Chapter 4

Data Analysis and Interpretation

This chapter presents a detailed analysis and interpretation of the data collected during the study. The purpose of this chapter is to examine how teachers and students perceive the use of code-switching in secondary school classrooms, and to analyze the situations in which it is used, along with its observed benefits and drawbacks. This chapter is structured around the key research objectives and questions.

The analysis is divided into thematic sections covering student and teacher perceptions regarding the advantages of code-switching, such as improved comprehension, participation, and engagement, as well as the potential disadvantages, like challenges to language proficiency.

4.1 Student and Teacher Perspectives on Code-Switching and its Use

Table 4.1 illustrates that most students (58%) are from urban schools, indicating more exposure to diverse languages and English-medium instruction. This suggests urban classrooms may see more frequent code-switching compared to rural (30%) or semi-urban (12%) ones. A large majority (77%) speak Hindi at home, while only 10% speak English. This mismatch between home and school language increases the need for code-switching to bridge comprehension gaps.

4.1 Students Demographic Profile

Variable	Options	Frequency (n)	Percentage (%)
Grade	9th	1	1
	10th	3	3
	11th	7	7
	12th	89	89
School Type	Urban	58	58
	Rural	30	30
	Semi-Urban	12	12
Languages Spoken at Home	Hindi	77	77
	English	10	10
	Other	13	13
Medium of Instruction	English	47	47
	Hindi	16	16
	Bilingual	37	37

While 47% study in English-medium schools, 37% are in bilingual ones, and 16% in Hindi-medium. The high bilingual percentage reflects the practical use of code-switching in mixed-language classrooms to aid participation and clarity. Overall, this demographic profile supports the study's focus, showing that language background and school setting all influence the frequency and necessity of code-switching in Indian classrooms.

As presented in **Table 4.2**, the data indicates that a large majority (70%) teach in English-medium classrooms, even though many students speak Hindi or other languages at home. This language gap reinforces the need for code-switching to aid student comprehension and participation.

4.2 Teachers Demographic Profile

Variable	Options	Frequency (n)	Percentage (%)
Teaching Experience	0-5	49	61.3
	6-10	11	13.7
	11-20	13	16.2
	20+	7	8.8
Medium of Instruction	English	56	70
	Hindi	14	16.2
	Bilingual	10	13.8

Teachers using Hindi (16.2%) and bilingual (13.8%) mediums show that code-switching may already be a built-in part of their instructional practice. These teachers likely rely on it to ensure clarity and cultural connection in their lessons.

4.2 Identification of the Situations in which Code-Switching is used by Teachers in Addition to its Frequency

According to the findings in **Table 4.3** a large number of students (65%) reported that teachers frequently use code-switching in the classroom. An additional 34% observed it being used occasionally, while only 1% said it was rarely used. No students indicated that it was never used, suggesting that code-switching is a common and accepted practice in Indian classrooms.

Students also identified the specific subjects where code-switching is most often used. The highest frequency was reported in Science (67%), followed by Social Science (49%), English (37%), and Mathematics (34%). This pattern shows that code-switching is more prevalent in content-heavy or language-complex subjects, where comprehension challenges are common.

4.3 Students' Perception on Use of Code-Switching

Statement	Options	Frequency (n)	Percentage (%)
Teachers' usage of code-switching in the classroom.	Frequently	65	65
	Occasionally	34	34
	Rarely	1	1
	Never	0	0
Subjects in which it is mostly used.	Mathematics	34	34
	Science	67	67
	Social Science	49	49
	English	37	37
	Other	8	8

These findings indicate that teachers tend to code-switch not randomly, but strategically, mostly during conceptually difficult lessons and that teachers switch to the students' familiar language to clarify abstract concepts, technical terms, and theoretical content. Even in English, a language subject, code-switching is employed, likely to bridge grammar or vocabulary gaps.

The results shown in **Table 4.4** suggest that a large proportion of teachers use code-switching regularly: 40% report using it often and 25% always. Only 1.2% never use it, and 7.5% use it rarely. This confirms that code-switching is a common teaching practice, especially in linguistically diverse classrooms.

The primary reason for using code-switching is to explain complex concepts (82.5%). This shows that teachers rely on it as a pedagogical tool to enhance clarity and student comprehension during challenging lessons.

Beyond explanation, teachers also use code-switching to build rapport with students (50%), motivate them (42.5%), and manage classroom behavior (35%). These findings indicate that code-switching is not just used for instruction, but also to create a more engaging and supportive learning environment. Overall, code-switching is used both for instructional clarity and for maintaining positive teacher-student relationships, making it a strategic and multifaceted classroom practice.

Hence, both students and teachers clearly agree that code-switching is a common classroom practice. These aligned responses indicate that code-switching is an established and accepted strategy in Indian classrooms, particularly in linguistically diverse settings. This suggests that teachers are using it strategically when content becomes difficult to grasp.

4.4 Teachers' Perception and Use of Code-Switching

Statement	Options	Frequency (n)	Percentage (%)
Frequency of using code-switching in the classroom	Never	1	1.2
	Rarely	6	7.5
	Occasionally	21	26.3
	Often	32	40
	Always	20	25
Purpose	Explaining complex concepts	66	82.5
	Managing Classroom Behaviour	28	35
	Motivating the Students	34	42.5
	Building Rapport	40	50
	All of the above	3	3.9

This shows that code-switching plays a broader role in classroom dynamics, not only improving comprehension but also strengthening teacher-student relationships and overall classroom climate. Together, these perspectives show that code-switching is both frequent and functional. It is used deliberately to bridge linguistic gaps, support learning, and maintain classroom engagement.

4.3 Exploration of Benefits of Using Code-Switching in Regards to Comprehension, Engagement, and Classroom Participation

The data in **table 4.5** strongly supports that students view code-switching as a powerful tool for comprehension. A total of 49% of students (45% strongly agree, 4% agree) believe it helps in better understanding classroom content. Notably, none of the students disagreed, showing unanimous positive perception. The most significant benefit identified was that 88% said code-switching makes complex ideas easier to understand. This highlights how switching languages clarifies academic content, particularly technical or abstract concepts that students may struggle to grasp in English alone.

Regarding engagement and participation, 40% of students reported that code-switching increases their engagement, while 43% said it encourages them to participate more actively. Additionally, 33% felt it reduces their fear of asking questions, suggesting that switching to a familiar language helps lower communication anxiety and promotes confidence.

4.5 Students' Perceptions of the Advantages of Code-Switching

Statement	Options	Frequency (n)	Percentage (%)
It helps in better understanding.	Strongly Agree	45	45
	Agree	4	4
	Neutral	6	6
	Disagree	0	0
	Strongly Disagree	0	0
Advantages:	Makes Complex Ideas Easier to Understand	88	88
	Bridges Familiar / Unfamiliar Concepts	52	52
	Increases Engagement	40	40
	Reduces Fear of Asking Questions	33	33
	Encourages Participation	43	43

Overall, students see code-switching not just as a translation tool, but as a pedagogical strategy that enhances their learning experience, improves classroom interaction, and creates a more inclusive learning environment.

The evidence presented in **Table 4.6** demonstrates that the majority of teachers believe that code-switching significantly improves student comprehension. Over 92% (53.8% strongly agree, 38.8% agree) agreed that it helps students understand difficult concepts, showing a strong professional consensus on its pedagogical value. In terms of student comfort and inclusivity, 93.7% of teachers (55% strongly agree, 38.7% agree) said code-switching helps students feel more comfortable and included. This suggests that switching to familiar languages reduces anxiety and promotes better classroom engagement.

Additionally, 95% of teachers (47.5% strongly agree, 47.5% agree) stated that code-switching bridges the gap between home language and medium of instruction. This highlights its role in supporting multilingual classrooms and ensuring equitable access to learning. In summary, teachers view code-switching as a highly effective strategy to enhance comprehension, boost student confidence, and foster inclusive participation, aligning closely with student perspectives.

4.6 Teachers' Perceptions of the Advantages of Code-Switching

Statement	Options	Frequency (n)	Percentage (%)
Helps Students Understand Difficult Concepts	Strongly Agree	43	53.8
	Agree	31	38.8
	Neutral	4	5
	Disagree	0	0
	Strongly Disagree	2	2.5
Helps Students Feel more Comfortable and Included	Strongly Agree	44	55
	Agree	31	38.7
	Neutral	2	2.5
	Disagree	2	2.5
	Strongly Disagree	1	1.2
Bridges the Gap between Students' Home Language and the Medium of Instruction	Strongly Agree	38	47.5
	Agree	38	47.5
	Neutral	3	3.7
	Disagree	1	1.2
	Strongly Disagree	0	0

Hence, both students and teachers share a strong belief in the value of code-switching as an educational tool, particularly in enhancing comprehension. This alignment suggests that switching to familiar languages not only aids academic clarity but also creates a supportive emotional environment for students.

Additionally, bridging the gap between home language and the medium of instruction was recognized as a major advantage by teachers. Students indirectly supported this through their emphasis on reduced fear of asking questions and better connection with classroom content, particularly in complex subjects.

In summary, both groups view code-switching not merely as a communication aid, but as a powerful instructional strategy that enhances understanding, boosts confidence, and fosters inclusive, participatory learning, especially in multilingual classrooms.

4.4 Exploration of the Disadvantages of Using Code-Switching

A close examination of **Table 4.7** shows that the majority of students do not view code-switching as disruptive to classroom learning. About 54% disagreed with the idea that it disrupts the flow of the lesson, and 11% strongly disagreed, while only a small percentage (9%) agreed or strongly agreed. This suggests that for most students, code-switching is well integrated into teaching without negatively affecting lesson continuity.

4.7 Students' Perceptions of the Disadvantages of using Code-Switching

Question	Options	Frequency (n)	Percentage (%)
Does it Disrupt the Flow of the lesson?	Strongly Agree	1	1
	Agree	8	8
	Neutral	26	26
	Disagree	54	54
	Strongly Disagree	11	11
Challenges faced when teachers use code-switching?	Confusion due to frequent language changes	7	7
	Loss of focus	9	9
	Difficulty in developing proficiency in one language	17	17
	Perceived as unprofessional	4	4
	None of the above	73	73

When asked about specific challenges related to code-switching, 73% of students reported no issues at all. However, some concerns were noted: 17% felt it makes it harder to develop proficiency in one language, and smaller percentages cited loss of focus (9%) or confusion due to frequent language shifts (7%). Only 4% viewed it as unprofessional.

These findings indicate that while most students are comfortable with code-switching and find it beneficial, there is a minority that believes it could interfere with language development and concentration. These concerns highlight the importance of using code-switching strategically and not excessively.

From **Table 4.8**, it can be inferred that teachers hold divided opinions on whether code-switching negatively impacts students' language proficiency. While 38.8% (6.3% strongly agree, 32.5% agree) believe frequent use can hinder students' proficiency in the medium of instruction, nearly 35% either disagreed or strongly disagreed. A significant portion (26.3%) remained neutral, indicating uncertainty or context-dependent experiences.

4.8 Teachers' Perceptions of the Disadvantages of using Code-Switching

Statement	Options	Frequency (n)	Percentage (%)
Frequent use can Hinder Students' Proficiency in the Medium of Instruction	Strongly Agree	5	6.3
	Agree	26	32.5
	Neutral	21	26.3
	Disagree	23	28.7
	Strongly Disagree	5	6.3
Creates Challenges in Maintaining Linguistic Consistency in Teaching	Yes	20	25
	No	33	41.3
	Sometimes	27	33.8
May lead to Confusion Among Students, Especially those Proficient in the Medium of Instruction	Yes	12	15
	No	45	56.3
	Not Sure	23	28.7

When it comes to maintaining linguistic consistency, 25% said code-switching creates challenges, and 33.8% said it sometimes does, while 41.3% did not perceive it as an issue. This

shows that nearly half the teachers experience at least occasional difficulty in maintaining language consistency while switching.

Only 15% of teachers believed that code-switching causes confusion among students who are already proficient in the instruction language. However, a majority (56.3%) did not see it as confusing, suggesting that most teachers feel code-switching is managed effectively without alienating proficient learners.Overall, while teachers acknowledge potential drawbacks like reduced fluency and inconsistency, most do not view code-switching as a serious disruption. The findings highlight the need for balanced and informed use, especially in classrooms with varied language proficiency levels.

Hence, students and teachers both acknowledge some potential challenges with using code-switching, but neither group views it as a major disruption to classroom learning. This suggests students generally accept and adapt to code-switching as part of the learning process. Teachers held more mixed views, particularly regarding language proficiency. They reflect a divided stance, possibly influenced by the linguistic backgrounds of their students and subjects taught.

4.5 Qualitative Analysis of Open-Ended Responses, Classroom Observations and Structured Interviews on the Positive Impact of Code-Switching

This section presents a thematic qualitative analysis of open-ended responses collected from students and teachers regarding the positive impact of code-switching as a teaching strategy in Indian classrooms. The analysis of the responses revealed several recurring patterns that illustrate how code-switching supports teaching and learning. The following key themes highlight the positive impact of code-switching on student understanding, engagement, inclusion, and emotional well-being. Key themes emerging from the data:

1. Enhancing Conceptual Understanding : Many respondents highlighted that code-switching aids in explaining abstract, technical, or complex topics more clearly. Teachers frequently switch to a familiar language to simplify content.

2. Facilitating Learner Engagement: Teachers reported that code-switching maintains learner interest and encourages active participation. When teachers incorporate local dialects or culturally relevant terms, students feel more connected to the content. This practice builds a more relatable and enjoyable learning experience.

3. Addressing Linguistic Diversity in Classrooms: In multilingual and mixed-proficiency classrooms, teachers rely on code-switching to ensure all students receive equitable access to content. Switching between English, Hindi, and regional languages enables differentiated instruction.

4. Building Confidence and Reducing Anxiety: Teachers noted that students felt more confident when allowed to engage with content in their native language. This, in turn, reduced classroom anxiety and enhanced student expression during activities like discussions, answering questions, and group tasks.

Thus, these responses collectively underscore the pedagogical value of code-switching in Indian classrooms. Teachers use code-switching not as a crutch but as a deliberate instructional strategy to bridge linguistic gaps, promote equity, and facilitate deeper understanding. The findings reveal that when employed thoughtfully, code-switching fosters a supportive learning environment where all students thrive regardless of linguistic background.

4.6 Qualitative Analysis of Open-Ended Responses, Classroom Observations and Structured Interviews on Challenges Faced While Using Code-Switching

This section presents a thematic qualitative analysis of open-ended responses collected from students and teachers regarding the challenges they have encountered when employing code-switching as a teaching strategy in Indian classrooms. While many of them indicated they faced no difficulties, several distinct patterns of challenge emerged across responses:

1. No Challenges Encountered: A considerable number of participants responded with 'None', or similar statements, indicating they had not faced any challenges in using code-switching. This may reflect the teachers' familiarity with bilingual contexts or their strategic use of code-switching within their comfort zones.

2. Linguistic and Vocabulary Constraints: Numerous teachers expressed difficulty in finding equivalent or appropriate terminology in the switched language, particularly when attempting to translate subject-specific or complex concepts. These challenges were highlighted especially when precise technical terms were unavailable in the home language or English and when teachers were not fluent in the students' regional or first languages. Such lexical gaps made explanations less effective and, at times, caused confusion among students.

3. Pedagogical Limitations and Instructional Flow: Many teachers pointed out that code-switching disrupted the natural flow of instruction. Specific issues mentioned include, time-consuming explanations in multiple languages and disruption of lesson rhythm due to frequent switching. These factors sometimes resulted in inefficient time management during classroom sessions.

4. Reduced Language Acquisition and Overreliance: Some participants observed that students began relying heavily on the easier or more familiar language, reducing their exposure and practice in the target language. This was perceived to dilute the students'

ability to think and respond in the intended language and delay mastery of grammar and vocabulary in that language.

Hence, the qualitative data reveals that while many of them did not perceive code-switching as problematic, others experienced a range of linguistic, pedagogical, cultural, and student-centered challenges. These challenges emphasize the need for strategic, inclusive, and well-informed use of code-switching tailored to the classroom's linguistic composition. It also suggests professional development in multilingual pedagogy could further empower teachers to manage these complexities effectively.

4.7 Summary of Data Analysis and Interpretation

A significant majority of respondents affirm that code-switching is a necessary teaching strategy in Indian classrooms. Their justifications reflect the unique sociolinguistic context of India, where students often speak a regional or home language that differs from the medium of instruction, usually Hindi or English.

From an academic standpoint, the data strongly indicates that teachers perceive code-switching as both pedagogically necessary and contextually responsive in Indian classrooms. This aligns with Vygotsky's social-constructivist view that learning is socially mediated, language being a key tool in that mediation. Code-switching appears to function not merely as a linguistic choice but as a pedagogical strategy to improve comprehension, engagement, and cultural relevance.

However, the analysis also reveals the need for balance and training. Teachers should be supported with professional development on when and how to code-switch effectively, so that it supports language development rather than impedes it. The findings underscore that in a multilingual country like India, code-switching is not only practical but essential. Teachers recognize its power to democratize access to content, enhance comprehension and foster a supportive learning environment.

Nevertheless, to ensure its effectiveness, strategic use, reflective teaching practices, and curricular guidelines are crucial. Over-reliance must be guarded against to maintain the integrity and development of the target language.

4.8 Conclusion

This study explored the use of code-switching in Indian classrooms through the perspectives of both students and teachers. The findings confirm that code-switching is a frequent and purposeful practice in multilingual educational contexts. It is employed most often in content-heavy subjects such as Science and Social Science, where teachers switch languages to simplify complex concepts. Students largely reported observing code-switching frequently, and

teachers acknowledged using it routinely to enhance instructional clarity, build rapport, manage behavior, and motivate learners.

Both students and teachers perceive clear benefits of code-switching, especially in improving comprehension, engagement, and classroom participation. A large majority of students stated that code-switching makes difficult content easier to understand and helps them feel more confident to ask questions and participate in class discussions. Teachers supported these observations, emphasizing that code-switching helps bridge the gap between home language and the medium of instruction, and fosters a more comfortable and inclusive classroom environment.

Despite the predominantly positive views, some challenges were acknowledged. A minority of students expressed concerns about difficulty in becoming proficient in a single language, potential confusion, and occasional loss of focus. Similarly, teachers were somewhat divided, while many did not see code-switching as disruptive, some were concerned that frequent switching might hinder students' proficiency in the language of instruction or lead to inconsistency in teaching. These insights highlight the need for balanced and strategic use of code-switching, especially in classrooms where language acquisition is a key goal.

The influence of code-switching on overall learning outcomes and classroom dynamics is overwhelmingly positive when used thoughtfully. It supports understanding, encourages student participation, and enhances the classroom atmosphere. However, the findings also suggest that excessive or unstructured use could pose risks to language fluency and instructional flow. Thus, code-switching should be treated not as a default method, but as a pedagogical strategy that is context-driven and learner-centered.