Language Attrition and Cultural Identity Dynamics in International Schools in Azerbaijan

Rena Alasgarova
The Modern Educational Complex Named in Honor of Heydar Aliyev, Azerbaijan

Jeyhun Rzayev
ADA University, Azerbaijan

Mukhammadfoik Bakhadirov
ADA University, Azerbaijan

Abstract

This study investigated the relationship between language attrition, cultural identity, and sociocultural factors in four international schools in Azerbaijan. Two distinct student groups, one undergoing English education since preschool (Group 1) and another transitioning to English after primary school (Group 2), were examined to discern the connection between language attrition, cultural identity, and sociocultural factors. The research explored acculturation strategies concerning loss of proficiency in the first language(L1) and bicultural identity and formulated hypotheses to assess the connection between education level and language loss and the influence of attrition on cultural identity shift. Employing a comprehensive mixed-methods approach, the research utilized native language proficiency tests and e-surveys for quantitative analysis, while focus group interviews and thematic analysis investigated qualitative aspects. The e-survey uncovered factors influencing L1 attrition, with Group 1 exhibiting lower native language proficiency, suggesting an impact of second language (L2) exposure. Regression analysis revealed that language skills, English communication preferences, and thinking in English predicted lower proficiency in L1, while the duration of L2 exposure played a pivotal role in shaping cultural identity. Focus group interviews demonstrated a subtle narrative of cultural shift and assimilation within the international school context. The theoretical framework and thematic analysis provided a comprehensive understanding of the acculturation experiences of international school students, emphasizing the concept of culture attrition influenced by diverse factors.

Keywords: acculturation, culture attrition, culture shift, language attrition, international school

Language is a dynamic element of human communication that significantly shapes cultural identity and heritage preservation (Köpke, 2004; Köpke & Schmid, 2004; Schmid, 2002; Schmid, 2011). The current study aimed at investigating the multifaceted relationship between language attrition, cultural identity, and the influence of sociocultural, sociolinguistic, and extralinguistic factors, framed within the context of international schools in a non-English macroenvironment. The focus of attention was on two distinct groups of school students to explore how variations in language education impact language proficiency and its consequences for cultural identity.

Language attrition, broadly characterized as the weakening or deterioration of language skills, particularly in bilingual or multilingual individuals, represents a linguistic phenomenon that transcends mere language loss or shift as it examines the nuances of language proficiency erosion due to reduced language use (Gallo et al., 2021; Köpke, 2004; Köpke & Schmid, 2004; Schmid, 2002; Schmid, 2011). Such extralinguistic factors as additive bilingualism, attitude, motivation, identity (Schmid, 2011), education level, and length of the second language (L2) exposure (Köpke & Schmid, 2004; Schmid, 2011) also contribute to language attrition. Therefore, understanding the role of extralinguistic factors is crucial for comprehending language attrition within a broader societal context. Despite being challenging to determine (Köpke & Schmid, 2004), education level influences language attrition through variations in language use and exposure to different linguistic environments, particularly concerning the age at which students begin learning L2.

The fundamental concepts of early language attrition theories (e.g., Dewaele, 2004; Köpke, 2004; Köpke & Genevska-Hanke, 2018; Köpke & Schmid, 2004; Schmid, 2002; Schmid, 2011; Yağmur, 2004) continue to offer crucial insights into the linguistic changes that occur in persons living in bilingual or multilingual contexts, despite the passage of time. The scarcity of contemporary studies that challenge or overhaul these foundational theories justifies their continued application in the analyses conducted in the study under investigation. Moreover, previous research has been restricted to examining the dynamics of language attrition in migrant settings; meanwhile, with the proliferation of international schools across the world, the language attrition process has shifted to an educational context due to its increasing relevance in international schools (Alasgarova, 2023).

In international schools, where English is used as a medium of instruction, students often become bilingual because of their immersive exposure to L2. Living in an international space, these students build their day-to-day interactions with teachers and peers of the same profile (Carder, 2013, p. 276) and adhere to English – only policies at school, thus picking up L2 naturally. The acquisition of the first language (L1) may slow down, causing additive bilingualism (Schmid, 2011). When the L2 has a high status as perceived by language learners, it tends to generate greater motivation to learn and use it. This motivation can be driven by practical benefits such as better career prospects, social prestige, or educational opportunities. Within an additive bilingual environment, one of the most significant concepts is the concept of language dominance and preference. Dominance pertains to the relative strength and proficiency of a language in an individual's repertoire, while preference signifies the subjective

choice of language for specific situations, reflecting the cultural, emotional, or social significance attached to a given language. Understanding the dynamics of language dominance and preference is crucial, as they significantly influence language loss and the resulting impact on cultural identity (Köpke & Genevska-Hanke, 2018).

There is a risk of cultural assimilation and identity shift, where the partial erosion of the native language and cultural practices can lead to a convergence with the dominant culture of the international school environment (Fitzsimons, 2019). Carder (2013) argues that international school students do not fall under the assimilationist model, often referred to as assimilationism, as there are no political incentives to promote assimilation or a specific nation-state to encourage such a process. However, many bilinguals tend to exhibit cultural dominance, adapting their cultural norms and behaviors based on their environment, social interactions, and their "favored identity" (Yilmaz, 2019, p. 313). As international schools use international curricula with insufficient native language and culture instructions (Alasgarova, 2023), it is hypothesized that L1 and culture attrition are now occurring in such academic settings.

In framing the present research, Berry's acculturation model was adopted. Exploring the dynamics of biculturalism, Berry's model offers four acculturation strategies – assimilation, integration, separation, and marginalization – which represent different ways individuals and groups adopt or maintain cultural practices (Berry, 1997). Despite being developed over two decades ago, Berry's model maintains considerable significance and remains unparalleled in its thorough representation of acculturation processes, serving as a seminal framework for the exploration of the complex interrelationship of language attrition and bicultural identity. In the alignment with this model, the research examined how language attrition influenced bicultural identity and which acculturation strategies individuals adopted in response.

The research focused on two distinct groups of school students in Azerbaijan. The first group had been educated in English since they started their educational journey in pre-school, while the second group transitioned to an English-taught curriculum after completing primary school, usually at age 9 or 10 in Azerbaijan. To comprehensively explore the factors influencing language attrition and its impact on cultural identity, the research employed a multistage research approach.

The research was guided by two main hypotheses:

Null Hypothesis 1 (H01): There is no significant difference in the level of language attrition between students who have studied in English since pre-school and students who transitioned to an English-taught curriculum after completing primary school.
Alternative Hypothesis 1 (H1): There is a significant difference in the level of language attrition between these two groups of students.
The responses were statistically analyzed to test the hypotheses related to the relationship between education level and L1 attrition and answer the research questions:

1. Does the duration of exposure to an English-only curriculum affect the level of L1 attrition among students in international schools?
2. What factors, such as language proficiency, language use, language of emotions and thoughts, and language preference, contribute to the observed differences in L1 attrition between the two groups of students?

Null Hypothesis 2 (H02): There is no significant relationship between the extent of language attrition and the shift in cultural identity among students.
Alternative Hypothesis 2 (H2): There is a significant relationship between the extent of language attrition and the shift in cultural identity among students.

Participants were encouraged to share their experiences regarding possible diminished L1 proficiency and its potential impact on cultural identity to provide insights on the third research question:

3. To what extent does language attrition correlate with international students' reported sense of cultural identity shift or change, in accordance with Berry's acculturation model?

So far, research on language attrition has generally been restricted to immigrant settings. However, with the increasing number of international schools, the phenomenon of language attrition has been shifting to school students who reside in their home countries. Due to the limited research conducted in such settings, this paper provides new insights on L1 attrition.

Literature Review

Language Attrition and Extralinguistic Factors

Language attrition, the gradual erosion of language proficiency, is a complex phenomenon that constitutes "a special case of variation in the acquisition and use of language/s and can best be studied, described, documented, and explained within a large framework that includes all other phenomena of L1/L2 acquisition, bilingualism, language use/choice, code-switching/mixing, and language attitudes" (Yağmur, 2004, p. 136). These factors can be further extended to age, motivation, quality and quantity of input, length of L2 exposure, and education level.

Findings from acculturation studies in L2 acquisition also highlight the interdependence of increased motivation and elevated levels of success in acquiring L2 (Yilmaz, 2019). This underscores the significance of motivation not only in predicting success in L2 acquisition but also in influencing the attrition rate. A positive emotional stance towards one's native language culture plays a major role in maintaining proficiency in the native language. Consequently, individuals with a strong inclination to immerse themselves in the second culture may experience greater attrition in their native language, especially if L1 loses practical and symbolic significance for them. In such cases, the diminished motivation to uphold the native language could contribute to a higher likelihood of L1 attrition (Yilmaz, 2019).

Research by Schmid (2011) emphasizes the role of identity in language attrition, highlighting that the attriters' attitude towards their native language and L2, as well as their motivation to use these languages, play pivotal roles in the attrition process. Furthermore, Köpke and Schmid (2004) argue that education level and the length of exposure to L2 are crucial extralinguistic factors contributing to language attrition. Education level influences language attrition through variations in language use and exposure to different linguistic environments. The longer the exposure to L2, the more profound the impact on the attrition process (Köpke & Schmid, 2004; Schmid & Cherciov, 2019). As individuals progress through different educational stages, the strength of their native language may diminish due to increased dominance of L2 in academic settings. As the study of language attrition continues to evolve, a holistic consideration of extralinguistic factors, particularly education level and length of L2 input, remains integral to comprehending the intertwined relationship of language proficiency, identity, and sociocultural dynamics.

Sociocultural Approach to Language Attrition and the Acculturation Process

Cross-linguistic influence in multilingual environments involves transferring linguistic features across languages, impacting vocabulary, grammar, and usage patterns. This blending of elements can enhance language learning but may also cause interference, where features from one language impede the proper use or understanding of another (Kubota et al., 2020; Yan et al., 2023). Concurrently, language attrition, marked by the gradual deterioration of language skills, is exhibited when individuals experience reduced use of their L1 due to increased exposure to L2 (Gallo et al., 2021; Köpke & Schmid, 2004). This relation extends beyond linguistic interaction, as "in the process of negotiating two languages, bilinguals also need to manage two cultural systems, which can become as interrelated as the languages they speak" (Yilmaz, 2019, p. 307). Research by Kashima (2019) emphasizes the bidirectional relationship involving acculturation and language use, highlighting how changes in cultural identity can influence language choices and, subsequently, contribute to language attrition.

The sociocultural approach to language attrition underscores the significance of societal and cultural contexts in shaping language proficiency and bicultural experiences of individuals. According to Berry's acculturation model (Figure 1), which explores how individuals adopt or maintain cultural practices, language attrition is deeply intertwined with biculturalism (Berry, 1997). In this framework, four acculturation strategies – assimilation, integration, separation, and marginalization – represent various ways individuals and groups engage with and navigate cultural practices.

Figure 1

Berry's Acculturation Model

Value and Maintain Host Culture	Value and Maintain Native Culture: Yes	Value and Maintain Native Culture: No
Yes	Integration	Assimilation
No	Separation	Marginalization

Language attrition, within this paradigm, is not solely a linguistic phenomenon but is closely tied to the broader process of cultural assimilation or preservation and acculturation. Individuals undergoing language attrition may experience shifts in their bicultural identity as they adapt to the dominant cultural practices of their environment. The sociocultural approach recognizes that language use is embedded in social interactions and cultural norms, and language attrition reflects not only a decline in linguistic proficiency but also a potential reshaping of bicultural identity.

Methodology

The given research was aimed at investigating the relationship between education level and L1 attrition, as well as the impact of language attrition on the loss of cultural identity among students. The following research objectives were set to explore the language attrition phenomenon and its dynamics in international school settings:

- To examine the relationship between education level and L1 attrition among students who transitioned from a national curriculum to an international English-taught curriculum after completing primary school.
- To assess the impact of language attrition on the loss of cultural identity among students, exploring the correlation with Berry's acculturation model.

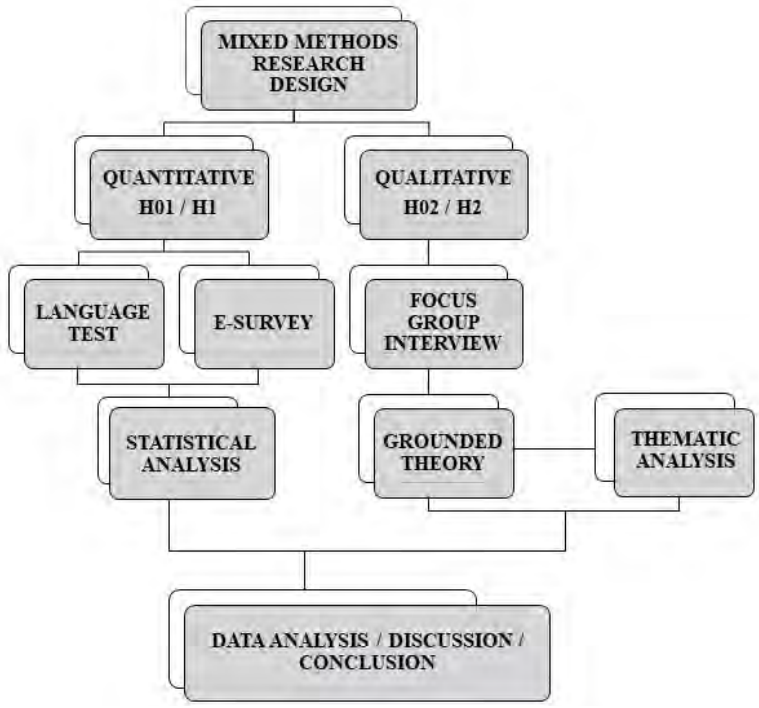
The study employed a mixed-methods approach, incorporating both quantitative and qualitative data collection methods to provide a comprehensive understanding of the complex relationship concerning education level, L1 attrition, and its impact on cultural identity. This methodology is verified by its capacity to offer a holistic understanding by integrating both quantitative and qualitative insights and is suitable for analysis of a multifaceted trend at several levels (Obeyd, 2021, p.59). In the quantitative phase, data was collected through an L1

test and a structured e-survey distributed among the two identified groups of students. The L1 proficiency language test was aimed at measuring the current level of control of the Azerbaijani language among the selected students, while the e-survey included questions designed to investigate the patterns of language use and language preferences.

After the quantitative phase and to investigate the second hypothesis concerning the impact of language attrition on the loss of cultural identity, the qualitative aspect of the research used a focus group interview with participants from both groups. The choice of this methodology framework (Figure 2) provided a holistic approach to the objectives of the research and facilitated more reliable and valid data collection and analysis. Grounded theory and thematic analysis were applied for qualitative analysis, which was examined with MAXQDA (VERBI Software, 2021). Triangulation design involved gathering and examining both quantitative and qualitative data simultaneously, allowing the researchers to gain a comprehensive understanding of the research problem and reduce research bias (Creswell & Creswell, 2022).

Figure 2

Methodology Framework



Population and Sample

The selection of an appropriate population and sampling strategy is integral to the validity and reliability of any research study (Creswell & Creswell, 2022). A stratified purposeful sampling approach was utilized for the purpose of this investigation, as the main objectives of the research were to examine the relationship presented by education level, L1 attrition, and the impact on cultural identity within specific settings. Although mainly used for qualitative research, stratified purposeful sampling serves the purpose of selecting participants to enhance

representation and improve the precision of analysis. This approach enables focused investigation of specific subgroups, effectively addressing the diversity within the population and ensuring that the results are relevant to the entire population (Creswell & Creswell, 2022). All the participants, regardless of the education stage at which they commenced the English-instructed curriculum, were grade 10 students and had two Azerbaijani language classes a week at their schools.

To initiate the sampling process, permission was sought from the principals of four international schools in Azerbaijan. The selection of schools depended on their sizable cohort of students fitting the research criteria. Having been informed about the objectives of the research, the principals granted official permission to conduct the research within the school premises.

Ethical considerations play a crucial role in the research process, especially when the research involves children. Minor participants may lack the cognitive and decision-making capacities of adults, making them more susceptible to potential risks and harm in research settings. Additionally, maintaining research ethics builds trust with parents/legal guardians, fostering a positive research environment. Adhering to ethical guidelines also contributes to the credibility and validity of research outcomes, as it upholds the integrity of the scientific process (McCabe & Pao, 2021). The next stage included obtaining the parental consent form by the participants' parents/legal guardians. The form was compiled in accordance with the Ethical Principles of Psychologists and Code of Conduct: Standard 8.03 "Informed Consent for Recording Voices and Images in Research" (American Psychological Association, 2017). The consent forms outlined the detailed nature of the research, provided contact information for the researchers, and explicitly stated the right of parents/ legal guardians to inquire about the research and withdraw their children from participation at any stage of the research.

The final sample comprised a hundred students in each group, resulting in a total of two hundred participants for the first phase of the study, including the language proficiency test and e-survey. Further, for the focus group interviews, 20 participants, 10 in each group, were randomly selected to ensure that in smaller homogeneous focus groups all the participants had a chance to contribute to the discussion (Creswell & Creswell, 2022). Prior to the interview, the researchers conducted a pre-investigation session with the students. During this meeting, the significance of the research was explained, and students were assured that their participation was entirely voluntary. This proactive engagement aimed to establish a sense of understanding and comfort among the participants, fostering an environment conducive to open and authentic responses during subsequent tests, e-surveys, and interviews.

Data Collection

To examine the correlation between education level and L1 attrition in students who transitioned to an international English-taught curriculum, the study applied the quantitative research method by analyzing data collected through an L1 proficiency test and e-survey. Quantitative research in linguistics possesses undeniable qualities, since it follows a methodical

and controlled approach, utilizing precise measurements to yield dependable and generalized outcomes (Obeyd, 2021).

The L1 proficiency test was based on the Azerbaijani language final exam for grade 9 international school students administered by the State Examination Center of the Republic of Azerbaijan. The test consists of 30 questions to be completed in 90 minutes and includes four listening comprehension questions, ten grammar questions, and two reading comprehension sections with eight questions per section. All test items are close-ended questions. To address one of the research questions, namely, to estimate the degree to which the length of exposure to the international curriculum contributes to two groups of participants' decreased proficiency in L1 skills and systems, the test was adopted upon the researchers' request. The Azerbaijani language expert from the State Examination Center substituted one reading comprehension section with eight multiple-choice questions on lexis and one essay writing task that fit the grade 9 Azerbaijani language framework used in international schools. The expert also provided detailed assessment rubrics and mark schemes to ensure a transparent and objective evaluation of the results.

To ensure the inter-rater reliability, fair marking, and consistency in results and validity of the L1 proficiency test, the pilot test was administered with two groups of students of an identical background in a different international school in Azerbaijan (Green, 2020). Ten students, five per group, were invited to participate in the pilot testing. The language expert, who reviewed the test, and two additional qualified assessors from two different schools evaluated the responses to the pilot test independently. The results of the pilot phase were then subjected to Cohen's Kappa coefficient to ensure the inter-rater reliability of the coding process, confirming that the observational data were consistently interpreted and categorized by different researchers (Kolesnyk & Khairova, 2022).

To measure the extent to which such linguistic factors as language proficiency, language use, language of thought, and language preference contribute to the decreased proficiency in L1, the researchers prepared the e-survey, which comprised eight sections and encompassed 23 closed-ended questions specifically tailored for this study using Microsoft Forms (Microsoft Forms, n.d.). Likert scale questions were utilized to quantify variables in the e-survey, where participants rated their level of agreement or disagreement on a five-point scale. This standard method in social science research provided a quantitative measure of attitudes and perceptions, essential for the analysis (Kusmaryono et al., 2022). The survey was conducted online, leveraging the efficiency of the Internet for survey administration, where the automation of response collection and data analysis processes streamlined the overall procedure (Torrentira, 2020). The review of the e-survey content by a language expert from the Ministry of Education ensured that the designed questions addressed the research variables. Because the primary focus of quantitative research rests in outlining relationships among variables, this type of research approach seemed appropriate (Obeyd, 2021).

The research hypothesized that factors like language proficiency, language usage, the language associated with emotions and thoughts, and language preference account for the differences in

the language attrition process between the two student groups with different lengths of L2 input in academic settings. Language attrition is argued to be influenced by the level of education because of the advantage of L1 literacy that older children usually possess (Köpke, 2004, p. 1338); in this regard, education level constituted an independent variable reflected in Section 2 *Language Background* Questions 3 and 4 of the e-survey.

As language attrition is a complex phenomenon encompassing sociolinguistic and psycholinguistic factors, it cannot "divorce from its social context", and to discuss or investigate it outside this context seems to be an unattainable task (Yağmur, 2004, p. 134). Dependent variables included language proficiency (Section 3 *Language Proficiency Questions* 5 and 6), language use (Section 5 *L1 Skills and Systems* Questions 10 to 15), language of emotions and thoughts (Section 6 *Language of Emotion and Stress* Questions 16 to 18and Section 7 *Language of Thoughts and Dreams* Questions 19 to 21), and language preference (Section 8 *Language Preference for Communication* Questions 22 and 23).

For instance, language proficiency was assessed through questions asking participants to rate their proficiency in their first language and English on a scale from 1 (very low proficiency) to 5 (very high proficiency). Similarly, language use was explored through questions that measured the extent of decrease in language skills, such as "Please indicate the extent to which you have experienced a decrease in grammar proficiency on a scale from 1 (no shift) to 5 (significant shift)". The language of emotions and thoughts was examined by questions such as "Please specify the primary language in which you think and plan your thoughts on a scale from 1 (always in your first language) to 5 (always in English)". "Language preference" for communication was measured by questions like "Please indicate your preference for spoken communication with family and friends on a scale from 1 (always using your first language) to 5 (always using English)".

The inclusion of these factors is grounded in the idea that interactive language use (communication in spoken and written modes of the language), non-interactive exposure to language (reading), and inner language (thoughts, dreams, counting, etc.) are said to be further analyzed to bring clarity into distinctions among these modes of L1 use (Schmid, 2011, p. 83). In an interview with Kapitsa, Chernigovskaya also stated that some criteria for selecting a native language from the languages in which the language user is fluent are in what language they think and count, as well as the language they switch to in a critical situation (Timofeev, 2012).

Control variables age and gender (Section 1 *Demographic Information* Questions 2 and 3) helped to maintain consistency in the demographics of the sample. Furthermore, promotion of the native language in the household, native language instruction at school, and the number of native language classes (Section 4 *L1* Input Questions 7 to 9) enhanced the internal validity, ensuring that any observed differences in language attrition can be attributed to the educational level rather than extraneous factors.
Microsoft Forms employs encryption measures for data both at rest (ensuring the security of stored inactive data on any device) and in transit (safeguarding data during its movement from one virtual location to another) (*Security and Privacy in Microsoft Forms,* n.d.). This

encryption protocol guaranteed the confidentiality and security of the acquired data throughout the survey process.

To address the second alternative hypothesis, namely, to examine the connection involving language attrition and cultural identity shift and suggest some recommendations about L1 retentions in international schools, the research employed a qualitative methodology to facilitate a comprehensive exploration of the subjective experiences and viewpoints of individuals (Busetto et al., 2020; Obeyd, 2021).

Focus group interviews were selected as a research tool for this stage of the study to gather rich and varied perspectives on language attrition and its implications for cultural identity among participants. This method proved particularly effective in identifying shared patterns and unique variations in how individuals perceive and manage the impact of diminishing language skills within their cultural contexts (Obeyd, 2021).

The focus group interview questions were formulated to elicit rich and varied responses from participants. To enhance the validity and relevance of the questions, an expert from the Ministry of Education conducted a thorough review. The expert's input was invaluable in refining the questions, aligning them with current educational standards and practices, and ensuring they were clear, unbiased, and appropriate for the target demographic. After the initial review by the education expert, the investigators conducted a pilot test of the focus group interview questions with ten students who participated in piloting the language test. Th pilot test allowed an observation of how the questions were interpreted in real-time and provided insights into whether they elicited the depth and breadth of responses that were anticipated. Criteria for evaluating the responses from the focus group sessions were established to ensure the data could be consistently interpreted and aligned with research goals.

The nature of semi-structured interview questions is inherently open-ended. While these questions provide a guide to ensure that all relevant topics are covered, they also offer the flexibility to probe further based on the given responses (Luke & Goodrich, 2019). Questions 2 to 5 touched upon the participants perceptions of the correlation between language attrition and cultural identity shift, for instance "Can you describe any specific instances or experiences where you feel your language skills have declined or changed as a result of your educational journey?" and "Do you believe that changes in your language skills have affected your sense of cultural identity?". Questions 6 to 7 aimed at encouraging the participants to discuss the process of acculturation, asking "Are there any challenges or conflicts you've encountered due to the shift in your cultural identity?" While Questions 8 to 10 elicited the participants' ideas and opinions on preservation of cultural identity and suggestions for improvement, inquiring "Are there strategies or activities you engage in to preserve your cultural identity and language proficiency? If so, could you describe some of these?". Closing questions in semi-structured interviews were crafted to gather participants' final reflections and uncover any additional insights. They prompted participants to summarize key points and introduce new ideas that might not have been discussed, ensuring comprehensive coverage of the topic (Luke &

Goodrich, 2019). Following the closing question, it was important to question whether the participants had anything to add (Creswell & Creswell, 2022).

The validity of the focus group method was ensured by using well-constructed, contextually relevant questions tailored to the participants' cultural backgrounds and experiences. The semi-structured interviews were developed with a preset set of key questions to maintain reliability throughout all discussions, hence augmenting the research's trustworthiness (Luke & Goodrich, 2019). Data collected during the discussion was securely stored, and access was restricted to the research team to ensure the protection of sensitive information and identities of participants.

In this research, transcription and coding processes were facilitated through the use of Notta for transcribing audio recordings (*Notta – AI Transcription & Meeting Notetaker*, n.d.) and MAXQDA for coding and data analysis (VERBI Software, 2021). Notta provided an efficient platform for transcribing spoken discourse, enabling accurate representation of participants' responses (*Notta – AI Transcription & Meeting Notetaker*, n.d.). MAXQDA, a widely used qualitative data analysis tool, played a crucial role in organizing and coding the data (Santos et al., 2021). Grounded theory, which allows researchers to investigate connections involving actions and meanings (Charmaz & Thornberg, 2021, p.308), enabled a dynamic approach to the analysis of focus group data, ensuring that the development of theoretical insights was directly grounded in participant responses. Thematic analysis, following Dawadi's (2020) approach, focused on identifying and analyzing recurring themes within the dataset.

While focus group interviews offer insights into the perspectives and experiences of the participants, one significant limitation is the potential for dominant participants to overshadow quieter group members, which can skew the data and reduce the diversity of viewpoints expressed. Additionally, the group setting may inhibit some participants from expressing dissenting opinions or sensitive information, leading to a conformity bias that can impact the authenticity of the responses (Dawadi, 2020). Despite these limitations, focus group interviews remain a valuable qualitative method for exploring complex phenomena and capturing diverse perspectives.

To reduce the possibility of unwanted limitations, the interviewers created a comfortable environment for participants, encouraging open and honest communication. This was achieved by establishing ground rules at the beginning of the sessions that promoted respectful listening and turn-taking and helped manage dominant personalities. The interviewers assured the participants that every voice was valuable and would be heard, thereby setting a cooperative tone during the interviews.

Results

Language Proficiency Test

It was hypothesized that the length of exposure of L2 has an impact on language attrition dynamics in international school students. The statistical analysis was implemented to analyze data collected through the language proficiency test. The test was conducted with 200 high school students with different lengths of exposure to the second language: Group 1 had been

studying in international schools since pre-school, while Group 2 transferred to an international school setting after completing primary school.

Results of the Groups Comparison

The mean values for Group 2 were statistically significantly higher than the mean values for Group 1 across all the measurements – listening (*M*=2.1, *SD*=0.58 vs. *M*=1.6, *SD*=1.12, respectively), grammar (*M*=6.2, *SD*=1.30 vs. *M*=5.4, *SD*=1.50, respectively), lexis (*M*=4.4, *SD*=0.80 vs. *M*=3.9, *SD*=0.54, respectively), reading (*M*=4.6, *SD*=0.92 vs. *M*=2.88, *SD*=1.32, respectively), and writing (*M*=3.58, *SD*=1.45 vs. *M*=1.72, *SD*=0.83, respectively) (Table 1). These findings support the idea that Group 2 performed better across all language aspects than Group 1. Therefore, all individual hypotheses stating that "both groups are equally proficient in listening/grammar/lexis/reading/writing" were necessarily rejected.

Table 1

Group Statistics by Language Background Groups – Listening, Grammar, Lexis, Reading, and Writing

	Language Background 1	N	Mean	Std. Deviation	Std. Error Mean
Listening TOTAL	After primary	100	2.15	.575	.058
	Pre-school	100	1.80	1.119	.112
Grammar TOTAL	After primary	100	6.20	1.295	.1295
	Pre-school	100	5.40	1.504	.1504
Lexis TOTAL	After primary	100	4.40	0.804	.0804
	Pre-school	100	3.90	0.541	.0541
Reading TOTAL	After primary	100	4.60	0.921	.0921
	Pre-school	100	2.88	1.328	.1328
Writing TOTAL	After primary	100	3.58	1.45	.145
	Pre-school	100	1.72	0.83	.083

An independent T-test was conducted to determine whether Group 2 demonstrated different performance across specific language proficiencies, consisting of listening (S5 Q15), grammar (S5 Q11), lexis (S5 Q10), reading (S5 Q13), and writing (S5 Q14) than Group 1. Results of the test revealed that the groups were statistically significantly different across all measured components (Table 2).

- Listening $t(148)=2.78$, $p<0.01$, 95% CI = [0.10, 0.60].
- Grammar $t(198)=4.03$, $p>0.05$, 95% CI = [0.41, 1.12]
- Lexis $t(173)=5.16$, $p<0.01$, 95% CI = [0.31, 0.69]
- Reading $t(176)=10.1$, $p<0.01$, 95% CI = [1.40, 2.04]
- Writing $t(158)=11.13$, $p<0.01$, 95% CI = [1.53, 2.19]

Table 2

Listening, Grammar, Lexis, Reading, and Writing – Independent Samples Test by Language Background Groups

		Levene's Test for Equality of Variances		T-test for Equality of Means					
								95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Listen. TOTAL	Equal variances assumed	52.17	.000	2.78	198	.006	.35	.126	.10	.60
	Equal variances not assumed			2.78	147.88	.006	.35	.126	.10	.60
Gram. TOTAL	Equal variances assumed	1.45	.230	4.03	198	.000	.80	.198	.409	1.191
	Equal variances not assumed			4.03	193.71	.000	.80	.198	.409	1.191
Lexis TOTAL	Equal variances assumed	45.50	.000	5.16	198	.000	.50	.097	.309	.691
	Equal variances not assumed			5.16	173.43	.000	.50	.097	.309	.691
Reading TOTAL	Equal variances assumed	13.85	.000	10.64	198	.000	1.72	.162	1.401	2.039
	Equal variances not assumed			10.64	176.36	.000	1.72	.162	1.401	2.039
Writing TOTAL	Equal variances assumed	27.59	.000	11.13	198	.000	1.86	.167	1.53	2.190
	Equal variances not assumed			11.13	157.51	.000	1.86	.167	1.53	2.190

E-Survey

The second research question looked at the extent to which such factors as language proficiency, language use, language of emotions and thoughts, and language preference

contributed to the observed differences in L1 attrition between the two groups of students. Table 3 documents group statistics by groups with different language background.

Table 3

Language Proficiency in L1 – Group Statistics by Language Background Groups

	Language Background 1	N	Mean	Std. Deviation	Std. Error Mean
Language Proficiency 1	No	100	2.10	.948	.095
	Yes	100	1.60	.667	.067

Table 4

Language Proficiency (Lang. Prof.) in L1 Independent Samples Test by Language Background Groups

		Levene's Test for Equality of Variances		T-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Lang. Prof. 1	Equal variances assumed	4.594	.033	4.31	198	.00	.050	.116	.27	.73
	Equal variances not assumed			4.31	198.6	.00	.050	.116	.27	.73

An independent T-test was conducted to determine whether Group 2 demonstrated better or worse language proficiency in the L1 (as measured by S3 Q5) than Group 1. Results of the test indicated that the groups were statistically significantly different, $t(198)=4.31$, $p<0.01$, 95% CI = [0.27, 0.73] (Table 4[1]). The mean for Group 1 ($M=2.1$, $SD=0.95$) was statistically significantly greater than mean for Group 2 ($M=1.6$, $SD=0.67$) (Table 3). These findings did not support the idea that Group 1 is more proficient in L1 than the other group. Therefore, the hypothesis stating that "both groups are equally proficient in L1" was rejected.

[1] See "Equal variances not assumed" row as Levene's Test for equality of variances is found to be significant ($p<0.05$), which indicates that the hypothesis that two samples have approximately equal variances should be rejected.

Table 5

Language Proficiency in L2 – Group Statistics by Language Background Groups

	Language Background 1	N	Mean	Std. Deviation	Std. Error Mean
Language Proficiency 2	No	100	4.40	.6667	.06667
	Yes	100	4.50	.6742	.06742

Table 6

Language Proficiency in L2 Independent Samples Test by Language Background Groups

		Levene's Test for Equality of Variances		T-test for Equality of Means					
								95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Dif.	Std. Error Dif.	Lower	Upper
Lang. Prof. 1	Equal variances assumed	.00	1.00	-1.06	198	.293	-.100	.095	-.287	.087
	Equal variances not assumed			-1.06	197.97	.293	-.100	.095	-.287	.087

A separate independent T-test was conducted to determine whether Group 2 demonstrated better (or worse) language proficiency in L2 (as measured by S3 Q6) than Group 1. Levene's Test for equality of variances was found to be insignificant ($p>0.05$), which indicated that that "two samples have approximately equal variances" hypothesis was not disallowed. The mean for Group 2 (M=4.50, SD=0.674) was greater than the mean for Group 1 (M=4.40, SD=0.667) (Table 5). However, the test results showed that this difference was found to be statistically insignificant, $t(198)$=-1.06, p=1.00, 95% CI = [-0.29, 0.09] (Table 6).These findings did not support the idea that the groups with different language backgrounds demonstrated divergent L2 proficiency. In other words, the hypothesis that "students with and without language background are equally proficient in L2" was not negated.

To test the hypothesis relating to the impact of various aspects of language such as skills, situations, emotions, and preferences for communication on the proficiency in L1, the examiners estimated different versions of the following ordinary least squares (OLS) regression equation.

$$\begin{aligned} \text{LangProf1} = \alpha &+ \beta 1\,(\text{Age}) + \beta 2\,(\text{Gender}) + \beta 3\,(\text{LangBack1}) \\ &+ \beta 4\,(\text{LangBack2}) + \beta 5\,(\text{LangSkill}) + \beta 6\,(\text{Emo}) \\ &+ \beta 7\,(\text{Thought}) + \beta 8\,(\text{Pref}) + \varepsilon \end{aligned} \quad (1)$$

In Equation (1), the dependent variable (LangProf1) indicated the degree of proficiency in L1 (S3 Q5). Greater LangProf1 variable represented student's higher proficiency in L1.

The main independent variables are (Lang. Skill), (Emo), (Thought) and (Pref). These ordinal variables respectively demonstrated the degree to which students experienced decrease in language skills, the language they typically used when they were emotional or stressed, the primary language in which they thought and planned their thoughts, and preference for communication with family and friends. Students responded to a number of questions in each of these categories using a Likert Scale where 1 represented always using L1, and 5 represented always using English. The variables were then calculated using the arithmetic mean of the responses given for each category. In addition, our regression equation included student age (Age), gender (Gender) and language background (Lang. Back.) as control variables.

Table 7

Descriptive Statistics

Variables	Mean	Std. Deviation	N
Lang. Prof. 1	1.85	.855	200
Age	15.55	.499	200
Gender	.50	.501	200
Lang. Back. 1	1.50	.501	200
Lang. Back. 2	1.50	.501	200
Lang. Skill	3.85	.636	200
Emo	3.63	.754	200
Thought	4.22	.800	200
Pref.	3.68	.858	200

Table 7 documents the descriptive statistics for the dependent, main variables of interests as well as the control variables used in the study. It reports rather low language proficiency in L1 (*M=1.85, SD=0.855*). The average values for the Lang. Skill, Emo, Thought, and Pref. variables, on the contrary, are rather high – *M=3.85, M=3.63, M=4.22, and M=3.68,* respectively.

Results of the Regression Analysis

Table 8

Correlation Matrix[a]

#		1	2	3	4	5	6	7	8
1	Lang. Prof. 1	1.000							
2	Age	.194	1.000						
3	Gender	-.176	-.503	1.000					
4	Lang. Back. 1	-.293	-.101	.200	-1.000				
5	Lang. Skill	-.534	-.161	.236	.683	1.000			
6	Emo	-.683	-.129	-.089	.355	.391	1.000		
7	Thought	-.712	-.258	.313	.272	.459	.632	1.000	
8	Pref	-.752	-.167	-.088	.321	.394	.903	.653	1.000

a. Dependent variable: Lang. Prof. 1

The correlation connecting the variables is presented in Table 8. The table showed a weak connection between the predictors for most of the variables. However, the correlation between language proficiency and the following variables was found to be statistically significant, negative and strong: language skill ($r(200)=-0.534$, $p<0.01$), emotions ($r(200)=-0.683$, $p<0.01$), thought ($r(200)=-0.712$, $p<0.01$), and preference ($r(200)=-0.752$.

Table 9

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.843[a]	.710	.700	.46851	1.645

a. Predictors: (Constant), Pref., Gender, Lang. Back., Age, Lang. Skill, Thought, Emo

b. Dependent Variable: Lang. Pref. 1

Altogether this set of selected variables predicted approximately 70% of the variance on the language proficiency, whereas the remaining 30% was predictable from other variables. Durbin-Watson coefficients is within acceptable range and is equal to 1.65 (Table 9) and analysis of variance demonstrated that variance in general is statistically significantly associated with these variables taken altogether ($p<0.01$).

A multivariate regression was conducted to examine if proficiency in L1 was impacted by the degree to which students experienced decrease in language skills, the language they typically use when they are emotional or stressed, the primary language in which they think and plan their thoughts, preference for communication with family and friends in English. Table 11 documents the results of the regression analysis. As hypothesized, significant negative coefficient estimates of language skills and preference for English in communication reported are (p-value<0.001). Standardized beta coefficients are equal to - 0.311 and -0.595,

respectively. Similarly, language used while thinking was found to negatively statistically significantly ($p<0.05$) predict the language proficiency in L1. Standardized beta is equal to -0.213. The bootstrapped 95% Confidence Interval (CI) for the slope to predict the language proficiency in L1 from thinking in English ranges from -0.368 to -0.096; thus, for each unit of increase of thinking in English, proficiency in L1 is reduced by about 0.096 to 0.36 points. This aligns with Dewaele's findings (2004) which state that the use of L1 in "inner speech and mental calculations" is influenced to the same extent by perceived L1 attrition as it is in spoken expression (Dewaele, 2004, p. 99). The range of negative impact of language skills [95% CI -0.572; -0.265] and from preferences to communicate in English [95% CI -0.781; -0.404] on the proficiency in L1 was even greater. This indicates that students who prefer to communicate in English were particularly less proficient in their L1. The Impact of Emotions on language proficiency was found to be statistically insignificant. Among all the control variables, gender and language background were found to be statistically significantly ($p<0.05$) predict the proficiency in L1. The regression equation for predicting the proficiency in L1 is as follows:

$$\begin{aligned}\text{LangProf1} = 7.749 - 0.157(\text{Gender}) + 0.185(\text{LangBack}) - 0.311(\text{LangSkill}) \\ - 0.213(\text{Thought}) - 0.595(\text{Pref}) + \varepsilon\end{aligned}$$

Table 10 documents the results of the regression analysis. As hypothesized, significant negative coefficient estimates of language skills and preference for English in communication reported are (p-value<0.001).

Table 10

Language Proficiency in L1 – Coefficients

Variable	Model (3)
CONSTANT	7. 749***
	(6.073)
Age	-0.068
	(-1.448)
Gender	-0.157**
	(-2.919)
Lang. Back.	0.185**
	(3.347)
Lang. Skill	-0.311***
	(-5.378)
Emo	0.021
	(0.229)
Thought	-0.213**
	(-3.426)

Pref.	-0.595*** (-6.200)
Observations	200
F-Value	67.267
R-Square	0.71

Note: The table reports the baseline results. The t-values based on the heteroscedasticity-robust standard errors are presented in parentheses. The outcome variable is Lang. Prof. 1 (Language Proficiency in L1). The OLS regression is used. The symbols ∗, ∗∗, ∗∗∗ correspond to p-value<0.1, p-value<0.05, p-value<0.01, respectively. All variables are listed in the earlier section and defined in detail in the methodology section.

Focus Group Interviews

The study examined the extent to which language attrition in international school students correlated with their reported sense of cultural identity shift or change, in alignment with Berry's acculturation model. Additionally, the study explored the suggested strategies or interventions to mitigate the potential cultural identity shift associated with language attrition in an international school context. Grounded theory encapsulated the coding procedures, which encompassed the retrieval of open, axial, and selective codes (Table 11) retrieved from both interviews. These findings were then integrated into the grounded theory framework, highlighting a central concept referred to as *Cultural Shift*.

Table 11
Coding Process

Open codes	Axial codes	Core codes
International stream	International school	Length of L2 exposure
Mixture of cultures		
National curriculum	National curriculum	
Support from school	Support from school	
Support from home	Support from home	Support from home
Celebrations	Customs and traditions	
Traditions		
L1	L1	Language attrition
L2	L2	
Communication with family	Communication	
Communication with friends		
Language preference	Language preference	
Cultural identity	Culture shift	Culture shift
Culture shift		
Globalization	Globalization	
Society		
History		
Music	Cultural aspects	
Values		
Ethnicity		
Culture		
Literature		
Necessity	Perceptions	Suggestions and perceptions
Motivation		
Attitude		
Recommendations	Recommendations	

The analysis of the transcribed interviews started with retrieving the open codes via MAXQDA (VERBI Software, 2021). The open codes included comments on the preferences for the use of L2 while conversing with friends and the forced use of L1 while communicating with family members and friends who do not know English. Most of the students argued that studying in an international school made them switch to using their L1 daily which resulted in their thinking in L2, which they also referred to as second mother tongue in some cases. Additionally, the participants said that their schools are a melting pot of cultures which gave them exposure to a "variety of cultures, customs, and traditions".

Against the background of the dynamic process of language attrition, the motivation towards the native language decreased thus shifting the attitudes towards native culture. The students

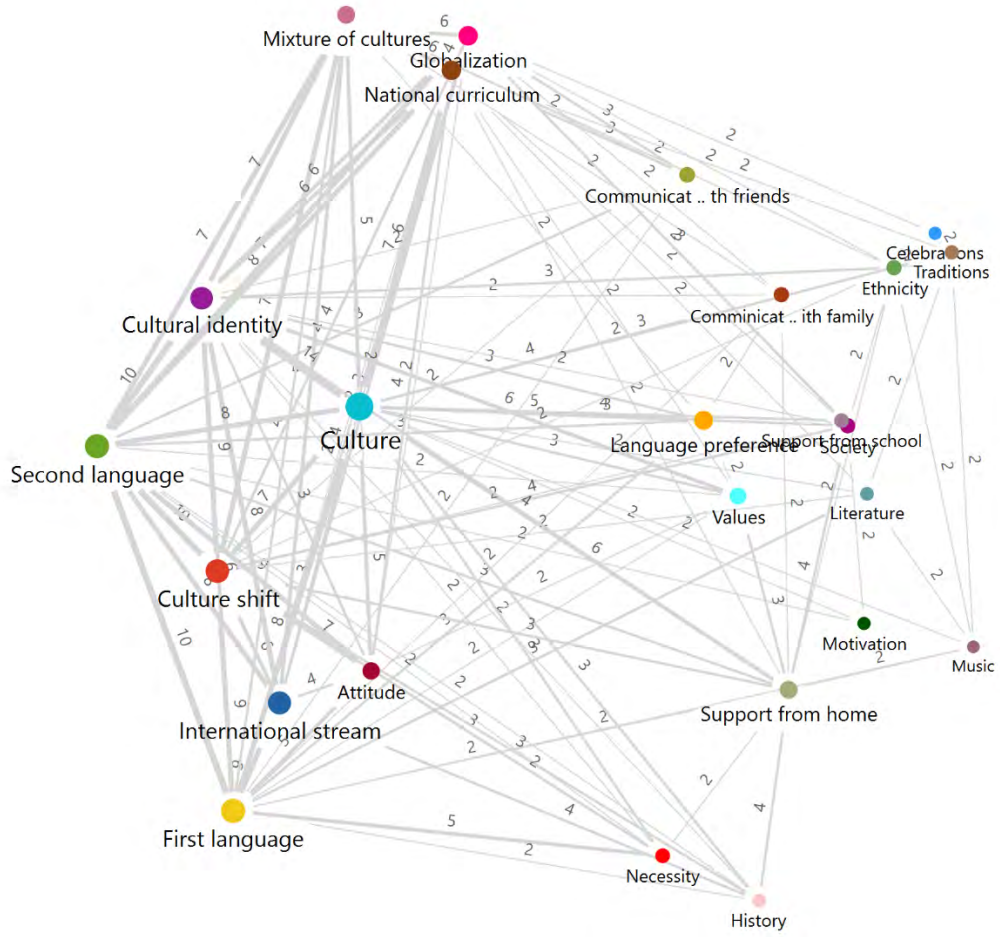
mentioned the tendency to read literature in English and listen to foreign songs as understanding "complicated texts in Azerbaijani now takes a lot of time and effort". Their cultural values were affected by globalization, and the shift in cultural identity was becoming more evident regardless of the cultural background and ethnicity. As one of the students responded, "I feel I belong to Northern American culture" even though the student is of Azerbaijani origin and does not have any ancestors from Northern America.

Following a thorough review of the transcribed interviews, an additional code that was initially overlooked was identified. The newly identified code, labeled *Support from home*, did not directly correspond to the research question. Nevertheless, its correlation with other codes and the frequency of its occurrence in the interviews underscored its significance.

The further analysis of the open codes and derivation of the connections among them facilitated their integration into axial codes: *International school, National curriculum, Support from school, Support from home, Customs and traditions, L1, L2, Communication, Language preference, Culture shift, Globalization, Cultural aspects, Perceptions,* and *Recommendations*. Regarding recommendations concerning the retention of the native language and culture, the participants reported that despite the quality of L1 teaching in their school, they considered the amount of L1 input to be insufficient to develop proficiency. However, the students also commented that their current level of L1 proficiency is adequate for understanding and being understood, and, thus, they are reluctant to spend their time on more than two classes of their native language a week. Furthermore, this lack of enthusiasm extended to their motivation to learn more about their native culture, as most of the students were inclined to study abroad and dismissed the need to know much about cultural aspects of their native culture. Some students suggested that it could be beneficial for their school community to promote national values through extra-curricular activities and field trips while avoiding overloading the existing curriculum.

Culture shift, Length of L2 exposure, Language attrition, Support from home, and *Suggestions and perceptions* were further synthesized into overarching core codes based on the patterns and relationships of the axial codes (Figure 3). The core codes discussed interactions that contribute to language and culture shifts in educational settings.

Figure 3
Code Map



The core concept, *Culture shift*, represented a "conceptual restructuring of cultural values" (Yilmaz, 2019, p.313) and gradual assimilation into the host culture. *Length of L2 exposure* denoted the duration of the excessive L2 input and its impact on *Language Attrition* which in its turn contributed to the culture shift. *Support from home* which was not initially considered appeared to be a crucial factor, as many of the participants stated that the role of the family in instilling local culture values was crucial in retaining a positive attitude and shaping native culture identity. The final component, *Suggestions and Perceptions*, provided insights into participants' views on strategies for diminishing culture shift and preserving native language and identity. The results highlight the complex relationship among language skills, cultural identity, and environmental factors, demonstrating that language exposure and support from families are key in molding cultural identity.

Discussion

The language tests' disclosure of significant discrepancies between the two groups provided a deep understanding of the mechanisms of language exposure and attrition, thereby confirming the first hypothesis (H1). The exceptional performance of Group 2 across various linguistic

domains not only underscored the complexity of bilingual education but also affirmed the hypothesis by demonstrating the tangible impact of prolonged L2 exposure on language proficiency, echoing Köpke's (2004) and Schmid's (2011) observations on bilingual education's complex balance. This balance involved the gains in L2 acquisition potentially coming at the expense of L1 proficiency, especially in contexts where L1 received inadequate reinforcement (Köpke & Schmid, 2004; Schmid, 2002). In exploring the specific language domains where Group 2 exhibited substantial linguistic benefits, their proficiency in grammar and vocabulary aligned with findings from Gallo et al. (2021), suggesting that deep immersion in L2 fosters a subtle grasp of grammatical structures and a wider lexical range. However, this enhanced proficiency in L2 underscored a possible trade-off, possibly leading to the attrition of L1-specific structures and vocabulary, a phenomenon previously documented by Schmid (2011) and Köpke & Schmid (2004).

The e-survey findings complement the language test outcomes by providing a subjective lens through which to view the interaction of language maintenance and attrition. The higher L1 proficiency reported by Group 1, juxtaposed with their L2 exposure, highlights a crucial equilibrium between preserving one's native language while acquiring a new one. This finding aligns with Yilmaz's (2019) study, emphasizing the importance of maintaining a balance to support dual language proficiency.

In addressing the research questions, the e-survey provided a detailed perspective on how students see their own language skills and the external elements they consider to be influential in their language growth. For example, students' insights into the role of environmental factors, such as the language spoken at home or the predominance of L2 in their immediate surroundings, provided valuable context for interpreting their language test performances, resonating with the discussions by Schmid and Cherciov (2019) and reinforcing the complexity highlighted by Kubota et al. (2020) regarding language proficiency's interaction with external factors. These insights underscored the complex nature of language proficiency, where external factors like societal language norms and internal factors like personal motivation and attitudes toward each language converge to shape individual linguistic trajectories, as discussed by Fitzsimons (2019).

Moreover, the e-survey findings about the psychological and socio-cultural dimensions of language attrition align with the quantitative data, highlighting the complexity of navigating dual language proficiency. These narratives provide a personal dimension to the quantitative findings, aligning with Berry's (1997, 2005) acculturation model and reinforcing the interconnected themes of cultural identity and language attrition explored by Yilmaz (2019). Qualitative insights from the focus group interviews add another layer of depth, portraying the personal and collective narratives of cultural shift and language attrition. The thematic emergence of *Cultural Shift* speaks directly to the second hypothesis (H2). The theme illustrates how individuals in international schools undergo transformations in their cultural values and identity, a process intricately linked to their linguistic experiences and mirroring broader cultural dynamics explored by Kashima et al. (2019). The students' experiences offered vivid illustrations of how language attrition and acquisition are experienced on a personal level,

providing a human context to the quantitative findings. The causal relationships within the theoretical framework (Figure 4) illustrated a sequential process of culture shift in international school environments.

Figure 4
Theoretical Framework

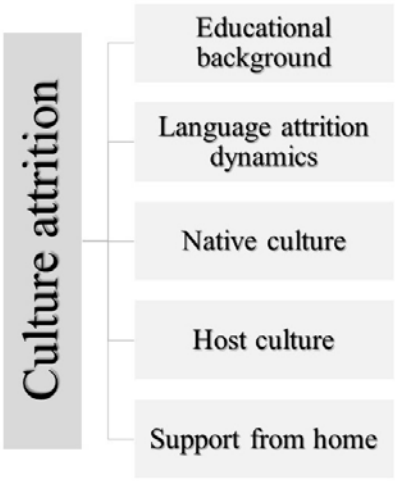
Consequently, the thematic analysis, (Figure 5) involving the in-depth analysis of the codes emerged during the grounded theory process and theoretical framework, enabled the retrieval of *Culture Attrition* through which individuals undergo a transformation in their cultural values and identity as an overarching theme. The exploration of *Educational Background* and *Language Attrition Dynamics* offered a direct response to the research question regarding the influence of academic experiences on language attrition. The first theme, *Educational Background*, unveiled the influence of academic experiences on *Culture Attrition*, describing how educational environments contribute to the reshaping of cultural perspectives. *Language Attrition Dynamics*, the second theme, examined the relationship between the duration of L2 exposure and the erosion of language proficiency, providing a critical link amid linguistic changes and the broader cultural shift observed.

Native Culture and *Host Culture*, as distinct yet interconnected themes, elucidated the conflict concerning individuals' original cultural identity and their assimilation into the host culture, highlighting the transformative nature of cultural values and practices. According to Berry's model, the native culture refers to the culture of the individual or group before the acculturation process. It is the culture associated with one's heritage, origin, or background. The host culture, on the other hand, refers to the culture of the larger society or the dominant cultural group within which individuals or groups find themselves when experiencing acculturation. It

represents the culture of the country or community where individuals are residing or interacting (Berry, 2005).

Support from Home emerged as a crucial theme, emphasizing familial influence in mitigating *Culture Attrition*, a factor that both Kubota et al. (2020) and Yan et al. (2023) acknowledge as significant in preserving language and cultural values. Hence, based on the theoretical framework and thematic analysis, it seems apparent that cultural attrition is a gradual degradation of native cultural values and reshaping of cultural identity perception furthered by sociolinguistic backgrounds and societal contexts.

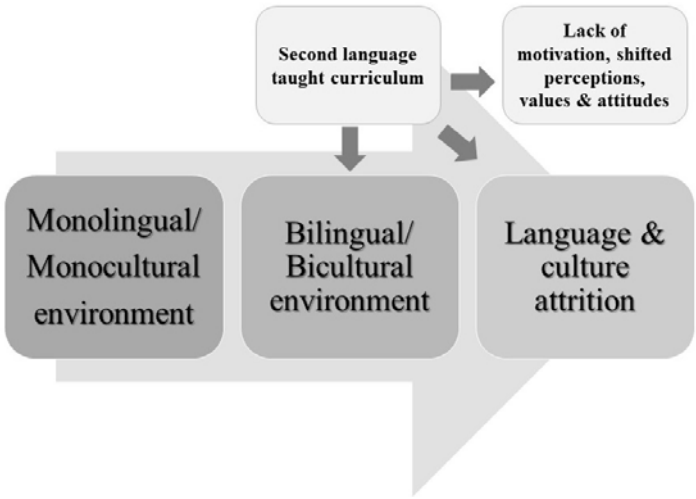
Figure 5
Thematic Analysis



The research findings underscored a compelling connection linking the acculturation experiences of students in international schools and their placement within the assimilation quadrant of Berry's acculturation model. As students started their educational journey in an international school, they gradually shifted from monolingual environments in their households to becoming bilingual speakers. However, in these educational settings, where exposure to the host culture is prevalent, students exhibited a tendency toward adopting the cultural norms and language of the host society while concurrently undergoing attrition in their native culture and language (Berry, 2005; Yilmaz, 2019). The assimilation orientation was evident as these students actively engaged in adopting the customs and language of the dominant culture, often leading to a lack of motivation in developing their native language and the gradual erosion of their ties to their native cultural identity and language proficiency (Figure 6).

Figure 6

Language and Culture Attrition Dynamics



Language and culture attrition dynamics reflect a significant aspect of the acculturation process, emphasizing the impact of extensive exposure to the host language and culture within the context of international schools. Understanding these dynamics is pivotal for educators, policymakers, and researchers seeking to enhance the cultural and linguistic well-being of students in international school environments and is encouraged to be further investigated.

Recommendations

Given the research findings on language attrition and cultural identity dynamics in international schools in Azerbaijan, it is critical to provide a number of suggestions that can inform policy development, future educational methodologies, and research endeavors. The study underscored the importance of a holistic approach to language education in international settings, advocating for enhanced support for students' native languages alongside the acquisition of a second language. Schools should consider integrating comprehensive language support programs that not only reinforce students' proficiency in their native language but also deepen their cultural connections (Köpke & Schmid, 2004; Schmid, 2011). Moreover, the adoption of practices that celebrate and reinforce cultural diversity within schools is essential. Initiatives that encourage students to engage with their cultural heritage can foster a more inclusive and enriching learning environment, supporting the dual goals of language retention and cultural identity preservation (Berry, 2005; Yilmaz, 2019).

On the policy front, there is a clear need for educational policies that acknowledge and address the dual objectives of language acquisition and cultural identity maintenance. Policies that equip international schools with the necessary resources and guidance to support students' linguistic and cultural needs will be instrumental in shaping a more balanced and culturally sensitive educational landscape (Alasgarova, 2023).

Future studies should aim to explore the longitudinal impacts of L2 language exposure on cultural identity, providing a richer understanding of how educational environments influence students' linguistic and cultural development over time. Such research is vital for crafting more informed and effective educational strategies and policies.

Conclusion

In this study, the impact of language exposure and proficiency on language attrition dynamics in international school students was investigated. The research encompassed quantitative analysis through the language proficiency test and e-survey, as well as qualitative insights obtained through focus group interviews. The findings discuss several key aspects, contributing to an understanding of language and culture attrition dynamics in international school students.

Language proficiency tests showed marked differences between two groups distinguished by their L2 exposure duration (Berry, 2005). Group 2, with more extended exposure, demonstrated higher proficiency in listening, grammar, lexis, reading, and writing than Group 1. Statistical methods, including independent T-tests, validated these significant differences. The e-survey explored factors affecting language attrition, such as proficiency, usage, emotional language, and preference, revealing that Group 1 had higher L1 proficiency, contrary to expectations. Regression analysis indicated that language skills, preferences, and cognitive language use profoundly affect L1 proficiency, highlighting the intricate relationship of language and cultural identity (Yilmaz, 2019).

Focus group interviews yielded insightful qualitative data, highlighting the intricacies of language and cultural attrition. Through grounded theory, a central concept emerged: *Cultural Shift*, which included shifts in language use, cultural values, and identity perceptions influenced by factors like L2 exposure duration, home support, and personal views. Theoretical and thematic analyses further clarified how educational experiences and language attrition dynamics interact, as well as the tensions involving native and host cultures.

While this research significantly added to an enhanced understanding of language and culture attrition in international school students, several considerations should be acknowledged. The findings are context-specific, and caution is warranted in generalizing them to diverse educational settings and cultural contexts. The reliance on self-reported data, inherent in surveys and interviews, introduces the potential for response bias, suggesting that future research could benefit from incorporating objective measures of language proficiency. Additionally, the design of the study did not account for the possible influence of teachers' language proficiency and attitudes towards L1 and L2, which could have impacted the students' language attrition and cultural identity experiences. This oversight suggests that future research should consider the broader educational ecosystem, including educators' roles in shaping language and cultural dynamics. The study provides a snapshot of language and culture attrition dynamics, and the temporal aspects of these phenomena could be more comprehensively explored through longitudinal studies. In conclusion, this research contributes valuable insights to the field, and its recommendations seek to guide educational practices and policies fostering

linguistic and cultural diversity in international educational environments. Nevertheless, further research is encouraged to investigate the long-term effects of language exposure on cultural identity and linguistic proficiency.

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Corresponding author: Rena Alasgarova
Email: rena.alasgarova@mtk.edu.az