reasons for the selected research approach, and describes the research methods and tools used for data collection.

3.1 Methodological Choice - Qualitative Research

This section introduces the rationale for choosing qualitative research methods. Qualitative research allows for the exploration of complex phenomena within their contexts (Creswell & Creswell, 2017), making it ideal for understanding the digital literacy training needs of translation students in China. Because digital literacy involves not just the ability to use technology, but also understanding how it integrates into the broader context of translation practices and education. By employing qualitative methods, the researcher can capture the nuanced requirements of translation students' digital literacy, including technical skills, cognitive processes, and contextual applications.

Furthermore, qualitative research supports the exploration of contextual factors (Creswell & Poth, 2018) that influence digital literacy. Understanding phenomena within their real-world context allows researchers to consider the social, cultural, and institutional factors (Creswell & Creswell, 2017), which affect digital literacy training. For translation students in China, these factors might include educational practices, technological infrastructure, and cultural attitudes towards technology use. By taking these contextual elements into account, qualitative research provides a comprehensive view of the digital literacy landscape.

Additionally, according to (Maxwell, 2013), qualitative research provides a deep understanding of human behavior and the reasons that govern such behavior. This aligns with the aim of this study, which is to delve into the specific skills, knowledge, and competencies needed by translation students to enhance their digital literacy.

Moreover, qualitative research allows for a flexible, iterative process where the researcher can adjust the focus based on emerging insights (Mertens, 2014). Given the rapid evolution of technology and

its impact on translation practices, a qualitative approach enables the researcher to stay responsive to new developments and perspectives.

The Philosophical Foundation-Ontology

Ontology refers to the nature of reality and what can be known about it (Guba & Lincoln, 1994). In this study, a nominalist ontological perspective is adopted, which assumes that the core skills, knowledge, and competencies required by translation students are constructed through their experiences and interactions. This perspective aligns with the qualitative approach, as it allows for the exploration of translators' subjective experiences and the contextual factors influencing digital literacy.

Therefore, the choice of qualitative research methods based on ontology is justified. This approach supports the exploration of individual experiences and contextual factors, offering insights that can inform the development of effective digital literacy training programs.

3.2 Research Methods - Life history Research

Life history research involves the collection and analysis of detailed personal narratives, allowing researchers to explore individuals' experiences and development over time (Manning & Cullum-Swan, 1998). This approach is effective in capturing the personal and professional development of translators, providing rich, in-depth insights into their core skills, knowledge, and competencies for several reasons:

Firstly, it facilitates an in-depth understanding of the individual trajectories of translation professionals, which is crucial for identifying the specific skills and knowledge they have acquired throughout their careers. By examining the life histories of experienced translators, a comprehensive view of the competencies needed in the translation field can be gained. As Goodson and Sikes (2001) highlight, life history research is valuable in understanding how individuals' backgrounds, experiences, and professional contexts shape their expertise and skills.

Secondly, life history research provides rich, contextual data (Dudek, 2017; Goodson, *et al*, 2017)). It offers a holistic perspective on the development of translation competencies and enables the exploration of how personal experiences, educational backgrounds, and professional practices intersect to shape translators' abilities. This method reveals the complexities of translators' professional journeys, providing essential insights into the multifaceted nature of translation skills and knowledge.

Thirdly, life history research offers a longitudinal perspective on skill development, allowing the researcher to trace the evolution of competencies over time (Stephens, 2017; Goodson & Sikes, 2017). This perspective is invaluable for understanding how core skills and knowledge are acquired and refined throughout a translator's career. By delving into the life stories of seasoned translators, the study can uncover the elements that contribute to effective translation practice.

In conclusion, life history research is chosen as the primary method for this study due to its effectiveness in capturing the detailed, personal narratives (Bertaux, 1981). The approach not only provides a comprehensive understanding of the translation profession but also informs the development of targeted training programs to enhance digital literacy among translation students.

3.3 Research Tools for Data Collection- Online Interviews

This section details the reasons for using online interviews as the data collection tool, describing the process of conducting online interviews to ensure comprehensive data collection.

Rationale for Using Online Interviews

The online interview was chosen as the primary data collection tool for this study due to several reasons. Firstly, the researcher is currently based in the UK, while the interviewees are located in China. Online interviews offer a practical solution to overcome geographical barriers, allowing for real-time interaction and data collection without the need for physical travel (Berg, 2004). Secondly, online interviews provide flexibility in scheduling, which is particularly important when coordinating between different time zones. This flexibility allows both the researcher and the participants to choose convenient times for the interviews, thereby facilitating better participation and more

meaningful conversations (Salmons, 2015). Thirdly, online interviewing is easy to record, save, and archive the interaction for close viewing later. This feature frees the researcher to focus on the questions and responses in the moment, without worrying about note-taking or missing important details (Salmons, 2015). The ability to revisit the recorded interviews ensures that no valuable information is lost and allows for a more thorough and accurate analysis of the data.

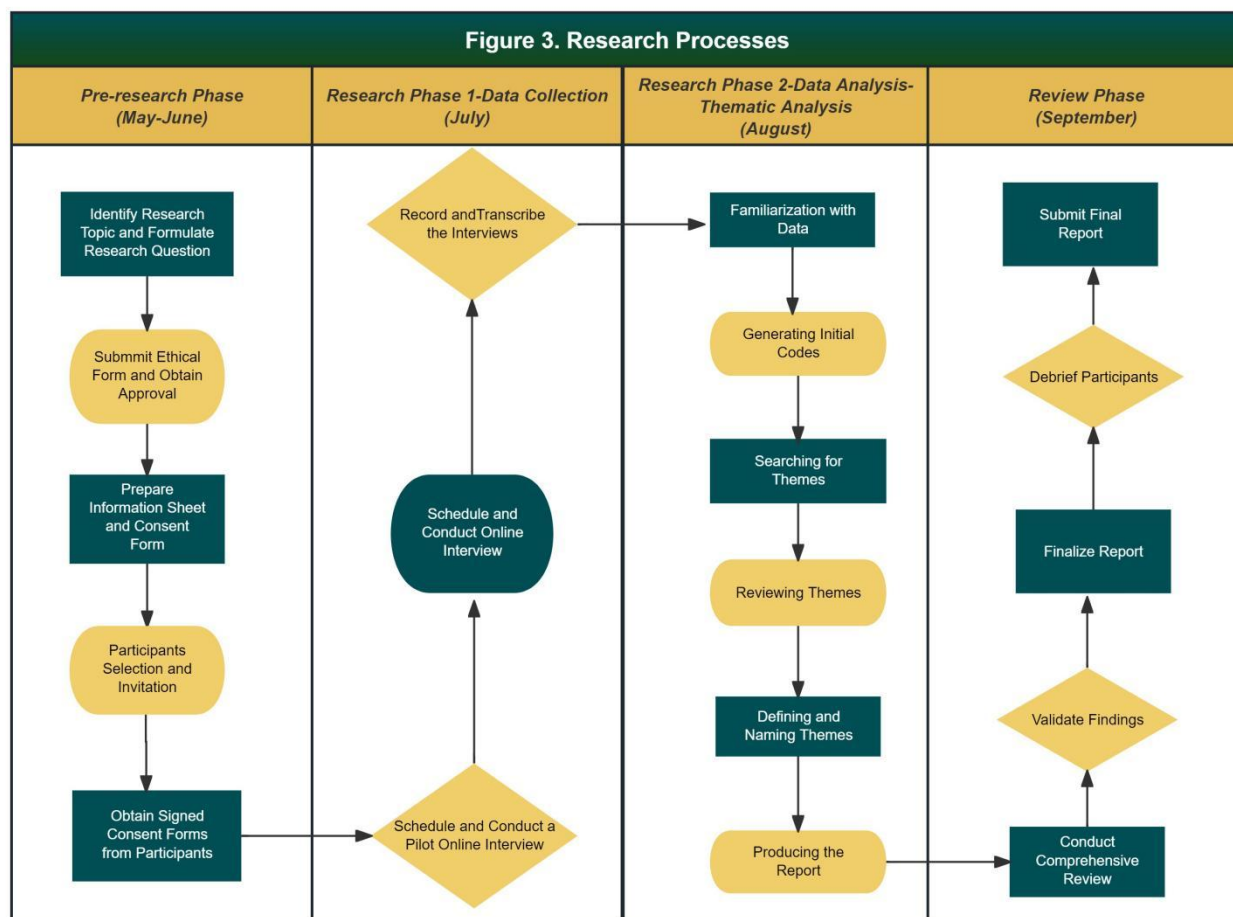
Format and Technological Requirements

The format of the online interviews are semi-structured, combining a set of predetermined questions with the flexibility to explore emerging topics and insights in greater depth. This format allows for a balance between consistency across interviews and the ability to delve into specific areas of interest as they arise (Holloway & Todres, 2003).

Technological requirements for conducting online interviews include a reliable internet connection, a computer or mobile device with a webcam and microphone, and a secure online platform such as Tencent Meeting or Microsoft Teams. These platforms offer features such as video recording, screen sharing, and chat functions, which enhance the quality and richness of the data collected. Ensuring that both the researcher and the participants have access to these technologies is crucial for the smooth conduct of the interviews. In this study, the researcher chose Tencent Meeting to align with the interviewees' preference.

3.4 Research Processes

This section provides a step-by-step description of the research processes, which include the pre-research phase, research phase 1-data collection, research phase 2- data analysis, and review phase. These processes outline the essential steps to ensure comprehensive data collection and analysis, as shown in Figure 3.



3.4.1 Pre-research Phase

Pre-research Phase includes 5 steps, which were completed by June, as shown below:

Step 1. Identify Research Topic and Formulate Research Question

Step 1 involved identifying a relevant research topic and formulating a precise research question. This process was based on prior coursework in 7015, 7016 and 7013, as well as extensive discussions and reflections with instructors. It was further guided by a thorough review of the literature to identify gaps and areas of interest. This step was completed by May 20, 2024.

Step 2. Submit Ethical Form and Obtain Approval

Step 2 involved submitting an ethical form to UWTSD's ethics committee to ensure that the study adhered to the highest ethical standards. The process of drafting this form included an assessment of various risks associated with the research. This evaluation, conducted in thorough discussions and reflections with the instructors, ensured that potential risks to participants were identified and

mitigated, safeguarding their well-being throughout the study. The ethical form was approved by the UWTSD ethics committee on June 20, 2024, prior to commencing participant recruitment and data collection (Creswell & Creswell, 2017).

Step 3. Prepare Information Sheet and Consent Form

In step 3, information sheets and consent forms were meticulously prepared. These documents provided potential participants with comprehensive details about the study, including its purpose, procedures, potential risks and benefits, confidentiality measures, and their rights as participants. The information sheets ensured that participants had a clear understanding of what their involvement would entail, while the consent forms included a section for participants to sign, formally acknowledging their informed consent. This step was crucial in fostering transparency and trust, ensuring participants were fully informed before agreeing to participate. It was completed by June 23, 2024.

Step 4. Participants Selection and Invitation

Step 4 involved selecting and inviting participants. Potential participants were chosen based on specific criteria relevant to the study's objectives. The detailed criteria are shown in Table 4. Invitations, which included the prepared information sheets and consent forms, were sent to four potential participants, hoping that at least two would agree and be willing to participate. This step was completed by July 25, 2024. The process for selecting participants followed the guidelines suggested by Patton (2002).

Table 4. Participants Selection Criteria	
Criterion	Description
Translation Volume	Participants must be established translators with over one million words of translated work, encompassing a diverse range of industry-specific texts.
Teaching Experience	Participants must have current or past university-level teaching experience in translation, including curriculum design, student assessment, and scholarly activities related to translation education.
Academic Publications	Participants must have published academic papers in translation, covering topics like translation theory, practice, pedagogy, or related interdisciplinary studies.

Step 5. Obtain Signed Consent Forms from Participants

In step 5, signed consent forms were obtained from 2 of the 4 participants. This ensured that participants had given their informed consent and understood their rights and the study's aims (Berg, 2004). Obtaining these signed consent forms was crucial for maintaining ethical standards and providing a clear framework for participant involvement (Mertens, 2014). Furthermore, it established a foundation of trust between the researchers and participants, reinforcing the commitment to transparency and ethical research practices (Flick, 2014). This step was completed by June 27, 2024. Thus, the pre-research phase was fully completed by the end of June.

3.4.2 Research Phase 1-Data Collection

Research phase 1, encompassing the entire data collection process, includes three steps (steps 6-8). These steps were completed by July, as detailed below:

Step 6. Schedule and Conduct a Pilot Online Interview

The pilot online interview process, completed by July 10, involved a series of structured steps designed to thoroughly prepare for the actual interviews. The researcher chose the platform, recruited pilot participants, scheduled the interviews, and conducted the pilot interview. Following these steps, the researcher collected feedback, analyzed the entire procedure, and made adjustments where necessary.

Choose the Platform: Select the appropriate online platform for conducting the interviews (Bryman, 2016). The researcher planned to use both Tencent Meeting and Microsoft Teams during the pilot, considering the option to offer more choices to the interviewees during the actual online interviews. Both platforms support recording and transcribing interviews, which, according to Creswell and Poth (2018), is crucial for accurate data collection and analysis.

Recruit Pilot Participants: Identify and invite participants to partake in the pilot interviews (Patton, 2002). The researcher planned to invite one of her doctoral colleagues who has a similar background and would also be conducting online interviews during this module. This way, common problems can be discussed together.

Prepare Interview Questions: Develop and refine the questions to be used during the interviews (Creswell & Poth, 2018). The researcher had already designed the interview questions, using a semi-structured interview format. This format allows for flexibility in the conversation, enabling the interviewer to probe deeper into specific topics as needed while maintaining a consistent framework across all interviews, which is crucial for gathering comprehensive and comparable data (Patton, 2002).

Schedule the Interviews: Organize and schedule the pilot interview sessions with participants (Maxwell, 2013). The researcher first sent out invitations to potential participants, outlining the purpose and details of the pilot interviews. Upon receiving acceptances, the researcher coordinated with the participants to find mutually convenient times for the interviews, ensuring that all logistical aspects such as time zones and availability were considered. Reminders were sent closer to the interview dates to confirm attendance. The researcher also ensured that the necessary technical arrangements were in place, including stable internet connections and access to the chosen online platforms (Tencent Meeting and Microsoft Teams).

Conduct a Pre-Interview Test: Run a test session to ensure all technical aspects are functioning correctly (Bryman, 2016). This involved checking the stability of the internet connection, the functionality of the chosen platforms (Tencent Meeting and Microsoft Teams), and the quality of

audio and video. The researcher also tested the recording and transcription features to ensure they worked seamlessly. Additionally, this test session provided an opportunity to troubleshoot any technical issues, such as microphone or camera malfunctions, and to ensure that both the interviewer and participant were comfortable with the platform's interface. Any adjustments needed were noted and implemented to avoid disruptions during the actual pilot interviews.

Run the Pilot Interview: Conduct the pilot interviews, closely following the prepared questions and protocol (Creswell & Poth, 2018). During this stage, the researcher conducted the pilot interviews by strictly adhering to the semi-structured interview format developed earlier. The interviews began with an introduction to the study's objectives. The researcher then asked the prepared questions, allowing for flexibility to probe deeper into specific topics as needed. Additionally, the researcher took notes on any issues that arose, such as questions that needed further refinement or technical problems that needed to be addressed. After the interview, the researcher reviewed the recorded data to ensure its quality and completeness.

Collect Feedback and Analyze the Whole Procedure: Gather feedback from participants and interviewers about the process and any issues encountered (Mertens, 2014). The participant suggested that it would be helpful to provide an overview of the entire interview process beforehand to make them feel more comfortable. This includes explaining the different stages of the interview and what to expect at each stage. The participant also recommended giving time prompts during the interview, such as notifying them when the interview is halfway through. This feedback was invaluable for improving the interview process, ensuring that participants are well-informed and more at ease throughout the session. The researcher analyzed this feedback to identify areas for enhancement and implemented these suggestions in subsequent interviews, leading to a more streamlined and participant-friendly procedure.

Make the Necessary Adjustment: Based on the feedback and analysis from the pilot interview, necessary adjustments were made to the interview process and materials. This step ensured that the study would run smoothly and efficiently (Salmons, 2015). This included analyzing comments on the clarity and relevance of the interview questions, evaluating the performance and usability of the

chosen online platforms, and assessing logistical arrangements such as scheduling and communication. The researcher carefully examined the feedback to identify specific questions that may have been unclear or ineffective and noted suggestions for rephrasing or additional probing questions.

During the main interview, it was observed that some of the initial questions were not specific enough to elicit detailed and insightful responses. This resulted in answers that were too broad or not entirely relevant to the core objectives of the interview. To address this, the researcher refined the questions to be more precise and focused on specific aspects of the translation industry, skills development, and education. This adjustment aimed to encourage the interviewee to provide more in-depth and relevant answers during the following actual online interview.

Justifications for Pilot Online Interview

The pilot online interview holds significant importance in the research process, as it serves multiple critical functions. Firstly, it allows for testing the technology (Bryman, 2016), ensuring that the chosen platform is reliable and suitable, thereby preventing technical issues during the actual data collection. Secondly, it aids in refining the interview questions (Creswell and Poth, 2018), enabling researchers to adjust and improve questions based on preliminary feedback to effectively elicit the required information. Thirdly, it provides an opportunity for training interviewers (Maxwell, 2013), allowing them to practice and enhance their interviewing techniques, thus boosting their confidence and competence. Additionally, the pilot interview helps identify logistical issues (Bryman, 2016) related to scheduling, communication, and coordination, ensuring a smoother process during the actual interviews. Lastly, it helps build participant comfort (Creswell and Poth, 2018) by familiarizing them with the interview process and platform, alleviating anxiety, and ensuring they are comfortable and prepared.

Schedule and Conduct Online Interviews

In this research, all online interviews were scheduled and conducted with 2 senior translators. The interview with Interviewee 1 lasted for 90 minutes, while the interview with Interviewee 2 lasted for 60 minutes. The difference in duration can be attributed to various factors such as the depth and

detail of the responses, individual communication styles, and the need for additional probing or clarification during the interviews.

Record and Transcribe the Interviews

According to Gibbs (2007), accurate transcription of the interviews is essential for subsequent data analysis. Each interview was recorded with participants' consent, ensuring ethical standards were maintained (Creswell & Creswell, 2017). The recordings were transcribed verbatim, capturing every spoken word and significant non-verbal cues such as pauses and intonations. To ensure accuracy, this process involved several steps: initial transcription, a thorough review to correct errors, and final verification against the original recordings (Connelly & Peltzer, 2016).

Initially, the recordings were transcribed word-for-word, including verbal fillers and hesitations, to preserve the authenticity of the interviews. After the initial transcription, the text was reviewed and cross-checked against the recordings to identify and correct any discrepancies (Creswell & Creswell, 2017). This step also included noting significant non-verbal cues that could provide context to the verbal responses, such as pauses indicating hesitation or emphasis.

Following the review, a final verification was conducted to ensure the transcriptions accurately reflected the original recordings. This involved listening to the recordings while reading the transcriptions to catch any remaining errors or omissions. The comprehensive nature of this process ensured that the data was accurately represented, providing a reliable foundation for the subsequent coding and analysis (Patton, 2002).

This thorough approach to transcription allowed for a detailed and nuanced understanding of the interview content, ensuring that the richness of the participants' responses was captured, providing a solid foundation for the subsequent analysis. Thus, the research phase 1- data collection was fully completed by the end of July.

3.4.3 Research Phase 2-Data Analysis

Thematic analysis (Braun & Clarke, 2006) was employed to analyze the collected data from the online interviews. This method was chosen to analyze, organize, and report themes found within the interview data because, according to Braun & Clarke (2006), it offers flexibility, adapting to different contexts due to its few set procedures. Although this flexibility might lead to a lack of coherence and inconsistency (Holloway & Todres, 2003), it can generate unanticipated insights by highlighting similarities and differences in participants' perspectives (King, 2004; Braun & Clarke, 2006). Its structured approach helps summarize significant characteristics of large data sets and report the material in an organized manner (King, 2004).

This study aimed to investigate the experiences and perspectives of translators regarding the digital literacy training of translation students in China. The research specifically explored the core skills, knowledge, and competencies needed by these students. Thematic analysis allowed effective identification and comparison of themes within the data, highlighting the essential digital competencies, the challenges faced, and the contextual factors influencing digital literacy training.

Following Braun and Clarke's (2006) six-phase process (see Figure 4), the thematic analysis was conducted as a reflective process, allowing movement between phases as necessary (Nowell et al., 2017).

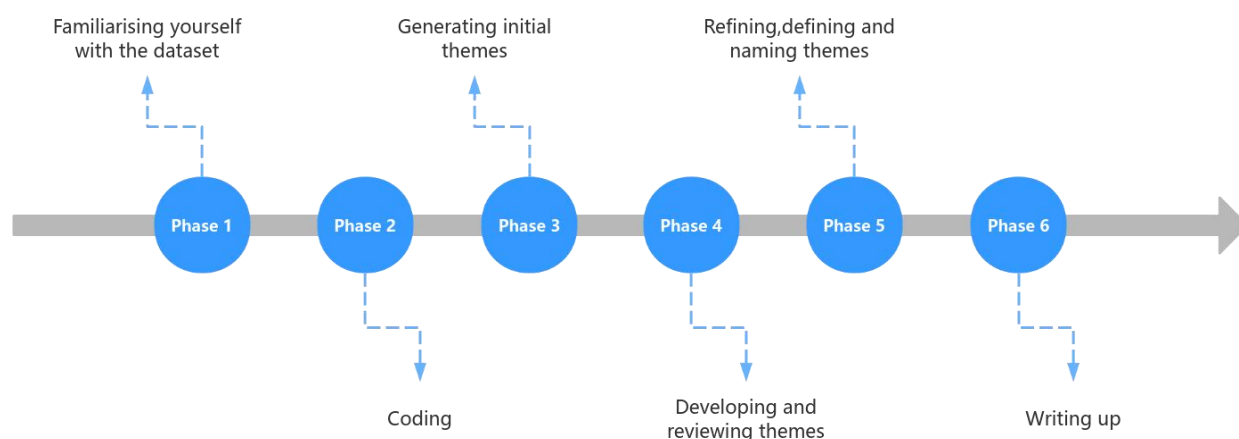


Figure 4. Six Phases of Reflective Thematic Analysis

The specific implementation of data analysis process is as follows:

Step 1. Familiarization with Data

According to Braun and Clarke (2021), this step involved reading and re-reading the transcripts to gain a deep understanding of the content. The researcher listened to the audio twice and thoroughly read and re-read interview transcripts (Interview 01 & Interview 02), making notes on initial thoughts and observations related to the skills, knowledge, and competencies mentioned by the participants. Through repeated reading, the researcher ensured a comprehensive grasp of the data, facilitating a more accurate and insightful analysis.

Step 2. Generating Initial Codes

This step involved generating initial codes from the data. This step was part of the thematic analysis process, where the researcher identified significant features of the data that were relevant to the research question (Braun & Clarke, 2006). In this step, the researcher systematically coded the data, identifying and labeling key features that relate to the core competencies of translation students. As the researcher generated codes, she continuously reflected on their relevance to the research question and adapted the coding strategy as new themes or patterns emerge. Finally, the researcher generated 20 initial codes (See Table 5) in this step.

Table 5 Codes Generated	
No.	Codes
1	Computer-Assisted Translation (CAT) Tools
2	Machine Translation Post-Editing
3	Information Management and <u>Cybersecurity</u>
4	Project Management and Remote Collaboration
5	Quality Assurance and Data Management
6	Technological Advancements and Machine Translation
7	Tool Diversity and Continuous Learning
8	Time Management and Project Management
9	Communication and Team Collaboration
10	Continuous Learning and Professional Development
11	Linguistic Proficiency and Pragmatic Competence
12	Cultural Background and Cross-Cultural Communication
13	Domain-Specific Knowledge
14	Localization and Commercial Translation
15	Information Retrieval and Writing Skills
16	Localization Needs
17	Professional Ethics and Responsibility
18	Market Research and Cultural Adaptation
19	Terminology Consistency and Version Control
20	Market Competition and Professional Development

Step 3. Searching for Themes

In this step, the researcher searched for themes among the generated codes. Themes are patterns in the data that are important to the description of the phenomenon and are associated with specific research questions (Braun & Clarke, 2006). The researcher organized the initial codes into five potential themes, grouping similar codes together to form themes that capture the essential skills and knowledge areas. The researcher evaluated the coherence and coverage of these themes, ensuring they comprehensively address the research questions and are supported by the data.

Step 4. Reviewing Themes

This step involved reviewing the identified themes to ensure they accurately represented the data and were coherent and consistent (Braun & Clarke, 2006). The researcher meticulously examined the themes to confirm that they accurately reflected both the coded data and the entire data set. During this process, the researcher refined the themes and discarded one theme that was deemed unnecessary. The researcher continuously reassessed the themes to maintain their relevance and accurate reflection of the data, ultimately making adjustments to arrive at four final themes.

Step 5. Defining and Naming Themes

In this step, the researcher defined and named the themes. This involved refining the specifics of each theme and generating clear definitions and names (Braun & Clarke, 2006). The researcher aimed to define each theme as clearly as possible, capturing its essence and naming it concisely to reflect its core meaning. This process ensured that the names and definitions of the themes are clear and informative, providing a comprehensive understanding of each theme's significance to the research. The themes are shown in Table 6.

Table 6. Themes and Descriptions		
No.	Themes	Descriptions
1	Digital Competency and Technical Skills	Mastery of technical skills and digital literacy essential for modern translation practices, including the use of advanced translation technologies and ensuring data security.
2	Integration of Technology in Translation Education	Incorporating technology into translation training to enhance time and project management, foster effective team communication, and support ongoing professional development.
3	Language Proficiency and Cultural Knowledge	Comprehensive understanding of linguistic and cultural nuances, enabling accurate and culturally appropriate translations across various domains.
4	Professional Knowledge and Occupational Qualities	Upholding professional ethics and responsibilities, conducting insightful market research, ensuring consistency in translation practices, and maintaining competitiveness in the translation industry.

Step 6. Producing the Report

The final step was to produce the report. This involved compiling the findings and writing up the research to ensure the report was clear, comprehensive, and accurately reflected the data (Braun & Clarke, 2021). The researcher integrated the themes into a coherent narrative, using data extracts (see

Chapter 4) to illustrate and support the analysis. Throughout the writing process, the researcher continuously reflected on how well the analysis answered the research question and considered any implications or areas for further exploration.

3.4.4 Review Phase

In this phase, the researcher conducted a thorough evaluation of the research process and findings, finalized the report, debriefed participants, and submitted the final report. This comprehensive review ensured that the study was critically assessed for biases and errors, and that the final output was of the highest quality.

Step 1. Conduct a Comprehensive Review

This step ensured that all aspects of the study were critically evaluated and any potential biases or errors were identified and addressed (Yin, 2018). The researcher systematically reviewed each phase of the study, including verifying the consistency of coding, re-examining the themes identified during analysis, and assessing the alignment with the research question, data collection methods, and findings. Additionally, the researcher sought peer reviews from three colleagues who teach translation courses and consulted with two experts to obtain feedback on the methodology and interpretations, further ensuring rigor and credibility.

Step 2. Finalize Report

This step involved editing, proofreading, and incorporating feedback to ensure that the final report was of the highest quality (Flick, 2014). The researcher meticulously edited the document for clarity, coherence, and conciseness. This included checking for grammatical errors, improving sentence structure, and ensuring logical flow between sections. Feedback from peers, advisors, and possibly external reviewers was incorporated to address any weaknesses or gaps in the content. The researcher also ensured that all citations were correctly formatted, all figures and tables were accurately labeled and referenced, and the entire report adhered to the required formatting guidelines. The final report was then proofread multiple times to ensure it was free of errors.

Step 3. Debrief Participants

This involved informing participants about the findings and outcomes of the study and addressing any questions or concerns they might have (Creswell and Poth, 2018). The researcher provided a detailed summary of the study's results, explaining how the data were analyzed and how conclusions were drawn. Participants were also given an opportunity to discuss their experiences during the study and offer any additional insights or feedback. This interaction helped to ensure that participants felt valued and respected, and it also provided an additional layer of data validation by confirming that the findings accurately reflected the participants' experiences and perspectives.

Step 4. Submit Final Report

This step involved preparing the report for submission and ensuring that all required documentation was complete and correctly formatted (Creswell & Creswell, 2017). All required forms and permissions were double-checked to ensure compliance with institutional guidelines before the report was submitted to the system. The researcher compiled all necessary appendices, and ensured that the report met the submission guidelines of UWTSD.

3.5 Ethical Considerations

In accordance with *The British Educational Research Association (BERA)* [2024] guidelines, several ethical issues were taken into account both before and during this research study. These issues include the information shared with the research participants, their treatment during the study, participant privacy assurance and consent, and adhere to the two guiding principles set out by *BERA* and the university – respect and responsibility (Hamilton & Corbett-Whittier, 2013). Furthermore, Hammersley & Traianou (2012) argue that researchers have a duty to the research itself, pursuing and defending factual knowledge based on evidence and making a worthwhile contribution to knowledge. The selection and execution of appropriate and justifiable research methods are vital in ensuring that the research is of the highest possible quality.

Throughout the entire research process, the researcher strictly adhered to *BERA* [2024] guidelines and followed a rigorous ethical approval process. The study ensures the protection of participants' rights and well-being, maintains the integrity and credibility of the research, and complies with the

university's established ethical standards and guidelines, including the *UWTSD Research Ethics & Integrity Code of Practice* and the *UWTSD Research Data Management Policy*.

Chapter 4: Findings and Discussion

4.1 Introduction

This chapter presents the findings from the thematic analysis of online interviews conducted with two professional translators. The analysis revealed four themes: two directly related to digital literacy and two others addressing broader competencies essential for translation students.

According to Braun and Clarke (2006), in research, it is reasonable for the discovered themes to be closely related to the research questions, even if these themes are not entirely within the expected scope of the research field. If answers the respondents mentioned are not directly related to the research field but are still important when answering the research questions, these should be included in the research results. This approach not only respects the integrity of the data but also reflects the actual situation of the research. Therefore, to present the integrity of the data and accurately reflect the actual situation of the research, this chapter will discuss all four main themes (See Figure 5) identified through the data analysis.

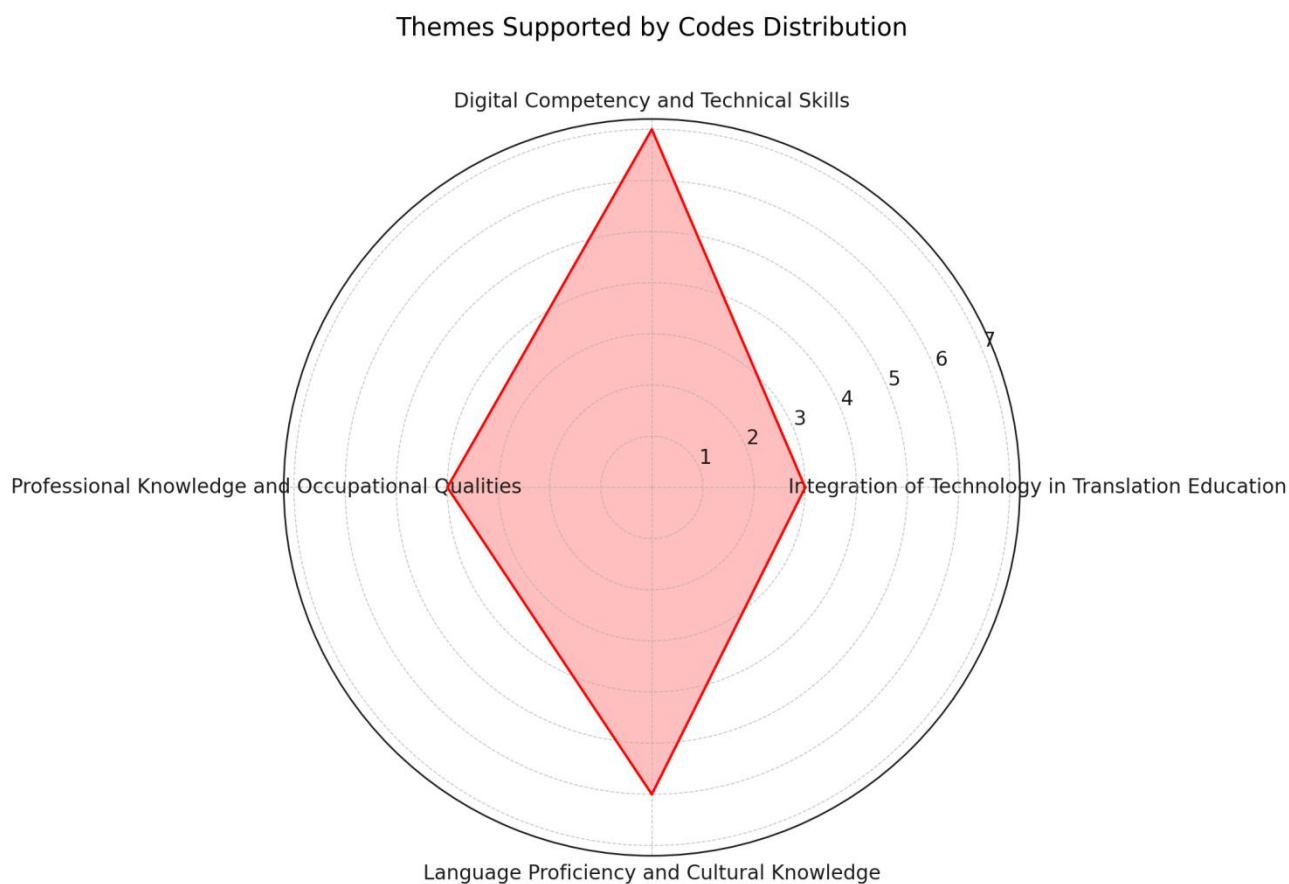


Figure 5. Themes Supported by Codes Distribution

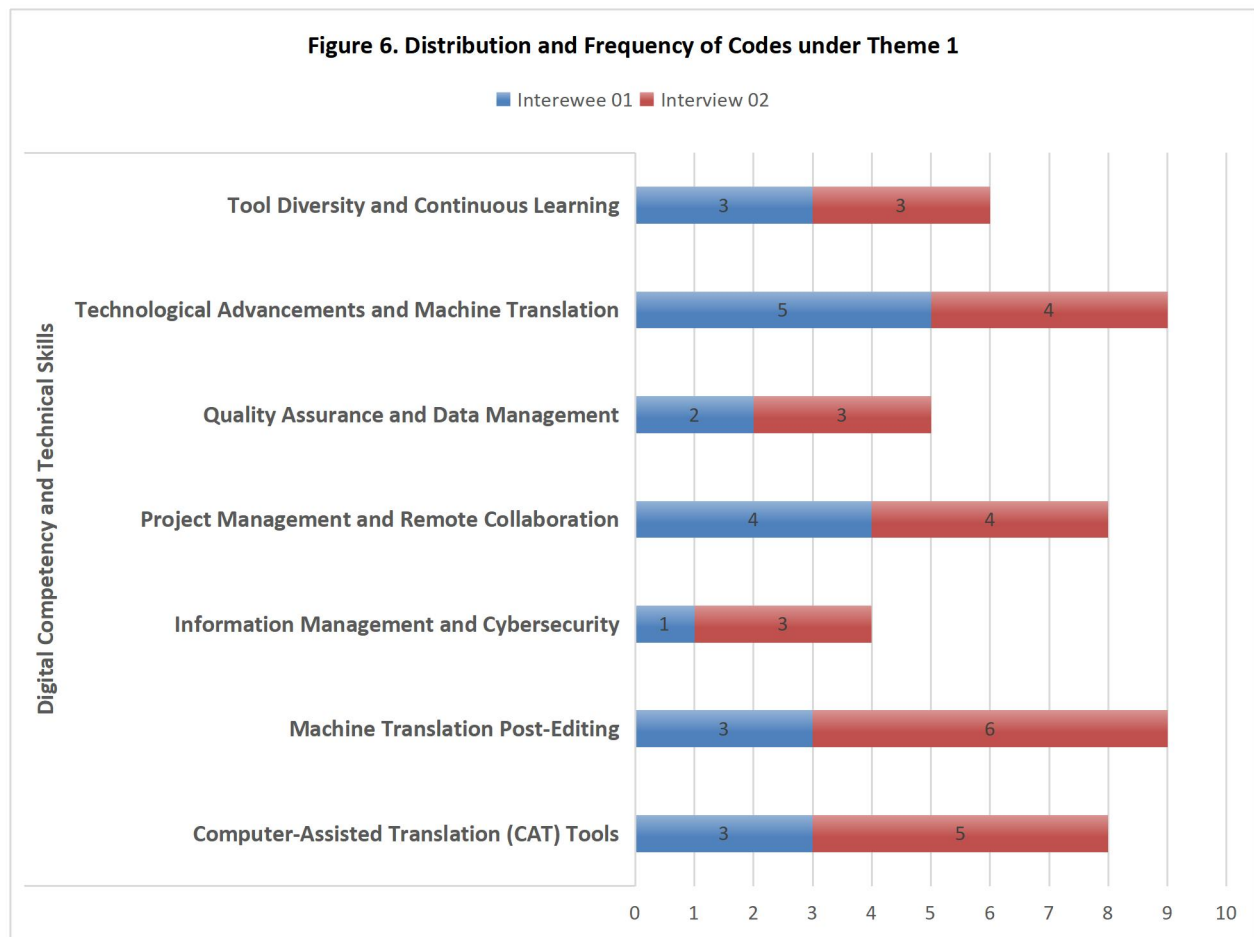
The radar chart in Figure 5 illustrates the distribution of codes across four key themes, digital competency and **technical skills**, integration of technology in translation education, language proficiency and cultural knowledge, and professional knowledge and occupational qualities, derived from a thematic analysis using Braun & Clarke's (2006) methodology. Each axis of the chart represents a different theme, and the extent to which the shaded area reaches towards the outer edge indicates the number of codes.

4.2 Main Themes

Following is a detailed exploration of the main themes that emerged from the analysis.

4.2.1 Theme 1: Digital Competency and Essential Technical Skills

This theme captures the essential digital and technical skills required for modern translators, comprising 7 codes (See Figure 6) that highlight specific skills and knowledge areas critical for modern translation professionals.



- Tool Diversity and Continuous Learning:** The interviewees repeatedly emphasize the importance of continuous learning to master new tools and techniques, stressing the necessity of taking a proactive approach to professional development. They believe that, with the rapid advancements in technology, translators must continuously update their knowledge and skills. Both interviewees focused on this area three times. Interviewee 01 remarked, “Mastering the latest translation tools is key to staying competitive in this industry.” Interviewee 02 stated, “Continuous learning is not only a way to enhance personal capabilities but also a necessary choice to adapt to changing market demands.” This shared recognition of the significance of tool

diversity and continuous learning reflects the dynamic nature of the translation field, underscoring the importance for professionals to remain updated and versatile.

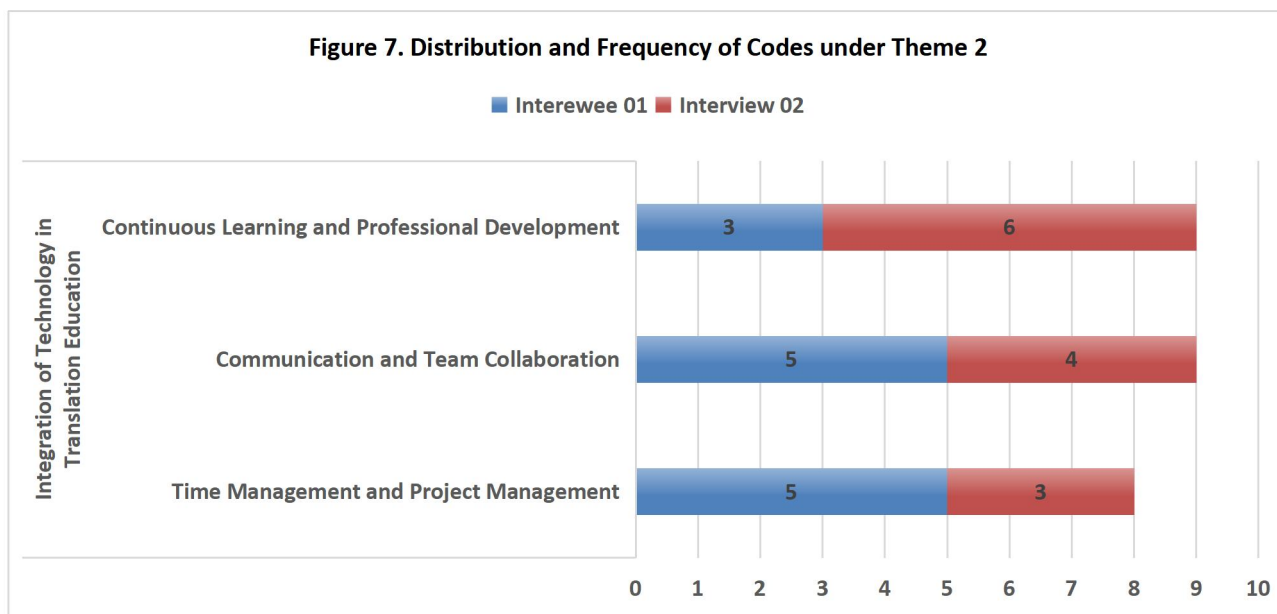
- **Technological Advancements and Machine Translation:** Both interviewees discussed the impact of such advancements on the translation industry. Interviewee 01 focused on this area five times, while interviewee 02 did so four times, indicating keen awareness and adaptation to ongoing technological changes. The considerable mentions of technological advancements and machine translation illustrate the field's dynamic nature and the continuous need for professional development.
- **Quality Assurance and Data Management:** Both interviewees frequently emphasized these aspects, with interviewee 01 mentioning them specifically to highlight their critical role in achieving translation accuracy and reliability. Interviewee 1 noted, "implementing strict quality assurance measures is fundamental to our work; it ensures that we deliver translations that meet the highest standards." Interviewee 02 stated, "effective data management is not just about organization but about safeguarding the integrity of our translations." The consistent focus on quality assurance and data management by the interviewees underscores their commitment to providing high-quality translation services.
- **Project Management and Remote Collaboration:** As globalization continues, the ability to manage projects and collaborate remotely has become essential (Yang, 2022). Both interviewees mentioned these skills four times, highlighting these skills as crucial for modern translators working across different geographies. The equal emphasis by both interviewees underscores the essential nature of project management and remote collaboration skills in today's dispersed and digital work environments, reflecting their universal relevance in current translation practices.
- **Information Management and Cybersecurity:** In the digital information era, managing sensitive data securely is paramount (Wang, 2023). Both interviewees emphasize the increasing risks and necessary precautions in the translation industry. Interviewee 01 brought this up once, and interviewee 02 three times, indicating varying levels of engagement with data security concerns. Although mentioned less frequently, the importance of information management and cybersecurity is recognized, pointing to a critical but perhaps underemphasized area in the field.
- **Machine Translation Post-Editing:** This code addresses the necessity for human intervention in machine-translated content to ensure quality and accuracy. Cui (2020) notes that post-editing

is critical as machine translation becomes more prevalent. Interviewee 01 referred to this process three times, whereas interviewee 02 discussed it six times, constantly suggesting a heavier workload related to machine translation in their practice. This code was frequently discussed, highlighting the growing need for translators to be proficient in refining machine-generated translations.

- **Computer-Assisted Translation (CAT) Tools:** CAT tools are vital in modern translation practices, serving to automate and enhance the translation process. According to Wang and Li (2019), these tools are essential for increasing efficiency and ensuring consistency in translations. Interviewee 01 mentioned CAT tools three times, indicating a significant reliance, while interviewee 02 emphasized them even more, with five mentions, highlighting their pivotal role in daily translation tasks. The high frequency of mentions across both interviewees underlines the fundamental importance of CAT tools in the translation industry, signifying a standard practice across the field. Both translators emphasized the fundamental importance of CAT tools in current translation practices.

4.2.2 Theme 2: Integration of Technology in Translation Education

This theme focuses on the incorporation of technology into translation, including 3 codes (See Figure 7). It highlights the importance of time and project management skills, fostering strong team communication, and encouraging continuous learning.



- Time Management and Project Management:** Both interviewees mentioned that project management software streamline course planning and execution, assist in scheduling, and monitor the progress of translation projects, thus increasing efficiency. Interviewee 01 mentioned this code 5 times, emphasizing, “utilizing project management tools allows us to stay organized and meet deadlines consistently”, reflecting a significant focus on the importance of managing time and projects efficiently. Interviewee 02 discussed this aspect 3 times, and remarked, “effective time management is crucial; it not only helps us deliver quality work but also ensures we allocate resources wisely”. This strong emphasis on time and project management skills highlights their vital role in achieving success in the translation field.
- Communication and Team Collaboration:** Both interviewees agree that effective communication and teamwork are critical components of a successful educational experience in translation studies. Interviewee 01 emphasized this by mentioning the importance of communication and collaboration five times, highlighting how these elements are essential for successful translation projects. Interviewee 02 echoed this sentiment, referring to the topic four times and stating, “Utilizing tools like Slack has significantly enhanced our ability to collaborate and share ideas quickly, which is vital in translation work.” This strong consensus among the interviewees underscores the crucial role that communication and teamwork play in the

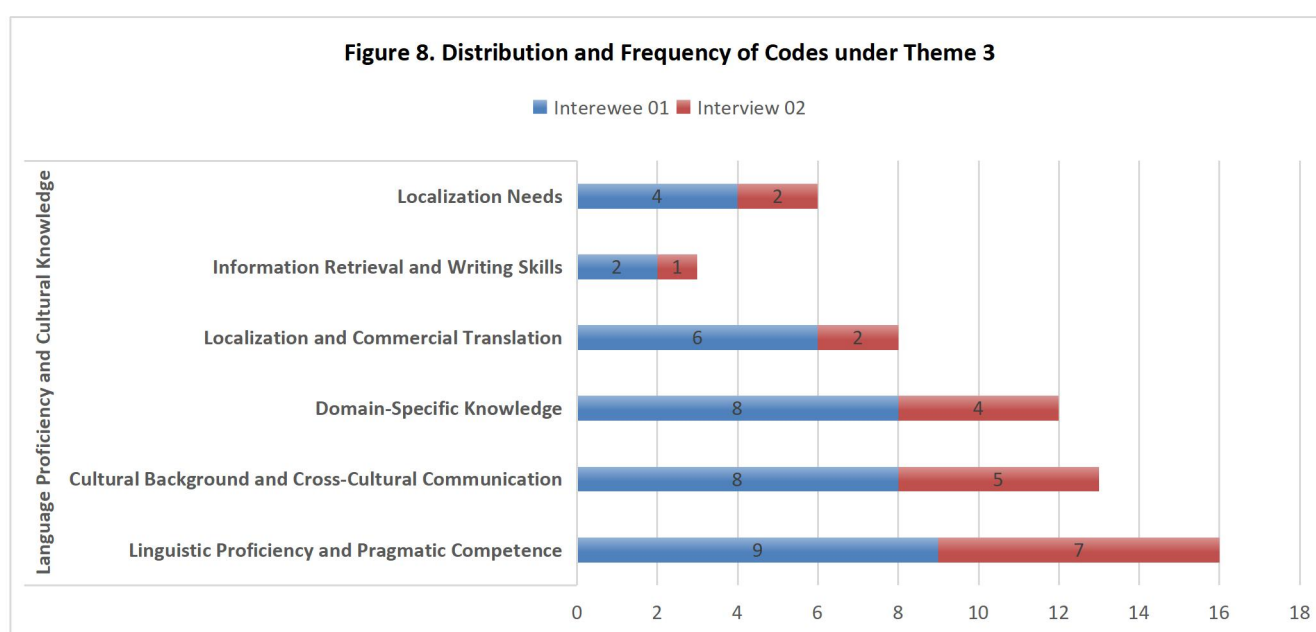
translation field, demonstrating that effective collaboration is key to achieving high-quality outcomes.

- Continuous Learning and Professional Development:** Both interviewees emphasize lifelong learning and adaptability are necessary for professional growth in translation. Interviewee 01 highlighted this code 3 times, pointing to the ongoing need for learning and development in the field of translation education as it evolves with technological advancements. Interviewee 02 emphasized this code substantially more, with 6 mentions, suggesting a very strong focus on the necessity for continuous professional growth and adaptation to new technological tools.

The bar chart in Figure 7 reveals differing emphases between the two interviewees on the various aspects of integrating technology in translation education. While both interviewees recognize the importance of all three codes, Interviewee 02 places a greater emphasis on continuous learning and professional development, indicating a possibly greater appreciation for the evolving nature of technology in education. This distribution highlights the diverse perspectives and priorities that professionals may hold within the same thematic framework.

4.2.3 Theme 3: Language Proficiency and Cultural Knowledge

This theme covers the foundational linguistic and cultural competencies necessary for effective translation, comprising 6 codes (See Figure 8).



- **Localization Needs:** Interviewee 01 referred to this code four times, emphasizing its significance in adapting translations to align with local preferences and standards. Interviewee 01 stated, “understanding local nuances is essential for producing translations that resonate with the target audience”. Interviewee 02 mentioned it twice, highlighting the importance of cultural relevance in translation work. Interviewee 02 noted, “tailoring our translations to fit local contexts not only improves comprehension but also enhances engagement”. These comments reflect a strong awareness of the necessity to customize translations to meet specific local needs effectively.
- **Information Retrieval and Writing Skills:** This code pertains to the ability to efficiently locate relevant information and convey it effectively in writing. Interviewee 01 mentioned this code twice, while Interviewee 02 referred to it once. Although these skills were discussed less frequently, their importance in facilitating effective translation processes was clearly acknowledged. Interviewee 01 remarked, “being able to quickly find the right information is crucial for ensuring accuracy in translations”. Similarly, Interviewee 02 added, “strong writing skills are essential for communicating ideas clearly and professionally.” These insights highlight the vital role that information retrieval and writing skills play in the translation field.
- **Localization and Commercial Translation:** This code emphasizes the adaptation of content to align with the cultural and linguistic preferences of a specific locale, which is essential for effective market-specific communications. Interviewee 01 highlighted this code six times, while Interviewee 02 mentioned it twice. This disparity indicates interviewee 01’s strong recognition of the significance of localization in translation, especially for commercial contexts. Interviewee 01 stated, “Localization is not just about translation; it’s about making the content resonate with the local audience.” Interviewee 02 also acknowledged its importance, saying, “Understanding local culture can make or break a marketing campaign.” These comments underscore the critical role of localization in achieving successful translation outcomes in commercial settings.
- **Domain-Specific Knowledge:** This code refers to the specialized knowledge necessary for translations in specific fields, such as legal, medical, or technical domains. Interviewee 01 highlighted this code eight times, while interviewee 02 mentioned it four times. The difference in mentions suggests varying levels of engagement or specialization in particular translation fields between the two professionals. Interviewee 01 emphasized, “Having in-depth knowledge

of the subject matter is crucial for producing accurate translations.” Meanwhile, interviewee 02 noted, “Without domain-specific knowledge, it’s easy to misinterpret key terms, which can lead to serious consequences.” These insights illustrate the vital importance of domain-specific expertise in ensuring the quality and accuracy of specialized translations.

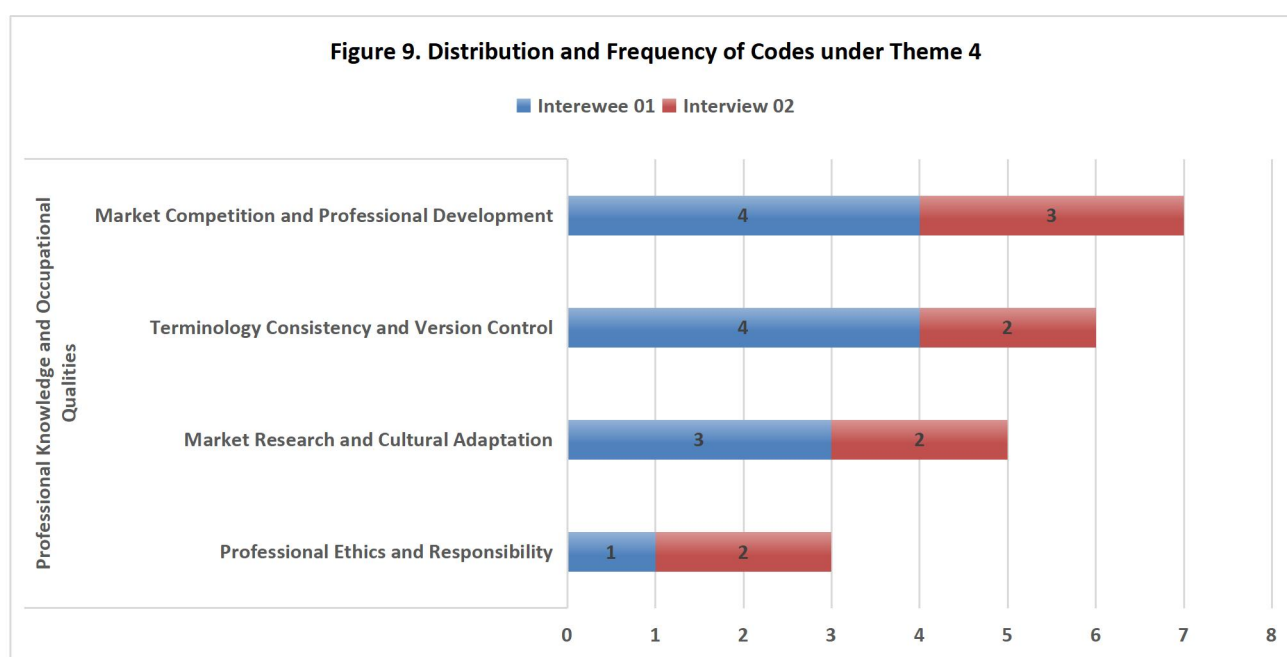
- **Cultural Background and Cross-Cultural Communication:** This code involves understanding and effectively communicating across different cultures, which is essential for producing translations that resonate with target audiences. Interviewee 01 discussed this code eight times, while Interviewee 02 mentioned it five times. The emphasis placed by both interviewees underscores the necessity of cultural awareness in delivering translations that are both accurate and culturally sensitive. Interviewee 01 stated, “Understanding the cultural context is key to creating translations that truly connect with the audience.” Similarly, Interviewee 02 remarked, “Without cultural sensitivity, even the best translation can fall flat and fail to engage the target audience.” These perspectives highlight the critical role of cultural background in the translation process.
- **Linguistic Proficiency and Pragmatic Competence:** This code refers to the ability to use language accurately and appropriately in various contexts, which is a key component of effective translation. Interviewee 01 mentioned this code nine times, while Interviewee 02 referred to it seven times. The high frequency of mentions indicates a strong consensus on the critical importance of linguistic accuracy and contextual appropriateness in the translation process. Interviewee 01 emphasized, “Mastering the nuances of language is essential for producing translations that convey the intended meaning.” Similarly, Interviewee 02 stated, “Pragmatic competence ensures that translations are not only correct but also suitable for the specific context.” These insights highlight the fundamental role of linguistic proficiency and pragmatic understanding in achieving successful translations.

The bar chart in Figure 8 illustrates varying priorities regarding the codes under theme 3. While both interviewees acknowledge the importance of all listed codes, the data shows that interviewee 01 places more emphasis on foundational linguistic skills and domain-specific knowledge, indicating a strong belief in the need for deep, technical expertise and linguistic precision. Interviewee 02 shows a balanced concern across multiple areas but with a particular focus on cultural understanding and

cross-cultural communication, reflecting a perhaps broader perspective on the necessity for cultural adaptiveness in translation. This variance underscores the diverse approaches professionals may adopt within the same field, highlighting different aspects of language and cultural proficiency that are considered pivotal in contemporary translation practices.

4.2.4 Theme 4: Professional Knowledge and Occupational Qualities

This theme highlights the professional skills and qualities necessary for translators to thrive in their careers, comprising 4 codes (See Figure 9).



- Professional Ethics and Responsibility:** This code emphasizes the importance of adhering to ethical standards and maintaining responsibility in professional translation practices. Interviewee 01 mentioned this code once, while interviewee 02 referred to it twice. Although the number of mentions is relatively low, the focus on ethics and responsibility underscores its foundational role in the translation profession. Interviewee 02 remarked, “upholding ethical standards is crucial; it not only protects the integrity of the work but also builds trust with clients.” This perspective highlights the essential nature of ethical considerations in ensuring the reliability and professionalism of translation services.

- **Market Research and Cultural Adaptation:** This code involves understanding target markets and adapting translations to fit cultural contexts, thereby ensuring both relevance and accuracy. Interviewee 01 brought up this topic three times, and stated, “conducting thorough market research allows translators to tailor their work to the specific needs of the audience”. Interviewee 02 mentioned it twice and noted “cultural adaptation is essential; it transforms a good translation into one that truly resonates with the target market”. The emphasis on this code highlights the necessity of providing culturally sensitive and market-oriented translation services.
- **Terminology Consistency and Version Control:** This code refers to the practice of using consistent terminology throughout a translation project and effectively managing different versions. Interviewee 01 mentioned this code four times, while interviewee 02 referred to it twice. The significant frequency of these mentions underscores the importance of precision and control in professional translation, which is critical for maintaining quality and coherence in the final output. Interviewee 01 emphasized, “consistency in terminology is vital”; Interviewee 02 remarked, “it ensures that the translation is not only accurate but also easy to understand.” The focus on consistency highlights its essential role in delivering high-quality translations that meet client expectations.
- **Market Competition and Professional Development:** It addresses the competitive nature of the translation market and the need for ongoing professional development to stay competitive . This code was mentioned four times by Interviewee 01 and three times by interviewee 02. Both interviewees indicates a strong awareness of the competitive landscape and the continuous need for skill enhancement in the translation industry.

The bar chart presented in Figure 9 illustrates the distribution of codes under theme 4. Interviewee 01 places more emphasis on market competition and professional development and terminology consistency and version control. Interviewee 02, while also noting the importance of these categories, cites them less frequently, suggesting a different prioritization or experience. Market research and cultural adaptation is noted by both interviewees, though with interviewee 01 slightly leading in emphasis. Professional ethics and responsibility is the least cited category, but shows input from both interviewees, indicating a baseline recognition of its importance. This data suggests that while both

interviewees recognize the key areas important to translation-related professions, their individual experiences or perceptions influence the priority they assign to each area.

4.3 Discussion

The discussion section integrates findings from the thematic analysis with insights from the existing literature to provide a comprehensive understanding of the study's implications. This section will explore how the identified themes relate to and expand upon current academic perspectives. By examining these connections, the discussion will highlight the implications for translation education and industry practices.

4.3.1 Relating Findings to Literature

The discussion of findings in this section integrates insights from the thematic analysis with existing literature, offering a comprehensive perspective on the implications of the study.

Theme 1: Digital Competency and Skill Development

The research findings confirmed the critical necessity of digital competency and technical skills, aligning closely with scholarly assertions by Wang and Liu (2023) and further elaborated in the *Translation Industry Annual Report* (TAC, 2024). Both interviewees emphasized the importance of continuous learning to master new tools and techniques, which Doherty (2016) stressed as essential for maintaining competitiveness and efficiency in the translation sector. Notably, Interviewee 01 highlighted the use of CAT tools and machine translation post-editing more frequently than interviewee 02, reflecting perhaps a more technology-intensive workflow. This emphasis illustrates the industry's dynamic nature and the ongoing need for translators to adapt to technological advancements.

Theme 2: Integration of Technology in Translation Education

The study's findings support the integration of technology in translation education, as covered by Zappatore (2024) and Xiao & Feng (2019). The use of digital tools and platforms for project management and collaboration reflects the shift towards a technology-driven educational approach.

The interview data underscore the importance of real-world experiences in translation programs, aligning with the literature that advocates for a practical, technology-enhanced curriculum.

Theme 3: Language Proficiency and Cultural Knowledge

This theme, though not explicitly covered in the literature review, represents a crucial aspect of translation studies on translation competency. The findings from both interviewees highlight the fundamental importance of linguistic proficiency, aligning with Rico's (2020) emphasis on language accuracy and appropriateness in translation. While the existing literature has predominantly focused on digital competencies, these results reaffirm the necessity of robust language skills as a foundational element of translation education, ensuring precision and effectiveness in communication across diverse contexts. The significant focus on cross-cultural communication echoes the insights of Venuti (2017), who highlights the need for cultural awareness in translation to ensure that translations are not only accurate but also culturally resonant. This finding emphasizes the need for translation curricula to include comprehensive cultural studies, preparing students to navigate and adapt to different cultural contexts effectively.

Theme 4: Professional Development and Continuous Learning

Similarly, the theme of professional development and continuous learning, though not directly addressed in the literature review, is crucial for ensuring translators remain competitive in a rapidly evolving industry. The study's findings indicate that ongoing professional growth and adaptation to new technologies are essential for career advancement and maintaining industry relevance. This suggests that existing curricula may need to incorporate more opportunities for lifelong learning and skill enhancement, an area not fully explored in the reviewed literature. The lesser emphasis on professional ethics may suggest an assumed baseline of ethical knowledge or possibly an area requiring further emphasis in curriculum development.

The emergence of these themes from the findings offers several important contributions to the field, including addressing gaps in current research, informing educational policy and practice and guiding

future research directions. These findings call for more empirical research to develop strategies that effectively support translation students and professionals. The study underscores the importance of updating educational policies to incorporate these emerging themes. Institutions may need to reevaluate their curricula to better support digital literacy development and ongoing professional growth. The study's findings provide a foundation for future research aimed at overcoming barriers to digital literacy and enhancing professional development opportunities in translation education. This could lead to more comprehensive strategies that address both the technological and human aspects of translation training. These findings offer practical insights that can inform policy-making and curriculum design in translation education.

4.3.2 Practical Implications

The study's findings have significant implications for the design of translation training programs. Educational policymakers and curriculum designers should consider integrating a core digital literacy module that covers not only the use of specific tools like CAT tools and machine translation post-editing, as emphasized by interviewees, but also broader competencies in data security and project management. The reported disparities in the emphasis on different digital skills highlight the importance of offering elective or specialized courses that allow students to deepen their expertise in particular areas of interest or demand within the translation industry.

For translation service providers and industry stakeholders, the study suggests a pressing need to continuously evaluate and update the digital competencies of their workforce. Given the rapid pace of technological advancements noted in the findings, ongoing professional development should be a staple of industry practice (Mu, Liang and Liu 2023). This could take the form of regular training sessions, workshops, or seminars that focus on the latest translation technologies and industry standards .

The specific mention of the practical use and challenges associated with CAT tools and machine translation in the interviews suggests that developers of these technologies should focus on enhancing user-friendliness and the integration capabilities of these tools. Feedback from

professional users, like the interviewees in this study, could be invaluable in guiding further development to ensure these tools meet the evolving needs of the translation industry.

Overall, this study contributes valuable insights into the digital competencies required by modern translators and how translation education programs can better prepare students for the challenges of a digitally-driven marketplace. By aligning educational practices more closely with the realities of professional translation work as reflected in the findings, translation education can become more relevant, effective, and responsive to the needs of both students and the professional translation community.

4.3.3 Reflection on Learning from Research Methodology

In this section, the researcher reflects on the learning experiences gained through the chosen research methodology, highlighting the challenges and opportunities encountered during the study.

Due to time constraints and geographical limitations, the sample size for this study was not comprehensive enough. The primary method of data collection was online interviews with two translators. While these interviews were effective in gathering qualitative insights, they limited the breadth of the data. Given more time and resources, a mixed methodology approach combining both qualitative and quantitative methods would offer a more holistic understanding of digital literacy training for translation students in China.

The researcher's initial justification for employing qualitative research was based on the need to gain deep, nuanced insights into the digital literacy experiences of translation students and professionals. This approach allows for exploring complex narratives and personal experiences, which are crucial for understanding the context-specific nuances in translation education (Creswell & Poth, 2018). Life history research was selected for its ability to capture detailed personal and professional journeys, providing rich qualitative data that reveals the intricacies of digital literacy development over time. This method was particularly useful for understanding the individual experiences of translators, offering depth and detail that quantitative methods alone could not provide. The narratives collected

through this approach enabled a deeper understanding of how digital literacy training impacts translators' professional growth and adaptability.

Reflecting on the methodology used, it is important to acknowledge its limitations and identify areas for improvement. While the qualitative approach provided valuable insights, its reliance on online interviews limited the scope of the data (Creswell & Poth, 2018). Integrating quantitative methods, such as surveys targeting translation students, could enhance the findings by providing statistical data and broadening the research scope.

Chapter 5 Conclusion

5.1 Introduction

This chapter aims to draw conclusions from the research findings in relation to the study's primary research question and offer recommendations based on these insights. The conclusions will be informed by data from the thematic analysis presented in Chapter 4, which integrates findings from interviews with experienced translators, as well as insights drawn from the literature review. The main research question guiding this study was:

- What core skills, knowledge, and competencies are essential for translation students in the digital age?

5.2 Answering the Research Question

The research addressed the research question: What core skills, knowledge, and competencies are essential for translation students today?

5.2.1 Core Skills, Knowledge, and Competencies Needed

The study identified several key competencies essential for modern translators, aligning with the findings of Wang and Liu (2023). The necessity for digital competency and technical skills was consistently emphasized, with tools such as computer-assisted translation (CAT) and machine translation highlighted as critical components for enhancing translation efficiency and accuracy. These tools have become indispensable in modern translation practice, supporting the need for their integration into translation education curricula.

Linguistic proficiency and cultural knowledge were also deemed critical, echoing Venuti's (2017) emphasis on the importance of linguistic precision and cultural sensitivity in translation. Translators must possess a deep understanding of both source and target languages, as well as the cultural contexts within which they operate. This ensures that translations are not only accurate but also culturally appropriate and tailored to specific fields and markets.

Additionally, skills such as project management, communication, and team collaboration were highlighted as essential for navigating the complexities of global translation projects. Wang and Li (2019) underscore the importance of these skills in enabling translators to manage projects across different time zones and collaborate effectively with international teams, thereby meeting client expectations and delivering high-quality work.

5.2.2 Insights from Life Histories of Experienced Translators

The life histories of experienced translators provided valuable insights into the evolving nature of the translation profession. Interviewees highlighted the importance of continuous learning and adaptability, supporting Cui's (2020) assertion that lifelong learning is crucial for translators to remain competitive in a rapidly changing industry. This ongoing professional development ensures that translators can keep pace with technological advancements and evolving industry standards. Professional ethics and responsibility emerged as foundational elements of translation practice, aligning with Yang's (2022) emphasis on the importance of maintaining integrity and quality in translation work. Translators must navigate ethical challenges such as confidentiality and cultural sensitivity to uphold professional standards. Moreover, the need for domain-specific knowledge was emphasized, particularly in specialized fields such as legal, medical, and technical translation. This specialization enables translators to provide accurate and reliable translations that meet industry-specific requirements (Cui, 2020), underscoring the importance of incorporating specialized training into translation education programs.

5.3 Strengths and Limitations

This study provides a detailed exploration of the competencies needed for modern translators, supported by insights from both literature and experienced practitioners. Strengths includes comprehensive integration of literature and empirical data, detailed thematic analysis, and diverse perspectives from professional translators. The study bridges the theoretical frameworks with practical insights, integrating comprehensive literature reviews with empirical data from interviews. This approach aligns with best practices in qualitative research, providing a well-rounded perspective that combines theoretical depth with real-world applications. Employing a detailed thematic analysis helps systematically identify critical areas within translation education, highlighting specific needs

and practices that are directly relevant to the field. This methodological rigor ensures a structured and reliable analysis, enhancing the study's validity. Incorporating views from two professional translators enriches the research's depth, mirroring recommendations for capturing a range of experiences in qualitative studies. This approach not only illustrates varied professional practices but also enhances the relevance and applicability of the findings.

The limitations, including limited sample size, potential bias in participant selection, focus primarily on digital competency, and rapid technology change, also exist. The small sample size, 2 samples, while providing valuable insights, may limit the generalizability of the findings across the broader translation industry. Expanding the sample size could provide a more representative view of industry trends. The selection of interview participants could introduce bias, as the professionals chosen may not represent the broader translator community. According to Zhang and Cui (2023), the selection bias could skew the study's applicability, particularly across different regions or sectors. The emphasis on digital competency, while pertinent, might overshadow other critical aspects of translation education. A broader exploration could prevent potential oversight of areas like interpersonal skills or business acumen, which are also vital. The fast pace of technological evolution poses a challenge to maintaining the long-term relevance of the study's findings. Continual updates are necessary to reflect current industry standards, a challenge noted in recent research on technology in education (Wang, 2023). These limitations might restrict the applicability of the findings across different contexts and potentially bias the insights toward specific technologies or practices that are not universally relevant. Future research could address these limitations by expanding the sample size, diversifying the participant pool, and updating the study to reflect technological advancements, thus strengthening the research's robustness and applicability.

5.4 Future Research Direction

Future research should explore the integration of digital competencies with traditional translation skills in educational curricula. Investigating how educational programs can adapt to the rapidly changing technological landscape will be crucial for preparing students for the future of the translation industry. Additionally, further research on the barriers to digital literacy and continuous professional development can inform strategies to enhance translation education and practice.

5.5 Closing Statement

In conclusion, this study highlights the dynamic nature of the translation profession and the need for comprehensive education programs that equip students with both digital and traditional skills. By aligning educational practices with industry demands, translation programs can produce graduates who are well-prepared to navigate the challenges and opportunities of the modern translation landscape. These findings contribute to a deeper understanding of the competencies required for successful translation practice and provide a foundation for ongoing improvements in translation education and professional development.

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