

Code-switching and Educational effectiveness: A quantitative analysis of NUML Peshawar English classrooms

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ABSTRACT

This study investigates the pedagogical role and frequency of code-switching in English classrooms at the National University of Modern Languages (NUML), Peshawar campus. Code-switching is a characteristic feature of bilingual education systems, especially in contexts where English serve as the medium of instruction. A quantitative approach employing close-ended questionnaires was used to assess the perceptions of both students and teachers regarding code-switching. The findings reveal that 42.4% of students regularly and 27.4% often engage in code-switching, while 77.8% consider it beneficial for understanding complex concepts. Teachers reported employing code-switching to clarify difficult material and enhance student engagement. Despite these advantages, concerns were raised about its potential to impede English language fluency. The study concludes that while code-switching can be pedagogically effective in bilingual classrooms, a balanced instructional approach is necessary to support both comprehension and target language proficiency.

Keywords: Code-switching, bilingualism, multilingual education, pedagogical effectiveness, language policy, second language acquisition, quantitative analysis

INTRODUCTION

Language plays a central role in educational settings, particularly in bilingual and multilingual environments where both teachers and students use multiple languages to facilitate comprehension. In such contexts, code-switching—the alternation between two or more languages—emerges as a common and sometimes necessary strategy.

At NUML Peshawar, English is the medium of instruction in many classrooms. However, both students and instructors frequently switch to Urdu or regional languages to enhance understanding, clarify complex ideas, and maintain learner engagement. This research adopts a quantitative approach to explore the frequency, functions, and perceived educational impact of code-switching within English language classrooms at NUML Peshawar. Using the students and teachers' responses submitted through structured questionnaires, the study looks at the role that code-switching has played in academic understanding, engagement and English language development.

Additionally, the study analyzes existing English-only policies and challenges associated with codeswitching in a bilingual classroom. The results will be used to inform language policies and teaching practices that both clarify instruction while building English fluency.

LITERATURE REVIEW

Code-switching has been a topic of extensive research in bilingual and multilingual contexts. In fact, Auer (1998) believed code-switching is critical in supporting understanding complex material and processes when the learners are able to make use of their knowledge related to the new knowledge brought through to their own linguistic constructs. His only caveat was don't use it too much, as it can impede the development of understanding a second language. Macaro (2005) emphasizes both the cognitive benefits of code-switching while acknowledging the negative cognitive linguistic consequences of language switching during instruction. Thus, while it can encourage navigating difficult terminology using the native language during instruction, it can hinder immersion into the target language. Sert (2005), and Lin (2016) share useful pedagogical resources on code-switching, and propose teachers use code switching, to facilitate learning in two ways by simplifying complex subject matter and maintaining students' engagement in learning, especially for students with low levels of proficiency in English. Although, similar to Sert (2005), Lin (2016) suggests moderation in all things, and to be sure to not over-code switch, as teacher codeswitching can limit the students opportunities to use English.

Baker (2006) found that classrooms permitting strategic code-switching often outperform English-only classrooms in terms of content comprehension, although they may fall short in developing full linguistic competence. Grosjean (2010) adds that code-switching enhances cognitive flexibility and problem-solving but can weaken linguistic accuracy in the second language.

Canagarajah (2011) rejects the notion that code-switching reflects linguistic incompetence. Instead, he sees it as a dynamic strategy that enables deeper exploration of meaning in bilingual settings. Garcia and Wei (2014) similarly argue that code-switching enhances student interaction, especially when learners lack confidence in English.

Creese and Blackledge (2015) draw attention to the relationship between code-switching and identity, positing that language alternation allows learners to express their cultural backgrounds and foster a sense of belonging. Ferguson also supports flexible language policies that acknowledge the role of code-switching in identity formation.

Overall, the literature supports the use of code-switching as a pedagogical tool, particularly in multilingual contexts. However, it also stresses the need for a balanced approach to maximize educational and linguistic outcomes. Within NUML Peshawar, where English proficiency is a key goal, a measured integration of code-switching appears to offer significant advantages without undermining target language development.

Objectives

The objectives of the study are;

- a) To analyze the frequency and contexts of code-switching in NUML Peshawar English classrooms.
- b) To identify the connection among code-switching and students' effectiveness.

Research Questions

- 1) What is the role of code-switching in bilingual educational environment?
- 2) How the code-switching affects the students' learning in English classrooms?

Limitations

- a) The study has conducted only in the regional campus of NUML, ignoring the other institutions due to shortage of time.
- b) It emphasizes on students' self-reported information may additionally introduces inaccuracies.

METHODOLOGY

This research employs a quantitative approach to identify the role of code-switching in English classrooms. It follows a descriptive design to find out the frequency, causes and the impact of code-switching in NUML Peshawar English classrooms. Structured questionnaires are used as an instrument to collect data from students and teachers. The questionnaires contain close-ended questions having both multiple-choice questions and scale-items to provide better understanding and facilitates analysis. Descriptive statistics are applied for the analysis to identify the relationships within the particular data. This structured methodology emphasizes reliability and objectivity in evaluating code-switching practices in bilingual classrooms.

Population and Sampling

Regional campus of National University of Modern Languages (NUML) Peshawar branch is the population for the studies. The students of English classrooms are from multiple linguistic backgrounds, specially speaking Pashto, Urdu, or other regional languages. The teaching staff also forms part of the study's population.

Simple random sampling is employed to students, students are randomly selected from all the semesters to ensure reliability and balanced approach. Faculty members are also involved due to involvement in English language teaching. A sample size of 150 students and 10 faculty members are selected to ensure sufficient data for quantitative analysis.

Data collection

The data collection instrument is a structured questionnaire for both students and teachers in order to get data about the frequency of code-switching and their perceptions of code-switching's effectiveness in learning. The study contains data from 113 students and 9 faculty members, ensuring a diverse representation of linguistics backgrounds and teaching experiences.

Questions	Options	Responses	Percentage
1. Previous schooling medium	Urdu	28	24.7%
	English	34	30.0%
	Mixed	51	45.1%
2. Teacher Code-Switching Frequency	Always	26	23.0%
	Often	33	20.3%
	Sometimes	37	32.7%
	Rarely	16	14.1%
	Never	1	0.88%
3. Teacher Code-Switching Reason	Complex concepts	30	26.5%
	Student understanding	53	46.9%
	Comfort	26	23.0%

Students' Data collection

4. <i>Helpful Code-Switching</i>	Environment		
	For Emphasis	7	6.19%
	Yes	88	77.8%
	No	2	1.76%
	Sometimes	23	20.3%
5. <i>Effective Language</i>	English	28	24.7%
	Urdu	15	13.2%
	Mixed	70	61.9%
6. <i>Students Code-Switching Frequency</i>	Always	48	42.4%
	Often	31	27.4%
	Sometimes	20	17.6%
	Rarely	13	11.5%
	Never	1	0.88%
7. <i>Enhances Understandings</i>	Strongly agree	35	30.9%
	Agree	67	59.2%
	Neutral	11	9.73%
	Disagree	2	1.76%
	Strongly Disagree	0	0.00%
8. <i>Improves Participation</i>	Strongly agree	45	39.8%
	Agree	51	45.1%
	Neutral	12	10.6%
	Disagree	7	6.19%
	Strongly Disagree	0	0.00%
9. <i>Fluency Impact</i>	Strongly agree	21	18.5%
	Agree	27	23.8%
	Neutral	35	30.9%
	Disagree	26	23.0%
	Strongly Disagree	3	2.65%
10. <i>Academic Performance Impact</i>	Positive	61	53.9%
	Negative	15	13.2%
	No Impact	47	41.5%
11. <i>English Only Importance</i>	Very Important	54	47.7%
	Important	46	40.7%
	Neutral	14	12.3%
	Not Important	1	0.88%
12. <i>Minimize Code-Switching</i>	Yes	46	41.8%
	No	33	30.0%
	Neutral	31	28.1%
13. <i>Challenges with reduced Code- Switching</i>	Difficulty in Complex topics	47	41.9%

Less Engagement	20	17.8%
Increased pressure	31	27.6%
No Challenges	14	12.5%

14. Optimal language balance	English only	23	20.7%
	Primarily English with occasional other	62	55.8%
	Equal balance English and another	22	19.8%
	Primarily another	4	3.6%

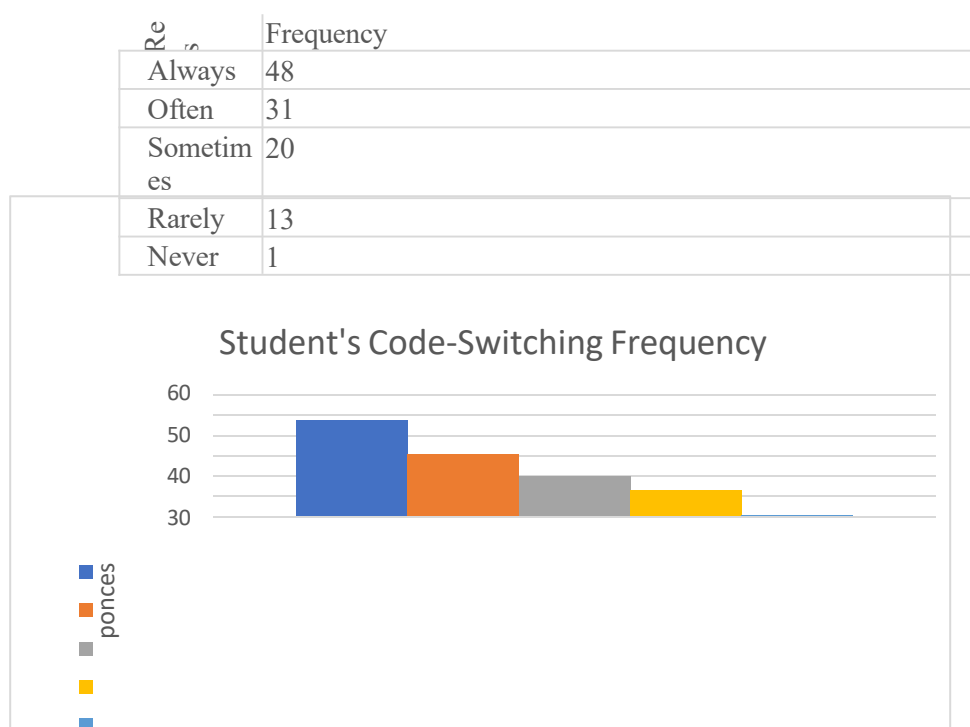
Teacher's Data Collection

Questions	Options	Responses	Percentage
1. Code-Switching Frequency	Always	1	11.1%
	Often	2	22.2%
	Sometimes	4	44.4%
	Rarely	1	11.1%
	Never	0	0.00%
2. Reason for Code-switching	Complex concepts	4	44.4%
	Students understanding	4	44.4%
	Engaging environment	3	33.3%
	For emphasis	4	44.4%
3. Situations in which it is helpful	Technical terms	6	66.6%
	Classroom discipline	0	0.00%
	Informal discussions	3	33.3%
	Others	1	11.1%
4. Conscious Planning	Yes	1	11.1%
	No	7	77.7%
5. Student Learning Impact	Positively	6	66.6%
	Negative	1	11.1%
	No effect	2	22.2%
6. Improves Students' participation	Strongly agree	2	22.2%
	Agree	6	66.6%
	Neutral	1	11.1%
	Disagree	0	0.00%
	Strongly disagree	0	0.00%
7. Helps students' participation	Strongly agree	1	11.1%
	Agree	6	66.6%
	Neutral	2	22.2%
	Disagree	0	0.00%
	Strongly disagree	0	0.00%
8. Student Challenges	Understanding Difficulty	4	44.4%
	Reduced participation	6	66.6%
	Decreased confidence	6	66.6%
	Other	0	0.00%

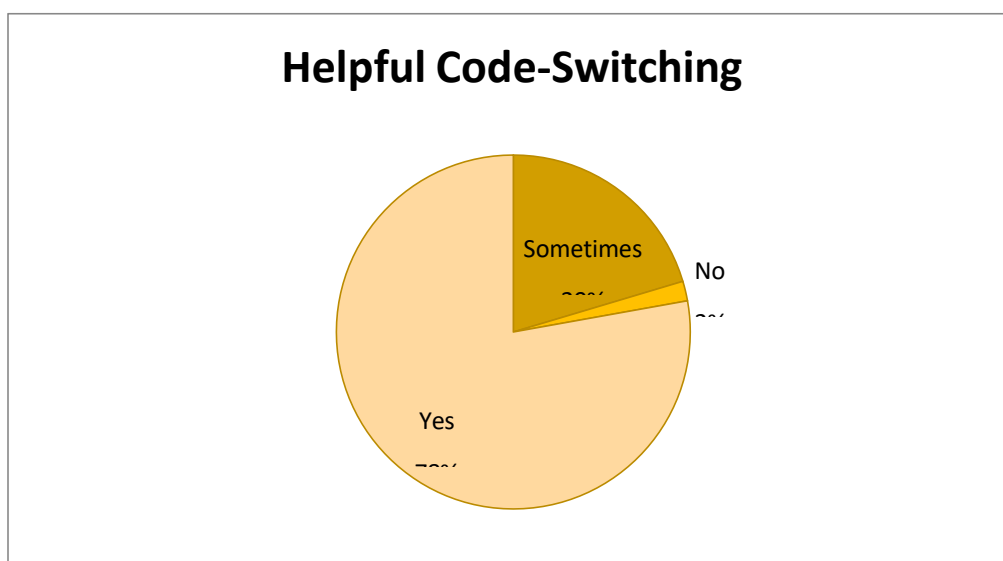
9. <i>Improves Performance</i>	Yes	4	44.4%
	No	0	0.00%
	Sometimes	5	55.5%
10. <i>English-only Importance</i>	Very important	3	33.3%
	Important	2	22.2%
	Neutral	4	44.4%
	Not important	0	0.00%
11. <i>Optimal Language balance</i>	English only	0	0.00%
	English with switching	9	100%
	Balancing both	0	0.00%
	Primarily another	0	0.00%

Research Results

The collected data highlights significant trends in the use of code-switching by both students and teachers at NUML Peshawar. Among students, code-switching is a common practice, with 42.4% reporting that they “Always” code-switch and 27.4% indicating they do so “Often.” This suggests that a majority of students rely on mixing languages during classroom interactions. The primary reason for this practice, as indicated by 46.9% of students, is that code-switching enhances their understanding of difficult concepts. Similarly, 26.5% of students believe it is particularly helpful for clarifying complex topics. These results demonstrate that students perceive code-switching as a strategy for overcoming linguistic barriers and facilitating comprehension.



A substantial majority of students (77.8%) find code-switching helpful in their academic learning, with only 1.76% disagreeing. However, when analyzing the impact of code-switching on English fluency, opinions are more divided. While 23.8% of students agree that code-switching negatively affects their fluency in English, 30.9% remain neutral on the issue. This divergence in perception indicates that while code-switching aids comprehension, it may raise concerns about long-term language proficiency.



Teachers' perspectives also provide valuable insights into the dynamics of code-switching in classrooms. The frequency of code-switching among teachers is moderate, with 44.4% stating they "Sometimes" use it, while 22.2% report using it "Often." The main causes behind the use of code-switching by teachers include explaining difficult and complex concepts and to enhance the understanding of students, both of which were recorded as 44.4% of participants. These results show the pedagogical value instructors delve to code switching as an instrument of effective and enhanced instructions.

Both the teachers and students highlight the optimistic value of code switching on educational effectiveness. It is noticed that code switching significantly enhances the class participation as 66.6% agree to this point, and a same frequency of instructors support it as well. Moreover, majority of the teachers including ratio of 66.6% just consider it to have a positive effect on educational learning, with none taking it as completely negative phenomenon.

In addition, 47.7% of students identified it as "Very Important", while investigating about the importance of English- only policy, reflecting their passion for English language proficiency. However, instructors collectively supported a balance approach, highlighting the need for occasional code switching to maintain the English proficiency and enhance understanding. This difference highlights various priorities among learners' passion towards fluency and teachers' focus on practical teaching methodologies. This mutual dependency on code switching emphasizes its importance in bilingual learning classrooms.

DISCUSSION

The findings claim that code switching is one of the important aspects of classroom engagement at NUML Peshawar. It acts as a necessary mechanism for students to navigate through more complicated ideas and processes and feel confident in their understanding, especially for the Urdu or mixed - medium students. Conversely, educators are implementing it frequently with students in order to articulate certain complicated ideas and to increase student involvement. This reinforces the pedagogical worth of code switching by educators.

Nonetheless, being able to code switch can also create barriers. Although it promotes understanding, it can also be a barrier to English language proficiency and fluency. Some students even articulated concerns that it could also inhibit their overall independence in linguistic development while also drawing an interesting tension about short term benefits and long term goals. Educators emphasized the need for a balanced approach to primarily focus on English and permit limited code switching when the moment calls for it.

The shared awareness between both educators and students of the beneficial influences of code switching on participation and positive learning outcomes provides further indications of its value in an educational setting. Both educators and students acknowledged that classroom code switching fosters an inclusive and holistic environment to promote engagement and participation; particularly for students who struggle within an English only format. This mutual understanding scenario that the code switching situations rises up is an effective pedagogical tool, not simply for enhancing learning but for developing a sense of belonging as well.

The shifts in attitudes towards English - only policies underscore the complexities of language use in educational spaces. Students want fluency to be prioritized and in turn they see English - only policy as the best approach to get to the fluency they want in their academic and professional fields. On the other hand, teachers are more pragmatic attitude. So, for example when teachers pursue a balanced approach they may secure the short term demands of immediate learning without compromising the overall and ultimate goal of English language development in nature.

In short, the findings suggest that although code has an effectiveness as an important pedagogical tool, it moderates it in a careful and skillful way. Educational institutions and teachers should strive to achieve a balance approach that maximizes the benefits of comprehension and engagement while minimizing the cost as they work on the outcome of English proficiency. Then this shaded strategic stance provides clarity in this argument that code switching builds on and does not shift from, the goal and visions of bilingual education.

CONCLUSION AND RECOMMENDATIONS

The results of this quantitative study clearly identify the important function of code switching in the English classes at NUML Peshawar. The teachers and students both agree that code switching is an important and practical strategy for facilitating understanding, especially when dealing with complicated ideas and concepts. The students accepted code switching as a common phenomenon, and most of them admitted to using it often. The teachers also accepted code switching but in a more moderate way, on the grounds that it was used for the sake of students' understanding, and to keep them engaged throughout the lesson.

However, the results also indicated an ongoing tension between some of the benefits and drawbacks of code switching. While code switching improves comprehension and participation, it also has an effect on students' fluency and efficiency in English. Due to the specific context, teachers supported a moderate position on code switching, supporting the periodic use of native languages for the sake of

better comprehension on select topics, without hindering the objective of developing students' English language proficiency.

The study concludes that code switching is an essential instructional method and address it as needing special care to obtain its benefits. It is recommended that institutions and teachers follow evidence based recommendations where the benefits of code switching are beneficial and avoid its potential costs. Moreover, educational bodies should consider arranging professional development workshops and programs to prepare teachers' with interactive tools to manage a bilingual (or multilingual) classroom more efficiently.

This research provides the groundwork for future research for the long-term impacts of code switching on language use and academic achievement. In addition, expanding the research across disciplines and settings would help further develop code switching in various bilingual/multilingual educational contexts in Pakistan.

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