

Exploring perceptions of digital literacy in a LINC curriculum

By

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## Abstract

This thesis examines the perceptions of instructors and students in the Immigrant Services Association of Nova Scotia's (ISANS) Language Instruction for Newcomers to Canada (LINC) program regarding the incorporation of digital literacy practices in their curriculum, specifically focusing on Canadian Language Benchmark (CLB) classes six, seven and eight. The study investigates digital literacy in the context of adult newcomers, using Nixon and Kerin's (2012) model which encompasses the operational, cultural, and critical dimensions of digital literacy.

Using a qualitative approach, data was collected through student focus groups, follow-up interviews with students, and interviews with instructors. Thematic analysis was conducted to identify patterns and trends in the perceptions of instructors and students. The findings from this study reveal that while there are diverse perspectives on the perceived need for digital literacy training and skills development within the ISANS EAL curriculum, there are also clear areas for improvement within the operational, cultural, and critical dimensions of digital literacy. This differs from much of the recent literature on the subject which focuses on the need for digital literacy education, without necessarily considering the specific perceptions of both students and instructors.

In general, instructors participating in this study expressed a belief that a greater emphasis and inclusion of discussions on digital literacy would improve the curriculum. Both instructors and students acknowledged the importance of developing skills such as email communication, finding and evaluating online information, and understanding online scams and fraud. Despite this, some students conveyed a lack of interest incorporating more digital literacy in into their classes, specifically in areas such as online safety and personal data management. Conversely, others voiced a strong need for increased digital literacy learning, especially in developing professional online networks, discussing scams and fraud, and managing personal data. Recommendations for improving the curriculum include a coordinated

approach, gamification, creation of a Digital Literacy Committee, implementation of a Content and Language Integrated Learning (CLIL) approach, and the introduction of translanguaging spaces. Finally, there are also suggestions and implications for future research in this area.

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## Introduction

### Rationale

Digital literacy is paramount in modern society as it enables individuals to effectively engage with the digital world. This is especially true for newcomers to Canada learning English as an Additional language (EAL) as it affects educational success, social integration, as well as economic opportunities. Interest in digital literacy education has been growing, particularly in the context of the Canadian Language Benchmark (CLB) - based Language Instruction for Newcomers to Canada (LINC) framework (Desyatova, 2020a, 2020b; Smythe et al., 2021; Zekri, 2021). The COVID-19 pandemic has emphasized the importance of combining digital literacy alongside linguistic skills for full participation in society, democracy, and the economy. This is particularly relevant for newcomers in Canada who use EAL, as digital equity and inclusion have become critical for their successful integration into Canadian society (Gallagher et al., 2019; Njenga, 2018; Reisdorf & Rhinesmith, 2020).

While an important topic, there is little research available about digital literacy education for newcomers who use EAL, particularly in the context of CLB-based LINC classes. One area that remains underexplored is how instructors and students perceive digital literacy practices in the LINC curriculum. Previous studies (Alonso, 2021; Galante, 2014; Tour, 2020; Yuan et al., 2019) of digital literacy in EAL education have not examined the specific context of the LINC framework, leaving a gap in our understanding of how digital literacy can be effectively integrated into English language learning for immigrants in Canada.

### Research Questions

This research seeks to fill the literature gap by examining how the Immigrant Services Association of Nova Scotia (ISANS) LINC instructors and students evaluate and perceive digital literacy education is addressed within their curriculum. Understanding their perceptions will shed light on the

changes necessary to improve digital literacy education in LINC classes and help determine whether classroom instruction reflects the digital literacy skills and related language that students and instructors perceive as essential in our digital age. In addition, it seeks to fill a practice gap by focusing specifically on LINC classes at ISANS, specifically in CLB classes six, seven, and eight.

The choice of LINC and ISANS as the context for this study stems from their importance in providing language instruction to newcomers in Nova Scotia as well as Canada as a whole. LINC is a program funded by the Canadian government to assist immigrants and refugees in improving their English language proficiency and adapting more easily to life in Canada. The program offers no-cost language classes that are based on national standards for measuring and recognizing the language skills of adult immigrants in both English and French. In addition to language instruction, classes also cover Canadian values, societal customs, and aspects of daily life in Canada. LINC classes are offered throughout the country at schools, community centers, and immigrant-serving organizations. Language instruction is typically offered at multiple levels, from basic to advanced, and is based on the CLB, a set of standards used to measure and recognize the English language proficiency of adult immigrants (Government of Canada, 2021; Government of Canada, 2010). Before the COVID-19 pandemic, most classes were traditionally held in-person. However, many programs have switched to virtual and hybrid classrooms to maintain their classes (Smythe et al., 2021).

As the LINC framework serves as a guiding curriculum for many immigrant serving organizations across the country, including ISANS, this study contributes to a deeper understanding of how digital practices can be effectively integrated into English language learning for immigrants. By addressing both the practice and research gaps, this study aims to contribute to the enhancement of digital literacy education for newcomers who use EAL within the LINC framework, ultimately promoting digital equity and inclusion for newcomers in Canada.



The research question for this study is: *How do instructors and students perceive how ISANS LINC curriculum addresses digital literacy in terms of the following:*

1) *How it supports students with the technical skills and language resources to engage in digital literacy practices?*

2) *How it supports students in learning about the “cultural contexts” of their digital literacy practices?*

3) *How it supports students in learning how to critically evaluate digital spaces and practices?*

As further explored in the literature review, this study is underpinned by Nixon and Kerin's (2012) model, *The 3D model of I(IT)eracy and the English curriculum*. The model helps identify potential gaps in the LINC curriculum by understanding digital literacy as comprising an operational, cultural, and critical dimension. The framework is also used to examine whether instructors and students feel that students are sufficiently supported in their digital literacy practices.

### **Study in Focus: Addressing Digital Literacy Gaps in ISANS LINC Classes**

By examining these dimensions, the study suggests improvements for better digital literacy development among students, particularly in CLB classes six, seven and eight. Although the LINC program plays a vital role in facilitating immigrants' language and literacy learning, how it supports digital literacy skills development has been largely underexplored. Studying ISANS allows for exploring digital literacy education in a specific context, which can provide insights potentially applicable to other institutions and classrooms that use the LINC framework. By focusing on LINC classes in ISANS, this study contributes to a better understanding of how digital practices can be effectively integrated into English language learning for immigrants throughout Canada. Ultimately, this study aims to enhance digital

literacy education for newcomers who use EAL within the LINC framework, promoting digital equity and inclusion for newcomers in Canada.

The findings of this study help determine whether classroom instruction reflects the digital literacy skills and related language that students and instructors perceive as essential for successful language learning and use in a digital age. The study also suggests potential changes to improve digital literacy education in LINC classes, including addressing gaps not only in basic computer skills but also in the more complex cultural and critical aspects of digital literacy. The insights gained from this research will serve as a foundation for future investigations and inform policy and curriculum development in the field of English language education for newcomers to Canada.

## Theoretical Framework

### Sociocultural Perspective on Language Acquisition and Literacies

For this study, I adopt a sociocultural view of language acquisition and literacy. This perspective posits that language acquisition occurs through social interactions both inside and outside the classroom (Lightbown & Spada, 2013; Mahn & John-Steiner, 2012; Van Compernelle & Williams, 2013), and that meaning, and mediation are essential elements that influence an individual's learning (Eun & Lim, 2009). I also acknowledge that language learning is a complex process that involves various factors that can impact its success. Cognitive factors such as memory, attention, and perception can play significant roles in language acquisition, while affective factors such as motivation, self-esteem, and anxiety can also influence language learning experiences (Dörnyei, 2009).

A sociocultural view of literacy also recognizes that literacy is not a singular concept, but rather encompasses multiple literacies (Gee, 2010). The ways in which we engage with and use information

depend on the subject matter and context. Moreover, literacy is a social activity shaped by the values and practices of our diverse social and cultural groups (Gee, 2010; Lankshear & Knobel, 2008).

Finally, it is important to recognize that literacy practices evolve over time. This has certainly been the case in our digital age, which has significantly transformed people's literacy practices as they engage with various forms of digital media. This study defines digital literacy as all the practices involved in "communicating, relating, thinking, and 'being' associated with digital media" (Jones & Hafner, 2021, p.17). Being literate in our contemporary society means having the ability to use digital literacy skills to participate in society and empower ourselves.

This study aims to explore how digital literacy is integrated into the ISANS LINC curriculum and how students evaluate and perceive its effectiveness. By taking a sociocultural approach to language acquisition, this research promotes a better understanding of multiple literacies and empowerment in our increasingly digital society.

### **The Three Dimensions of Digital Literacy and Language Learning**

This study uses the 3D model of l(IT)eracy and the English Curriculum by Nixon and Kerin (2012), adapted from Green's (1988) original 3D model of literacy, to understand the digital literacy needs and perceptions of EAL students and instructors. Green's model, initially crafted for subject-specific literacy learning, has been updated over time (Green & Beavis, 2012). Nixon and Kerin further refined this model to focus on the English curriculum, alongside the integration of digital literacy practices and information communication technologies. This adaptation aligns well with a sociocultural understanding of literacy as a context-specific social practice.

The Nixon and Kerin model emphasizes three crucial aspects of digital literacy: technical skills and language, cultural context, and evaluation of digital literacy practices. This provides a holistic view of

digital literacy in the classroom. This model underpins this research study and has significantly influenced the research questions, data collection techniques, and analysis procedures in this study. It serves not only as a guiding tool in the research design but also as a lens through which the findings and discussions are organized.

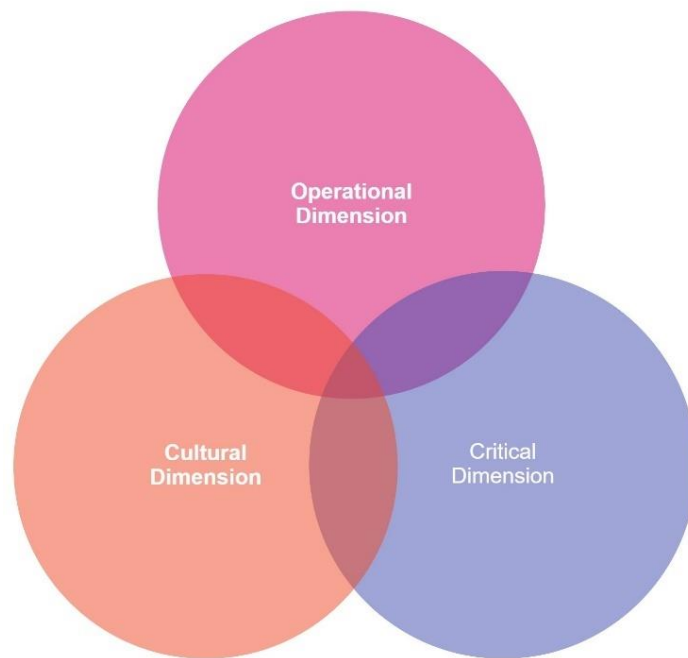
1) **The operational dimension** (*Language and Technology*) - How well students are able to combine the technical skills and language resources to engage in the digital literacy practices they need.

2) **The cultural dimension** (*Meaning*) - How well students understand the “cultural contexts” of their digital literacy practices. This includes appropriateness, audience, aspects of register such as specialized vocabulary, etc.

3) **The critical dimension** (*Power*) - How well students are able to critically evaluate their digital literacy practices. This includes activities such as identifying fake news, avoiding social engineering, and using ICT (*Information and Communication Technologies*) to improve their life.

Figure 1

The three dimensions of digital literacy (Adapted from Green & Beavis, 2012)



Adapting this framework to reconcile how our literacy practices interact with our digitally dominated lives, Nixon and Kerin's (2012) reconceptualization provides a useful model for how we can understand literacy practices of today for EAL students. These dimensions represent how we can conceptualize the different aspects of digital literacy while understanding how they inform one another and as other researchers have shown, using this model as a framework can help with understanding how students and their instructors conceptualize their digital literacy practices (Kerin, 2017; Tour, 2010; Villamizar, 2018).

The operational dimension focuses on the skills and language needed to “operate” technology systems. Included in this are the skills necessary to operate a computer, tablet, or smartphone, use software and services like search engines, email, social media, and create multimodal documents (Jones, 2021). A part of this is having the linguistic competencies to describe what you are doing and articulate areas of concern to identify and resolve problems.

The cultural dimension focuses on the knowledge necessary to make meaning and participate in online discourses. This includes, for example, the knowledge of genre specific vocabulary and conventions, needed to send and receive emails, as well as participate in discussion websites and social media and blogs.

The critical dimension has arguably been one of the most overlooked aspects of digital literacy in our educational system. As Pangrazio (2016) argues, it is essential to critically examine our ability to understand how digital texts are constructed, who constructs them, and who they are intended for. As well as examining what assumptions are made and how it works to reproduce existing inequalities (Pangrazio, 2016). An increasingly relevant aspect of this dimension is our ability to discern what information online is misleading or “fake news” and whether we are being targeted into performing actions or divulging confidential information (Bacalja et al., 2021).

### *Strengths and Limitations of Model*

The 3D model of digital literacy is a helpful framework for understanding how social practices, adult English language teaching pedagogies, and technology interact in the classroom. Though defining digital literacy is difficult and applying any model requires caution due to cultural bias and diverse contexts, the model's three dimensions are interconnected. As well, emerging digital literacy practices can be hard to keep up with due to technological advancements.

Villamizar (2018) considers the three-dimensional model of digital literacy to be a strong framework that accurately views literacy as a non-linear interaction between social practices. This model helped him see a clearer picture of, as well as intersections between adult English language teaching pedagogies and technologies in the classroom. It captures the sophisticated capabilities of digital literacy and yet provides a "teacher-friendly" approach (Tour, 2019). However, digital literacy is a nebulous concept, and this model is just one of many (Tour, 2019). Similarly, Buckingham (2015) discusses the challenges of defining digital literacy and stresses the need for caution when applying any model regarding potential cultural bias and the need to adapt the model to diverse contexts. Finally, Leu et al. (2015) highlight the complexity of assessing online research and comprehension skills, which can be related to the challenge of measuring progress in the critical and cultural dimensions of the three-dimensional model.

However, while this model divides digital literacy into three dimensions, these aspects are deeply interconnected and not easily separated in practice. As this study reveals, real-world applications require understanding the fluidity of digital literacy practices rather than focusing on these dimensions in isolation. While this model provides a strong model for understanding digital literacy, further contributions are needed to better understand the areas where each dimension intersects, and this influences our understanding of digital literacy practices. Models such as the Technological Pedagogical Content Knowledge (TPACK) framework, introduced by Mishra & Koehler (2006), underscore the necessity for these further explorations, and helps facilitate the translation from theory into practice. A more robust theoretical basis is needed to fully appreciate these intersections, especially within pivotal areas like Cultural-Critical and Operational-Critical spaces.

Additionally, due to the rapid speed of technological change, it can be quite difficult to keep pace with technological advancements and the emergence of new digital literacy practices. The rise of Artificial Intelligence and other emerging technologies presents an opportunity an expansion of the

current model and the possibility for new dimensions. This could involve the introduction of new dimensions that encompass the evolving digital literacy practices required to make use of technologies such as AI and Machine Learning.

Despite its limitations, the 3D model of I(IT)eracy and the English curriculum offers a comprehensive perspective on digital literacy, including operational, cultural, and critical dimensions, important for understanding literacy. The model has been successfully used in previous research (Villamizar, 2018; Tour, 2019), showing its practicality and adaptability in various contexts. It's suitable for analyzing the digital literacy practices of EAL students in the LINC curriculum. By using this model, this study can help contribute valuable insights to the field of English language education for newcomers who use EAL in Canada.

## Literature Review

This literature review explores how digital literacy has emerged as an essential skill in our society today. Particularly for newcomers to Canada who are learning EAL, as they often encounter unique challenges when interacting with digital technologies alongside learning English. It delves into the complexities of digital literacy, its significance, and the unique difficulties faced by EAL learners. The aim is to enrich the discourse surrounding digital inclusion and equity within Canada. A part of this is emphasizing the need for more research and discussion about how to equip newcomers with digital literacy skills that they feel they need for their successful participation in our rapidly evolving digital landscape.

### Understanding Our Digital World

In today's world, digital technologies have become an intrinsic part of our daily lives, transforming the ways we produce, consume, and share information. This transformation has



underscored the significance of digital literacy practices, which are deeply rooted in our social, cultural, and economic contexts. As Jones & Hafner (2021) elaborate, these digital literacies are not stand-alone skills but are intrinsically tied to the "values, ideologies, power relationships, and cultural understandings" inherent in these contexts (p. 18).

With the growing influence of digital technologies, education's role in cultivating these literacies becomes critical. Digital literacy has evolved to become an essential part of the educational process, fostering identity construction and enabling social integration (Barker, 2021; Burke, 2013; Wong et al., 2021; Galante, 2014; Gallagher & Rowsell, 2017). It's not just about gaining technical skills; it's also about developing a cultural understanding that equips individuals to navigate the complexities of digital communication (Jones & Hafner, 2021).

In this context, it's necessary to debunk the oversimplified notion of "digital natives"—a generation believed to be inherently adept at technology usage. Bennett and Maton (2010) argue against this generalized view, suggesting that our experiences with technology are far more varied and complex. Not everyone starts from the same place in digital proficiency, which underscores the significance of comprehensive digital literacy education.

As digital tools continue to be seamlessly integrated into our routines, it becomes crucial to understand their impact on our world. Digital literacy, beyond its technical aspect, requires a well-rounded approach encompassing cultural understanding and critical thinking to evaluate information validity (Nixon & Kerin, 2012). An educational approach that incorporates digital literacy discussion and learning is key to equipping all individuals with the skills to navigate our digital landscape successfully. In doing so, we ensure that everyone can fully participate in our increasingly digital world.

## Towards Digital Inclusion and Equity

Digital equity and inclusion are crucial for creating an inclusive society. It's essential to recognize and address the digital divide in digital literacy practices (Barker, 2021; Gallagher et al., 2019). This refers to the gap between those who have access to digital resources and those who do not, as well as a skills gap. In addition to teaching fundamental operational skills (Tour, 2019), key steps towards this aim also include developing a better understanding of digital literacy perceptions across differing settings and groups (Plowman et al., 2012). Supporting newcomers who use EAL in effectively utilizing digital resources can help bridge the digital divide in this area (Alam & Imran, 2015; Galante, 2014).

Indeed, digital inclusion is essential for a more inclusive society. This means everyone should have the digital literacy skills needed to competently access, consume, produce, and share information (van Deursen & van Dijk, 2014; Warschauer & Matuchniak, 2010). Unfortunately, a visible digital divide is arising in digital literacy practices, known as "skills access," referring to "skills and fluency with digital practices ranging from consuming (more passive) to consuming and producing (more active)" (Gallagher et al., 2019, p.774). Warschauer and Matuchniak (2010) stress that digital inclusion bridges the digital divide, promoting equitable access to information and communication technologies. van Deursen and van Dijk (2014) also emphasize the importance of digital literacy skills for effectively navigating the digital world and engaging in various activities. According to Gallagher et al. (2019), it's critical to note that access to digital resources doesn't guarantee their adoption, engagement, and understanding. Simply owning smartphones, tablets, and laptops doesn't ensure effective and safe use. Factors like culture, language, education, age, and language proficiency significantly influence the adoption and use of digital technologies among different groups (Alam & Imran, 2015). Hence, a nuanced approach to digital literacy is necessary, acknowledging the many factors shaping technology engagement.

To tackle this issue, scholars urge immediate action toward digital equity and inclusion (Alam & Imran, 2015; Reisdorf & Rhinesmith, 2020). This demands a deeper understanding of how digital literacy practices are perceived across different everyday settings (Plowman et al., 2012). As well, it is important to also look beyond technical abilities, realizing that "basic operational skills are not enough in the contemporary digital context" (Tour, 2019, p.594). Increasing the focus on teaching digital literacy skills can involve supporting newcomers who use EAL in using digital resources more effectively, empowering them. Alam and Imran (2015) discovered a growing divide among refugee migrants in Australia, with digital skills increasingly impacting various aspects of life and creating a gap between effective ICT users and passive users. As researchers have shown, addressing digital inclusion is imperative for building a more inclusive and equitable society and work needs to be done now to move towards digital equity and inclusion, concentrating on developing digital literacy skills and aiding those struggling in the digital age (Robinson et al., 2015; Selwyn, 2016).

## Newcomers to Canada and the Digital Divide

Newcomers to Canada who are learning English as an additional language often face challenges related to digital literacy, contributing to the aforementioned digital divide. This also means that they often require extra support to develop digital literacy skills (Friedrich et al., 2017; Smythe et al., 2021; Truong & Sweetman, 2018). Truong and Sweetman (2018) discovered that despite having higher education levels and living in urban areas, adult newcomers who use EAL had lower average (CT) scores than Canadian-born individuals, indicating a substantial gap. Caidi et al. (2010) found that newcomers face a variety of barriers to accessing information. These range from the structural barriers because of insufficient language proficiency to social barriers because of higher levels of social isolation.

Two primary challenges related to digital literacy faced by newcomers who use EAL in Canada include learning the necessary English language abilities for effective technology engagement (Alam &

Imran, 2015) and adapting to a new sociocultural environment (Tour, 2010; Darvin, 2018). Gee (2010) emphasizes the importance of recognizing that literacy practices are deeply embedded within social and cultural groups, which in turn influences the adoption of digital practices.

Integrating translingual pedagogies, which emphasize the fluidity of languages in language education, has been shown to foster a more welcoming atmosphere for immigrant students in the USA (García & Wei, 2014). This approach can be particularly helpful for immigrants who may experience digital literacy barriers (Hanks, 2022). Additionally, newcomers who use EAL require critical digital literacy skills that develop critical thinking and promote social justice (Kaya et al., 2022; Masood & Haque, 2021; Wineburg & McGrew, 2019). Njenga (2018) and Pangrazio (2016) argue for the development of a comprehensive and inclusive definition of digital literacy that accounts for the unique challenges faced by immigrants, such as limited access to technology or specialized training requirements.

Addressing the settlement and integration needs of skilled immigrants is crucial for their success in Canada (Kaushik & Drolet, 2018). Recent case studies have highlighted the need for newcomers who use EAL to acquire or develop better digital competencies (Darvin, 2018; Friedrich et al., 2017; Smythe et al., 2021). Friedrich et al. (2017) emphasized the need for targeted support, while Smythe et al. (2021) found that many newcomers who use EAL faced challenges with language and literacy skills, negatively affecting their ability to engage with digital tools and platforms. Limited digital literacy skills can worsen the parenting, employment, economic, and linguistic challenges that newcomers encounter when immigrating to Canada. Gallagher et al. (2019) reported that many newcomer families needed guidance and support in understanding and using online portals for their children's schools. Furthermore, Smythe et al. (2021) observed that numerous beginning English language learners struggled to adapt to Zoom and other online learning forms due to insufficient language or literacy skills.

## How Digital Literacy Is Addressed in an EAL Curriculum

As a government initiative to help immigrants improve their English language proficiency and better integrate into Canadian society (Government of Canada, 2021; Government of Canada, 2010), integrating digital literacy topics into the LINC curriculum is crucial for newcomers who use EAL. While some research has been conducted in this area (Desyatova, 2020a, 2020b; Zekri, 2021), further investigation is needed. Immigrants in Canada face numerous challenges related to communication and workplace integration due to diverse digital literacy and English language skills (Cheng et al., 2021; Lai et al., 2017; Kaushik & Drolet, 2018). A study by Cheng et al. (2021) found that language use and communication challenges negatively impact the workplace experiences of immigrant professionals. Similarly, Lai et al. (2017) examined the experiences of immigrant engineers and emphasized the importance of unspoken skills and tactics for their integration into workplace culture.

Comprehensive training programs are essential to support newcomers who use EAL (Hébert et al., 2020; Truong & Sweetman, 2018). These programs can help them navigate the digital world and integrate into Canadian society. As well, to effectively incorporate digital literacy into instruction, teachers require access to resources, technology, and support (Wong et al., 2021). Unfortunately, studies have shown that LINC instructors often are unable to encourage digital literacy or digital citizenship skills development in the classroom (Desyatova, 2020b; Zekri, 2021). Indeed, while the LINC framework's flexibility allows instructors to customize course content to meet their students' specific needs, it also makes it difficult to study how topics are addressed across LINC EAL institutions and classrooms.

Re-examining curriculum and implementing innovative approaches can help newcomers who use EAL develop digital literacy skills essential for life in a technology-driven society. Several pedagogical approaches have been proposed, such as gamification, which has been shown to increase motivation

and engagement in language learning (Al-Dosakee & Ozdamli, 2021; Figueroa Flores, 2015; Zainuddin et al., 2020). A systematic literature review by Al-Dosakee and Ozdamli (2021) highlights the effectiveness of gamification in language learning, particularly for newcomers who use EAL.

Content and Language Integrated Learning (CLIL), as its name implies, is an approach to education that integrates the learning of content in a language that the student is learning. While it is mostly commonly found across Europe (Dalton-Puffer, 2011; Harrop, 2012), it is also gaining popularity in other parts of the world. While more research in this area is needed, there is some evidence that CLIL can provide educational opportunities to newcomers who use EAL that they may not receive in other education programs (Somers, 2017).

Tour et al. (2021) demonstrated the potential of experiential digital storytelling as a pedagogic approach for teaching digital literacies, emphasizing an operational, cultural, and critical understanding of EAL tasks. However, to effectively incorporate digital literacy into their instruction, teachers need access to resources, technology, and support (Wong et al., 2021). As we continue to migrate to more and more complex and multimodal forms of communication which involve digital media, so must too our curriculum (Cimasko & Shin, 2017).

Ultimately, the focus should not be solely on operational and technical capabilities, but also on a more nuanced and holistic approach (Friedrich et al., 2017; Plowman et al., 2012). This would allow students to learn how to engage in ICT practices in a new linguistic and sociocultural context (Tour, 2010) and become better prepared to apply digital literacy practices outside the classroom (Gallagher et al., 2019).

## Methods

This study examines how ISANS LINC instructors and students perceive and evaluate digital literacy in their curriculum. To do this, four student focus groups and four follow-up interviews were conducted, as well as two interviews with instructors. Thematic analysis was used to identify patterns and themes related to the research questions. The study aimed to provide insights for other institutions and classrooms that use the LINC framework for digital literacy education in English language learning for immigrants throughout Canada.

### Participants

As mentioned, ISANS helps immigrants and refugees settle and integrate into their new communities by providing language training and employment support (ISANS, 2021). Studying ISANS provides an opportunity to better understand the experiences and perspectives of its students and instructors. Through this, we can help ISANS and other like service provider organizations which use the LINC Framework to improve their services and curriculum to better serve the EAL immigrant and refugee populations in Nova Scotia.

This study used purposive stratified criterion sampling to gather both students and instructor participants for the initial focus groups. The goal was to hear directly from students and instructors about the experience of learning and teaching the ISANS LINC curriculum as they are the ones that provided the clarifying accounts (Polkinghorne, 2005). Purposive stratified sampling was used for this study because it aimed to examine a narrow set of the population, specifically ISANS LINC students who were at levels comfortable discussing how digital literacy is addressed in their curriculum. Due to the extremely limited population, it was difficult to find participants and thus follow-up interviews were conducted to add more depth to the gathered data.

Mount Saint Vincent University's Review Ethics board approved the ethical clearance for the initial scope of the study, which included recruitment, focus groups, and interviews with students who had completed CLB seven and instructors who had taught CLB seven. While several students expressed interest in becoming participants, only three completed the informed consent form and only two showed up to participate in the focus group. This was followed by two follow-up interviews with said students and an interview with an instructor who teaches CLB seven.

Due to the small size of the sample, the study's scope was broadened with University Review Ethics board approval to include students from CLB levels of six to eight. After more recruitment presentations, thirteen students agreed to participate. This allowed for three more focus groups, each one having three or four students, and two more follow-up interviews. Finally, one additional instructor agreed to participate in an interview.

All interviews and focus groups were conducted online using Microsoft Teams, a platform familiar to ISANS' EAL students as many use it for their online classes. While this may have influenced the sample towards those who are more digitally literate, it did not impact the quality of data gathered. The participants were not chosen to represent all EAL instructors or the entire immigrant EAL population of Nova Scotia, but because they could provide meaningful contributions about the "experience under investigation" (Polkinghorne, 2005 p. 139.)



Table 1

*Information about Student Participants*

<b>Pseudonym</b>	<b>Age</b>	<b>CLB Level</b>	<b>Country of Origin</b>	<b>First language</b>	<b>Time spent in Canada</b>	<b>Time learning EAL at ISANS</b>	<b>Date of Focus Group (FG) Follow/ up Interview (FI)</b>
Sam	42	8	Iran	Farsi	3 years	2.5 years	2022-06-08 (FG) 2022-06-12 (FI)
Wilab	36	8	The Philippines	Tagalog	4 years	3 months	2022-06-08 (FG) 2022-06-14 (FI)
Fadila	37	6	Egypt	Arabic	3 years	2 years	2022-10-25 (FG) 2022-11-08 (FI)
Eva	51	6	Brazil	Portuguese	4 years & 7 months	4 years	2022-10-25 (FG)
Jing	32	6	China	Mandarin Chinese	4 years	4 years	2022-10-25 (FG)
Min	49	7	China	Mandarin Chinese	1 year	6 months	2022-10-25 (FG)
Nadiya	44	6	Ukraine	Ukrainian	6 months	1 month	2022-10-26 (FG) 2022-11-09 (FI)
Yong	40	6	China	Mandarin Chinese	2 years	5 months	2022-10-26 (FG)
Hai	35	7	China	Mandarin Chinese	6 months	1 month	2022-10-26 (FG)
Angela	41	6	China	Mandarin Chinese	1 year	7 months	2022-11-07 (FG)
Oksana	57	6	Ukraine	Ukrainian	2 months	1.5 months	2022-11-07 (FG)
Hanna	26	7	Ukraine	Ukrainian	5 months	3 months	2022-11-07 (FG)
Nasira	N/A	7	Syria	Arabic	1 year	11 months	2022-11-07 (FI)

Table 2

*Information about Instructor Participants*

Pseudonym	CLB Level teaching	Country of Origin	First language	Time spent teaching EAL at ISANS	Interview date
Amie	7	Canada	English	10 years	2022-07-28
Cathryn	6	Canada	English	8 years	2022-11-22

**Focus groups**

Four student focus groups were conducted, each consisting of two to four participants, and lasting approximately 60 minutes. The sessions were conducted via MS Teams and designed to create a relaxed environment for participants to share their perspectives and experiences. The focus groups covered topics such as how students use digital literacy in their daily lives, how digital literacy is discussed in current LINC classes, and related topics that students would like to discuss in their EAL classes going forward. Additionally, questions related to the three dimensions of digital literacy (operational, cultural, and critical) were included (Nixon & Kerin, 2012). To make sure everyone understood, all initial questions were displayed on the screen for participants (See Appendix A).

The focus groups provided an opportunity for students to share their perceptions and experiences of digital literacy in their LINC classes. By building upon each other's comments, students were able to explore their ideas in more depth and even the more reluctant participants were encouraged to contribute due to the relaxed atmosphere (Robson & McCartan, 2016). During the sessions, all participants were encouraged to share their views and respond to their peers, noting agreements, disagreements, and similar experiences.

## Semi-Structured Interviews

After the focus groups, students were invited to engage in follow-up interviews to elaborate on the group discussions. Four such interviews were conducted, each tailored to the participants, enabling them to expand on their own comments as well as those made by others during the focus groups. These interviews provided an in-depth exploration of the themes emerging from the focus groups, shaping the structure of the interview guide. During the consent process, students were given the option to indicate if they wanted to participate in follow-up interviews. From this subset of interested students, I selected those who had been particularly expressive during the focus groups and whose insights appeared most likely to contribute meaningfully to the research questions. The duration of these interviews ranged from 25 to 60 minutes, depending on the participants' level of engagement.

Due to the limited number and availability of instructors, it was not feasible to form a focus group. As an alternative, the focus group protocol was adapted into an individual interview guide, which was employed for one-on-one sessions with each instructor participant.

## Ethical Considerations

Beyond obtaining ethics approval, special attention was paid to the recruitment process, focus groups, and interviews with EAL student participants. All participants were informed about the potential benefits and risks of participating in the study. Furthermore, participants were assured that their personal information would be anonymized and that their thoughts, comments, opinions, and identifying information would not be disclosed to the language services department or any other party outside of the study's findings. Finally, their participation would not affect instructor positions at ISANS, nor would it affect students' ability to participate in ISANS programs.

Another concern is that participants may have viewed the interviews and focus groups as an opportunity to voice any grievances they may have had with their program, in the hopes that I, as the

principal investigator, could help resolve them (Rolland et al., 2019). To address this concern, I emphasized at the beginning of each focus group/interview that this was for my thesis dissertation and that I was not acting on behalf of ISANS. As well, while there have been calls for researchers to offer language choices to participants or to work with interpreters when working with multilingual research participants (Rolland et al., 2019), this study was carefully designed to ensure that participants had the necessary language capabilities to contribute to conversations and answer questions.

### Positionality

The social location, identity, and positionality of a researcher are reflected in all aspects of the research process. This complex relationship influences all aspects of the research process, from formulating research questions to analyzing data and identifying themes (Ravitch, 2016). As the principal researcher for this qualitative study, it is essential that I incorporated critical reflection into all aspects of this study, as my identity, beliefs, and feelings have shaped its goals and meaning (Ravitch, 2016).

Furthermore, self-awareness is crucial for conducting not only meaningful but also ethical research, particularly when working with underrepresented populations in academic research (Morrow, 2005). As this study mainly examines the perceptions, needs, and aspirations of newcomers who use EAL, it is essential that I position myself within the context of this research study.

Although I am not an immigrant, I am the child of immigrants and hope that this work can positively impact newcomers who use EAL and their digital literacy skills. My experience as an EAL teacher and a TESOL student has been closely linked to digital technologies. I have predominantly taught EAL at a private adult language center using a blended learning approach. In fact, many of my students studied English to engage with others from around the world online or even to come to Canada to study or immigrate. These comments made me think more about how we engage with digital technologies

and how English operates as the de facto lingua franca of the internet (Chen & Wellman, 2004; Zoubi et al., 2021).

It is also important to note that while I do not work in the ISANS language services department, I do work at ISANS and acknowledge that this plays a role in how I approach this research. As an insider with prior knowledge of ISANS, where the research was conducted, I was aware of my unique position (Fleming, 2018, p. 311). It was crucial that I exercised caution to mitigate any informant bias, which was achieved by ensuring that participants fully understood during the focus groups and interviews that they were not being judged based on their opinions or experiences.

Like hundreds of millions of people worldwide, the Covid-19 pandemic forced me to use online platforms to teach and take classes. However, this shift assumed certain digital and linguistic competencies, consequently excluding many individuals who lacked these skills (Arya et al., 2021; Esses et al., 2021; Smythe et al., 2021). Throughout this research, I consciously recognized how I am situated within it and aimed to be mindful of how my personal background and experiences influence my perspective and understanding of both students' and instructors' shared experiences.

## Data Analysis

I transcribed the recordings of each MS Teams focus group and interview session using the platform's transcription feature. I reviewed and edited the transcripts for accuracy, and then inputted them into the MAXQDA software program for analysis. I followed Braun and Clarke's (2006) six phases of the thematic analysis approach, which involved familiarizing myself with the data, generating initial codes, searching for themes, reviewing themes, and then defining and naming themes.

The data was initially coded inductively, identifying patterns and themes related to the research questions. Once the dataset was coded, the codes were reviewed, refined, and consolidated into a

coding hierarchy to ensure thematic clarity. Finally, the top-level codes were coded deductively and organized under the "operational, cultural, critical" dimensions of digital literacy (Nixon & Kerin, 2012). I also practiced reflexivity as the principal investigator, reflecting on my own biases and perspectives throughout the research process to ensure that their interpretations were not unduly influenced by my personal biases (Braun & Clarke, 2021). Finally, it's important to acknowledge the role of my supervisor in conducting this research and whose guidance helped mitigate research bias and reduced the risk of partiality in the findings.

## Findings

Overall, students expressed a range of opinions on how digital literacy was addressed in their curriculum. There were discussions and disagreements about the importance of digital literacy, what aspects were lacking, and which areas need improvement. Despite these varied opinions, several key patterns emerged where students and instructors believed that more emphasis and discussion would be beneficial in the curriculum. Incorporating these areas could considerably benefit students. See Appendix B for a chart showing the frequency of topics discussed in focus groups and interviews.

As this study examines digital literacy using Nixon and Kerin's (2012) three dimensions: operational (basic skills for using digital tools), cultural (understanding within socio-cultural contexts), and critical (critical analysis and evaluation of digital information), the findings have been organized accordingly (see Figure 2) as well as a final section discussing participants overarching perspectives of digital Literacy in the LINC Curriculum.

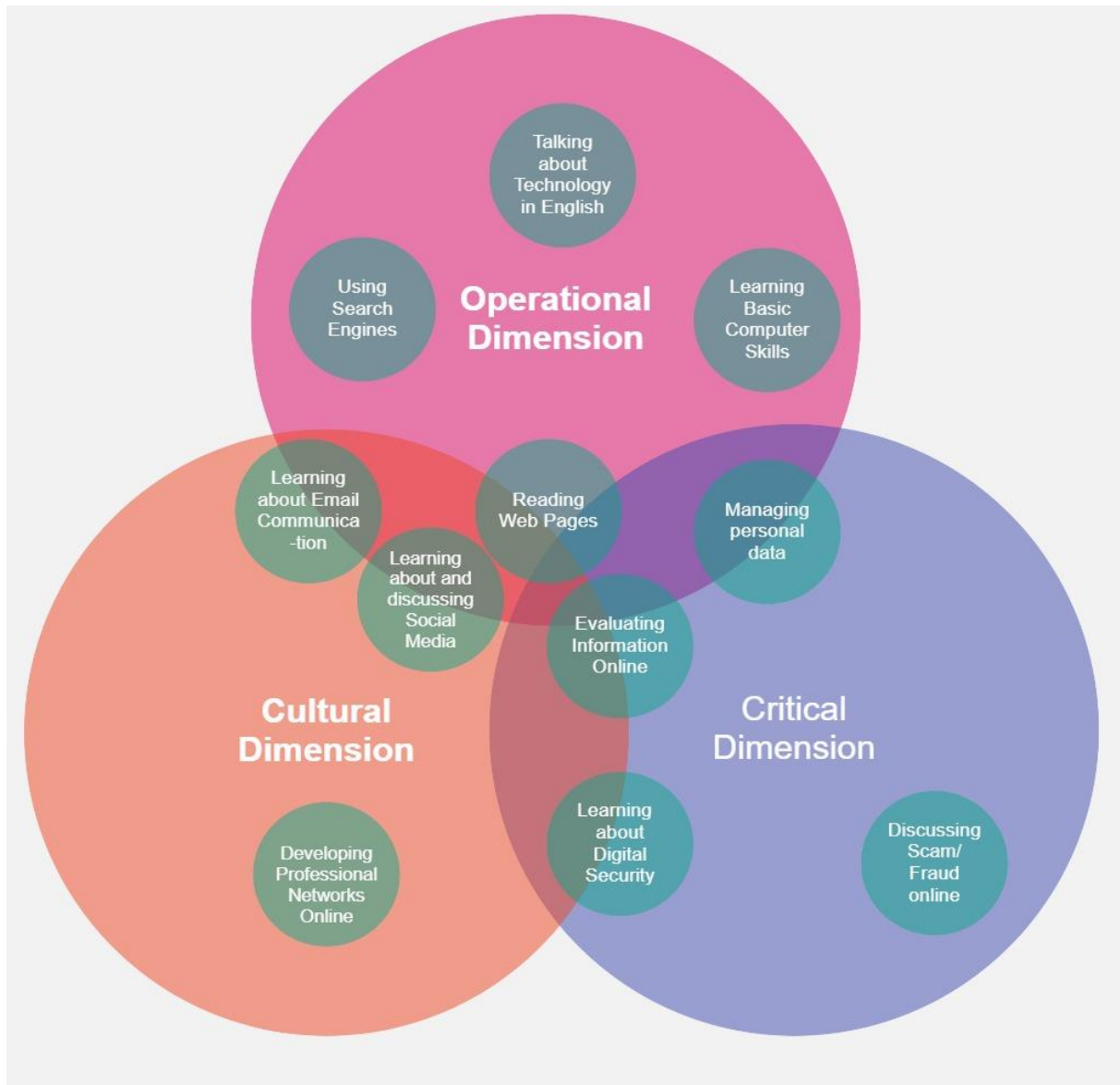
It should be noted that the classification of these subthemes is subjective. Their assignment under the three dimensions as well as understanding of how they overlap with one another depends on various factors. For this study, their placement is a combination not only on the responses of the

participants in this study, but also on various factors such my positionally as the principal researcher and my interpretation of the theoretical framework behind this study.

In the operational dimension, the most frequently discussed activities include learning digital skills in English, finding and understanding information online, and developing professional networks. The cultural and critical dimensions cover topics such as email communication, evaluating online information, and discussing scams and fraud. Finally, students and instructors suggested ways to improve digital literacy education, including inviting IT professionals to speak and forming a Digital Literacy Committee, as indicated below.

Figure 2

*Emerging themes from the Focus group and Interview discussions with students and instructors*



As indicated in the above figure, numerous digital literacy skills and practices extend beyond the confines of the original three dimensions: Operational, Cultural, and Critical. Following several rounds of initial code generation, theme identification, and theme consolidation, a total of eleven significant themes remained.

These dimensions help us understand the unique skills and underlying concepts behind digital literacy. Ultimately, these categories function as a conceptual framework for literacy, thereby facilitating



a deeper understanding of digital literacy practices (Nixon & Kerin, 2012). While separating digital literacy into distinct dimensions helps with understanding what is at the core of the topic, many practices fit well within multiple dimensions and demonstrate overlap. For instance, evaluating information from online sources requires both operational skills, such as proficiently navigating search engines, and critical skills, such as the ability to evaluate the credibility of online information sources. It also requires an understanding of the context, origin, and authorship of the online content and material.

For this study, I have placed, 'Learning about Email Communication' and 'Discussing Social Media' intersect both the Cultural and Operational dimensions. 'Managing Personal Data' and 'Evaluating Information Online' straddling the Operational and Critical dimensions, while 'Learning about Digital Security' encompassing both the Cultural and Critical dimensions. Finally, 'Reading Web Pages' and 'Evaluating Information Online' extend across all three dimensions. The findings of this study have been organized into separate dimensions to emphasize where the activities best fit. However, I have also added a special section where I review the nuances of these divisions and overlaps.

### Operational Dimension of Digital Literacy

Throughout the focus groups and interviews, both instructors and students recognized a skills gap among numerous ISANS LINC learners concerning the operational dimension of digital literacy. This dimension encompasses the practical skills required for learners to effectively utilize digital tools and platforms. To better present the findings, I have organized them into the following subthemes: discussing technology-related topics in English, finding, reading, and understanding information online, and learning computer skills.

### *Talking About Technology in English*

One important aspect of the operational dimension of digital literacy, acknowledged by both students and instructors in the discussions, is that learning digital literacy skills in their LINC classes can also improve their English language skills. Four participants, three students and one instructor, were emphatic that this would be a beneficial use of their class time, as it would certainly lead to an improvement in their English language skills. As shown below, Sam believes that discussing a variety of topics in English is beneficial for both language and digital literacy development.

You know everything we learn, for example, for LinkedIn for Facebook, for everything is in English. And at the center we can learn more about English. And more about the soft skills and even harder skills in Canada. So yeah, I wanted to, you know, emphasize that.

(Sam, Student).

Moreover, both students and instructors placed emphasis on the importance of learning vocabulary related to computers, smartphones, tablets, and their component parts as well as being able to talk about and describe popular software programs and applications they use on a regular basis. While not a top priority, this was seen by the participants at large as important to the overall language development of students in their EAL classes.

### *Finding, Reading, And Understanding Information Online*

Many student participants recognized the importance of being able to find information through a search engine and navigate webpages to read information digitally. They considered this an essential part of their reading skills and appreciated that it was already being incorporated into their classes.

However, they also acknowledged that there was room for improvement in this area. As mentioned by Cathryn (instructor), one of the biggest challenges for their students is “...often just finding things, finding the information they're looking for.”

Both instructor participants saw this as an essential goal that is directly related to daily tasks that coincide with the goals of the LINC curriculum. However, Cathryn, an instructor, mentioned that while she appreciated the benefits of using authentic materials and resources such as search engines, she primarily used materials and reading texts that she had already prepared. She felt that it is much more difficult and time-consuming to customize lessons around the use of searching for and reading specific web pages. Additionally, instructor Amie mentioned that they had previously discussed using search engines in a CLB Four class and found it challenging to teach explicitly in a virtual classroom. For students who struggled the most, everything had to be broken down into basic steps, and pictures had to be used to help certain students distinguish between things such as a search engine and their browser.

### *Learning Basic Computer Skills*

During the focus groups and interview conversations, there was a discussion about whether there should be time devoted to teaching students basic skills. This would include operating computer devices, such as laptops and smartphones, as well as basic software use, including the Microsoft suite.

While the instructors were uncertain about whether teaching basic computer skills should be part of the curriculum, they certainly felt that a lack of ability with computer devices such as laptops and smartphones, and basic software use, including the Microsoft suite, is a barrier to learning for some of their students. As seen below, Instructor Amie emphasized that these skills are necessary for personal use and for seeking employment in Canada. As well, she noted, not all working professionals who come to Canada have the digital literacy prerequisites necessary to fully integrate into their professional spheres in Canada.

“So, it's (basic computer skills) inescapable and certainly in Canada. I think it's still avoidable in some context in other countries because I have people who come in who are working

professionals in their home countries and they don't always have computer skills. They don't always have digital literacy. They didn't necessarily have to work on a computer in their job." (Amie, Instructor)

While the instructors were uncertain about whether teaching basic computer skills should be part of the curriculum, some students suggested that integrating topics related to Microsoft programs, such as Word, Excel, and PowerPoint, could be beneficial.

### Cultural Dimension of Digital Literacy

Similarly, discussions surrounding the cultural dimension of digital literacy proved to be significant. As emphasized in the findings, students and instructors alike were acutely aware of the disparities in online communication practices between students' home countries and Canada, underscoring the need for addressing these aspects in the classroom. The three primary themes emerging from these discussions are: cultural differences in email communication, the cultivation of professional networks online, and the integration of social media platforms within the LINC curriculum.

#### *Learning about Email Communication*

During discussions about cultural differences in digital practices between their home countries and Canada, email use was identified as one of the most significant themes. Many students noted the prevalence of email use in Canada compared to their home countries. They were more familiar with using messaging applications like WhatsApp and WeChat. Instructors also mentioned that they used WhatsApp to communicate with their learners at the beginning of the Covid-19 pandemic, as it was a tool that most learners were already using.

One student, Nadiya, from Ukraine, emphasized the importance of email in her home country, which was in contrast to her classmates who preferred messaging apps. Nadiya still prefers email over

messaging apps because she feels that messaging apps are less secure and can be tracked more easily. This highlights the importance of understanding cultural differences in the use of communication tools and considering the security concerns of users when choosing a communication platform. Similarly, the importance of email use in Canada was also frequently mentioned. Although most students had prior experience with writing emails in English, many noted significant differences in basic formatting, structure, and email types compared to their home countries. The participants agreed that differences in email writing practices created challenges for students accustomed to a different style of writing.

Most students need to learn the cultural nuances of email communication within the Canadian context. This was emphasized by student Fadila, who said “My emails by my home language Arabic is not this type, shape, just the information that you need to send it to others without shape without steps. Totally different.” All student and instructor participants agreed that the LINC curriculum should continually focus on learning how to write emails, with specific guidance on framing them for colleagues and supervisors while maintaining a professional tone. The instructor participants noted that writing emails is a regular task in the class, and it will continue to be so, as emails are essential for workplace communication, requesting services or information, and sending important information.

### *Developing Professional Networks Online*

During the focus group discussions and interviews, students expressed considerable interest in learning how to develop professional networks online. In particular, they emphasized the importance of new immigrants in Canada being able to use employment-focused social media platforms such as LinkedIn. They stressed that learning to establish connections through online networking in Canada is not only essential for finding employment, but also aids in language skill development and gaining exposure to Canadian cultural workplace norms.

One student participant, Fadila, mentioned that this can teach students how to create effective resumes and market themselves on LinkedIn. Additionally, Sam pointed out that learning about social networking sites such as LinkedIn and Facebook in English can help improve language skills and find job opportunities. Importantly, as seen in his quote below, he wants to learn more about the cultural aspects within the Canadian context. “I know how to use LinkedIn, but I know it in my home country. Here, I need to know more about cultural differences” (Sam, Student). However, some participants expressed concern that this topic is not closely aligned enough with the learning outcomes of the language-focused LINC curriculum. Therefore, they suggested that it should be covered in a separate elective class instead.

### *Discussing Social Media*

There was considerable pushback against incorporating social media into classroom discussions due to privacy concerns. Additionally, using social media was considered too commonplace to be a useful topic for digital literacy practice. However, during discussions, interesting cultural differences were identified among students from different countries, particularly with regard to popular social media platforms such as Facebook Marketplace, Telegram, WhatsApp, and WeChat.

Sam suggested that discussing aspects of digital literacy, such as workplace expectations, could be beneficial. He noted that while it is generally unacceptable to use social media during work hours in Canadian workplaces, this is not necessarily the case in other cultures such as his own. One instructor, Aime, felt that it could be useful to bring this topic into the classroom and shared her experience of discussing Facebook sharing in her CLB seven class but was surprised to learn that one of her learners did not use any social media platform at all.

## Critical Dimension of Digital Literacy

Lastly, the discussions also explored the skills encompassed by the critical dimension of digital literacy, specifically, their relevance to the ISANS LINC curriculum. The primary themes that emerged included evaluating online information, addressing scams and fraud, managing personal data, and understanding digital security. The discussion highlighted the complexities and challenges of incorporating these concepts into the classroom, as well as the advantages newcomers could reap from acquiring these skills, enabling them to confidently navigate the digital landscape.

### *Evaluating Information Online*

Both students and instructors agree that the ability to evaluate online information is a crucial skill for those new to Canada. While participants noted that while this skill is partly addressed in the curriculum, there is a strong interest in integrating it more thoroughly.

Amie, an instructor, emphasizes that this is a critical skill her students need to master so that they are able to access trusted and verified health and science information independently. She stresses the importance of not relying on social media for such information, as it may not be reliable. From a student perspective, Angela appreciates the current focus on learning and discussing how to evaluate information found online. As seen below, she felt that a recent listening assessment, where they had to search for information on a website and evaluate its credibility, was quite useful and hopes that more activities like this can be included in future classes.

“I think we have learned a lot of this during our classes already ... for some weeks ago we have a listening assessment. The assessment is around how to search the website to find the information what we heard. Then there was a lot of the technology that is [related to] how to search your information online then how to evaluate that information. That is what

you would like to search or that is the real information you can believe on it. ...so the learning this is very useful and important to us.” (Angela, student)

### *Discussing Online Scams/Fraud*

During focus groups and interviews, several participants stressed the importance of discussing topics such as phishing, scams, and fraud in their classes. The instructor participant Amie noted that she has briefly touched on this topic in their classes, but had not been able to go into much detail. She did note that students have responded positively to this material in the classroom. As well, she noted that there are one or two modules available on Avenue, an online learning platform used by some LINC programs, that deal with scams and fraud broadly.

Cathryn suggested having separate classes for these topics but was concerned about whether her students would have the time and means to attend those sessions in addition to their LINC classes. Sam, who has experienced many phishing attempts in Canada through emails and text messages, strongly recommended incorporating these topics into the LINC lessons. He believed that there is a significant knowledge gap for newcomers in Nova Scotia and suggested breaking down the topic and distributing it across different CLB levels to make it more engaging and less overwhelming for learners. As seen when he said, “Protecting my personal data is the first thing I need in Canada” (Sam, Student), this was seen as a high priority for him as a new immigrant to Canada.

Although most students were interested and said that they would be grateful to learn about the topic, as they were aware of the prevalence of scams but were not sure how to protect themselves, Wilab, a student from the Philippines, disagreed. She said that her experience in Canada has been similar to that of her home country, and she already has an instinct for identifying scams and fraud.



### *Managing Personal Data*

During the discussion, Nadiya expressed her concern about online security and the protection of personal data. She mentioned that she avoids using WhatsApp as she does not feel it is secure.

However, when asked if this should be addressed in the classroom, she felt that her classmates may not be interested in learning about this topic. Therefore, discussing it in the classroom may not be effective.

Instructor Amie raised a valid point that although she would like to introduce the topic of managing personal data in her classes, her lack of understanding of the topic could be a significant barrier. She noted that this may be true for other instructors as well, resulting in a wide variation in their abilities to teach the topic.

Although Wilab, a student participant disagreed, stating that people already know how to manage and protect their private information online from previous experiences before coming to Canada. They believe that discussing this would not be necessary for most people as it is intuitive.

### *Learning About Digital Security*

Although most participants agreed on the importance of digital security, most students agreed in feeling that introducing this topic into their classes would be too intense. While acknowledging its importance, many students felt that the topic may be too complex for beginners. And advanced topics such as antivirus protection and identifying fake apps may require both a higher level of knowledge of digital/technical knowledge as well as a higher level of English proficiency.

To address these concerns, Fadila suggested breaking down the digital security curriculum into manageable segments, with each segment building on the previous one. Meanwhile, Wilab emphasized the need for students to be proactive in learning about personal data and account security. While in-depth coverage of these topics may be beyond the scope of the LINC classroom, she suggested that

teachers can play a role in students' self-directed learning by providing access to resources and tools that can help them learn about digital security.

## Overarching Perspectives of Digital Literacy in the LINC Curriculum

Beyond the three dimensions, several themes emerged concerning the overall role of digital literacy instruction within the ISANS LINC curriculum. Both students and instructors expressed diverse perspectives and concerns regarding the integration of digital literacy topics into their language classes. The discussion, outlined below, includes various concerns and suggestions on what should be incorporated and how ISANS can achieve a balance between teaching digital skills and concentrating on language development.

### *Balancing Digital Literacy Discussions in the Curriculum*

While Both instructor participants agreed that discussing digital literacy more in the classroom could be beneficial, student participants had mixed responses. Seven of the thirteen student participants emphasized at least once within either the focus groups or interviews that this would be a beneficial use of their class time, as it would certainly lead to an improvement in their English language skills. However, both student and instructor participants had concerns about the time and resources required to teach digital skills in the classroom, as well as the need to balance learning digital literacy skills alongside language development.

An important aspect discussed was whether digital literacy education even belongs in the EAL class. Some student participants felt that it should be taught separately from language classes, which should focus mostly on language. However, some students emphasized that this does not mean technology cannot be discussed. These students suggested focusing on English language which would help prepare students to describe and talk about their digital literacy practices in English. This approach is more language-focused but also helpful for improving communication skills related to the internet and

web. From Sam's perspective, "English course, CLB course, is not just about English. [Its] Just about how to make clients' life easier. You know?" (Sam, student).

However, not everyone was interested in learning about digital literacy topics in depth. Four participants noted that while there were indeed interested in exploring digital literacy topics in their LINC classes, they were worried that there would not be enough interest among students who did not see the need to learn them.

### *Other Concerns*

There were also other concerns from both the instructor and student perspectives regarding LINC classes in Canada. These concerns provide us with insight into what they see as the largest obstacles toward better integration of digital literacy into their curriculum.

Although many students felt that there was room for discussing digital literacy, there were still concerns that a shift towards focusing more on it could detract from more important topics. Yong, a student participant, expressed that some classmates may need more support in this area, particularly older students. However, he also noted that this could require instructors to spend more time explaining concepts and helping lower-level students, which may not be the best use of classroom time. This sentiment was echoed by other students during other focus groups and interviews. Likewise, according to Wilab, the first thing immigrants need to learn in Canada is the culture and the differences between their own culture and Canadian culture. She felt that this is the most critical aspect of adapting to a new country, and ISANS already does a good job teaching it. As seen below, Wilab is wary of any changes in the curriculum that would shift towards a greater focus on digital literacy.

"... I think if they focus on..., you know, digital or something like that, they might, you know, they might... ignore, or you might not give attention or full details to the to the

what's that [sic] traditions in Canada to their culture, right? So? I mean it's, I mean for me, it's, uh, the main or the first thing that we need as immigrant. The first thing that we need to adapt or to know in Canada is how they live in Canada. How is their culture and what's the difference between their culture and our culture?" (Wilab, Student)

From the instructor's perspective, the importance of digital literacy within LINC classes was clear, especially for older students in their classes who were not pursuing other forms of continuing education in Canada. There is also the challenge of accommodating a wide range of digital literacy levels within the same class, as well as the limited resources, time, and support available to develop a coordinated approach for introducing digital literacy into their classes. As instructor Cathryn mentioned, this means that she focuses on providing extra support to the students who need it the most, using her class to reach them. However, she also recognizes that this approach may be detrimental to students who are already proficient and don't need the slower pace of instruction. Finally, Amie made a very pertinent point that instructors may have a gray area where there are important topics that they may not cover in their classes.

"There's this gray area where there are things, topics that that we or one might identify as really important in a person's life, in a newcomer's life. And if they don't learn it in an EAL classroom, well where are they going to learn it?" (Amie, Instructor)

### *Suggestions From Participants*

During the discussion, students raised interesting points about digital literacy at ISANS. One suggestion was to invite IT professionals to speak and teach learners at different levels. This would help participants become more confident in using technology to support their settlement process. Sam proposed creating a Digital Literacy Committee to define and provide guidance on digital literacy requirements for ISANS participants. The committee could offer guides for common applications used by

immigrants, such as banking apps or language learning software, in English at varying levels.

Additionally, they could provide standalone courses for specific applications to ensure participants have access to the right resources to learn skills relevant to daily life.

Several students emphasized the importance of having guides and walkthroughs at different levels for learners with varying levels of expertise. This was particularly important for an organization like ISANS, which serves individuals of different ages, cultures, languages, and knowledge levels. By providing these tailored guides, ISANS could better meet the needs of its participants and ensure they have access to the right resources to support their settlement process.

One student mentioned that from her perspective, this could be combatted with “gamifying” some of the learning.

“As a student, if I need to learn something and something is new for me... maybe boring. If it's... if this information [is] covered by entertainments or game or steps or challenge will be good for me. If I learn online or by myself... if the knowledge or information [sic] come to me by score by game, by, step by step, it's ... it will be interested more than give[ing] me the information and then handled by myself. This is my idea as a student.” (Fadila, student)

Overall, both students and instructors emphasized the importance of learning the language related to digital devices such as computers and software programs, as well as finding, reading, and understanding information online. The cultural and critical dimensions of digital literacy were also discussed, including the need to learn about email communication, developing professional networks online, and evaluating information, scams, and fraud. Suggestions for addressing these concerns included creating a Digital Literacy Committee and providing tailored guides and gamified learning resources.

## Emerging Themes Across Multiple Dimensions

As mentioned in the beginning of this section, there is overlap amongst some of the themes discussed in this study in terms of where they fit within the three-dimensional digital literacy model.

For instance, “Reading web pages’ requires the technical skill to navigate the web page (Operational), understanding the conventions of web page design (Cultural), and the ability to evaluate the credibility of the information presented (Critical). ‘Learning about Digital Security’ not only involves technical understanding (Operational) but also requires knowledge about safe online behavior (Cultural) and the ability to discern potential online threats (Critical). As well, while some skills such as being able to communicate via emails require learners to be technically proficient; learners also need to understand the cultural context behind how this is done. In the context of the English curriculum, these overlapping skills and practices highlight the interconnected nature of digital literacy. Thus, while the themes are organized by primary dimensions, an integrated approach is a helpful way of addressing digital literacy in the English curriculum.

Within this study, the majority of themes are primarily associated with the Operational Dimension. This could be a reflection of the current state of digital literacy for the participants within this study’s context. Indeed, the basic technical skills required to operate digital devices and software, is the most immediate and tangible aspect of digital literacy. Participants in this study, saw these basic skills as a foundation for more advanced digital literacy practices. This may suggest that the curriculum heavily concentrate on these basic skills. The reasons for this could vary, ranging from the learners’ initial digital literacy levels to the perceived resources available within the educational setting.

While the Operational Dimension is crucial, the less prevalent themes within the Cultural and Critical Dimensions could indicate potential areas for development. The Cultural Dimension, dealing with the understanding of norms and practices within digital spaces, and the Critical Dimension, involving the ability to analyze and evaluate digital content, both contribute to a richer, more holistic sense of digital literacy. Their underrepresentation in these findings may suggest a need for greater emphasis on these areas in the curriculum, or it may point to the learners' relative comfort with operational skills compared to these more nuanced aspects of digital literacy.

Overall, these patterns offer valuable insights for curriculum development, teaching practices, and future research in the area of digital literacy and underscore the importance of a balanced approach that cultivates all aspects of digital literacy.

## Discussion

The goal of this research study was to better understand ISANS LINC curriculum's approach to digital literacy and determine whether instructors and students perceived that it sufficiently:

1. Supports students in developing technical skills and language resources to engage in digital literacy practices.
2. Assists students in understanding the cultural contexts of their digital literacy practices.
3. Guides students in learning how to critically evaluate digital spaces and practices.

This study addresses these research questions and offers valuable insights into the complex role of digital literacy within the ISANS LINC curriculum from the perspectives of both students and instructors. As shown above, A key concern for participants was finding an appropriate balance between digital literacy and language development in the curriculum. Participants expressed concern that

increased emphasis on digital literacy could detract from other essential areas of the curriculum, such as language learning and important settlement topics, like Canadian culture.

Despite varied opinions on how digital literacy training and skills development should be integrated into the ISANS curriculum, there was a common consensus on the necessity for a greater focus on digital literacy. This was evident in the prominent themes of enhancing digital skills in English, improving the ability to find and understand information online, and cultivating professional networks. Participants also emphasized the importance of discussions on topics such as email communication, evaluation of online information, and understanding scams and fraud. Overall, this study highlights the nuanced and multifaceted nature of incorporating digital literacy into the ISANS LINC curriculum.

### Comparison with Previous Research

Contrary to expectations based on recent literature, this study revealed more diverse responses regarding incorporating digital literacy training and skills development into the curriculum. While instructors strongly advocated for digital literacy support, student participants' opinions were more varied. Furthermore, there was a lack of consensus on challenges related to the necessary English language skills for engaging with technology and adapting to a new sociocultural environment in Canada (Tour, 2010; Alam & Imran, 2015; Barker, 2021). Some studies have suggested that limited digital skills can pose challenges for newcomers integrating into Canadian society (Gallagher et al., 2019; Smythe et al., 2021). However, the findings from this study suggest that this issue is more complex than previously assumed, warranting further exploration and consideration in curriculum development.

Prior research has highlighted the importance of digital literacy skills among new immigrants in Canada, suggesting potential negative outcomes if digital literacy training is not prioritized alongside traditional language learning (Alam & Imran, 2015; Darwin, 2018; Truong & Sweetman, 2018). These findings align with this study, where both students and instructors acknowledged the importance of



being able to find, read, and understand information via search engines. However, Jones & Hafner (2021) argue that a critical approach toward search engines is crucial, indicating a potential need for the current curriculum to foster critical thinking skills.

Tour (2020) proposes practical strategies for teaching digital literacies in EAL classrooms, such as problem-centered tasks and scaffolded learning experiences, which could potentially enhance the current ISANS LINC curriculum. Additionally, the COVID-19 pandemic has emphasized the essential role of basic computer skills, especially for EAL students transitioning to online learning (Arya et al., 2021; Esses et al., 2021; Smythe et al., 2021). Although some students were hesitant about incorporating basic computer skills into the curriculum, instructors unanimously supported it, aligning with previous research that highlights lower levels of basic computer skills among some new immigrants to Canada (Hébert et al., 2020; Truong & Sweetman, 2018).

The LINC program, designed to assist adult immigrants and refugees in developing English language skills and cultural understanding (Government of Canada 2010), must also acknowledge the crucial role of online professional networking. As van Dijck (2013) suggests, access to job opportunities, career advancement, and societal integration are intimately connected to "professional self-promotion" through online networks like LinkedIn. Students in this study also expressed a keen interest in learning about online professional networking, highlighting the importance of job opportunities for new immigrants in Canada (Kaushik & Drolet, 2018).

Despite the availability of online courses about professional networking, they are not as widespread or prioritized as LINC classes for newcomers to Canada learning EAL. Consequently, Jones & Hafner's (2021) emphasis on the role of online culture and language in shaping communication within virtual communities is especially relevant. A comprehensive review of the LINC curriculum would be beneficial, exploring the integration of online professional networking instruction, particularly on

platforms like LinkedIn, alongside the essential cultural and linguistic knowledge newcomers using EAL require.

Considering the practical perspective of what students need to integrate and thrive in Canadian society, Instructor Amie's approach aligns with the necessity of these skills, as emphasized by the pandemic's impact on LINC classes in Canada (Detwyler, 2022; Smythe et al., 2021). A clear finding from this study is the importance of developing digital skills within the ISANS LINC curriculum to at least ensure that all students are able to navigate primarily online learning environments.

### Unexpected findings

One unanticipated finding from this study was uncertainty among instructors about whether teaching basic digital literacy skills falls within their responsibilities. This raises important questions about the role of EAL instructors, inside and outside ISANS, and the scope of their teaching. This could be rooted in the traditionally language-focused nature of EAL instruction, which typically does not include explicit digital literacy instruction. However, as this study argues, basic digital skills are almost as fundamental as language skills. Thus, it may be necessary for the curriculum to evolve to meet these changing needs. This also underscores the need for providing instructors with more guidance and resources to confidently teach digital literacy. What was similar to other studies (Smythe et al., 2021), however, was the same fact that instructors were clear that they do not receive the resources to include these topics in a systematic way.

Another unexpected finding was the reported lack of interest from some students in learning about online safety and personal data protection. Considering the growing significance of digital security in today's interconnected world, this was unexpected. For some students, however, limited English language skills could be a barrier to understanding complex topics such as digital security. For others, cultural differences may influence their perceptions of online safety, leading them to underestimate its

importance. Lastly, it is possible that some participants have a false sense of security and thus undervalue the need to learn about online safety measures.

This finding emphasizes the need for more research in this area alongside the need for more structured teaching around digital security, demonstrating how to protect personal information and avoid online scams and fraud. Despite the lack of interest expressed by some students, it remains crucial for the curriculum to address these topics to ensure students can safely navigate digital spaces.

## Interpretation of Findings

The findings from this study provide valuable insights that can be applied within the ISANS LINC curriculum as well as more broadly in the context of language learning and digital literacy education curriculums. It highlights the significant interconnection between digital literacy and language, particularly for EAL learners.

One key lesson from this study is that despite some students' reported lack of interest, teaching online safety and personal information protection is critical. To ensure that all learners are equipped to navigate the digital world safely, it is recommended that immigrant-serving organizations consider implementing a comprehensive digital safety education program that is tailored to the language proficiency of learners.

The study also highlighted the importance of basic computer skills for learners. Without these skills, learners may face barriers to integration in a digital society, potentially intensifying digital divides. Therefore, it is recommended that institutions make it a priority to incorporate basic computer skills into their curriculum. Although this would be most accessible through integrated lessons within the LINC curriculum, it could also be achieved through stand-alone courses, depending on the resources available and the specific needs of the learners. This of course requires more research and discussion with all stakeholders.

In an increasingly digital world, language resources are crucial to understand the contexts and nuances of digital literacy practices. Therefore, it is important to systematically examine and address digital literacy within any language learning curriculum, considering the specific needs of the learners. Ultimately, the integration of digital literacy into language learning curriculum is crucial for supporting students' digital skill development and successful adaptation to an increasingly digital world. This study offers valuable insights and recommendations that can inform best practices in the field of language learning and digital literacy education.

## Recommendations

In order for Nova Scotia to move towards a more inclusive society, we need to offer digital literacy training to all those who need it. This training must work to empower all those involved. In order to better support newcomers to Canada with their digital literacy practices, we need to re-consider how it is addressed in the EAL curriculum.

While this study specifically focused on the ISANS LINC curriculum, the findings and lessons learned can be applied more broadly. There are multiple opportunities for enhancing digital literacy instruction and potential pathways for improvement. Any enhancement should be undertaken with an understanding of the diverse needs of learners, the constraints of resources, and the importance of balancing digital literacy, language development, and cultural understanding.

As demonstrated by this study, it is widely recognized that digital literacy skills are essential for newcomers to Canada to navigate and participate effectively in society. LINC classes can provide newcomers with a valuable opportunity to develop not only their language skills but also their operational, cultural, and critical digital literacy skills. Based on the findings of this study, there are

several recommendations for enhancing digital literacy in LINC classes while maintaining a focus on language development and cultural adaptation for newcomers.

First, there is a need for a coordinated approach to integrating digital literacy into LINC classes. This would help alleviate instructors' concerns regarding their students' digital literacy skills and help students become better able to participate as digital citizens in all aspects of their civic, social, and economic life (Mossberger et al., 2008). If done well, this will provide opportunities for simultaneous language and digital skill development (Hanks, 2022). Support, funding, and training for instructors are crucial in achieving this. Alongside this, further research could help explore both the ISANS and other LINC-based curricula to determine the extent the degree of digital literacy integration within these educational frameworks.

Secondly, as advised by Fadila (student), implementing gamification in learning can significantly improve the learning experience for students. As Jones & Hafner (2021) and other researchers (Al-Dosakee & Ozdamli, 2021; Figueroa Flores, 2015; Zainuddin et al., 2020) suggest, incorporating gamification into the learning process can improve motivation, collaboration, and interaction, leading to better skill development in writing, reading, and speaking.

Also advised by student participants, creating a Digital Literacy Committee and inviting IT Professionals to Teach Learners could be a useful tool to consider. Establishing a digital literacy committee, involving students, instructors, and curriculum designers, would facilitate resource development, needs assessment, and student engagement. Collaborative efforts would help students use digital tools in their daily lives and language learning both inside and outside the classroom. Inviting IT professionals to teach learners could be a creative solution to address concerns raised by both students and instructors. This would help alleviate pressure on instructors and provide real-world

examples for the students, making the lessons more engaging. However, challenges include finding IT professionals who can participate and ensuring lessons are suitable for culturally diverse populations.

In addition, to improve both digital literacy and English proficiency, consider incorporating a CLIL approach, teaching subjects and content in the target language that students are learning (Harrop, 2012; Dalton-Puffer, 2011). This methodology can simultaneously develop students' digital literacy and English proficiency levels. It's not just about discussing technology in English; it's about improving English skills through this discussion. It is both content and language skills development.

Finally, introducing translanguaging spaces, where multiple languages are used in partnership to support students' understanding of digital literacy practices. This offers collaborative opportunities for LINC teachers, students, scholars, educational institutions, and community organizations.

Hanks (2022) study examines the effects of COVID-19 and the shift towards hybrid learning for LINC in DIVERSEcity Community Resources Society's LINC classes. They found that introducing mobile devices and WhatsApp group chats created a "translanguaging space" (Garcia & Wei, 2014) where multiple languages are used in partnership to better help students make meaning and support each other's understanding of their digital literacy practices. This could become a collaborative opportunity, not only for LINC teachers and students but also scholars, educational institutions, and community organizations (Hanks, 2022). Hank argues that the current limited approach used in LINC pedagogy can be improved by enhancing students' English digital literacy skills, which can increase interaction among students and support overall language learning (Hank, p. 46). Hank (2020) suggests that incorporating translanguaging can empower students in a more realistic way, rather than sticking to a monolingual approach (p. 51).

Yuan et al. (2019) recommend examining issues using asset perspectives rather than deficit lenses when it comes to supporting language learners' development of digital skills and literacy

competencies. This embraces cultural identities while empowering ELLs as critical consumers/producers of information.

This study is only a first step in finding out how to best support LINC students in ISANS with their digital literacy development alongside their language learning. Elsageyer (2020) recommends that teachers receive training on how to better integrate and use different educational tools as part of their recommendations from their study looking at the learning preferences of students in online LINC classes.

## Conclusion

This study highlights the perceived importance of digital literacy skills among instructors and students at the ISANS LINC program. These skills include finding and evaluating online information, email communication, and developing professional networks. However, concerns were raised about balancing digital literacy with language development, accommodating varying levels of digital literacy, and the need for tailored resources and gamified learning. The cultural dimension of digital literacy was also emphasized, with the need to address disparities in online communication practices between students' home countries and Canada.

Both instructors and students emphasized the need for effective email writing, finding and understanding information online, evaluating information online, and discussing scams/fraud and personal data management. Among the recommendations are more efforts towards a coordinated approach to integrating digital literacy, gamification, translanguaging, and a CLIL approach to create a more comprehensive and effective learning experience for EAL students.

### *Limitations*

It is important to note the limitations of this study. Firstly, the majority of participants were recruited through presentations to students in ISANS online classes. It is possible that those who chose to participate are more comfortable with digital literacy practices, which may have led to a discrepancy in the perceived needs of instructors and students. Instructors may see a greater need among students with lower levels of digital literacy.

Additionally, since this study has only a few instructor participants, further research is needed to understand whether LINC instructors, particularly those within ISANS, feel that teaching basic digital literacy skills falls within their responsibilities.

Additionally, due to the fluid nature of how the CLB LINC framework can be interpreted in the curriculum, there can be quite a bit of variability in how digital literacy is addressed in the classroom (Desyatova, 2020). As a result, students who have taken the same course might have vastly different experiences than those presented in this study. Thus, the findings of this study should not be generalized but rather contribute to understanding how LINC instructors and their newcomer EAL students conceptualize digital literacy and inform suggestions for practice and curriculum development. Importantly, further research and critical evaluation of EAL curriculums are needed.

Finally, I recognize that I am a novice researcher and developing research skills takes time. There are challenges that affect the study's validity and reliability, particularly during focus groups (Roulston et al., 2003). I have mitigated these limitations by practicing focus group facilitation to gain familiarity with the process and employing follow-ups, probes, and clarification-seeking questions during focus groups to enhance participant understanding (Krueger & Casey, 2015, p. 538; Reish, 2007). Furthermore, by collecting data from different sources (students and instructors) and using multiple data collection



methods (focus groups and interviews), the study aimed to achieve reasonable triangulation, which can help avoid spurious findings (Braun & Clarke, 2013, p. 285).

### *Implications*

In conclusion, this study offers valuable insights into the integration of digital literacy within the ISANS LINC curriculum and identifies key areas for improvement, such as addressing basic computer skills, developing professional networks online, and discussing personal data management. By incorporating recommendations like the coordinated approach to integrating digital literacy, gamification, translanguaging, and a CLIL approach, we can create a more comprehensive and effective learning experience for newcomer EAL students as they integrate into Canadian society.

The findings of this study not only contribute to the ongoing development of the ISANS LINC curriculum but also inspire further research and innovation in EAL education in Canada. As these students face the challenges of integration, enhancing their digital literacy and language skills is essential for their success in both personal and professional contexts. By building on these findings and implementing the study's recommendations, we can equip EAL students with the necessary tools to fully participate and engage in the digital and social worlds, thereby fostering a more inclusive and empowering educational experience for all newcomers.

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## Appendices

### Appendix A

#### Focus Group Protocols

##### A1: Focus group Protocol Students

	Focus group Protocol Students	Minutes
	<b>Introduction</b>	5
<b>1.</b>	<p><b>Icebreaker –</b></p> <p>Can you tell us</p> <ul style="list-style-type: none"> <li>• your name?</li> <li>• where you are from?</li> <li>• your first language</li> <li>• how long you have been in Canada?</li> <li>• what CLB class you are in?</li> <li>• how long you have been studying EAL at ISANS?</li> </ul>	
	<b>Digital literacy</b>	10
<b>2.</b>	<p>Define digital literacy</p> <ul style="list-style-type: none"> <li>• All the skills we need to understand and use digital technologies and digital media</li> <li>• Using the internet, social media, and most of the things you do on your computer, smartphone, and other similar devices</li> </ul> <ul style="list-style-type: none"> <li>• What are some digital literacy practices that you do regularly?</li> <li>• Do you think you should talk more about digital literacy in your ISANS classes?</li> </ul>	
	<b>Vignette Question</b>	10
<b>3.</b>	<p>For this question, I want you to imagine that you have a friend that is coming from your home country to Canada.</p> <p>She uses a computer and a smartphone everyday but only knows how to do basic things</p> <ul style="list-style-type: none"> <li>• What are some important digital literacy skills she will need in Canada? <ul style="list-style-type: none"> <li>○ Why does she need these skills?</li> </ul> </li> <li>• Do you learn or practice any of these skills in your ISANS CLB classes?</li> </ul>	
	<b>Three Dimensions of digital literacy</b>	15

4.	<ul style="list-style-type: none"> <li>• What do you learn about using technology in your CLB classes? <ul style="list-style-type: none"> <li>○ Do you think students should learn more about this? If yes, what should they learn about?</li> <li>○ How will this help you?</li> </ul> </li>   <li>• What do you learn about communicating online in your CLB classes? <ul style="list-style-type: none"> <li>○ Do you think students should learn more about this? If yes, what should they learn about?</li> <li>○ How will this help you?</li> </ul> </li>   <li>• What do you learn about protecting yourselves online in your CLB classes? <ul style="list-style-type: none"> <li>○ Do you think students should learn more about this? If yes, what should they learn about?</li> <li>○ How will this help you?</li> </ul> </li> </ul>	
<b>Digital literacy Practices</b>		15
	<ul style="list-style-type: none"> <li>• Here are 10 digital literacy practices</li> </ul> <p>Can you tell me if you think ...</p> <p style="padding-left: 20px;">They should more in your classes. Why?</p> <p style="padding-left: 20px;">It isn't necessary to learn about these activities in our classes. Why?</p> <ul style="list-style-type: none"> <li>• Reading a web page</li> <li>• Online discussions / Commenting on an article</li> <li>• Using search engines / Searching for information</li> <li>• Creating a web page</li> <li>• Evaluating information</li> <li>• Working together on a Google doc/ word document</li> <li>• Managing personal data</li> <li>• Sharing on social media</li> <li>• Communicating via email</li> <li>• Developing social and/or professional networks online</li> </ul>	
<b>Conclusion</b>		5
	<p>Thank you all for sharing!</p> <p>Is there anything you would like to share before we finish?</p>	



## A2: Focus group Protocol Students



	<b>Focus group Protocol Instructors</b>	<b>Minutes</b>
	<b>Introduction</b>	5
<b>1.</b>	<p><b>Icebreaker –</b></p> <p>Can you tell me your name and how long you have been teaching EAL at ISANS?</p>	
	<b>Digital literacy</b>	10
<b>2.</b>	<p>Define digital literacy</p> <ul style="list-style-type: none"> <li>• All the skills we need to understand and use digital technologies and digital media</li> <li>• Using the internet, social media, and most of the things you do on your computer, smartphone, and other similar devices.</li> </ul> <ul style="list-style-type: none"> <li>• What are some digital literacy practices that you do regularly?</li> <li>• Do you think you should talk more about digital literacy in your LINC classes?</li> </ul>	
	<b>Vignette Question</b>	10
<b>3.</b>	<p>For this question, I want you to imagine that together you all are going to create an information package for newcomers to Canada. The first section focuses on important digital literacy skills newcomers need when they arrive in Canada.</p> <ol style="list-style-type: none"> <li>1. What skills would you list?</li> <li>2. Why do they need these skills?</li> <li>3. Do you learn or practice any of these skills ins your classes?</li> </ol>	
	<b>Three Dimensions of digital literacy</b>	15
<b>4.</b>	<ul style="list-style-type: none"> <li>• What do students learn about using technology in your LINC classes? <ul style="list-style-type: none"> <li>○ Do you think students should learn more about this? If yes, what should they learn about?</li> <li>○ How will this help them?</li> </ul> </li> <li>• What do students learn about communicating online in your LINC classes? <ul style="list-style-type: none"> <li>○ Do you think students should learn more about this? If yes, what should they learn about?</li> <li>○ How will this help them?</li> </ul> </li> <li>• What do students learn about protecting themselves online in your LINC classes? <ul style="list-style-type: none"> <li>○ Do you think students should learn more about this? If yes, what should they learn about?</li> <li>○ How will this help them?</li> </ul> </li> </ul>	




	<b>Digital literacy Practices</b>	15
<ul style="list-style-type: none"> <li>• Here are 10 digital literacy practices</li> </ul> <p>Can you tell me if you think ...  They should be taught more in your classes. Why?  Or, it isn't necessary to be taught in your classes. Why?</p> <ul style="list-style-type: none"> <li>• Reading a web page</li> <li>• Using search engines / Searching for information</li> <li>• Evaluating information</li> <li>• Managing personal data</li> <li>• Communicating via email</li> <li>• Online discussions / Commenting on an article.</li> <li>• Creating a web page</li> <li>• Collaborating on a Google doc/word document</li> <li>• Sharing on social media</li> <li>• Developing social and/or professional networks online</li> </ul>		
	<b>Conclusion</b>	5
<p>Thank you all for sharing!</p> <p>Is there anything you would like to share before we finish?</p>		

## Appendix B

Frequency of topics discussed in focus groups and interviews.

		Discussing digital literacy practices in the LINC classroom	Wanted by Instructors		Wanted by Students		Addressed in curriculum	Lacking	Does not exist	
			Yes	No	Yes	No				
The three dimensions of digital literacy	Operational	Talking about technology in English								
		Finding, reading and understanding information online	Using Search Engines							
			Reading web pages							
		Learning basic computer skills								
	Cultural	Learning about Email Communication								
		Developing professional networks online.								
		Learning about and discussing Social Media								
	Critical	Evaluating Information online								
		Discussing online Scam/Fraud								
		Managing personal data								

		Learning about Digital Security										
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	Frequently mentioned 10+ mentions
	Sometimes mentioned 4-9 mentions
	Mentioned a few times >=3 mentions