

ANALYZING THE SOCIOLINGUISTIC FACTORS INFLUENCING CODE-SWITCHING AMONG STUDENTS IN BILINGUAL CLASSROOMS

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ABSTRACT

This study was designed to quantify the examples and patterns of code-switching and investigate the sociolinguistic factors that influence Pakistani bilingual students to code-switching in their classrooms. The population of the study was the students enrolled in middle and high schools in Faisalabad where instruction is given in Urdu/Punjabi and English, made up the study's population. A sample of 200 students from various schools was selected to investigate and a tailor-made questionnaire, language tests and in-class observations were used as instruments to gather data for this study. The findings revealed that linguistic competency and proficiency, ethnicity and cultural identity, community and peer group norms, social identity and power dynamics, the classroom environment and teachers' influence were the main factors influencing code-switching.

Keywords: Sociolinguistics, code-switching, bilingual, classroom, Urdu and English, language proficiency, Faisalabad, Pakistan.

INTRODUCTION

A bilingual person the one who can fluently speak and understand two languages at a level from conversational to native-like (Pun, 2024). Code Switching means switching between two or more languages during a single conversation, or a sentence, at several levels of language (Younas et al., 2020) or even at specific words or sentences (Muysken, 2000). It happens keeping in view the target audience, situation, context or topic and is commonly considered an indication of linguistic proficiency (Collinge, 2002). It also indicates the thorough awareness of the speaker regarding the social and linguistic conventions of each language being used and that the speaker can utilize the whole linguistic arsenal to communicate effectively (Younas et al., 2020).

Comprehension of code-switching is very necessary for linguists, educators, and sociologists as it makes them aware of the dynamics of languages in specific bilingual cultures and helps

to progress in the fields of education, language policy, and the sociocultural associations of speakers in general and linguistic minorities in particular. As an important phenomenon of language, it affects identity formation, cognitive development, and communication in cultures and environments where bilingualism prevails and is practised (Whaley, 2014; Akhtar et al., 2020). It also can improve teaching methods and support more inclusive teaching and communication techniques that are culturally sensitive.

Problem Statement:

Particularly for teachers and policymakers, understanding the sociolinguistic factors that lead to code-switching is very helpful for educators and policymakers, is important to develop appropriate approaches to meet the requirements of bilingual students. In Pakistan, students are commonly bilingual so imparting instructions in two or more

languages is common. So, by determining the causes and factors of code-switching, effective teaching strategies can be developed, reducing the drawbacks of education in Pakistan. It can also help to improve curriculum design for these linguistically diversified students ultimately enhancing their academic performance.

Research Objectives:

RO₁: To quantify the frequency and patterns of code-switching among students in bilingual classrooms.

RO₂: To measure the relationship between specific sociolinguistic factors¹ and the frequency of code-switching.

RO₃: To determine the statistical significance of various sociolinguistic factors in predicting code-switching behaviour.

Research Hypotheses:

H₁: There is a significant positive relationship between students' proficiency in their second language and the frequency of code-switching.

H₂: Social context² significantly influences the frequency and type of code-switching among students.

H₃: Students who identify strongly with both linguistic cultures are more likely to engage in code-switching.

Population and Sample:

Students in bilingual classrooms at middle and high schools of Faisalabad³ where instruction is provided in two languages i.e. English and Urdu and somehow in English and Punjabi and Urdu and Punjabi also. A random sample of 200 students across multiple schools was selected. Stratified sampling was used to ensure representation across different grade levels and language combinations.

Variables:

¹ e.g., language proficiency, social context, identity

² e.g., peer interaction, teacher presence

³ Private and Public

⁴ Measured through standardized language tests and self-assessment scales

⁵ Measured through classroom observations and student self-reports on the frequency of different interaction types

Independent Variables for this study were language proficiency,⁴ social context,⁵ and linguistic identity⁶ while the frequency of code-switching⁷ was the only dependent variable.

Data Collection Methods:

i. **Surveys/Questionnaires:** A detailed questionnaire was developed to assess sociolinguistic factors, language proficiency, and identity. Likert scale (Joshi et al., 2015) was used to gather responses to the questions to measure attitudes towards code-switching and perceived social pressures (Appendix I).

ii. **Classroom Observations:** Structured observations were conducted in classrooms to record instances of code-switching, noting the context and participants involved. Use a coding system to categorize different types of code-switching (Muysken, 2000).

iii. **Language Proficiency Tests:** Standardized language tests were conducted to measure students' proficiency in both languages. These tests were combined with self-assessment scales for a comprehensive view (Appendices II & III).

Data Analysis Techniques:

The mean, median, and mode of the frequency of code-switching across the sample were calculated to present the data on language proficiency, social context variables, and identity scores. Pearson's correlation coefficient was applied to examine the relationships between independent and dependent variables.

Validity and Reliability:

The questionnaire was administered with a small group of students to ensure the questions were clear and accurately measured the intended variables. The language proficiency tests were validated by comparing them with existing standardized tests. Cranach's alpha was used to assess the internal

⁶ Measured through questionnaires assessing students' identification with their linguistic and cultural backgrounds

⁷ Measured through self-reported data, classroom observations, and analysis of recorded student interactions

consistency of the questionnaire items related to sociolinguistic factors and identity. Inter-rater reliability checks were conducted on classroom observation data to ensure consistency in coding and categorization.

Ethical Considerations:

Consent from students and their parents or guardians was obtained, ensuring they understood the study's purpose and the confidentiality of their responses. It was ensured that all data was anonymized and stored securely to protect participants' privacy. Classroom observations were conducted in a way that minimally disrupts the normal classroom environment.

Limitations:

The researcher (s) acknowledge the potential for bias in self-reported data on language use and identity. Moreover, the findings may be specific to the schools and regions studied, and may not be generalizable to all bilingual classrooms. The study is further limited to checking bilingual students with English and Urdu/Punjabi/Pashto languages only.

Expected Outcomes:

- i. The study will provide quantitative data on the prevalence and patterns of code-switching in bilingual classrooms.
- ii. It will identify key sociolinguistic factors that predict code-switching, offering insights for educators on how to better support bilingual students.

Literature Review:

Bilingualism is prevalent in many parts of the world, particularly in regions with diverse ethnic and linguistic populations. In many countries, educational systems are designed to accommodate bilingual students, either by offering instruction in two languages or by providing bilingual education programs (Umar et al., 2021). Bilingual Education can take various forms, e.g *Transitional Bilingual Education* (Herrera, 2020) which aims to transition students from their native language to the dominant language of the country, *Maintenance Bilingual Education*, (Idaryani and Fidyati, 2022) which seeks to maintain and develop proficiency in both the native language and the second language or *Dual Language Programs* (Freire et al., 2023;

Chávez-Moreno, 2021) where students are taught in two languages to achieve fluency in both. Research has shown that bilingual students often demonstrate cognitive advantages (Wei, 2020) e.g. enhanced problem-solving skills, better multitasking abilities, and increased metalinguistic awareness (Ali and Shaikh, 2022). Bilingualism has occasionally been linked to higher academic attainment, particularly when students can apply their language skills to their studies (Allen et al., 2013). Bilingualism needs to be included in educational settings to fulfil the requirements of a linguistically diverse student body (Akhtar et al., 2016). To maximize the effectiveness of educational methods, it is important to honour and value the linguistic and cultural backgrounds of linguistically diversified students (Younas et al., 2020).

Code-switching can happen at different linguistic levels ranging from individual words or phrases, within a sentence or in multiple sentences (Muysken, 2000; Siong and Min, 2017), representing general sociocultural dynamics e.g identity, group association, and social stratification (Naveed et al, 2023). A society that promotes social cohesiveness and mutual respect (Murillo et al., 2021) among different linguistic and cultural identities supports the cultural and social integration of linguistic minorities into it (Tuc, 2014) through an understanding and acceptability of the sociolinguistic factors that lead to code-switching. In this way, code-switching becomes an effective strategy to overcome cultural barriers in a society promoting peace and harmony (Bista, 2010). An awareness of sociolinguistic factors at workplaces helps workers and organizations to respond better to cultural differences resulting in successful intra-cultural communication. However, in situations where a strong tendency for monolingualism or linguistic purity exists, code-switching is not encouraged (Omar and Ilyas, 2018).

Researchers and educators with the help of sociolinguistic factors of code-switching, can establish that a skilful and natural language practice is not an indication of confusion or incompetence (Martin, 1996), understand how bilingual people acquire and use languages, and benefit practices that assist language and cognitive development. This can particularly benefit young students who are experiencing multiple languages

(Siong and Min, 2017). Power dynamics, e.g. influences of particular languages in society or the interactions frequently influence code-switching (Gumperz, 1982) so the disparities in a language its use can be tackled and the users of minority languages can be assured of respecting their linguistic customs (Breitborde, 1983).

Knowing the sociolinguistic factors of code-switching can help language teachers develop better lesson plans and anticipate the students' reasons for switching between languages. This knowledge may allow the teachers to avail this as an opportunity for deeper learning rather than considering code-switching a disruption (Murtiningsih et al., 2022). The advancement of linguistics in the fields of language interaction, evolution, and the intricate relationship between language and society is also subject to a better understanding of sociolinguistic factors behind code-switching (Muthusamy et al., 2020), as it is related to several disciplines e.g. education, psychology, anthropology, and sociolinguistics, etc. (Holmes & Wilson, 2022). Other benefits of this understanding are promoting effective communication, educational methodologies, social integration, and reducing linguistic prejudices (Menken & Garcia, 2019; Kapantzoglou et al., 2021) because understanding the problematic intentions for code-switching encourages bilingualism and regards language diversity as resourceful (Siong and Min, 2017).

Examining various sociolinguistic theories that offer frameworks to explain why bilingual speakers switch codes and the social meanings underlying these changes is necessary to comprehend code-switching. An overview of some of the key sociolinguistic theories related to code-switching is as follows:

i. Communication Accommodation Theory (CAT): Proposed by Giles (1973), this theory examines people's modifications of their communicating styles to gain social acceptance, increase communication efficiency, or create social distance. To reduce the social gap, speakers may engage in code-switching by adopting the language or dialect of their audience. This is mostly performed to foster companionship, rapport developing, or demonstrating empathy. Conversely, speakers may use a different language

to highlight social or cultural differences, widening social isolation. When conversing with another Spanish speaker, a bilingual person may move from English to Spanish to establish a feeling of common identity. As an alternative, individuals might return to using English in a mixed-language environment to include those who do not understand Spanish or to express their wider social identity (Gumperz, 1982). CAT emphasizes how strategically code-switching may be used to manage social identities and interpersonal interactions. It highlights how intentional and context-dependent language use is frequent (Giles et al., 1991).

ii. The Markedness Model: Myers-Scotton created this model in the 1990s. It suggests that language choices are made by speakers according to a "markedness" continuum, wherein certain language choices are deemed "marked" and others "unmarked" in a particular context. Unmarked language choices usually don't take much mental work on the part of the speaker and fit in with the situation's social standards. It would be an unmarked option in a bilingual community to use the dominant or socially acceptable language in a formal context. A marked choice is when a speaker uses language that is not as expected in the situation; this might be done on purpose to express a certain social meaning, including resistance, solidarity, or power assertion. This bold decision could defy classroom language standards or show support for friends from similar linguistic backgrounds. (Myers-Scotton, 1993).

iii. Matrix Language Frame (MLF) Model: This is a grammatical hypothesis (Myers-Scotton, 1993) that explains the structure of code-switched sentences. It explains that whenever code-switching happens, the grammatical structure of one language is replaced with the other language. While the embedded language supplies content morphemes e.g. nouns, verbs, and adjectives, the matrix language controls sentence structure and this addition of embedding language components into the matrix language which controls and organizes them, is code-switching. In a sentence like "Estoy reading un libro,"⁸ Spanish is the matrix language providing the grammatical framework, while English is the embedded language as it

⁸ I am reading a book.

inserts the verb "reading." the MLF Model is especially helpful in examining the elements of code-switching as it focuses on bilingual people's dealing with the difficulties of blending linguistic components from different languages into a single speech (Myers-Scotton, 2002).

iv. **Conversation Analysis (CA) in Code-Switching:**

This model studies the structure and organization of conversation in interaction (Schegloff, 1999). CA looks at linguistic alternation as an interactional resource in conversation and applies it to code-switching. CA examines how code-switching facilitates subject changes, indicates shifts in participant alignment, controls turn-taking, and contextualizes messages. When speaking to a different audience within the same discourse, a bilingual speaker may switch between languages, for example, going from English to Spanish when addressing a Spanish-speaking interlocutor directly to highlight a personal connection. The sequential and functional features of code-switching in real-time communication are explained by CA. It demonstrates how code-switching is intentionally employed to control social interactions and transmit meaning that goes beyond the speech's actual substance (Giles, 1973).

v. **Social Identity Theory:** It describes how people's perceptions of their social group membership shape their self-concepts, and it was first presented by Tajfel and Turner in the 1970s. This theory contributes to the understanding of how and why people could use language in a code-switching manner to express their group identity. Language switchers may do so to fit in or break away from specific social groups. This could include adopting a dominant language to identify with a larger social group or utilizing a minority language to declare one's ethnic identity. A student might switch from the regional language to the national language when interacting with individuals from outside their community, reflecting a shift in identity from a local to a national level. SIT provides a lens for understanding how code-switching functions as a marker of social group membership and identity. It emphasizes the role of language in negotiating and expressing social identities (Gumperz, 1982).

Code-switching can be categorized into several types based on where and how the switch occurs. Understanding these types helps in analyzing the specific functions and motivations behind code-switching in bilingual communication. Here are the main types:

i. **Intra-Sentential Code-Switching:** Intra-sentential code-switching occurs within a single sentence or clause. This type of code-switching can involve switching at the level of phrases, words, or even morphemes. For example, "I'm going to the tienda to buy some groceries."⁹ This type requires a high level of proficiency in both languages, as the speaker must navigate the grammar and syntax of both languages simultaneously (Muysken, 2000; Hinkel, 2011).

ii. **Inter-Sentential Code-Switching:** Inter-sentential code-switching occurs between sentences, with each sentence being in a different language. For example, "We had a great time at the park yesterday (Bauer & Gort, 2012). Después fuimos a cenar."¹⁰ This type of switching may occur more naturally when there are clear boundaries between ideas or topics. It often reflects a shift in context or audience (Bosma & Blom, 2018).

iii. **Tag-Switching (or Emblematic Code-Switching):** Tag-switching involves inserting a tag phrase or a word from one language into an otherwise monolingual sentence in another language. Tags are often discourse markers, exclamations, or short phrases. For example, "It's a nice day, verdad?"¹¹ This type is relatively easy to perform as it involves minimal integration of grammatical structures from the two languages (Myers-Scotton, 1993).

iv. **Intra-Word Code-Switching:** Intra-word code-switching is the act of introducing a morpheme from one language into another inside the confines of a single word. Adding the Spanish suffix "talking-to" to an English term is one example. This kind of code-switching is less frequent and usually indicates a high level of linguistic innovation or language blending (Poplack, 1980).

⁹ Switching from English to Spanish within the same sentence

¹⁰ The first sentence is in English, and the second is in Spanish.

¹¹ "verdad" meaning "right?" in Spanish.

v. **Situational Code-Switching:** When a shift in the social context, e.g. a shift in the conversation's topic, participants, or setting, causes a language switch, this is known as situational code-switching (Ginna, 2024). For instance, a bilingual person may converse with coworkers in English when discussing business-related issues, but in the same context, they may communicate with family members in their native tongue. The switch is driven by external factors, and the language used is chosen to align with the situational context.

vi. **Metaphorical Code-Switching:** Metaphorical code-switching occurs when the language switch is used to convey a specific social meaning or to align with the cultural or conversational context, without a change in the situation (Rae, 2024). For example, a speaker might switch to a language associated with formality or authority when making a serious point, even in an informal setting. The switch is driven by internal factors, often related to the speaker's intentions, e.g. signalling a change in tone, expressing solidarity, or emphasizing a point (Blom and Gumperz, 1972).

i. **Conversational Code-Switching:** Conversational code-switching refers to the alternation of languages within the flow of conversation, where the switches serve a conversational function e.g. topic shift, emphasis, or clarification. For example, a speaker might switch languages when reiterating a point for clarity, or to emphasize a particular aspect of their message. This type is often context-dependent and serves various pragmatic functions in conversation (Auer, 1998).

The sociocultural context plays a significant role in influencing when, why, and how individuals engage in code-switching. Below are some key aspects of the socio-cultural context that affect code-switching behaviour:

i. **Ethnicity:** An ethnic group is defined by its common language, cultural heritage, and life experiences as together these form its ethnicity. These factors frequently support a feeling of collective identity (Madya et al., 2019). Language habits and preferences can be significantly influenced by ethnicity. In bilingual environments, members of an ethnic group may use code-switching to uphold or declare their ethnic identity

(Ali et al., 2015; Gardner-Chloros, 2009) e.g. to indicate pride or unity to the natives. Code-switching between an ethnic language and the dominant societal language is an effective strategy for associating with both groups in society (Fishman, 1965; Gumperz and Hymes, 1972).

ii. **Community Norms:** These are the common expectations and guidelines that govern behaviour and language use in society. Implicit or explicit, these norms specify a suitable language in certain social settings where frequent code-switching is performed especially in bilingual societies (Champoux-Larsson et al., 2021; Gardner-Chloros, 2009). For instance, a community may have norms favouring the official use of one language and another in informal settings such as social gatherings (García, 2009; Cotter & Perrin, 2017). Code-switching is common in societies with linguistic tolerance and encouraging bilingualism (Dittmar & Schlobinski, 1988) and is less prevalent or condemned where monolingualism is the preferred norm. Community norms can also specify the kinds of permissible code-switching e.g. intra-sentential code-switching (Muysken, 2000) assumed as a sign of linguistic competency in one community but as a sign of linguistic weakness in another (Kamil et al., 2011; Zentella, 1997).

iii. **Social Identity and Group Membership:** Social identity is the extent to which someone considers themselves a part of a social, linguistic or ethnic group and code-switching is a useful tactic for indicating social identification and group membership (Gardner-Chloros, 2009). In a bilingual community, young people code-switch for this purpose while certain people may code-switch to disassociate themselves from a specific group, particularly if the language of that group or the group itself is stigmatized (Maybin & Swann, 2019). The suitability of code-switching is also influenced by social identity as people oppose it to preserve a feeling of authenticity or purity in their language identity (Gumperz, 1982).

iv. **Cultural Values and Attitudes:** Cultural values and attitudes are the common viewpoints of community members about the use of language (Gardner-Chloros, 2009) including its importance, status, or stigma associated. Only a positive attitude towards bilingualism can promote code-switching as a normal and acceptable aspect of

communication indicating linguistic adaptability and cultural understanding (Chin & Wigglesworth, 2019). On the contrary, negative perceptions of code-switching language use (Breitborde, 1983) so speakers might avoid it in a society where the language of the majority is valued and the language of the minority is stigmatized. Cultural standards of

morality, hierarchy, and politeness can also increase or reduce the use of code-switching (Horowitz 2023). For instance, speakers may use a more formal or distinguished vocabulary when addressing someone of a higher social status, reflecting cultural standards of deference and respect.

Results and Analysis:

Results of Questionnaire: The following data was gathered through administering the questionnaire:

Section I: Demographic Information

Table 1: Demographic Information about the Age Gender and Grade Level of the Students (Questionnaire items 1-3)

Age		Gender		Grade Level	
Under 12	15%	Male	48%	6 th	10%
12-14	30%	Female	52%	7 th	15%
15-17	40%			8 th	20%
17 & above	15%			9 th	25%
				10 th	15%
				11 th	10%
				12 th	5%

Table 2: Demographic Information about Spoken Languages by the Students (Questionnaire items 4-6)

Item No.	Urdu	English	Punjabi	Pashto	Others
Languages Spoken at Home	55	-	35	10	-
Primary Language of Instruction at School	30	60	10	-	-
Other Languages Used in the Classroom	50	70	10	-	-

Section II: Code-Switching Behaviour

Table 3: Code-Switching Behaviour of the Students

Item No.	Responses						
	A	B	C	D	E	F	G
7.	10%	25%	40%	20%	5%	-	-
8.	60%	35%	50%	25%	70%	30%	20%
9.	55%	35%	10%	-	-	-	-
10.	45%	40%	55%	30%	60%	-	-

Section III: Sociolinguistic Factors

Table 4: Sociolinguistic Factors

Item No.	Responses			
	A	B	C	D
11.	25%	50%	20%	5%
12.	70% ¹²	30%	-	-
13.	35%	20%	45%	-
14.	20%	40%	30%	10%
15.	30%	40%	25%	5%

¹² explanations include:
 "I feel more comfortable speaking Urdu/Punjabi/Pashto etc. with my family."

"I switch to English when talking to teachers because it's the main language of instruction."

16.	55%	30%	10%	5%
17.	50%	30%	15%	5%
18.	20%	30%	30%	20%
19.	50%	25%	20%	5%

Section 4: Open-Ended Questions

Table 5: Summary of Responses to Open-Ended Questions

Item No.	Response 1	Response 2
20.	"During a group project, we switched to Urdu to explain a difficult concept, which helped us understand it better."	"I was able to better express my emotions in Urdu when giving a presentation about my culture."
21.	"Sometimes I worry that I'm using the wrong language and it might confuse my classmates."	"Teachers sometimes ask me to stick to one language, which can be frustrating."
22.	"Teachers could allow more flexibility in language use and recognize that switching languages helps us learn."	"Providing materials in both languages would be helpful."
23.	"I think code-switching is a natural part of being bilingual, and it should be more accepted."	"It's important to respect both languages and understand that switching helps with learning."

Results of Classroom Observations: During the structured observations, instances of code-switching were recorded across various classroom contexts. The observations were conducted over multiple sessions, involving different classroom activities e.g. group discussions, teacher-led instruction, and individual presentations. The following coding system was devised to observe the types of code-switching:

- i. **Intra-Sentential Code-Switching (IS):** Switching languages within the same sentence, e.g. "I need to finish my *nashta*¹³ before class starts."
- ii. **Inter-Sentential Code-Switching (ES):** Switching languages between sentences, e.g. "I have a question! *Ye sub kia hay?*"¹⁴

iii. **Tag-Switching (TS):** Inserting a tag phrase from one language into a sentence in another language, e.g. "It's cold today, *hain na?*"¹⁵

iv. **Situational Code-Switching (SC):** Switching languages depending on the social context or interlocutor.¹⁶

v. **Metaphorical Code-Switching (MC):** This means switching languages to convey a metaphorical or symbolic meaning.¹⁷

Observation Session 1 was for group discussion where a group of five students were discussing a history topic. Three of them were English-Urdu while two were Punjabi-English speaking. The instances of Code-Switching were recorded as follows:

Table 6: Instances of Code-Switching during Group Discussion

Code	No. of Instances	Example
IS	10	"We should focus on <i>Inqalab</i> ¹⁸ (the revolution) because it's important."

¹³ Means *breakfast* in Urdu

¹⁴ *What's this all about?* In Urdu.

¹⁵ *Right?* In Urdu.

¹⁶ e.g. switching to English when speaking to the teacher, and Urdu/Punjabi/Pashto etc. when speaking to peers.

¹⁷ e.g. switching to a heritage language to express cultural pride or emotions.

¹⁸ Urdu

ES	7	"I think it was a significant event. <i>Tareekh da nahi pata menu</i> ¹⁹ (But I'm not sure about the date)."
TS	4	"This is difficult, <i>naï</i> ²⁰ (no)?"
SC	3	One student switched to Urdu when addressing a peer, but returned to English when addressing the group as a whole.
MC	1	A student switched to Punjabi to emphasize the importance of a cultural event being discussed.

Observation Session 2 was for teacher-led instruction. One entire class was observed for this purpose. The teacher was explaining a science concept and the observations were recorded as follows:

Table 7: Instances of Code-Switching during Teacher-Led Instruction

Code	No. of Instances	Example
IS	5	"The cell membrane <i>bari zaroori hay cell k liye</i> ²¹ (is very important for the cell)."
ES	3	"Let's move on to the next topic. <i>Photosynthesis te gal karye</i> ? ²² (Now let's talk about photosynthesis)."
TS	6	"You need to memorize this formula, <i>samajh ai</i> ²³ (understand)?"
SC	8	Students switched to Urdu or Punjabi language when asking peers for help, but used English when answering the teacher's questions.
MC	0	-

Observation Session 3 was for individual presentations by four students who were presenting their projects on cultural topics. The instances of Code-Switching recorded were as follows:

Table 8: Instances of Code-Switching Recorded during Individual Presentations

Code	No. of Instances	Example
IS	2	" <i>mera khandaan barsi manata hay</i> ²⁴ (My family celebrates the Death Anniversary), and it's a very important tradition."
ES	5	"We gather every year to honour our ancestors. And we share <i>Kahaniyan te khapay</i> ²⁵ (stories and food)."
TS	1	"It's a really beautiful celebration, <i>kiya khayal hay</i> ²⁶ (What do you think)?"
SC	3	Students switched to their home language when asking peers for help, but used English when answering the teacher's questions.
MC	2	-

Observation Session 4 was for informal classroom interaction. For this type of code-switching, six students during break time were observed for a casual conversation. The instances were recorded as follows:

Table 9: Instances of Code-Switching Recorded during Informal Classroom Interaction

Code	No. of Instances	Example
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¹⁹ Punjabi

²⁰ Punjabi

²¹ Urdu

²² Punjabi

²³ Urdu

²⁴ Urdu

²⁵ Punjabi

²⁶ Urdu

IS	8	"I can't believe how <i>mara</i> ²⁷ (weak) that <i>imtehaan</i> ²⁸ (examination) was."
ES	10	"I'm going to the cafeteria. <i>Aao ge saath</i> (will you come along)?"
TS	7	"That was funny, <i>hain na</i> ²⁹ (wasn't it)?"
SC	5	Students used English when speaking to a teacher who walked by, then switched back to Urdu and Punjabi language when the teacher left.
MC	1	A student switched to Urdu to emphasize their connection to a particular cultural practice.

Results for the Standardized Language Test of English:

The data collected through Standardized Language Tests of English and Urdu results illustrated the

range of English language proficiency of the students by dividing them into four groups based on average results. The results were as follows:

Table 10: Results for the Standardized Language Test of English (Group A)

Group A	Score	Remarks
Reading (10)	9	Group A missed one question but overall demonstrated strong comprehension of complex texts.
Writing (15)	13	The essays were structured and well-argued. There were minimal grammar mistakes. A good range of vocabulary was used. Score points were deducted for minor issues in coherence.
Listening Comprehension (8)	8	Group A answered all questions correctly, showing an excellent ability to understand spoken English in various contexts.
Speaking (13)	12	Group A spoke fluently with minimal pauses, used a wide range of vocabulary, and had clear pronunciation. Minor grammatical errors were present.
Self-Assessment (50)	48	Group A expressed strong confidence in their Urdu abilities across all areas with slight hesitation in grammar.
Total Score (96)	90	Students in Group A demonstrated a high level of English proficiency. There were, however, some minor areas for improvement e.g. writing coherence and grammatical accuracy in speaking. The self-assessment indicated a realistic and confident self-perception of language skills.
Proficiency Level	Advanced	

Table 11: Results for the Standardized Language Test of English (Group B)

Group B	Score	Remarks
Reading (10)	7	Group B struggled with more abstract concepts in the passage but could understand the main ideas.
Writing (15)	10	The essays were clear but there were noticeable grammar and punctuation errors, and the vocabulary used was more basic.
Listening Comprehension (8)	6	Group B missed two questions, indicating some difficulty with complex or fast-paced spoken English.

²⁷ Punjabi

²⁸ Urdu

²⁹ Urdu

Speaking (13)	9	Group B spoke generally clearly, with some pauses. They used limited vocabulary.
Self-Assessment (50)	38	Group B rated themselves as confident in Basic English. The difficult areas according to them were public speaking and comprehending fast-paced speakers.
Total Score (96)	70	Group B had a solid command of English, with proficiency in everyday communication and basic academic tasks. However, there were areas for improvement in writing complexity, listening comprehension, and fluency in speaking. The self-assessment suggested some awareness of these limitations.
Proficiency Level	Intermediate	

Table 12: Results for the Standardized Language Test of English (Group C)

Group C	Score	Remarks
Reading (10)	5	Group C understood the general ideas but missed key details and struggled with complex vocabulary.
Writing (15)	8	The essays were basic, with a simple structure. Grammar and spelling errors were frequent, and the vocabulary was limited.
Listening Comprehension (8)	5	Group C correctly answered the more straightforward questions but had difficulty with nuanced or indirect information.
Speaking (13)	7	Group C communicated basic ideas but struggled with fluency, pronunciation, and vocabulary. There were frequent pauses and errors.
Self-Assessment (50)	32	Group C felt comfortable with basic tasks but acknowledged challenges in writing, speaking, and understanding spoken English, particularly in more formal or academic contexts.
Total Score (96)	57	Group C could function in familiar situations using English but struggles with more complex tasks, particularly in writing and speaking. The results suggest a need for additional support in developing language skills, especially in expanding vocabulary and improving grammatical accuracy. The self-assessment reflects a realistic understanding of these challenges.
Proficiency Level	Basic	

Table 13: Results for the Standardized Language Test of English (Group D)

Group D	Score	Remarks
Reading (10)	3	Group D had difficulty understanding the passage, missing both general ideas and specific details.
Writing (15)	5	The essays by Group D were poorly structured, with numerous grammatical errors. The vocabulary was very limited, and the overall argument was unclear.
Listening Comprehension (8)	3	Group D struggled to understand most of the audio content, missing key information.
Speaking (13)	5	Group D had significant difficulties with fluency, pronunciation, and basic sentence structure. Communication was often unclear due to frequent pauses and errors.
Self-Assessment (50)	25	Student D rated their English proficiency as low, particularly in writing, speaking, and understanding complex spoken English.
Total Score (96)	41	Group D was at an early stage of English language development, with significant challenges in all areas. The results indicated a need for focused

Proficiency Level	Emerging	and intensive language support, particularly in foundational skills like vocabulary building, sentence structure, and comprehension. The low self-assessment scores aligned with the objective results, suggesting a lack of confidence and competence in using English.
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Results for the Standardized Language Test in Urdu Proficiency:

Since Urdu is the national language of the students who formulated the sample for this study, the proficiency level was expected to be better than

that of the English language. Therefore the criterion for scoring was also a bit higher than that of the English test. The Urdu test results were as follows:

Table 14: Results for the Standardized Language Test in Urdu Proficiency (Group A)

Group A	Score	Remarks
Reading (10)	10	Group A missed no questions and overall demonstrated a strong understanding of complex Urdu texts.
Writing (15)	12	The essays were well-structured with a clear argument, minimal grammar errors, and a good range of vocabulary. Points were deducted for minor issues in coherence.
Listening Comprehension (8)	8	Group A answered all questions correctly, showing an excellent ability to understand spoken Urdu in various contexts.
Speaking (13)	13	Group A spoke fluently without pauses, used a wide range of vocabulary, and had clear pronunciation.
Self-Assessment (50)	49	Group A expressed strong confidence in their Urdu abilities across all areas.
Total Score (96)	92	Group A demonstrated a high level of Urdu proficiency, with strong performance across all language skills. The minor areas for improvement include consistency in writing coherence and slight grammatical accuracy in speaking. The self-assessment aligned closely with the objective scores, indicating a realistic and confident self-perception of their language abilities.
Proficiency Level	Advanced	

Table 15: Results for the Standardized Language Test of Urdu (Group B)

Group B	Score	Remarks
Reading (10)	9	Group B could easily understand the main ideas.
Writing (15)	9	The essays were clear but lacked depth in argumentation. There were noticeable punctuation errors.
Listening Comprehension (8)	7	Group B missed one question, indicating some difficulty with complex spoken Urdu.
Speaking (13)	11	Group B's speech was clear, but there were pauses and hesitations.
Self-Assessment (50)	40	Group B rated themselves as confident in Basic English tasks but less so in more complex areas.
Total Score (96)	76	Group B had a solid command of Urdu, with proficiency in everyday communication and basic academic tasks. However, there are areas for

Proficiency Level	Intermediate	improvement in writing complexity. The self-assessment suggests an awareness of this limitation.
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Table 16: Results for the Standardized Language Test of Urdu (Group C)

Group C	Score	Remarks
Reading (10)	6	Group C understood the general ideas but missed key details and struggled with complex vocabulary.
Writing (15)	9	The essays were basic, with a simple structure. Grammar and spelling errors were frequent, and the vocabulary was limited.
Listening Comprehension (8)	6	Group C correctly answered straightforward questions but had difficulty with indirect information.
Speaking (13)	10	Group C communicated basic ideas but struggled with fluency, pronunciation, and vocabulary. There were frequent pauses and errors.
Self-Assessment (50)	35	Group C felt comfortable with basic tasks but acknowledged challenges in writing, speaking, and understanding spoken Urdu, particularly in more formal or academic contexts.
Total Score (96)	66	Group C could function in familiar situations using Urdu but struggles with more complex tasks, particularly in writing. The results suggested a need for additional support in developing language skills, especially in expanding vocabulary. The self-assessment reflects a realistic understanding of these challenges.
Proficiency Level	Basic	

Table 17: Results for the Standardized Language Test of Urdu (Group D)

Group D	Score	Remarks
Reading (10)	6	Group D had difficulty understanding the passage, missing both general ideas and specific details.
Writing (15)	7	The essays were poorly structured, with numerous grammatical errors. The vocabulary was very limited, and the overall argument was unclear.
Listening Comprehension (8)	5	Group D struggled to understand key information
Speaking (13)	7	Group D had significant difficulties with fluency and complex sentence structure.
Self-Assessment (50)	26	Group D rated their Urdu proficiency as low, particularly in writing.
Total Score (96)	51	Group D was at an early stage of Urdu language development, with significant challenges and a need for focused and intensive language support for sentence structure. The self-assessment scores also suggested a lack of confidence in using Urdu.
Proficiency Level	Emerging	

Testing of hypothesis:

Hypothesis # 1: There is a significant positive relationship between students' proficiency in their second language and the frequency of code-switching.

Results Interpretation:

Table 18: Pearson Correlation Coefficient Statistics

Variable	Mean	SD	1	2	3
Second Language Proficiency	85.3	10.2	1.00		
Frequency of Code-Switching	45.7	12.5	0.63	1.00	
First Language Proficiency	92.1	8.4	0.45	0.38	1.00

From the analysis of Table 13, it is evident that second language proficiency is positively correlated with the frequency of code-switching ($r = 0.63$), suggesting a strong positive relationship. First language proficiency is also correlated with the frequency of code-switching ($r = 0.38$), though the relationship is weaker compared to second language proficiency shows a moderate positive correlation with first language proficiency ($r = 0.45$), indicating that students who are proficient in their second language are also likely to have strong first language skills.

Regression Analysis:

i. **Equation:** Frequency of Code-Switching = $1.2 + 0.03 \times$ Second Language Proficiency Score

ii. **T-test Results:** $t = 4.8, p = 0.001$

iii. **Interpretation:** The regression coefficient is significantly different from zero, indicating a significant positive relationship between second language proficiency and the frequency of code-switching. For every unit increase in proficiency, the frequency of code-switching increases by 0.03. **Classroom Observations:** Higher proficiency students were observed to code-switch more frequently, especially in informal or less structured classroom activities.

Findings: Based on the statistical analyses, the hypothesis is supported by the data. The findings suggest that students more proficient in a second language, tend to code-switch more frequently.

Hypothesis # 2: Social context significantly influences the frequency and type of code-switching among students.

Results Interpretation:

Table 19: Descriptive Statistics

Situation	Frequency of Code-Switching		Types		
	Mean	SD	Intra-sentential	Inter-sentential	Tag-switching
Peer Interaction	15 instances per session	3	60	30	10
Teacher Presence	8 instances per session	2	30	50	20

The Chi-Square Statistic was (χ^2): 18.5, $p = 0.002$ indicating that there is a significant association between social context and the type of code-switching. The distribution of code-switching types varies depending on whether the students are interacting with peers or under teacher supervision.

The ANOVA results, (F-Statistic: 12.4, $p < 0.001$) indicated that the frequency of code-switching significantly differs across social contexts. The presence of peers versus teachers influences students' code-switching. The Post-Hoc Analysis indicated Significant Pairwise Differences (Peer

Interaction vs. Teacher Presence: Significant difference $p < 0.01$), with more frequent code-switching during peer interactions.

Based on the statistical analyses, the hypothesis is supported by the data. The results indicated that students were more code-switching and engaging in different types of it while interacting with peers than in the presence of their teacher. Specifically, intra-sentential code-switching was more common. During the teacher’s presence, the inter-sentential switching was increased. This suggests that students are influenced by the sociolinguistic factor of formality and adjust language use according to the social dynamics of the classroom.

Hypothesis # 3: Students who identify strongly with both linguistic cultures are more likely to engage in code-switching.

Results Interpretation:

Table 20: Descriptive Statistics

Variables	Mean	SD	r
Composite Cultural Identification Score	7.5	1.2	0.58
Code-Switching Frequency	10 instances per session	3	

In Table 20, the Analysis of Pearson Correlation Coefficient ($r = 0.58$) indicates that a positive correlation exists between the two variables. Analyzing the equation ($\text{Frequency of Code-Switching} = 4 + 0.8 \times \text{Cultural Identification Score}$) and the t-test results ($t = 3.9, p < 0.001$) indicated that the cultural identification score was a significant predictor of code-switching frequency. For each unit increase in cultural identification, the frequency of code-switching increases by 0.8 instances. The ANOVA results indicated Significant differences ($p < 0.01$) in code-switching frequency across students with high, medium, and low cultural identification. The Post-Hoc Test indicated that Students with high cultural identification code-switch significantly more than those with medium or low identification.

The statistical analyses support the hypothesis. The correlation indicated a relationship between cultural identity and code-switching behaviour. The regression analysis further confirmed that cultural identification was a significant predictor of how often students switched codes, suggesting that

those who felt connected to both cultures were linguistically more flexible and likely to navigate between two languages. This means that cultural identity is important in understanding bilingual communication practices.

Findings:

Based on the analysis, here are the findings:

- i. Students who strongly identify with their ethnic group and cultural heritage are more likely to engage in code-switching as a way to assert and maintain their cultural identity.
- ii. Code-switching was used to reinforce group cohesiveness and cultural pride among peers.
- iii. Ethnic identification also influenced the choice of language in circumstances where students felt the need to express themselves or discuss culturally particular themes, which were more comfortably stated in their heritage language.
- iv. Peer group norms significantly influenced the frequency and kind of code-switching.
- v. In schools where bilingualism was the norm, pupils switched languages regularly with little to no stigma connected.
- vi. Peer acceptability and a desire to fit in with the group were powerful motivators for code-switching.
- vii. Students were more likely to switch languages when they were around classmates who also code-switched, implying that code-switching served as a form of in-group identification.
- viii. Social identity was strongly linked to language use, with students frequently employing code-switching to navigate power dynamics in the classroom.
- ix. Language proficiency was a significant factor in code-switching behaviour. Students with higher proficiency in both languages engaged in more complex forms of code-switching.
- x. Students with lower proficiency in one of the languages tended to avoid code-switching or limited it to simpler forms.
- xi. In classrooms where teachers encouraged bilingualism and allowed code-switching as a pedagogical tool, students were more likely to switch codes without hesitation.
- xii. Intra-sentential code-switching was the most common type observed, followed by inter-sentential and tag-switching. Situational code-

switching was frequent, particularly during teacher-student interactions and peer discussions.

xiii. Code-switching occurred most frequently in informal contexts and was less common during formal instruction.

i. Students were more likely to use intra-sentential code-switching during group work and discussions, where the language of conversation was fluid and dependent on the participants' comfort levels.

ii. Inter-sentential and tag-switching were common during individual presentations and teacher-led sessions, reflecting a more deliberate language choice.

iii. The observed instances of metaphorical code-switching, though less frequent, highlighted the students' use of language as a tool for expressing identity and cultural connection.

iv. Situational code-switching underscored the role of social dynamics in language choice, particularly in classrooms with diverse linguistic backgrounds.

v.

Discussion:

The hypothesis testing results successfully answer the research questions and the study's aims. The findings emphasize the intricate interaction of cultural identity, language competency, and social situation in determining code-switching behaviour among bilingual students. This extensive investigation adds new insights to the subject of sociolinguistics and bilingual education, with practical implications for educators and policymakers looking to promote bilingualism and bilingualism in educational contexts.

Interpretation of Findings: The findings revealed a moderate to significant positive relationship between students' cultural identification with both language cultures and their frequency of code-switching. Furthermore, the regression analysis revealed that cultural identity strongly predicts code-switching frequency ($t=3.9$, $p<0.001$). These findings directly address RQ1 and Objective 1, suggesting that pupils who strongly identify with both linguistic cultures are more likely to code-switch. The research supports the idea that cultural identity has a substantial impact on bilingual students' communication patterns. The findings stress the significance of cultural identification in

understanding why students switch languages, so fulfilling Objective 1.

Previous research found a link between second language skills and code-switching frequency. The Pearson correlation coefficient revealed a significant association, and the regression model verified that more ability in a second language leads to more frequent code-switching. This finding supports RQ2 and Objective 2 by demonstrating that language competency affects how frequently students code-switch. The findings confirm the notion that better linguistic skill in the second language enables pupils to switch between languages more fluidly, hence achieving Objective 2. This concept is crucial for instructors seeking to help pupils achieve balanced bilingualism.

The social context had a substantial impact on the frequency and kind of code-switching, with more switching occurring during peer interactions than during teacher-led activities. The Chi-square test found a strong correlation between social context and code-switching type (χ^2 , $p=0.002$), whereas ANOVA revealed substantial differences in code-switching frequency among social situations ($p<0.001$). These findings address RQ3 and achieve Objective 3 by demonstrating that social settings e.g. peer interaction and instructor presence have a major impact on both how frequently and in what way pupils code-switch. The findings show that students tailor their language use to the social dynamics of the classroom, with peer relationships encouraging more frequent and probably less formal code-switching. This insight is crucial for understanding the social factors that shape language use in educational settings and for developing strategies to manage or leverage code-switching in bilingual education.

Comparison with Existing Literature: Here is a summary of how the findings of the study are related to the existing literature:

i. **Cultural Identity and Code-Switching:** The findings established "a moderate to significant positive relationship between students' affiliation with both linguistic cultures and the frequency of code-switching" indicating linguistic flexibility and that the students who are associated with both cultures are more likely to switch languages. This finding is in line with Grosjean (1982) and Fishman (1972) who established the importance of cultural identification in bilingual communication,

claiming that those who are associated with the cultures of two languages are more frequent and natural in code-switching. However, Zentella (1997) suggested that code-switching is influenced by social and environmental circumstances more than by cultural identification. Therefore the findings of this study differ from this type of research by highlighting the importance of cultural identification.

ii. **Language Proficiency and Code-Switching:** The finding of the study that “There is a strong positive link between second language proficiency and the frequency of code-switching” is in line with the findings of Poplack (1980) and MacSwan (2000) who established that code-switching is common among proficient bilinguals because they possess more linguistic resources to switch between languages more fluidly. However, Valdés-Fallis, 1978 discovered that less fluent bilinguals may also code-switch often because of a lack of vocabulary in one language. This means that code-switching is not only due to great proficiency in both languages but also due to a lack of proficiency in one or both languages.

iii. **Social Context and Code-Switching:** The study established that “social settings, e.g. peer interaction and instructor presence, influence the frequency and kind of code-switching.” This finding is in line with Auer (1998) and Myers-Scotton (1993) who established that code-switching is highly dependent on the context to conform to social norms, manage interactions, or negotiate power dynamics. However, Blom and Gumperz (1972) have established that code-switching is associated with specific activities e.g. task-related demands or formal vs. informal settings. This means that social context is important but understanding the situational factors may provide additional information about code-switching.

Conclusion:

This paper analyzed the sociolinguistic factors that influence code-switching among Pakistani students in a bilingual classroom to determine its frequency and patterns. A careful collection of quantitative data and its analysis shed light on the patterns and contexts of code-switching among children in bilingual classrooms, exposing the intricate interaction of linguistic, social, and cultural

elements that drive this behaviour. Code-switching was noticed during teacher-student exchanges and peer discussions, but it happened more frequently in casual settings and less during formal instruction. Students frequently switched languages based on the perceived language skill of their interlocutor, or to convey special cultural or emotional implications. Students employed code-switching during group work and discussions, where the language of conversation was variable and based on the participants' comfort levels, as well as individual presentations and teacher-led sessions, which reflected a more purposeful language choice. Students also used language to express their identity and cultural backgrounds.

A significant positive relationship between students' proficiency in their second language and the frequency of code-switching was found. Social context e.g., peer interaction, and teacher presence significantly influenced the frequency and type of code-switching among students. Students who identified strongly with both linguistic cultures were more engaged in code-switching.

Recommendations:

Based on the findings from the study on code-switching among students in bilingual classrooms, several key recommendations are as follows:

- i. Teachers should foster a positive attitude towards code-switching and view it as a natural and beneficial linguistic practice rather than a deficiency/problem to be corrected.
- ii. Encourage students to use both languages fluidly in appropriate contexts to enhance their cognitive flexibility and cultural identity.
- iii. Policies should be devised that may recommend code-switching in bilingual education by acknowledging it as an effective and legitimate means of communication.
- iv. The code-switching should be integrated into the language curriculum.
- v. The teachers should be trained to handle code-switching in their classrooms.
- vi. Assessment tools should be designed to handle bilingual students' code-switching behaviour.
- vii. Classroom activities and discussions in a classroom with multicultural backgrounds of students should include code-switching.
- viii. Peer interaction should be bilingual.

ix. Code-switching should be integrated into language assessments.

Recommendations for Future Research:

Further research for understanding code-switching in bilingual educational setups, the following areas of research are recommended:

- i. Investigate the relationship between socioeconomic status (SES) and code-switching behaviour in bilingual classrooms.
- ii. Conduct cross-cultural studies to compare code-switching behaviours across different linguistic and cultural contexts.
- iii. Examine the psychological effects of code-switching on bilingual students, including its impact on identity, self-esteem, cognitive load, and academic performance.
- iv. Investigate how teachers' beliefs and instructional practices influence students' code-switching behaviour in the classroom.
- v. Conduct experimental studies to test the effects of code-switching on specific learning outcomes, e.g. vocabulary acquisition, comprehension, and problem-solving abilities.
- vi. Explore code-switching practices among speakers of minority and endangered languages.

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