

ORIGINAL ARTICLE

Impact of Bilingual Approach in Undergraduate Education of Health Sciences

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ABSTRACT

Objective: The study aims to evaluate the effectiveness of English only and bilingual approach with additional use of Urdu as medium of instruction for facilitating students' learning and communication in academic and clinical interactions, in undergraduate education of health sciences.

Study Design: Survey based quantitative study.

Place and Duration of Study: The study was carried out at Islamic International Medical College, Islamic International Dental College and Riphah College of Rehabilitation Sciences belonging to Faculty of Health and Medical Sciences, Riphah International University Islamabad, Pakistan from May to September 2013.

Materials and Methods: A survey was conducted by administering two structured questionnaires using ordinal scale. Questionnaire A was filled by 600 students and B by 60 teachers. The collected data was processed and analyzed by SPSS version 17.

Results: Thirty five percent students came from institutions using only English medium of instruction. 55% received education in both (English and Urdu) and 10% in other languages. The students speaking Urdu with parents and patients were 63% and 79% respectively. 50% and 61% students talk in both languages with friends and teachers respectively because of comfortable communication and expression. 62% students prefer to be taught, 54% prefer to give viva voce and 55% understood viewpoints better using both languages. 87% students and 91% teachers admitted that use of Urdu enhances learning. 84% students confirmed that teachers used both languages during lectures and 72% teachers admitted it. Considering $p < 0.05$ the nonparametric test applied shows significant value of 0.0499.

Conclusion: Bilingual approach in medium of curriculum using English and native languages is an effective tool for better learning, expression and communication.

Key words: *Dual medium education, Higher education, Bilingual approach.*

Introduction

The continuous efforts with development of various strategies and tools, to improve learning and teaching with aspiration for excellence, are evident in the history of educational research. In addition to role of students and teachers, the impact of medium of instruction or language of curriculum demands further exploration. The medium may be mother, local, national or any foreign language. Cummins highlights two levels of language proficiency. The basic interpersonal communication skills represent language of informal conversation. The cognitive academic language proficiency (CALP) requires higher levels of language and cognitive processes needed for success.¹ The lack of command on language and CALP result in lack of learning leading

to deterioration in educational competency and development of rote memorization.

The local and international literatures highlight the importance of local/mother language and effects of foreign language in education. The local language as integral part of an individual's philosophy, promote comprehension and accuracy of expression. The learning would be faster with enhanced participation.^{2,3} It is the most effective and natural mean of mutual understanding, because of more familiarity with words, script, synonyms and formalities.⁴ The concepts are grasped rapidly. The foreign language is felt as barrier for interaction. The ease in expression and development of command is not possible. Learning requires more effort and time.^{5,6} It may also pose conceptual, linguistic and psychological problems.⁶

The vigilant nations like Europe, USA, China, Japan and Russia etc. that achieved academic excellence and progress use vernacular medium from primary to higher education. The states having local language other than English teach it as second alternate. The foreign students learn local language but now the

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option of English medium shows bilingual inclination. Many countries like Uganda, Nigeria, Turkey, Arizona and Vietnam etc. are switching to native languages through immersion phases of mother tongue based bilingual education or multilingual approach.^{2,3,6,7,8}

The national language Urdu is most commonly spoken in multilingual Pakistan. When English was declared as medium of instruction in 1835 in sub-continent, Medical colleges of Calcutta and Agra, Engineering College Rarki and Veterinary College Poona had Urdu medium.⁵ Jamia Usmania (Haideraabad Dakkan 1917) and Jamia Milia Islamia (Ali garh 1920) were recognized for post-graduate admission in European universities. Urdu was allowed at primary level in 1887, matriculation in 1930 and intermediate and BA levels after 1947.⁹ The country has both Urdu and English medium institutions but higher education is still in English.

Baker defined Bilingual Education as learning in more than one language often encompassing more than two. The use of native and curriculum languages transforms translanguaging into useful resource to teach and integrate content in two languages. It improves learning and ability to function across cultures. The resultant impact is not linear sum of 2 but multiple trajectory of $1+1=11$.¹⁰ Weak Parallel bilingualism implies that instructions and some of study materials are provided in both languages. The strong or perfect Parallel bilingualism requires provision of tuition, course material and text books in both.¹¹ In USA, Bilingual Education Act 1968 combined with Supreme Court decision 1974 requires instruction in native language of students for education in all subjects. The National Association for Bilingual Education (NABE) was established to ensure educational excellence and equity for all students.¹²

The reluctance to participate and express in English only during academic interactions and additional use of Urdu is observed in many students of health sciences including those who studied throughout in English medium. Dissatisfaction about clinical communication is also felt within community. Bilingual interactions to students and professionals are suggested to address these issues. This study aims to evaluate the effectiveness of English only and bilingual approach with additional use of Urdu as medium of instruction for facilitating students'

learning and communication in academic and clinical interactions, in undergraduate education of health sciences.

Materials and Methods

The research was conducted in Islamic International Medical College, Islamic International Dental College and Riphah College of Rehabilitation Sciences belonging to Faculty of Health and Medical Sciences (FHMS), Riphah International University Islamabad Pakistan from May to September 2013. A survey based research design with quantitative approach was used. To access the participants, written approval was obtained from Institution Review Committee. Population included all students and teachers. Random samples of students from all classes and teachers (lecturers and above) were taken. The purpose of research and instructions were explained to all the participants. Two self designed structured Questionnaires, A for students and B for teachers, using ordinal scale and approved validity, were administered to investigate their opinions about language/s and bilingual approach as medium of instruction and communication. The disclosure of identity was optional. After discarding the incompletely filled ones, data of Questionnaires from 600 students and 60 teachers were processed and analyzed by SPSS version 17.

Results

The data revealed that 35% students came from institutions using only English as medium of instruction, 55% students received education in both (English and Urdu) languages and 10% in only Urdu or other language. Figure 1 shows Student feedback and Figure 2 shows Teacher feedback about languages used in academic interaction. The student feedback about languages used in clinical interaction is shown in Figure 3 and for social interaction in Figure 4. During lecture, in addition to English, Urdu is used always by 25%, more frequently by 20%, less frequently by 50% and never by 5% teachers. The students and teachers understand the point of view of others better in English were 12% and 8%, in Urdu 29% and 12% and both languages 59% and 80% respectively. The percentages of students and teachers who think that people understand their point of view in English were 6% & 8%, in Urdu 38% & 16% and in both 56% & 76% respectively.

The reasons for using language/s in descending order of frequency were feeling comfortable to interact, ability to express fully and understanding of language. Mostly the students give viva and patients use the language in which they can express better. The enhancement of learning by use of Urdu was agreed upon completely by 63% students and 55% teachers, to some extent by 24% and 38% respectively. About 6% students and 2% teachers

disagreed and 7% thought that it would not matter. The reasons of enhanced learning were mostly comfortable communication and command over both languages. Considering $p < 0.05$ the nonparametric test applied shows value of 0.0499 which is significant and further enhances our result. The 100% validity of questionnaires and 98.3% reliability were confirmed by SPSS.

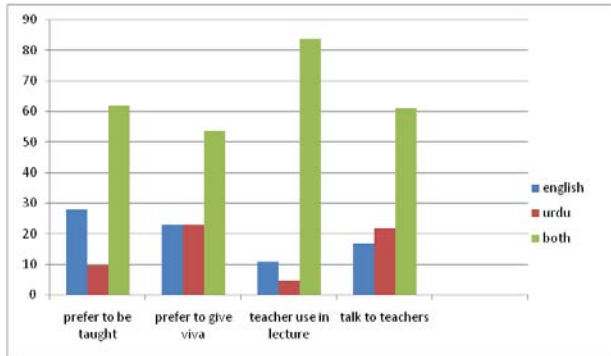


Figure 1: Student feedback about language used in Academic interaction

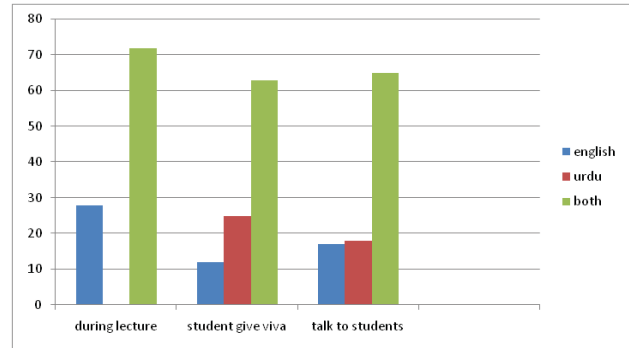


Figure 2: Teachers' feedback about language used in academic interaction

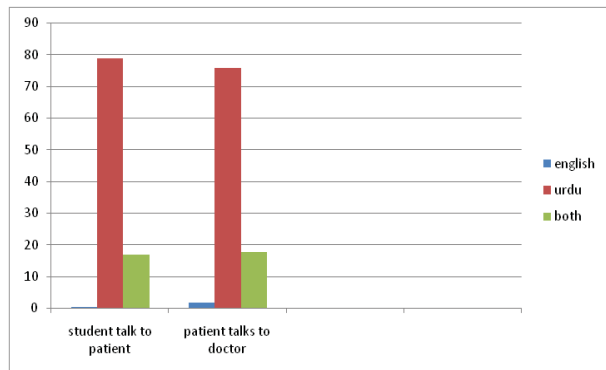


Figure 3: Students' feedback about Language used in clinical interaction

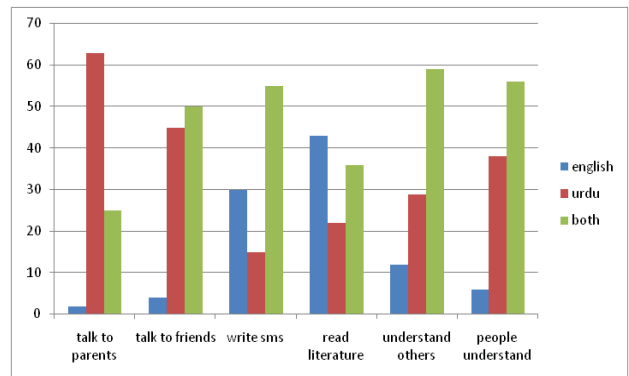


Figure 4: Languages used for social interaction by students

Discussion

The practice of Bilingualism exists at secondary, intermediate and even under graduate health sciences levels of education in our setup. Most of the participants admit the enhancement of learning and use it for academic, clinical and social interactions. Similarly international research conducted at various levels of education highly applause its effectiveness for language minorities and majorities to achieve command on subject.^{7,8,13,14,15} Charles L Gleen considered educational settings that use two languages for significant intellectual and cultural achievement as the best. Two ways bilingual programs in California State up to 12th grade showed great promise for academic excellence for all

students.² The meta-analysis at Arizona demonstrated effectiveness of bilingual education more than English only alternative and development of ability in students to engage academic content in two languages.⁷ In Vietnam Mother tongue based bilingual education proved positive results in terms of increased access and equity, improved learning outcomes, reduced repetition and dropout rates, socio-cultural benefits and lower overall costs.⁸ The switching from one to another language heightens ability to monitor the environment, improves cognitive skills, executive function of brain that direct the attention processes and shields against dementia in old age.¹⁶ Ofelia Garcia considered bilingual approach as the best choice to improve students'

learning in the 21st century.¹⁰

Purser pointed out the inevitable and universal use of more than one language in higher education.¹⁷ The University of Puerto Rico has been promoting Spanish/English bilingualism for more than 100 years requiring proficiency in both languages.¹⁸ Free university of Bolzano/Bolzan offer bilingual and trilingual studies with the motto of "Dare to be multilingual".¹⁹ The Afrikaans medium universities in South Africa repositioned themselves as bilingual with flexible policy on medium of instruction and allowed various deviations of bilingualism. Other bilingual universities around the globe include University of Ottawa (1848), University of Fribourg/Freiburg (1889), National University of Rwanda and Istanbul Technical University etc.¹¹

In addition to the reasons that led to prevailing bilingualism for teaching and viva in our set up, the changing landscape in higher education in Europe contributed to its growth.²⁰ Other reasons include preservation or development of minority language and culture, bilingual context, market driven forces and changing student demographics.¹¹ Bilingual higher education could be established through principle of bilingual parallelism. The difference of our teachers' opinion about frequency of Urdu use justifies suggested application of weak Parallel bilingualism to undergraduates and continuation of monolingual instruction at post graduate level.¹¹

There is limited research exploring language awareness in medical teaching, health education and care and also factors influencing language choice for a certain language speaker. The significance of an effective interpersonal communication between doctor & patient and student & teacher in multilingual societies and universal drive for culturally and linguistically appropriate healthcare practice demands that the students and health professionals should develop better proficiency in languages predominantly used by patients along with English. The predominant use of national language by our patients automatically requires language awareness training as recommended for enhanced healthcare delivery.²¹ In Taiwan, medical discourse is carried on mainly in Mandarin and English. The communication problem for health education to the monolingual illiterate public speaking Southern Min was addressed by the

speaker's preference of Southern Min in the spoken discourse which provided comprehensive and easy-to-access medical knowledge for the lay audience.²²

Encouraging results of self management were found in diabetics who were provided instructions and guidance by bilingual Mexican American nurses, dieticians and community workers.²³ Institute for Spanish Language Studies California offers medical Spanish training including medical terminology, patient interviews and anatomy to help medical students and professionals in dealing patients.¹⁴ Multilingual interactions in internationalized academic dentistry are suggested to address the issues of language and culture in clinical communication and education.¹⁵

Peih-ying Lu and John Corbett contributed towards establishing sub-discipline of medical linguistics. They addressed the developments in medical and language education and perceptions of medical educators about medical language. The methodological shifts towards 'task-based' and 'problem-based learning' in both fields have broadened their focus on clinical expertise and linguistic skills to address issues of cultural competence, understand spoken discourse in medical settings, use of tasks and problems in language education for medics, the development of critical skills and use of literature and visual media in language education for doctors. These changes are responded by re-imagining the language classroom in medical settings as an arena for the exploration of values and professional identity. The medical educators have to broaden their understanding of the challenges faced by non-native speaker medical students or doctors to address the issues of professionalism.²⁴

The world is aiming to have bilingual education re-conceptualization and practices are becoming more popular.^{3,10} However multi-dimensional extensive research in health education is needed to confirm the benefits of bilingualism as medium of instruction and academic and clinical communication in order to recommend official implementation. The survey can be extended to other public and private health institutions at local and national level for further verification. The patients' opinion in this regard should also be explored.

Conclusion

Admitting the importance of native language and English to access latest developments in knowledge and research, bilingual approach is an effective tool for better learning, understanding and verbal or written expression. The approach can be employed for command on the subject and its application leading to creativity and innovation in undergraduate education of health sciences. To serve the community effectively through accurate diagnosis, better management and patient compliance, health professionals should also be trained in medium of communication prevalent in society.

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