

Lost and Found: The Connection Between Education Level and First Language Attrition

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Abstract

Language attrition is a complex phenomenon that can be explained as a loss of fluency in one's mother tongue due to a variety of factors. So far, research on the process of language attrition has predominantly been conducted on internal and external emigrants. Nevertheless, native language attrition has also been observed in international schools where English is used as a medium of instruction. This paper discusses the role of education level in the development of the attrition of the mother tongue. For the purpose of the current investigation, the case study was conducted on ten secondary school students in Azerbaijan who switched from the national curriculum to international after completing primary school, thus receiving more quantity and quality second language input and being less academically exposed to their native language. The data for the case study was collected through one-on-one, semi-structured interviews with the subjects. The interviews were transcribed and subsequently coded via the MAXQDA software and manually to mark similar concepts with a code label to retrieve the data for further analysis. Each code was named to provide an indication of the relevant concept and/or idea, divided into sub-categories, and transferred into maps. The results demonstrate that the academic context as well as the interruption of formal education in the mother tongue in primary education contribute to the degradation of the first language performance and competence as well as affect motivation towards maintaining the first language proficiency.

Keywords: Language Attrition, Cross-Linguistic Influence, Applied Linguistic, Language Interference, Secondary School, Bilingualism

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Introduction

As has been widely debated, language attrition is defined as a total or partial degradation of the mother tongue due to a variety of factors and is not connected with any brain injuries and/or health conditions (Schmid, 2011). Since the first conference on language attrition, which was hosted by the University of Pennsylvania in 1980 (Weltens & Cohen, 1989), there have been numerous studies on what language attrition is and is not and its impact on the fluency, accuracy, and speed in the reception and production of mother tongue skills and systems, and attitudes towards the native language and culture alike. The erosion of linguistic competence and fluency can occur due to various factors, often influenced by the linguistic environments that individuals find themselves in (Seliger & Shohamy, 1989). Previous research on language attrition has predominantly focused on individuals experiencing internal and external migration (Schmid, 2011). However, native language attrition has also surfaced in international schools where English serves as the primary medium of instruction.

The proliferation of international schools, wherein students receive their school education in English in non-English-speaking countries, has recently engendered instances of language attrition. Ergo, language attrition is currently spreading beyond immigration settings and expanding to educational contexts. The quality and quantity of exposure to a second language are increasingly recognized as significant contributors to this process (Köpke, 2004). Thus, the linguistic settings created in the schools with the English language as a medium of instruction foster first language attrition. The limitation in the use of the mother tongue is conditioned by the fact that a significant number of international schools generally have a prolonged school day (from 5 to 6 hours of instruction) and pursue an English-only policy, when students are discouraged to use any other language but English during their stay in school, including break time. It is noteworthy that most of the schools continue to offer mother tongue instruction; however, it is observed that the level of linguistic input provided is typically insufficient.

Given that the second language influence is described as a factor that can affect mother tongue attrition, investigating the extent to which both the limited native language exposure and the impact of the second language use and proficiency contribute to the decline in mother tongue proficiency provides insights into the underlying causes of attrition (Gallo et al., 2021). The question that drives this investigation is to what extent the educational level correlates with the progression of native language attrition. To address this question, a case study was conducted by interviewing ten high school students in Azerbaijan. These students transitioned from a national to an international curriculum after completing primary school. As a result, they encountered a substantial increase in second language input, both in terms of quantity and quality, while being progressively removed from academic exposure to their mother tongue.

The study utilized one-on-one, semi-structured interviews as the primary data collection method. The interviews, conducted with ten secondary school students in Azerbaijan, were recorded and transcribed with the aid of the MAXQDA software. Subsequently, the data was coded and analyzed using the same software. The employment of grounded theory in this research helped in constructing a solid foundation for the exploration of the intricacies of language attrition. In addition to grounded theory, the study employed thematic analysis, a technique for identifying and examining recurring themes within the dataset (Braun & Clarke, 2006).

Literature Review

Language Attrition

Language attrition is a phenomenon characterized by the decline or erosion of proficiency in one's native language, primarily due to reduced use or exposure to that language (Schmid, 2011). It often occurs when individuals adopt the second language as their dominant means of communication, leading to changes in their linguistic competence in their first language (Schmid & Köpke, 2017). Several factors contribute to language attrition, including sociolinguistic factors such as age, gender, education level, and language environment (Köpke, 2004). Among these factors, the quality and quantity of input in both the first and second languages play a pivotal role. The linguistic input individuals receive in their daily lives significantly influences their language proficiency and retention, making it a critical aspect to consider when examining language attrition. The literature on language attrition underscores the relationship between linguistic input and the maintenance or degradation of language skills, particularly in bilingual and multilingual contexts (Tokowicz & Kroll, 2007; Köpke, 2004).

Language Attrition in School Settings

International schools often adopt English as the primary medium of instruction, creating a bilingual environment where students are exposed to English alongside their mother tongue. Recent research indicates that bilingualism, when nurtured and maintained, can offer cognitive, cultural, and academic advantages (Bialystok, 2011). However, concerns arise when bilingualism is not adequately supported or when students prioritize the dominant language (English in many cases) over their native tongue. In this context, having a limited or below-par proficiency in the local language while possessing strong English skills may provide opportunities on the global stage but severely limit prospects at the local level.

Several factors contribute to language attrition in international schools. These include the quality and quantity of first language input, peer interactions, and individual language preferences. Students may experience attrition when they receive limited exposure to their first language, leading to reduced proficiency in speaking, reading, and writing. Efforts to mitigate language attrition in international schools are crucial. Strategies include promoting bilingualism by incorporating the first language into the curriculum, encouraging parental involvement in supporting the mother language, and creating a supportive linguistic environment (Crisfield, 2020). By actively addressing language attrition, international schools can help students maintain their proficiency in both languages and maximize the benefits of being bilingual speakers.

Cross-Linguistic Influence

Köpke (2004) has explored the relationship between the first and second languages and how exposure to a second language can influence the native tongue. This phenomenon poses questions about the dynamics of language systems and the ways in which second language exposure affects language attrition processes.

Language attrition does not merely affect overall language competence but operates within distinct linguistic domains. Lexical attrition, where individuals lose specific words or vocabulary in their first language, has been well-documented (Montrul, 2008). Over time,

speakers may struggle to recall or use certain words and expressions, affecting their language proficiency.

Grammatical changes are another dimension of language attrition. Schmid and Köpke (2017) have researched the impact of language attrition on grammar structures, illustrating that as speakers become less exposed to their native language, their grammatical knowledge may deteriorate. These changes can reveal errors in sentence structure and grammatical usage.

Excessive input of a second language can significantly influence an individual's reading and writing abilities in their first language, potentially contributing to mother tongue attrition. Intense exposure to a second language can lead to a decline in linguistic proficiency in the first language (Montrul, 2008). As individuals engage extensively with academic or professional content in the second language, they may become more proficient in the second language, diverting cognitive resources away from the first language (Bialystok, 2011). The complex interplay among language input, cognitive abilities, and first language attrition highlights the fluidity of bilingualism and its influence on linguistic proficiency.

Methodology

In applied linguistics, qualitative research is used to investigate the way the subjects “interact with experience and interact with a phenomenon at a given point in time and in a particular context, and the multiple meanings it has for them” (Crocker, 2009, p. 7). Given that the current study explores the extent to which these educational shifts correlate with the attrition of the first language, the qualitative case study was utilized to enable a more in-depth understanding of the phenomenon of first language attrition from a firsthand source.

The instrumental case study was selected for this research as it is aimed at discussing the issue of language attrition from a wider perspective rather than providing solutions to the particular case (Dörnyei, 2007). Qualitative method employs a variety of research mechanisms to collect and analyze data. Crocker (2009) categorized the methods of qualitative data collection by placing them into two intersecting continuums, the first one defining the extent to which the researcher controls the research settings and the second one expressing the level to which the researcher structures the data collection (Figure 1).

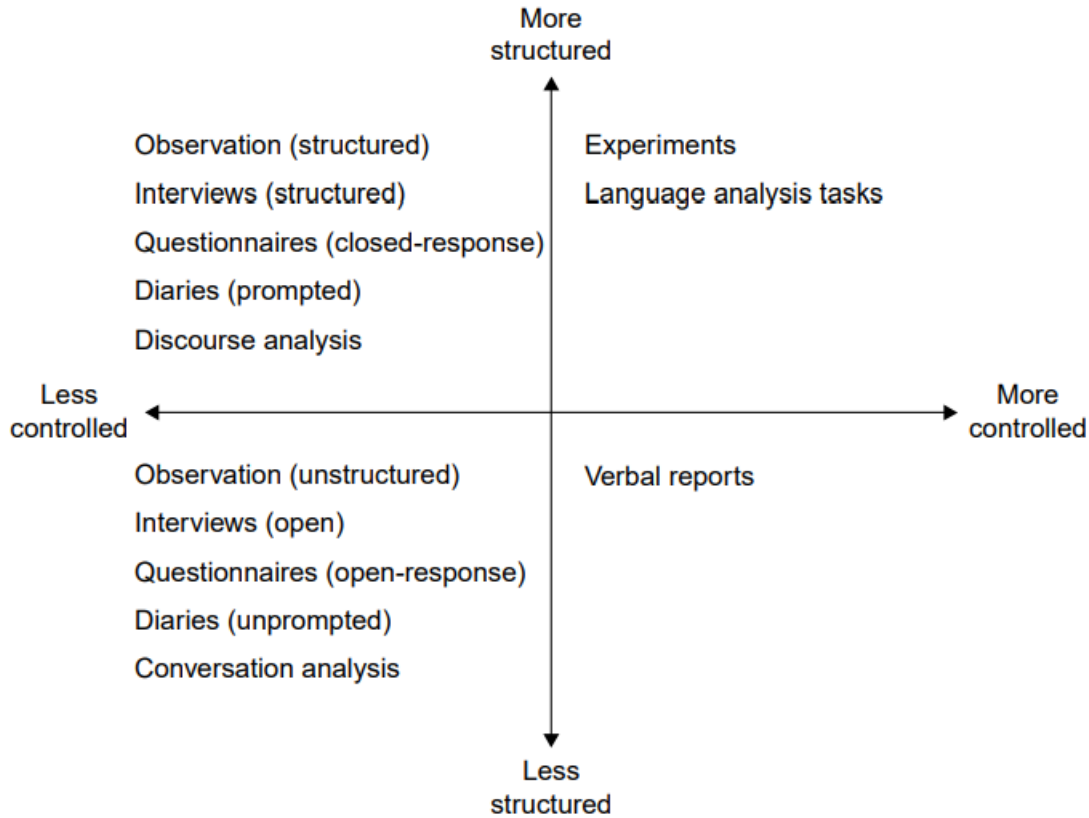


Figure 1. Qualitative data collection methods

To maintain a balanced approach to data collection, the case study utilized a semi-structured interview that can be placed somewhat in the middle of the two continuums. A semi-structured interview includes some pre-designed closed questions while leaving a window for the interviewer to ask some additional questions, either to encourage the interviewee to contribute further into the conversation or elaborate on the response or ask some open questions that may arise during the interview (Fox, 2009).

As argued by Dörnyei (2007), the possible limitations to collecting data via interviews might include a lack of communication skills thus resulting in the interviewee not communicating all the necessary information. In contrast, during face-to-face interviews, there is a possibility that interviewees may attempt to present their responses in the best possible light, potentially leading to the generation of less informative or less candid data (Dörnyei, 2007). These limitations can be avoided by accurate planning, including establishing the code of conduct with participants and careful facilitation of the process (Edley & Litosseliti, 2017).

Population and Sampling

The case study looks at the relationship between the level of education and attrition in first language proficiency. For this purpose, the interview questions were designed in a semi-structured way to provide an opportunity for elaboration on the guided questions (Hancock et al., 2009) and allow for deeper exploration of the ideas, views, and experiences (Edley & Litosseliti, 2017).

This research unfolds in the educational landscape of Azerbaijan, focusing on two international schools where English is adopted as the primary medium of instruction. The key

criterion for selecting the research setting was the prevalence of first language attrition among students making the transition from the national curriculum to international education. The population for this study was specifically drawn from students who had experienced this educational transition. Employing the purposeful sampling technique, participants were selected by the administration of both schools to ensure that they held the relevant experiences and insights necessary for addressing the research question (Palinkas et al., 2013). The request for the interview was sent to two international schools in Azerbaijan to describe the relevance of the study, the research question, and the interview procedure, as well as the consent forms. The administration of both schools selected the students fitting the profile and ensured their participation in the study.

Ethical considerations play a crucial role in this research to ensure the rights and well-being of participants and to uphold research integrity (Duff, 2007). The participants were provided with an opportunity to become familiarized with the objectives, procedures, potential risks, and benefits of the case study and were also informed participation is voluntary. The research was authorized ethically by the principals of the participating schools, and the student was informed that the study would remain anonymous before signing the consent form.

Data Collection and Analysis

To address the research question and investigate the relationship between exposure to the second language and its influence on proficiency in the mother tongue, data were collected through a semi-structured interview. Qualitative interviews should avoid relying on a fixed set of questions that need to be addressed within a predetermined time frame, as this does not allow for in-depth analysis of the focus of the study and “is not really adequate for research” (Fox, 2009, p. 16). Thus, qualitative researchers commonly utilize semi-structured interviews, comprising a set of open-ended questions rooted in the subject areas of interest to the researcher (Hancock et al., 2009). The interview designed for the purpose of this research aimed to explore the participants’ daily language use, changes in proficiency and fluency in their mother tongue (Azerbaijani), and their attitudes toward language attrition. The interview was conducted in a one-on-one setting, allowing for a thorough exploration of the participants’ experiences and perceptions. This approach allowed for revealing the themes that had not initially been the focus of this investigation, namely the relation between the increased second language input through rigorous academic input and the lack of motivation to keep improving or maintaining the proficiency level of the native tongue.

In the past, transcribing interviews was a laborious and time-consuming task that demanded meticulous attention to detail (Dörnyei, 2007; Hancock et al., 2009). Richards calls it “the least enjoyable aspect of this form of data collection” (Richards, 2009, p.192). Indeed, researchers often had to manually transcribe hours of recorded conversations, which not only consumed a significant amount of time but also posed challenges in maintaining accuracy and consistency. However, in contemporary research practices, a number of transcription software applications have emerged to support and expedite the intricate process of transcribing qualitative interviews. Within the context of this study, MAXQDA was selected as the transcription software for this study due to its multifaceted capabilities, which significantly expedited the intricate process of transcribing qualitative interviews. Unlike manual transcription, which can be time-consuming and susceptible to errors, MAXQDA offers a systematic approach to segmenting and categorizing transcribed textual data (Dörnyei, 2007).

To analyze the data, the research utilized a grounded theory approach followed by thematic analysis of the core codes. Grounded theory guarantees that the theory created is closely connected to the perspectives and experiences of the participants in the study. This connection enriches the authenticity and comprehensiveness of the study's findings (Charmaz, 2006). In this research, grounded theory helped establish a relationship between the increased academic second language input and deterioration in the proficiency of mother tongue skills and systems. The correlation between open codes and between the axial codes at the second stage of coding resulted in four core codes: *L1 Attrition*, *Academic L2 Interference*, *L2 Proficiency*, and *Perceptions & Suggestions*. The relationship between the core concept of *L1 Attrition* and its influencing factors is multifaceted. *L1 Attrition* is directly influenced by *Academic L2 Interference*, as the presence and extent of academic language interference in the second language plays a causal role in driving changes in L1 attrition. Similarly, *L2 Proficiency* also exerts a causal influence on *L1 Attrition*, where higher proficiency levels result in varying degrees of L1 attrition. As a consequence, changes in *L1 Attrition* have implications for *Perceptions and Suggestions*. The alterations in the first language due to academic L2 interference and L2 proficiency are reflected in how individuals perceive their language skills and the suggestions they offer, making it a dynamic interaction between causality and outcomes in the context of language attrition.

Further thematic analysis helped to focus on identifying and analyzing broader themes and patterns in the data. By scrutinizing the qualitative interview data, thematic analysis enables the researcher to identify not only overarching themes but also subtler linguistic intricacies, making it ideally suited for investigations seeking to investigate the complexities of language attrition (Braun & Clarke, 2006). *Language Attrition Dynamics in Educational Contexts* serves as the overarching theme of this research, encapsulating the central focus on language attrition processes within educational settings. Within this context, several key themes emerge: *Language Proficiency and Competence*, which addresses various language skills and potential variations across skills due to L1 attrition; *Language Systems and Structures*, exploring the influence of attrition on components like grammar and lexis; *L2 Input and Output*, examining the role of L2 exposure in educational environments; and *L1 Attrition Processes*, which examines the core concept of first language attrition and its associated mechanisms. Additionally, the theme of *Language Attitudes and Motivation* probes students' attitudes toward their first language, uncovering the development of negative attitudes, motivational factors, and their impact on language use.

Discussion

The present study discusses the complex processes associated with language attrition in response to the introduction of a second language in international school settings. The discussion centers on the multilayered dimensions of language attrition within educational settings, considering its consequences for language proficiency, linguistic competence, and the formative aspects of students' attitudes and motivations.

Grounded theory involved the coding process, including retrieving open, axial, and core codes (Table 1), and incorporating this finding into the grounded theory framework as a core concept – *L1 Attrition*.

Open codes	Axial codes	Core codes
Motivation	Mindset	Perceptions and Suggestions
Attitude		
Recommendations	Recommendations	
Lexis	Language systems	Academic L2 Interference
Grammar		
Academic language		
Speaking	Language skills	
Reading		
Writing		
Communication		
School input	Academic L2 Exposure	
Mother tongue	Use of L1	L1 Attrition
Household input	L1 Support	
Second language	Use of L2	L2 Proficiency

Table 1. Coding process

The analysis of the transcribed interviews started with retrieving the open codes. The open codes included mentions of debilitating of first language reading and writing skills, vocabulary loss, and inability to communicate about complicated concepts due to the increased second language input. The majority of students commented on the slowed-down reading pace and inability to understand literary texts in their native language compared to their comprehension of literary texts in English. All of the interviewees also mentioned that they prefer using English while communicating with their friends either in spoken or written modes outside the school, as they feel they do not have sufficient vocabulary to communicate in their mother tongue as well as it is easier and faster for them to produce coherent speech and maintain conversation in their second language. They explained it by saying that they have to translate what they think in English into their mother tongue while conversing with others, which substantially impedes the fluency and accuracy of mother tongue production.

Having discussed what the reason for such a decrease in first language proficiency could be, each participant acknowledged that as they transitioned from a national into an international curriculum, they have had very limited opportunities to develop academic knowledge in their first language. Due to the restricted mother tongue input, their proficiency in skills and systems has also been suffering. With a rather rapid transition from the educational mother tongue-instructed settings to the English-instructed secondary school, the gap between the quality and quantity of input in the first and second languages has created a favorable premise for language attrition (Köpke, 2004). One of the participants reported: “We stopped picking up Azerbaijani naturally and started learning the rules”. This resonates with observations made by Yilmaz (2019), who emphasized that in bilingual or multilingual environments, speakers often undergo changes in their mother tongue even though “it is assumed that the native language, once completely acquired, would be immune to change” (Yilmaz, 2019, p. 304). However, it has been clearly shown that all speakers who live in bilingual contexts and/or routinely use more than one language experience a certain amount of change in their first language, partly through non-use and partly through interference from the dominant contact language (Yilmaz, 2019).

After the subsequent review of the transcribed interviews, more initially unattended codes were retrieved. The newly emerged codes, namely *Motivation*, *Attitude*, and *Recommendations*, are not directly aligned with the research question; however, their correlation with other codes (Figure 2) and the number of instances of these codes in the interviews demonstrated their significance.

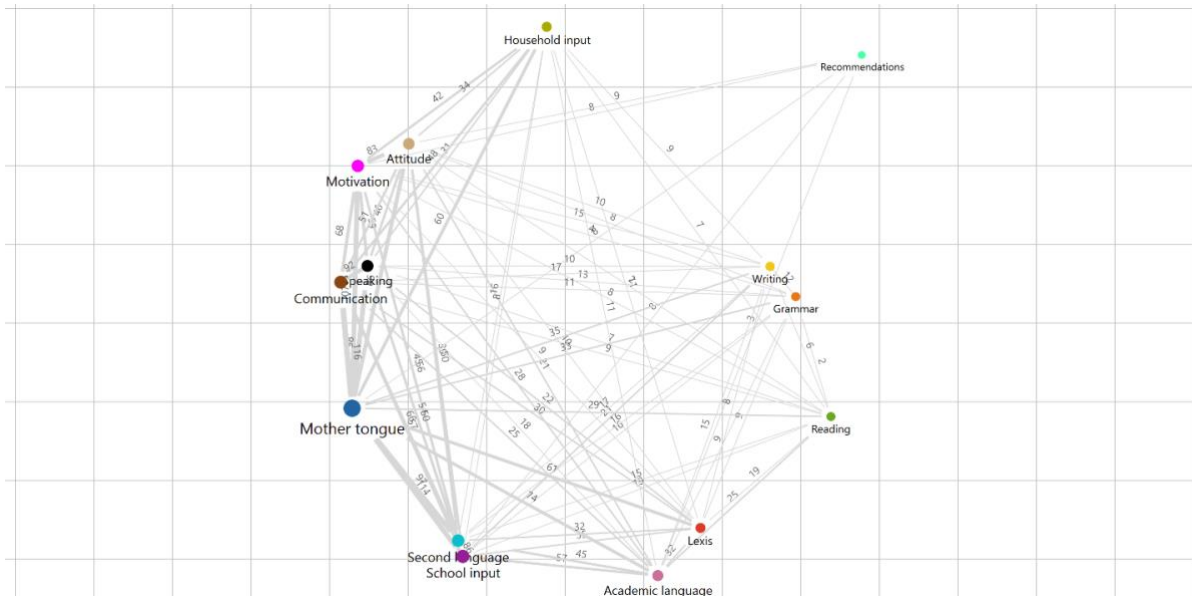


Figure 2. Code map

These interrelations between the open codes helped to combine them into axial codes: *Language skills*, *Language Systems*, *Mindset*, *Recommendations*, *L1 Support*, *Academic L2 Exposure*, *Use of L1*, and *Use of L2*. *Language Skills* and *Language Systems* are pivotal components that influence language attrition in educational settings. Students in this study reported a decline in their language skills, including reading, writing, speaking, and comprehension in their native language. Such findings align with previous research indicating that reduced use and exposure to the first language can lead to linguistic degradation in various language skills (Schmid, 2011). The lexical attrition observed in this study, where participants experienced difficulties recalling specific words or expressions in their mother tongue, is consistent with established research on lexical attrition in language learning and attrition contexts (Jarvis, 2019; Montrul, 2008). Additionally, students mentioned challenges in grammar and syntax, suggesting that language systems can also be significantly affected by language attrition. Schmid and Köpke (2017) have previously examined the impact of language attrition on grammar structures, highlighting the deteriorating influence of reduced first language exposure. As was identified, productive skills (speaking and writing) in the mother tongue are more significantly affected by the second language compared to reading or language systems (Figure 3).

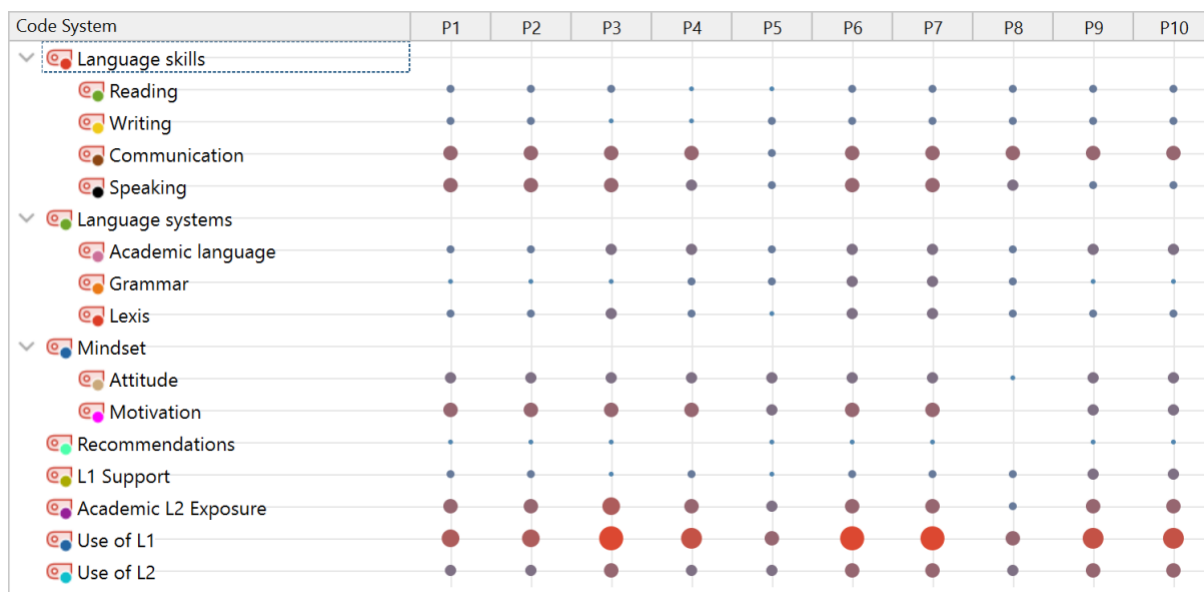


Figure 3. Code system

Mindset plays a crucial role in understanding the dynamics of language attrition, as it underlines the psychological aspects and attitudes of students toward their mother tongue. The emergence of this code echoes the significance of motivation and attitude in language attrition processes. As suggested by Dörnyei (2007), motivation is a driving force behind language learning and attrition. Furthermore, students' preference for using English in everyday conversations can be attributed to their motivation to communicate effortlessly and maintain fluency, aligning with theories on dominant language use (Bialystok, 2011). The interviews also revealed recommendations from students on how to mitigate language attrition and support language proficiency in their first language. Such recommendations align with previous suggestions in the literature, emphasizing the importance of incorporating the first language into the curriculum and creating a supportive linguistic environment (Triebold, 2020).

The core codes, *L1 Attrition*, *L2 Proficiency*, *Academic L2 Interference*, and *Perceptions & Suggestions*, that emerged in this study discuss interactions underpinning language attrition in educational settings. The core concept, *L1 Attrition*, represents the decline of the first language due to the introduction of a second language in an educational context. *Academic L2 Interference* denotes the correlation of academic language and its rules in the second language with the proficiency of the mother tongue. This resonates with prior studies highlighting how language interference, particularly in academic contexts, can contribute to changes in the first language (Schmid & Köpke, 2017). *L2 Proficiency* is pivotal in this framework, as it indicates the proficiency level achieved in the second language. Previous literature (Gallo et al., 2021) suggests that students' motivation to maintain high proficiency in their second language can lead to language dominance, affecting their native language. *Perceptions & Suggestions* explains students' attitudes and the recommendations they offer. The link between language attitudes and attrition is consistent with Dörnyei's (2007) emphasis on the role of motivation in language learning. This interplay of core or theoretical codes, based on the principles of the grounded theory framework (Charmaz, 2006), illuminates the causal relationships that underlie the complex nature of language attrition within educational contexts. *L1 Attrition* is directly influenced by *Academic L2 Interference* and *L2 Proficiency*, with implications for *Perceptions & Suggestions*, creating a dynamic

framework for understanding the intricate processes of language attrition in international schools (Figure 4).

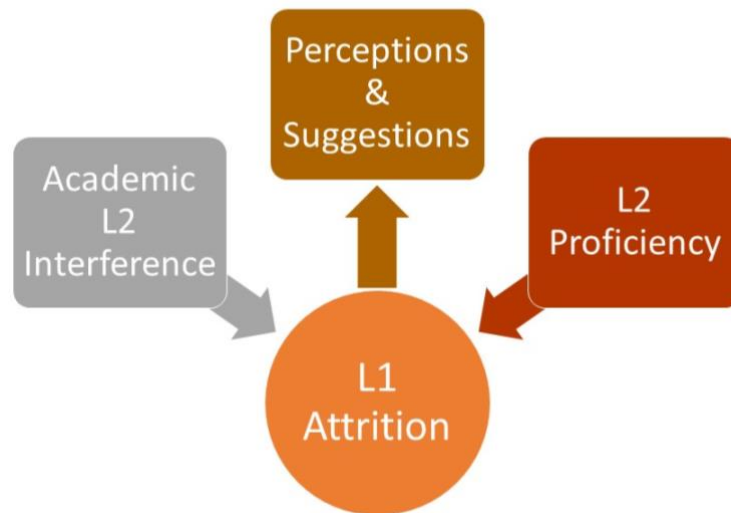


Figure 4. Theoretical Framework

The thematic analysis in this study revealed a subtle interaction between themes and sub-themes that together provided insight into the mechanics of language attrition in educational contexts. The overarching theme, *Language Attrition Dynamics in Educational Contexts*, reflected the central focus of this research, emphasizing the dynamic nature of language attrition processes (Figure 5). Within this theme, *Language Proficiency and Competence* explored variations in language skills across speaking, reading, writing, and comprehension, aligning with previous studies highlighting the complex nature of language proficiency (Schmid, 2011). Additionally, the theme of *Language Systems and Structures* examined the impact of L1 attrition on language components like grammar and lexis (Montrul, 2008). *L2 Input and Output* highlighted the role of intensive second language exposure in the educational context and its consequences on language attrition and proficiency (Köpke, 2004). The core theme, *L1 Attrition Processes*, dissected the mechanisms and cognitive changes involved in the decline of the first language, aligning with the concepts of language interference and language dominance (Schmid & Köpke, 2017). Although *Language Attitudes and Motivation* does not directly align with the initial research question, they emerged as a significant theme.

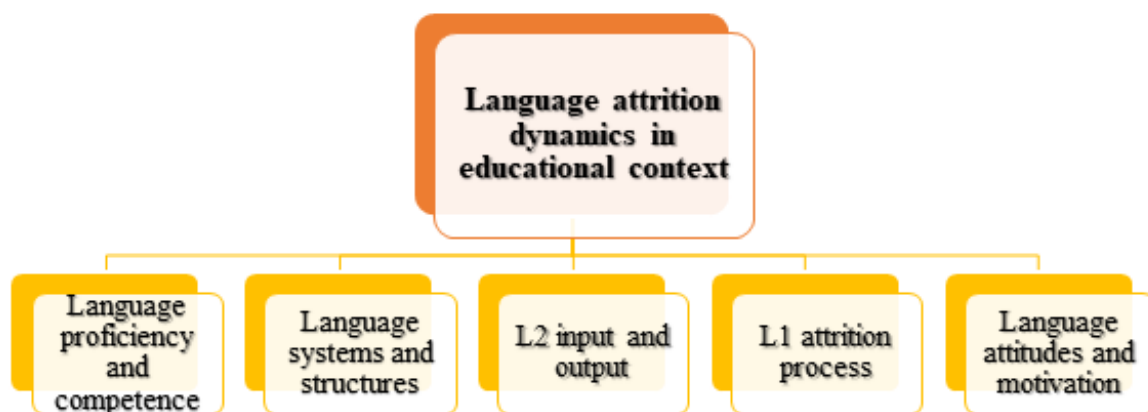


Figure 5. Thematic analysis

Notably, two students described feeling “forced” to use their mother tongue, while one student referred to English as a “native second language”, reflecting their subconscious acknowledgment of English as their emerging mother tongue. Furthermore, most students expressed contentment with their current level of native language input at school, illustrating the development of a mindset that prioritizes English proficiency in international school streams. Remarkably, the majority of students did not exhibit embarrassment about their declining proficiency in their mother tongue, attributing it to the school’s emphasis on English instruction and their role as passive recipients in shaping their language preferences. As one student noted, “It’s a school’s choice, not mine”.

Conclusion

The study has examined the processes of language attrition within educational settings, with a specific focus on how education level correlates with native language attrition. The findings indicated that the academic context, coupled with the reduction of formal education in the mother tongue during primary education, contributes to the degradation of first language performance and competence. As the research results demonstrated that the first language erosion occurs mostly in productive skills, which Schmid refers to as “interactive language” skills, and less in receptive skills and language systems, further research is necessary to identify the differences in these types of first language “use” (Schmid, 2011, p. 83).

Furthermore, the limited native language exposure and the impact of the second language play significant roles in the progression of native language attrition (Köpke, 2004) and decreasing motivation to improve and/or maintain mother tongue proficiency. The shift from the educational mother tongue to an English-instructed secondary school accentuates this process, reflecting the relationship between increased academic second language exposure and a decline in native language proficiency.

This research contributes to the growing body of literature on language attrition by exploring this phenomenon in an educational context, expanding beyond the typical focus on emigrants. It underscores the importance of considering education level as a significant factor in language attrition dynamics and the resulting consequences for language skills and attitudes (Gallo, 2021).

While this study provides valuable insights into language attrition in educational settings, several limitations should be considered. First, the scope of the research is limited to a specific group of students in Azerbaijan, which may not be universally applicable. The findings may vary in different cultural and linguistic contexts, so caution should be exercised when generalizing the results.

Second, the study’s reliance on one-on-one structured interviews could be subject to individual perception biases. Participants’ responses may be influenced by their personal experiences and attitudes, which could impact the accuracy and generalizability of the findings. It is important to recognize that self-reported data, especially on sensitive topics like language proficiency, can be influenced by social desirability and personal biases.

To address the challenges of language attrition in educational settings, a more complex approach is recommended. Firstly, there is a need to promote bilingualism by valuing both the second language and the native language (Triebold, 2020). Educational institutions should strive to create an environment that nurtures and celebrates proficiency in both languages.

Secondly, it is crucial to incorporate the native language into the curriculum, even in international school settings, to ensure students receive ample exposure and instruction in their mother tongue (Tsimpli, 2014). Encouraging parental involvement is equally vital; parents should play an active role in fostering their child's proficiency in the native language, establishing home environments where the mother tongue is actively used. In addition, awareness programs and training should be provided to teachers, students, and parents to emphasize the significance of maintaining the native language (Köpke, 2004). Finally, schools should aim to create a supportive linguistic environment that actively promotes the use of the mother tongue within the school community. Collectively, these recommendations serve to empower students in international educational contexts to thrive academically and maintain their language skills and cultural connections.

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