Enigma of Medium of Instruction and Cognitive Academic Proficiency of the Learners

Vol. IV, **No.** II (Spring 2019) | **Page:** 514 – 520 | **DOI:** 10.31703/grr.2019(IV-II).54
p- ISSN: 2616-955X | **e-ISSN:** 2663-7030 | **ISSN-L:** 2616-955X

Nazakat[*] | Muhammad Imran[†] | Adil Khan[‡]

Abstract *The role of language in education in Pakistan has been a source of contention among educationalists, researchers, and intellectuals. The educational policymakers were unable to decide the proper function of any language in education. As a result, English and Urdu medium of instruction policies in Pakistan have often been tossed out. The current research is the outcome of two sources of inspiration. The first source of inspiration was a federal policy enacted in 2003 regarding the medium of instruction, which mandated that science subjects in government schools be taught in English beginning in grade six. The findings of the study show that the academic capacity of the students is not impeded even if they have local language literacy. The findings reconcile with Cummin's CALP notion, and it is suggested for the policymakers that the native languages of the learners need not be sacrificed for the English language.*

Key Words: Language, Medium of Instruction, Education, Academic Achievement

Introduction

The importance of language in education cannot be underrated because it is through language that concepts, ideas, and thoughts are communicated in a classroom. Pakistan is a multilingual country where regional languages predominate in conversation. In academia, English and Urdu form a significant partnership. The focus of this research is on government policy about the medium of instruction and how it affects student academic achievements. In some government institutions, this strategy involved changing the medium of instruction from Urdu to English by Musharraf in 2003. According to Ellis (1985), the medium of instruction has tantamount significance for the literacy and educational facet of any nation. There are diverse opinions about the place of language in early education, but the context and settings decide about the implementation of respective policies of the governments. In a multilingual and immigrational backdrop, the results cannot be compared and aligned where particular geostrategic and demographic conditions are different. Bell (2006) finds that using a second language in an academic environment too early stunts the growth of the mother tongue. October (2002) claims that the choice of language medium is a never-ending controversy at the heart of educational reform. The value of the medium of instruction, according to the author, cannot be overstated. It shows that the medium of instruction has a significant impact on the quality of students. It is pertinent to trace a brief historical line in the case of Pakistan to better understand this enigma obscuring a solid educational policy.

Flashback of Language Policies

Suppose we trace a brief historical survey about the decision of language in education; the state policies since the very first day were not clear about any viable place of languages in education. The obscurity was aggravated by political strife between Urdu and Bengali on the one hand and the redoubtable lack of any acceptable policy on the other hand. Since the inception of Pakistan, there has never been any agreed-upon language policy that can bring the nation out of linguistic controversy and show any visible path for nation-building. The stalemate remained there till the cessation of Decca, and unfortunately, even after the separation of erstwhile East Pakistan, there has never been made any attempt to cross this divisive quagmire. In the backdrop of soaring decentralizing

[*]Lecturer, Department of English, Hazara University Mansehra, KP, Pakistan.
[†]Assistant Professor, Department of English, Government College Havelian KP, Pakistan.
[‡]Lecturer, Department of Pakistan Studies, Hazara University, Mansehra, KP, Pakistan. Email: adilseemab@gmail.com

sentiments and consequent separatist feelings, there is an exigent need to introduce a language in education policy that can comply with language issues. The whimsical policies taking place now and then cannot help nation-building. In this situation, an academic and scientific approach may be helpful to remove this confusion at the federal level, which can be disseminated at the grass-root level. In the presence of carrot and stick type approaches and wide disparity in the education systems, there cannot be any viable and solid solution. The aim of this study is to see how one of the government's educational policies in 2003 on the medium of instruction has affected the academic achievements of the students. About this language controversy Rahman (1996) has concluded that there are at least six major languages spoken in Pakistan, as well as 58 minor languages. Urdu, the national language, is spoken by over 11 million people. In 1947, the founder of Pakistan, Muhammad Ali Jinnah, proclaimed Urdu to be Pakistan's national language. The political repercussions of Jinnah's naïve proclamation stirred controversy not only between Two Units but the smouldering of this temperature reached to the provinces as well, which was later manifested in the Sindhi language as well. According to the Sharif Commission (1959), English should be made mandatory in schools and at the graduate level. According to Rahman (1996), Pakistan has had serious problems as a result of a lack of political will to address language issues. The Sharif Commission (1959) report suggested that English will be a compulsory language in schools from grades VI to XII. While English is now the official language of Pakistan, Urdu was granted that status in 1956 and was later divided into Urdu and Bengali. Since its inception, the role of Urdu in Pakistan's educational system has been questioned. Bengali speakers were irritated by the focus on Urdu because of their oppressed status (Rahman, 1996). This succinct historical reference speaks volumes about the absence of proper language policy in education. The 1973 constitution outlined new proposals for a country that had recently split from the Eastern wing. This time, linguistic tensions were not of the same magnitude as the Bengali-Urdu conflict; instead, all relevant languages were pledged to be accommodated, and the decision was made to exclude English as an official language. Urdu is the national language of the country, according to Article 251 of the 1973 constitution, and provisions must be made for it to be used for official and other purposes within fifteen years. It has been opposed, however, because the centre's governing class has patronized it, sometimes in insensitive ways(Rahman, 1996).

Inspiration of the Study

In Pakistan, the controversy over an official language has a long history, as briefly pointed out in the above paragraphs. The study was inspired by one of the National Educational Policy 1998-2010's advisory policies and its implementation in the district of Mansehra. In terms of the medium of instruction, this policy notes that the medium of instruction from class six onward is changed to English. It is another reality that a child is exposed to many languages in more diverse urban areas. Also, teachers in such places teach primarily in their mother tongue. The topic of the medium of instructions has taken on pedagogical, political, and, more recently, theological overtones. A child's cognitive abilities are obviously harmed by an emphasis on learning a foreign language. Teachers in rural areas may not be fluent in the mother tongue of the students. Differences in ethnicity and social status are also present(2010). The researchers found the concept of CALP quite relevant and interesting to probe the ever-existing enigma of language in education. The current study is relevant in the light of government policies that continue to raise the question of the medium of instruction. The researchers were intrigued by the idea of testing the CALP level of students in a first-year class whose medium of instruction had been changed from class six onwards. The researchers hypothesize that changing the medium of instruction from Urdu to English at the sixth-grade level would have little impact on learners' cognitive academic success in material subjects taught in English at the first-year college level.

Objectives

The study envisaged the following objectives.

i. To compare students whose medium of instruction was changed from Urdu to English to those whose medium of instruction was not changed in order to assess their cognitive and intellectual comprehension.
ii. To put Cummin's CALP concept to the test in a Pakistani context.
iii. Experiment on students to determine the validity of Cummin's CUP principle in the Pakistani context

iv. To determine if the decision to change the medium of instruction in government schools in class six was useful or not.
v. To provide policymakers with guidance on how to choose a medium of instruction.

Literature Review

The primary goal of this study is to assess students' cognitive and intellectual comprehension of science subjects taught in English at the first-year level after the medium of instruction was switched from Urdu to English in class six. Language is a beautiful gift of verbal communication that nature has entrusted to humans. The relationship between language and education has piqued the interest of many academics (Qureshi, 1975). Whorf (1956) has occupied a significant reputation as a linguist who believes in intertwined relation between language and thought, and this notion has given stimulus to uphold the place of native language in education. Theodore's (2002) work often emphasizes the importance of language in everyday life. He believes that there will be no development, no society, and no culture without language. However, his thesis differs in that he addresses strategies for teaching foreign languages in situations where it is difficult to survive without them. His work is critical for countries like Pakistan, where successful English language instruction is needed to compete with the rest of the world before national languages are established to the required level. Theodore's thesis, on the other hand, is more general and not focused on the linguistic issues of a particular nation.

In relation to the importance of language in education in Pakistan, Qureshi (1975) opposes the use of any foreign language as a medium of instruction. For him, it triggers brain fag, puts excessive fag on children's nerves, turns them into crammers and imitators, makes them unfit for original jobs, and prevents them from passing on their knowledge to their family or the masses. The international medium effectively makes children foreigners in their own country, preventing the development of our vernaculars. The use of a mother tongue is the only way for a man's mind to grow naturally. In their survey on the issue of medium of instruction in the Chinese context, Vivienne and Athinson (1996) explain their experience conducting research in Hong Kong. After conducting research at the secondary level in some Medium English schools, they discovered that when students were subjected to composition tests in their mother tongue, a larger number of students scored above average. Oller (1979) proposed a universal language proficiency definition and gathered enough evidence to back up his claim. Cummins, on the other hand, disagreed, claiming that children acquire certain aspects of language learning faster than their peers and that some aspects continue to develop throughout their lives. Cummins (1979), on the other hand, disagreed, claiming that while some aspects of children's first language learning (such as phonology) plateau relatively early, others (such as vocabulary knowledge) continue to evolve throughout our lives. As a result, these disparate dimensions of proficiency cannot be equated to a single unitary proficiency dimension. Swaine shows that older children had an edge in some linguistic and cognitive skills: they were more cognitively advanced, more able to abstract, define, and generalize while formulating and applying their own language.

According to Swain (2000), students' use of the L1 allows them to build techniques for carrying out assignments in the target language and solving complex problems more quickly than they do with their L2. The direct approach, according to Yu (2000), imitated how children learn their first language, stressing the avoidance of translation and the direct use of the foreign language as the medium of instruction in all cases. In Malawi and Zambia, William (2003) investigated the effect of language of instruction on reading ability in L1 and L2. His research does not focus on cognitive skills, and his background differs from that of current research. MacSwan (2005) talks about the difficulties. In Pakistan, according to the Year Book of 1988, it was unanimously agreed in the Provincial Education Minister's Committee of 1987, chaired by a federal minister, that Urdu should replace English as the medium of instruction, but English should be included as an additional language up to secondary level. Iqbal (1989) sheds light on the subject of science education, as well as the medium of instruction and political perspectives in educational decision-making, but his study is not based on any language theory. It is focused on surveys, and the data gathered is used to develop its methodology. The current study is based on Jim Cummin's theory and employs experimental methods to further the investigation (Akhtar, 1990). Mansoor (1993) avows the role of the mother tongue as instrumental in better literacy. It supports the idea of Cummins (1979) that one's native language whets academic proficiency.

Theoretical Framework

Basic Interpersonal communication Skill (BICS) is a conversational language used in everyday situations. Cummins (1984) distinguishes between social and academic contexts when it comes to expression. BICS proficiency does not imply that a child is adept at comprehending scientific concepts. Academic language acquisition entails more than just learning content-area vocabulary. Comparing, classifying, synthesizing, assessing, and inferring are some of the skills covered in academic cognition. Language becomes more cognitively demanding, as well. Students are exposed to new ideas, concepts, and vocabulary at the same time. Cummins' traditional underlying proficiency model of bilingualism can be depicted graphically as two icebergs. Both languages are in use.

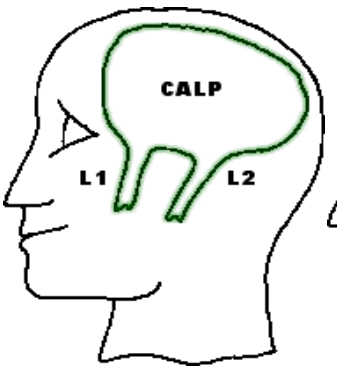

Figure 1: CALP

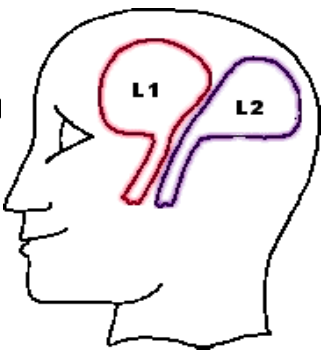

Figure 2: BICS

According to Cummins (1979), cognitive proficiency in a language includes at least 5 to 7 years of immersion in the learning environment, such as classrooms and books. The common underlying pool of language aids in attaining academic proficiency in the target language over a period of 5 to 7 years. The study's aim is to assess first-year students' academic English proficiency in the light of Cummin's proficiency model.

Methodology

Participants of the Study

The participants in the current research study were all intermediate level students in the Mansehra district of Khyber Pakhtunkhwa. At the college level, students are exposed to a single medium of instruction. As a result, while there is a standardized style of education at this level in terms of language, context education is taught in a variety of ways. In the current situation, one section is those whose medium of instruction has been modified from Urdu to English from class 6 onwards, but there is still one category of schools where students are taught in the Urdu language before they reach matriculation. Regardless of medium, quality, and standard can vary from institution to institution. Two subjects were chosen for teaching and evaluating students from the selected institutions. The students had never been taught or tutored on the subject matter of the studies before. The exam was of the conceptual kind, with the emphasis on learning English language concepts. A test was designed to evoke the cognitive ability of the learners of experimental groups. There were total 20 students comprising of 10 each from those who were taught English throughout and 10 those whose medium of instruction changed into English after class six dubbed as private and government respectively. At the college level, they all were treated the same. In the light of Bloom's (1956) taxonomy of learning domains, the researchers put Cummin's BICS and CALP theories to the test. The primary goal of this study was to determine the learners' cognitive academic proficiency, so the researchers only borrowed the cognitive domain of Bloom's taxonomy. As discussed in the preceding paragraph, the aim was not to test the students' grammar or high-frequency vocabulary. The students were taught in an almost direct manner. Cummins' CALP model states that a person's cognition in a given language is dependent on how long he or she stays in that language. The subjects were explored in great detail in class. Since academic language is context reduced rather than context embedded or context laden, inferences,

exemplifications, and nonverbal language were used to make it context embedded. It wasn't just lecturing; it was a method of debate in the classrooms. The researchers attempted to teach in a harmonious manner in all of the classes and to ensure that all students participated. Since the students in the experimental groups were apprehensive about their names being included in the study, the researchers promised not to reveal their identities. Instead of naming their names, the researchers listed their numbers to comply with this ethical requirement.

Data Analysis

The aim of this study was to see if Cummins' theory of Cognitive Academic Language Proficiency (CALP) was having any relevance in the Pakistani context or not, and the nature of the data was quantitative. The researchers intended to investigate more about the students' comprehension abilities. The annual results are not the determining factors for the analytical competence, and the aim of the study was not to find fluency in a language, but rather literacy, which Cummins refers to as BICS and CALP difference (Cummins, 1984). The study's findings were not intended to be an exact measure of students' fluency in a specific language, but rather their ability to comprehend and understand with respect to the creative sense of education as discussed in Friere (1973). The results of the students on the Cognitive domain showed there was not a considerable difference in their academic achievements. Both the groups were taught in uniform pedagogical principles adopting the English language. A statistical quantification is applied for the convenient presentation of data.

Statistical Formula

On the basis of numerical values obtained from the self-designed tests of the learners of both group, the following values are calculated.

1. We state our null and alternative hypothesis as $H_{0:}\ \mu$ = The mean results are equal.

$$H_{1:}\ \mu = \text{The mean results are not equal}$$

2. We select our level of significance5%. $\alpha = 0.05$

We use student distribution, but the following have paired observations in this problem, so we use t-test: Paired two-sample for means.

$$.t = \bar{d} / sd / \sqrt{n}$$

Where $\bar{d}$ = difference between two groups of observations and s^2d is the variance of difference, where d bar is the mean difference between two samples, s^2 is the sample variance, n is the sample size, and t is a paired sample t-test with n-1 degrees of freedom.

3. The critical region, which we used at 5% of significance, is

$$t \geq t_{\alpha/2;\nu}$$

Where for the hypothesis are $t_{\alpha/2;\nu}$ the upper critical value from the *distribution* with degrees of ν freedom. Critical values we found in t-test table. This is two-tailed test so our critical values

are in the table are 2.262 and -2.262 in our distribution.[xxxv] After calculating the parameter, we will compare the calculated value with thetablevalue. If the calculated value is greater than the table value, then we will reject the null hypothesis for the paired sample t-test. If the calculated value is less than the table value, then we will accept the null hypothesis in the paired sample t- test and say that there is no significant mean difference between the two-paired samples in the paired samplet-test.

Computation

Results

Table 1. $\bar{d} = \sum di / n \bar{d} = -73/10\ \bar{d} = -7.3$

Students	Private	Government	di(difference)	di^2
1	70	68	-2	4
2	75	77	2	4
3	52	68	16	256

4	77	64	-13	169
5	78	31	-47	2209
6	73	49	-24	576
7	74	72	-2	4
8	63	79	16	256
9	77	73	-4	16
10	71	56	-15	225
∑	710	637	-73	3719

$s^2d = \sum(di - \bar{d})/n-1 = 1/n-1[\sum di^2-(di)^2/n]$ $s^2d=1/9[3719-(-73)^2/10]$

$s^2d = 1/9[3719-532.9]$

$\sqrt{s^2d} = \sqrt{354}$

$sd=18.81$

now

$t = -7.3/18.81/\sqrt{10}$ $t =-1.22$

The null hypothesis H0 and may conclude that the data do not provide sufficient evidence to suggest that the different medium of instruction affects the findings because the measured value of t = - 1.22 does not fall within the critical field. Thus, in the context of this study, the basic hypothesis that a shift in the medium of instruction has no effect on students' cognitive academic performance has been proven correct. In the light of Bloom's taxonomy of learning, there are variations in student achievement at individual levels in different areas of learning. The majority of students received maximum marks.

Discussion

The findings of the study reveal that the students of both groups had minor language problems, but their CALP levels were almost identical. The primary goal of this study was to assess students' cognitive and intellectual understandings when their medium of instruction was switched from Urdu to English. The findings of the study suggest that beginning English as a means of instruction in science subjects in grade six does not burden students' minds when they enter college. A shallow policy of blindly following any "master language' creates a servile mentality among people who do not work for their own language. There is a difference between rhetoric and true cognition, and there is theoretical support in favor of first language presence in early education; this is what Cummins called Cognitive Academic Learning Proficiency. The learners who are exposed to their mother tongue their cognition is free of the misty and foggy concept of ideas. If we take a particular example of Pakistanis settings and especially those students who were taught in their mother tongue, their intellectual abilities are sufficiently developed over a five-year period in an English language setting for them to effectively interpret, synthesize, compare, and assess ideas in science subjects. They are able to think in English and perform almost as well as those whose medium of instruction has never changed from English. BICS should not overlook anyone, and CALP decisions should not be taken solely on the basis of English language proficiency. The study's findings are very positive, and they steer our attention away from the popular misconceptions about our educational system's problems. After a long period of interaction with students and the general atmosphere of educational institutions, the researchers came to the conclusion that the problem is someone else and that someone else is to blame. When approached scientific inquiry, the English language is not an issue. If other countries around the world are dealing with linguistic problems in the current period of globalization, and students from non-native English-speaking areas are clinching world-class distinctions, why not Pakistanis?

References

Iqbal, H. M. (1989). Education and Medium of Instruction: Science Teaching, the Language Policy of the Government, and its Impact. Táleemat, 11. 23-32.

Akhtar, R. (1989-90) Pakistan Year Book : Karachi: East and West Publishing Company

Bell, B. (2006). Mother-tongue maintenance and maths and science achievement: A contribution towards the formulation of multilingual language-in-education policies for South African schools. Retrieved from http://www.und.ac.za/und/ling/archive/bell-01.html2.

Callard, K. (1958). Pakistan; A Political Study. London: George Allen & Unwin Ltd.

Cummins, J. (1979). Cognitive/academic language proficiency, linguistic interdependence, the optimum age question and some other matters. Working Papers on Bilingualism.19. 121-129.

Cummins, J. (1984). Bilingualism and special education: issues in assessment and pedagogy. Clevedon, England: Multilingual Matters.

Cummins, J. (1996). Negotiating identities: Education for empowerment in a diverse society. Los Angeles: California Association for Bilingual Education.Garcia, B. (1997, Fall). On BICS and CALP: An informal discussion. OMSLE Newsletter, p. 8.

Ellis, R. (1985). Understanding Second Language Acquisition. Oxford: Oxford University Press

Freire, P. (1973). Education for critical consciousness. New York: Seabury Press.

Cummins, J. (1979). Cognitive/academic language proficiency, linguistic interdependence, the optimum age question and some other matters. (Working Papers on Bilingualism, No. 19, 1979) 121-129.

Swain, M., & S Lapkin,. (2000). Task-based second language learning: The uses of the first language. V(4). Language Teaching Research

Mansoor, S. (1993). Punjabi, Urdu, English in Pakistan: A Sociolinguistic Study. Lahore: Vanguard.

October, M. (2002). Medium of Instruction and its effect on matriculation examination results for 2000, in Western Cape secondary schools: a study of examination results in relation to home language and language medium (Mini-MPhil dissertation). Cape Town: University of Cape Town .

Oiler, J. (1979). Language tests at school: A pragmatic approach. London: Longman.

Qureshi, I. H. (1975). Education in Pakistan. Lahore: MAAREF.

Rahman, T (1996). Language and Polities in Pakistan. Karachi: Oxford University Press.

Sharif, (1959). Commission on National Education, Islamabad: Ministry of Education.

Vincent, C. (1996). Singing to a star: The school meanings of second generation Salvadorean students. (PhD dissertation). Fairfax, VA. George Mason University. Retrieved from

Whorf, B. L. (1956). Language, Thought and Reality: MIT