

# The Impact of Language and Social Communication on the Sense of Belonging among International Students Using ScLINGO Application

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**Abstract:** The UK's Higher Education landscape embraces global diversity, with the country ranking second as a destination for international students. However, limited research attention has been given to understanding the challenges faced by these students, particularly regarding language proficiency and cultural adaptation, which affect their sense of belonging. This study aims to address these challenges by investigating the impact of ScLINGO, a web-based gaming platform, on enhancing language skills and fostering social integration among international students, including those studying to become health professionals. Drawing on existing literature, the study seeks to fill this gap and promote sociocultural adaptation through a digital gamified language-learning tool. ScLINGO offers personalized bingo cards and interactive language exercises to familiarize players with everyday phrases and enhance language proficiency, encouraging both independent learning and collaborative interaction. The study navigates through three phases of game development, informed by insights and feedback from practitioners, students, and technology developers. By promoting cross-cultural competence and communication, the study aims to create a more inclusive higher education environment. ScLINGO's pilot phase addresses the rationale behind the game, building-up phases, and stakeholder feedback, anticipating its role in addressing cross-cultural maladjustment and facilitating effective support mechanisms for international students. Ultimately, the findings aim to contribute to the development of support systems facilitating international students' transition and adaptation to diverse cultural and learning contexts.

**Keywords:** Belonging, Communication, Gaming, International Students, Language

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## 1. International Students and Language

International students are an integral part of higher education in the United Kingdom, comprising 20% of the total student population. According to Bolton *et al.* (2023), in 2021/22 there were 679,970 overseas students studying at UK universities. International students commonly encounter psychological challenges including acculturative stress, homesickness, loneliness, frustration, depression, isolation, and feelings of worthlessness (Tseng & Newton, 2002). Given their physical distance from family and friends, they often have less access to social support compared to local students (Bisadi *et al.*, 2013). However, fostering communication with peers and building a social network can help alleviate their need for social support (Poyrazli & Grahame, 2007).

Although studying in a cross-cultural setting may be valuable, international students may experience challenges and acculturative stress in adjusting to the new environment as it is a complex issue that depends on several factors. They may be vulnerable to stress, which refers to the physical, social, and psychological impact of adaptation to a new culture (Poyrazli and Grahame, 2007). They may experience homesickness and social isolation, a cultural difference and a lack of social support (Dee & Henkin, 199). They often feel overwhelmed by cultural differences (Özturgut, & Murphy, 2009). Examples of day-to-day needs and use of language are such as finding suitable accommodation, applying for social security ID, learning about the transportation system, adapting to local food and being familiar with the city and campus. Consequently, feelings of confusion, anxiety, sense of loss and isolation may arise. If not managed properly, international students' academic success, social wellbeing and psychological health could be in jeopardy (Hechanova-Alampay *et al.*, 2002). Additionally, they may face the fear of failure of academic achievement. Interestingly, many of these questions and challenges can be relived and resolved by the student asking his/her peers for help, however with the limitation of different language and/or accent these challenges persist. Heish (2007), noticed that international students kept silent in her American classes. The participant internalized a deficient self-perception as a useless person in her group discussions and perceived that a deficient identity was attributed to her. Studies that explore social connections within the campus commonly adopt the notion of belonging. Belonging involves feeling connected and the extent to which students feel personally accepted, included, and supported by others in the educational social environment (Goodenow, 1993). Research suggests the importance of establishing relationships with

international students so that other “good practices” may occur, where every location has a range of spoken languages or dialects. Therefore, students need an icebreaker when they start university life away from their mother tongue. The icebreaker supports them in acclimating to the new linguistic environment, fostering connections with peers, and building confidence in social interactions.

## 2. The use of Amification in Educational Settings Across Different Cultural Contexts

Gamification has emerged as a transformative approach in educational settings, leveraging game design elements to enhance student engagement and learning outcomes. Across different cultures, gamification has been shown to break down barriers and foster inclusive learning environments. For instance, a study by Bukina *et al.* (2022) found that gamification effectively reduces intercultural barriers, such as stereotypes and language differences, promoting better communication and collaboration among international students. For medical students, virtual patient simulations, like those offered by "Body Interact," allow medical students to practice diagnosing and treating patients in realistic scenarios, enhancing clinical skills and decision-making through interactive, gamified experiences (Kononowicz *et al.*, 2019). Furthermore, the work of Naderi and Moafian (2023) highlighted the success of non-digital gamification methods in vocabulary learning, particularly in culturally diverse classrooms, suggesting that both digital and non-digital games can be tailored to meet the unique needs of students from various cultural backgrounds. These findings underscore the versatility and effectiveness of gamification as an educational tool, capable of bridging cultural gaps and enhancing learning experiences across the globe.

## 3. International Students as Health Professionals

As international students transition into roles as health professionals (HPs), a deeper understanding emerges regarding the significance of language in their professional practice. Feeling a sense of belonging in the workplace not only fosters positive outcomes like independent work, professional growth, and effective teamwork but also contributes to a fulfilling work experience. Conversely, the absence of belonging or feelings of social exclusion can hinder learning opportunities, compromise human dignity, and evoke negative emotions such as alienation, diminished self-esteem, resignation, and apprehension towards challenges. According to Jamaan (2020); Cena *et al.*, (2021), in Medicine, users are exposed to scientific and commercial medicine names. Another dimension for HP students, is that communication is across more than one domain; HP-patient and HP-HP (peer) communications are both barriers to effective communication. According to Mattila (2010), there is a need to develop clinical practice arrangements when the language of the learning environment is other than that of the student nurse. This study focuses on international students who study and live in Liverpool and experience Scouse in their day-to-day lives. Scouse, officially known as Liverpool English or Merseyside English, is an accent and dialect of English associated with the city of Liverpool and the surrounding Liverpool City Region (Honeybone, 2007).

The study focuses on international students’ sense of belonging in the university community through language communication using a web-based application, entitled ‘Schlingo’, which aims to gamify the use of day-to-day language. Examples of the different meanings of words in English compared to the Scouse and be found in Table 1. SCLINGO has a benefit for HPs who are going to be working in the NHS and a health profession, interacting with patients, who will come from different age groups. And sorts of backgrounds. How to interact with them and minimize the potential for language misunderstanding.

**Table 1: Scouse terms and meaning of words**

Scouse Term	Meaning	Alternative (more common) Meaning
Part 1- Day-to-day language		
Boss	excellent or satisfactory	Superior or leader
Sound	Good or okay	Physical sensation of sound or volume level
Goin' the ozzy	Visiting hospital	
You're a wool	Someone from the surrounding areas of Liverpool.	Wool: is the textile fibre obtained from sheep a is the textile fibre obtained from sheep a
Part 2 - Clinical Terms		

Scouse Term	Meaning	Alternative (more common) Meaning
Patient is settled	Patient is not disturbing the member of staff	Patient has become calm or stable
Bulk	In pain	Big, huge

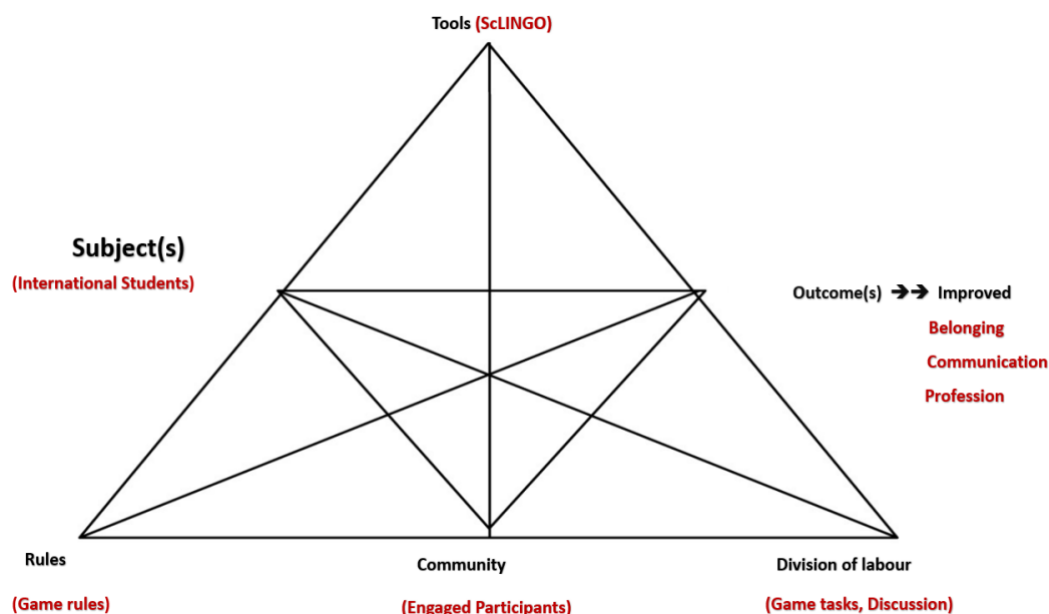
In summary, considering the challenges that international students face from academic, social, and cultural perspectives. Additionally, for health professionals who communicate with patients and colleagues in the health sector, the risk of misunderstanding or misinterpretation of a word, adds a professional perspective to these challenges for international students.

#### 4. Gaming for International Students

Games have been received positively by international students in terms of high engagement, experiential learning, the learning process, personal versus professional, self-efficacy and knowledge (Hamari *et al.*, 2014) For Bukina *et al.* (2022), elements of gamification for international students break down intercultural barriers such as stereotypes and prejudices, non-verbal and language barriers. For health professionals, little attention has been focused on using digital games to address international students' adjustment issues (Bissadi *et al.*, 2013). The area of health professions, particularly concerning international students, and the utilization of gaming—both digital and non-digital—to support language acquisition in their work practice, remains under-researched. While there is a growing body of literature exploring the integration of gaming technologies in education and healthcare, there is a notable gap in understanding how these tools can specifically aid international students in navigating language barriers within healthcare contexts. Given the increasing globalization of healthcare systems and the diverse linguistic backgrounds of healthcare professionals, further research in this area is crucial to develop effective interventions and support mechanisms. By leveraging the immersive and interactive nature of gaming, healthcare educators can potentially enhance language learning experiences for international students, ultimately improving their communication skills and patient care outcomes (Kukkohovi *et al.*, 2023). This avenue of inquiry holds promise for addressing the unique challenges faced by international students in the health professions, fostering cultural competence, and promoting inclusive healthcare environments. Consequently, the area of health professionals who are international students, and using gaming (digital or non-digital) to support them in using language in their work practice, is under-researched. In summary, the focus of this study is on the use of the game 'ScLINGO' for international students and health professionals to develop their sense of belonging, and improve their social communication, professional language, and communication at work and in day-to-day life practice.

#### 5. Theoretical Framework

Activity-based theory is a multidisciplinary paradigm for comprehending the relationship between action and cognition, built upon cultural-historical activity (Vygotsky, 1978). As described by Kuutti (1996), activity theory emerged from Vygotsky's psychological research into learning, specifically from his discussion of the mediating role of tools (e.g., a game) to facilitate cognitive processes. Activity theory is suitably situated in learning, with individual actions informed by a wider cultural and historical context (diverse linguistic, cultural, and ethnic backgrounds of international students). Stemming from Vygotsky's socio-constructivism theory and the notion that learning occurs in a socially mediated environment, (Kuutti, 1996 and Squire, 2002) expanded the model of activity theory and added another layer to the system to represent the community within which the activity takes place. This forms one of the bases for developing this game, as the development of negotiations and a dialogic approach with international students is one of the main objectives of this study. The community here includes the Community of Practice (CoP), a group of people who share a craft or a profession (Wenger, 2006), students, peers, colleagues, and patients in their work placement. Activity theory includes the used tool (ScLINGO), with the subjects being international students who are health professionals. The applied rule(s) is the language (English Scouse), and the community where the learning of language mediates includes peers and colleagues. The division of labour (elements to be developed) includes teamwork, collaboration, and social communication. The expected outcomes are developed senses of community belonging, social communication, and the use of professional language. Figure zzz below illustrates the Activity theory in using the ScLINGO game.



**Figure 1: ScLINGO in Activity Theory**

Activity-based theory posits that learning is most effective when individuals engage in hands-on experiences and active participation. By utilizing this theory, the game (ScLINGO) provides a dynamic platform for international students and health professionals to immerse themselves in practical scenarios, fostering a deeper understanding of cultural nuances and professional communication skills. Through active involvement in the game, participants can enhance their sense of belonging, refine social communication abilities, and develop proficiency in both professional and everyday language usage, thereby facilitating smoother integration into their respective environments. Besides, in building up the game, the team acknowledges that it should be rule-based which makes players understand the environment; 2) Games should be responsive which means giving players the controls; 3) Games should challenge the players; and 4) The players must build progress to achieve the game's goal (Prong *et al.*, 2018). Besides, in addition to these elements, ScLINGO has been designed to incorporate interactive group discussion and feedback by peers and the class facilitator to provide players with immediate guidance and encouragement as they navigate through the game's challenges.

## 6. Methodology

### 6.1 Conceptual Framework (Participatory Action Research (PAR))

Participatory Action Research (PAR) has been employed as a methodological approach for developing the ScLINGO game through a series of cycles, enabling active collaboration between researchers, international students, and health professionals throughout the game's design and implementation phases. It's worth mentioning that this research is still in the building-up stage of ScLINGO, aiming to simultaneously investigate, reflect, and solve issues that arise within the development and game usability, as APR suggests. Action research conducts research and takes action concurrently. According to (Baum *et al.*, 2006; Crane, 2010), this approach fosters a sense of ownership and engagement among participants (Ozaki, 2018), ensuring that the game addresses their specific needs and challenges in real-world contexts. However, a potential limitation of APR is the time and resources required for ongoing collaboration by different stakeholders and iteration, which may extend the development timeline. APR is iterative; plans are created, implemented, revised, and then implemented, lending itself to an ongoing process of reflection and revision. In action research, findings emerge as action develops and takes place; however, they are not conclusive or absolute, but ongoing (Koshy, 2010). The multiple iterations allowed us to understand domain-specific design constraints and provided insights into governing variables that drove the direction of our research. Therefore, we explain our approach as a double-loop learning process.

## 6.2 What is ScLINGO?

ScLINGO aims to enhance language skills and social integration among international students, addressing communication complexities in university environments. It promotes inclusivity and awareness of language diversity, fostering a sense of belonging through gameplay and discussions in classes. Future plans include tailored versions for various audiences, such as healthcare professionals in physiotherapy, expanding its utility beyond mental health nursing. ScLINGO considers two main aspects of the language (profession) and the language culture (day-to-day language). Therefore, it has two parts; *CLINGO* is based upon professional mental health terms, whereas *SLINGO* is based upon Scouse dialect. The breakdown of ScLINGO (S+C+L+INGO) is explained below.

### 6.2.1 S (Scouse)

Scouse, originating from Liverpool, encompasses both a dialect and the city's residents. Its name derives from a stew eaten by sailors (Hughes & Trudgill, 1979). The accent and language feature unique pronunciation, vocabulary, and intonation, influenced by Irish, Welsh, Lancashire, and maritime cultures. Notable features include terms like "boss" (meaning excellent) and "sound" (meaning okay). This distinctiveness is evident in various word meanings between English and Scouse.

### 6.2.2 C (Clinical)

The initial beneficiaries of this game are clinical practitioners in the Faculty of Health and Life Science at the University of Liverpool. More examples of the different words meaning between Clinical English and Scouse English can be found in Table 1 – part 2.

### 6.2.3 LINGO (Language + Bingo = Lingo )

Bingo is a well-known game dating back to the 16th century, where players mark off numbers on cards as they are randomly drawn by a caller. The objective is to complete a predetermined pattern on the card, such as a straight line or full card, to win a prize. Bingo is commonly played in various settings, including bingo halls, community centres, and online platforms, and it has a long history dating.

## 6.3 ScLINGO Team

One of the drivers of employing PAR is the engagement of different stakeholders in the development of the game (Koshy, 2010). Baum *et al.*, (2006) addressed PAR in health research and acknowledged that this approach that researchers and participants undertake, improves self-reflective inquiry, so they can understand and improve upon the practices in which they participate and the situations in which they find themselves. Hence, ScLINGO team across the iterative approach includes; pedagogical expertise (e.g. educators), professional expertise (e.g. nurses) and technological expertise (e.g. programmers).

## 6.4 ScLINGO Development Process

ScLINGO's phase 1 of development commenced with a cardboard prototype, facilitating hands-on testing and refinement. A 'phase 2' saw the transition to a digital version, incorporating online multiplayer functionality and expanded content options. Future iterations aim to integrate user feedback, explore additional features, and establish partnerships to enhance effectiveness and reach.

## 6.5 Phase 1: Carboard Game – CLINGO & ScLINGO

ScLINGO initially began as a non-digital game, utilizing pen and paper. Each student would require one or more printed cards before the session, resulting in extensive preparation and environmental concerns. However, due to its positive reception by both teachers and students, the decision was made to transition the game to a digital format. In the game, participants would draw cards containing language prompts or challenges and engage in interactive exercises to enhance their language skills and social integration. It is noted that at this stage, the game has two separate sub-sections (1) CLINGO (clinical words) (2) SLINGO (Scouse words). See Table 3 below.

List of Scouse words - for the facilitator			Printed card for the SCLINGO game – for the students		
Scouse	Meaning	Example			
Hya Yya Alright What's appenin'	All greetings to say hello	"Hya" "Yya" "Alright" "What's appenin'"	Challenging behaviour	Successful Leave	Therapeutic relationship
Ta-ra	Goodbye	"Ta-ra"			
Ta Nice one Cheers	Thank you	"Ta" "Nice One" "Cheers"	Nurses discretion	Unsettled	Optimum health
La'	Lad	"What's appenin' La'"			
Bird	Used when referring to someone's girlfriend	"I'll have to ask me bird first"			
'Ar Fella Da'	Dad	"Am goin' the pub with me 'ar fella"	Risky Behaviour	Maintain a safe environment	Explicit Language
Ma	Mum	"Am goin' shoppin' wid me Ma"			
Ar kid	Used affectionately when referring to a brother / cousin or friend	"Me and Ar Kid are on the way"	Increased arousal levels	Contributing Factors	Boundaries
Bezza	Best Friend	"This is me bezza, Ellie"			
Proper	Denoting something that is truly what is said or regarded to be	"I proper love being a scouser"	Regular observation	Community access	Crisis

**Table 2: SCLINGO on printed papers (phase 1)**

It is worth mentioning that the primary resource for the Scouse words database originates from grey literature, such as "The Liverpoolian" (2023). Subsequently, the team continually updates and expands this database. Team co-creation fosters engagement and encourages ownership (Naik, 2014). Another aspect to consider is the distinction between the roles of the teacher (module content expert) and the facilitator (Scouse expert) when playing SCLINGO with students in the classroom. Finally, SCLINGO's non-digital version has been piloted with a small cohort of undergraduate students and received positive feedback from both students and teachers. However, using pen and paper does have its limitations, see a teacher quote confirms this difficulty by stating, "Pen and paper game is a hard work for you I think when you play it on a paper-based version obviously give the cards out and I have a master sheet and I would read that sheet with the master sheet laid out if I was to start at the top and work my way down where the digital package randomly generates So it was really nice to kinda have it in a new format it's phenomenally easy to utilise in the current package click and that does the handwork for me."

Upon agreement by the game stakeholders (lecturers, practitioners, etc.), it was decided to digitalize SCLINGO (phase 2). This shift is well-aligned and confirmed by literature (Naik, 2014; Naderi *et al.*, 2023), which demonstrates the advantages of technology in terms of accessibility and ownership (each student can access it on their mobile phone or computer screen), besides the ease of use and ability to upgrade game features. However, according to Naderi (2023), digital games should not lead to ignoring the benefits of non-digital activities and play in language education. For SCLINGO, according to this study, facilitators who experienced the non-digital version of the games have explained that the evolved discussion using printed paper was richer than students looking at their mobile screens, as Naderi *et al.* (2023), suggest that technology restrains face-to-face interaction. The preceding claim has been confirmed by the teacher's view that states; "students may have more engagement in board games than their phones."

## 6.6 Phase 2: Digital Game – CLINGO & SCLINGO

At this phase, SCLINGO (a Bingo-style game) has been digitized into a web format written with web standards JavaScript/HTML/CSS. There are two web pages: HTML controls the layout of the pages, CSS styles the look of the pages, and JavaScript adds functionality to the pages. The game is split into two web pages. The first page, called "The Caller," serves as the bingo caller itself and is used by the facilitator of the game. The second page, "The Card," is a webpage that generates bingo calls and must be opened by all players.

### 6.6.1 The Caller

The caller is a webpage that the facilitator of the event opens, placing it on a large screen or whiteboard where all participants can see it. When the page is loaded, a simple piece of JavaScript randomizes the order of the phrases. Subsequently, the JavaScript attaches these phrases to buttons and positions them in the centre of the screen. Because they are randomized, the order of the items on the page changes each time the page is loaded. Figure 1.1 shows the caller when first loaded.

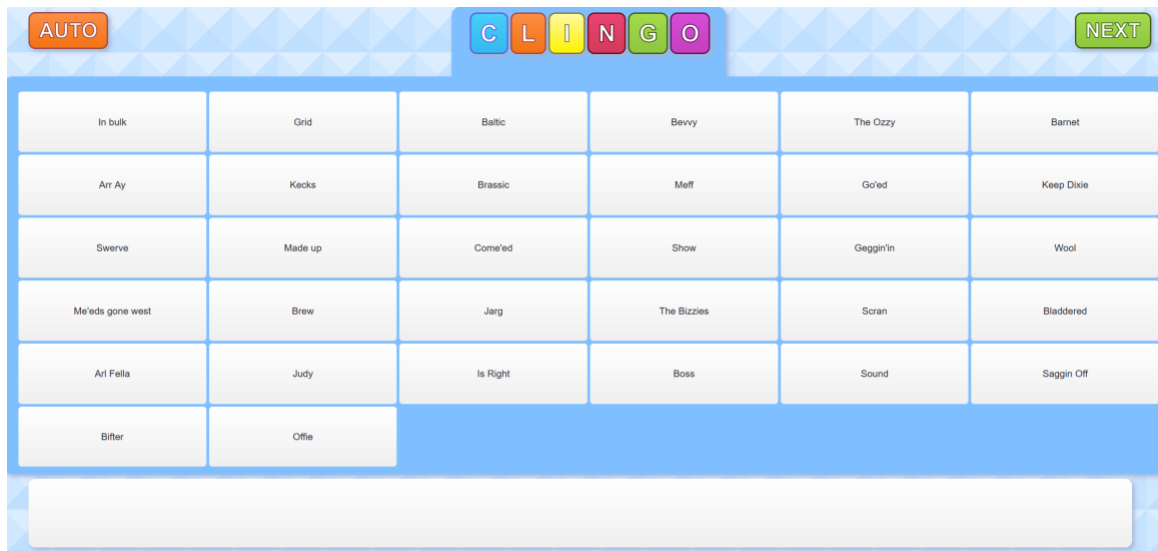


Figure 2: The SCLINGO caller

The order of items is randomized each time the page loads, with a hidden list created simultaneously. This hidden list contains all Scouse phrases in a new randomized order, along with sound file locations. To initiate the game, the facilitator can press either "AUTO" or "NEXT." Pressing "NEXT" triggers JavaScript to read the first item on the list, causing it to flash red for 2 seconds, play a sound effect, and display in a bottom box. The top item is then removed, repeating the process with a new phrase upon subsequent "NEXT" presses. "AUTO" mode repeats these actions every 5 seconds. The game stops once all phrases are read, though usually manually before completion. This system enables facilitator-paced gameplay with randomized phrase presentation, enhancing engagement and control.



Figure 3: The Screen when the auto button has been pressed

### 6.6.2 The Card

During the setup phase, the facilitator loads "The Caller" on a large screen while players access the "Card" page by typing in a URL or scanning a QR code. Similar to "The Caller," the Card is an HTML webpage with CSS and JavaScript. It displays a 4x4 grid with 10 randomly selected Scouse words placed at random positions. The webpage's size adjusts based on where it's accessed. Users can access it directly or through platforms like Microsoft Teams. Each user receives a card with 10 different items. When a phrase is called out, users can cross it off their card by clicking the corresponding item on the webpage. Once all phrases are crossed out, users are prompted to call "Clingo."



Figure 4: Ticking correct word on A SclINGO digital card

### 6.6.3 Piloting SclINGO in Phase 2

The pilot involved 12 students, 1st year MSc mental health nursing students comprising a mix of local, non-local, and international students, all enrolled in mental health programs. The session was facilitated by one teacher and one facilitator. At this stage, CLINGO (<https://ceds-demos.net/tools/clingo/>) and SLINGO (<https://ceds-demos.net/tools/sclingo/>) are separate games, CLINGO started, followed by SclINGO to prepare students before going to their placement and encourage discussion between them about used terms in their practice. Towards the end of the session, lasting 15-20 minutes, the conversation shifted towards professional language, especially as students had recently received their first timetable for clinical placements. This led to a discussion about the significance and relevance of professional language within their field.

Table 3: collected quotes from SclINGO users (teacher, facilitator and students)

Theme	Quote
Teacher & Facilitators' quotes	
Social Discussion	"We revisited and we had a discussion, you know, both from the students' experience, you know, what did they think these phrases mean? what his professional opinion was, what they meant, and then that discussion on a word-by-word basis. While playing the game, the discussion was about the value of the word and benefits to the patient."
Learning and competitiveness	"So, I think the process of the interface of having the words and stuff like that was a real catalyst for a learning experience and getting the students thinking. Besides, The game is competitive in its essence you can see while students are playing. They are checking on each other to see who is ahead".
Accessibility and availability	"So it makes life a lot easier for the person facilitate the game. Accessible and available because it is it's an online platform, so you're not worried about haven't equipment with you. It's just it's available because it's available for anyone with a smart phone, for students, with SclINGO, students own the game on their phone (it is about ownership)."
Wider engagement	"just trying to raise awareness of all that it could be used as an icebreaker, but I think it's more than an icebreaker activity. I think it is saying something about not just particularly Liverpool, every geographical region of every country. So, you know, in the UK, whether you're in Liverpool, Newcastle, Birmingham, Glasgow."
Student's quote	
"As someone with a strong cultural identity, I recognize how fun and engaging it can be for friends and colleagues from outside the region to understand the many terms that local people use within daily communications, and how this can be an excellent tool to aid therapeutic engagement."	



#### 6.6.4 Preliminary Findings

The team has collected qualitative findings based on collected feedback from interviews with students who experienced ScLINGO, these findings include Improvement and enhancement of Language Proficiency, Social Integration and Professional Communication.

*Improved Language Proficiency:* Interviews with participants indicated that students felt a notable improvement in their language skills after using ScLINGO. One student stated, "I feel more confident going to the shop now, especially with local phrases." This qualitative feedback suggests that gamified learning tools can significantly enhance language acquisition among international students.

*Increased Social Integration:* Feedback from students revealed a strong sense of social connectedness developed through the use of ScLINGO. A student shared, "Playing the game helped me make new friends and feel more at home." This highlights the potential of ScLINGO to foster a sense of belonging and community among international students.

*Enhanced Professional Communication:* Health professional students reported increased confidence in clinical settings. One nursing student mentioned, "Using ScLINGO made it easier to understand medical terminology and communicate with patients and colleagues." This highlights the practical benefits of ScLINGO in preparing students for real-world clinical interactions.

### 7. Enhancing ScLINGO: Implementing Strategies for Effective Integration and Broadened Engagement

The team at this current stage is refining ScLINGO and considering feedback from students and practitioners (lecturers and facilitators). This phase focuses on implementing four trending perspectives in the new version of ScLINGO, each designed to optimize user experience and educational outcomes. Ethical approval has been obtained to conduct a study on the impact of ScLINGO on students' sense of belonging and its social implications in both social and clinical practice (Ref, year). This study will commence after the induction day, where ScLINGO will be introduced to the wider university community.

#### 7.1 Co-creation Process

From a methodological perspective, ScLINGO embraces a co-creation process, allowing users, including students and teachers, to actively contribute to expanding and refining its database. Research has shown that involving users in co-creating educational resources can significantly enhance their impact on learning outcomes (Ozak, 2018) and explore opportunities and limitations (Ismail & Adam, 2022). By empowering users to shape the content of ScLINGO, the game becomes more tailored to their specific needs and preferences, thereby maximizing its effectiveness as a language-learning tool. Stakeholders include Pedagogy Experts (teachers), Professionals (e.g. nurses), Technology Team (e.g. developers) and End Users (Students).

The co-creation of the game has a positive impact on students' sense of ownership over their learning. It allows them to construct their learning, leading to increased motivation and engagement (Ozak, 2018). In the study context, ScLINGO users (students and teachers) will have the opportunity to co-create the thesaurus for ScLINGO database, by adding new phases to a virtual 'postbox'.

#### 7.2 Facilitator Training

One of the outcomes from the pilot phase addresses the importance of the facilitator's role in using ScLINGO, as highlighted by a teacher quote: "The facilitator needs to have some knowledge of phrases to translate the terms, deconstruct them, and put them into the context of how they fit within a professionalized program. From a professional perspective, this means that you need to capture the voice of the person you serve, or you breach the regulations." Therefore, the next phase plans to provide ScLINGO facilitators with 'train-the-trainer' guidelines to support effective implementation in educational settings. These guidelines equip facilitators with the knowledge and skills necessary to utilize ScLINGO's various playing modes, including individual, group, and role-play formats. Each mode offers unique benefits, such as fostering independent learning, encouraging collaborative interaction, and promoting real-world language use. By offering diverse playing options, ScLINGO caters to different learning preferences and styles, ensuring that all users can engage with the game in a manner that suits their needs.

### 7.3 Wider Engagement

Although ScLINGO focuses on Scouse, the team envisions the importance of raising awareness about interprofessional learning (IPL) on a broader scale. Nationally, similar issues would arise if someone were working in Newcastle with Geordie accents or Glasgow with Glaswegian accents. Therefore, we are using a particular city and regional dialect to illustrate a broader set of verbal communication issues. I believe we should consider integrating it into the IPL components accessible to all students. Consequently, there are two planned scopes for ScLINGO's wider usability: educational integration across taught programs and inclusivity for use across all university students to promote social engagement and develop a sense of belonging.

#### 7.3.1 Scope 1: Educational

The current ScLINGO game has primarily been utilized in modules associated with mental health topics, such as the MSc in mental health nursing program. However, considering that mental health is relevant across various disciplines, facilitators should also consider incorporating ScLINGO into other programs, such as adult nursing or physiotherapy. Therefore, ScLINGO meta-versions are planned to be developed for each module, providing specialized content tailored to the unique learning objectives and requirements of different courses.

#### 7.3.2 Scope 2: Inclusiveness

ScLINGO prioritizes usability and wider dissemination, particularly in large-scale educational settings. For example, during an induction day welcoming 900 new students in September 2024, ScLINGO will be seamlessly integrated into the orientation program. Its user-friendly interface and intuitive design will facilitate easy access and navigation for all participants, enabling them to quickly familiarize themselves with the game and its features. The role of orientation events for international students has been addressed by Bisadi *et al.* (20213); the role of orientation programs in transferring university information should not be ignored.

### 7.4 Bridging Generation Language Gaps

The final outcome of piloting the ScLINGO game is the observation of a generation and language gap. It was noted that certain terms were suggested by tutors who may be three or more decades older than students, while others were proposed by students themselves. Interestingly, some terms were identified by younger individuals rather than their elders, and vice versa. This observation suggests the potential for bridging the language gap between generations. Additionally, there is a social awareness aspect regarding the use of certain words that might be offensive, stereotyping, or unacceptable within the community (e.g., "female" being equated to "Judy")

## 8. Conclusion and Recommendations

The development of ScLINGO is an ongoing collaborative process involving Communities of Practice (COP) (Wenger, 2006), comprising pedagogy experts, professionals, technology teams, and end users. Integrating Participatory Action Research (PAR) methodologies and activity-based theory, ScLINGO offers a dynamic platform for international students and health professionals to enhance their sense of belonging, improve social communication, and refine professional language skills in both workplace and day-to-day settings. Based on feedback from phases 1 and 2 of ScLINGO's development within its COP, it's concluded that ScLINGO incorporates diverse scenarios and cultural contexts, enriching the learning experience for international students and health professionals. Pedagogically, the next version of ScLINGO will integrate into existing language and clinical professional development curricula (e.g., physiotherapy). Socially, ScLINGO will be employed as an icebreaker on induction day for new university students in the upcoming academic year. Additionally, empirical data, collected through surveys and interviews, will evaluate ScLINGO's impact on students' sense of belonging, social communication, and professional practice. This longitudinal study will extend throughout the entire next academic year.

Additionally, empirical data collected through surveys and interviews will evaluate ScLINGO's impact on students' sense of belonging, social communication, and professional practice. This longitudinal study will extend throughout the entire next academic year.

### 8.1 Expected Results and Implications

The expected results from the implementation of SCLINGO include improved language proficiency, enhanced social integration, and a stronger sense of belonging among international students. These outcomes are anticipated to have significant implications for both academic and professional practices:

1. **Influence on Current Practices:** The findings could inform the development of more inclusive and effective support systems for international students in higher education institutions. By providing a gamified language-learning tool, universities can better support the linguistic and social adaptation of international students, ultimately contributing to their academic success and overall well-being.
2. **Theoretical Approaches:** The study's outcomes may influence theoretical approaches in digital gamification for language learning. By demonstrating the effectiveness of a gamified approach in enhancing language skills and social integration, the study can provide valuable insights for the development of future educational technologies and methodologies.
3. **Professional Implications:** For health professionals, the ability to effectively communicate in both everyday and clinical settings is crucial. The use of SCLINGO can help international health professional students overcome language barriers, leading to improved patient care and more effective teamwork in healthcare settings. This can contribute to the development of more culturally competent healthcare practitioners who are better equipped to serve diverse populations.
4. **Academic Relevance:** By addressing the specific needs of international students and providing a practical solution through SCLINGO, the study can highlight the importance of tailored educational interventions in fostering a supportive and inclusive learning environment.

In summary, the development and implementation of SCLINGO aim to address critical challenges faced by international students, particularly in the context of language learning, social integration and their professional practices. By enhancing their sense of belonging and communication skills, SCLINGO has the potential to make a meaningful impact on their academic journey and future professional practice.

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