



ADDRESSING ENGLISH AS UNIVERSAL LANGUAGE OF SCIENCE

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ABSTRACT



A language is always equated in terms with communicative purpose. At the same time it also serves as a link between different people, a window to the developments and as a bridge to different cultures. In this paper, the importance, status and the role of English language is addressed specially in the development of science. The paper also analyzes how a language acts as a tool in the process of global communication of scientific research. The distinct challenges faced by scientists who are not native speakers of English are also discussed. It is concluded that the position maintained by English language need to be retained for universal dissemination of scientific knowledge keeping in view the limitations of those who are not the native speakers of English language and this can best be achieved when all members of the scientific community work together for the betterment of humanity.

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INTRODUCTION

English today is the third most common native language in the world, after Mandarin and Spanish and around 378 million people speak English as their first language. Mandarin and Spanish is limited to certain geographical areas of the world whereas English has broken down the barriers of the nations and brought the people closer. English being the universal language serves as a link between different people, a window to the developments and as a bridge to different culture. Likewise, English is now used almost exclusively as the universal language of disseminating knowledge in science and technology. Roughly 80% of all the journals indexed in bibliographic databases are published in English. Therefore, by learning a single language, scientists around the globe can access the various publications

in their area of interest and can communicate with other scientists working in related fields anywhere in the world. A vast amount of scientific and technological developments has come out in the form of books, periodicals, journals and manuals which are mostly available in English language giving it the status of "Library language"(Baruah, 5). The use of English by scientist all over the world makes the language more dynamic by enriching the vocabulary of the language. However, the use of English as the universal scientific language creates distinct challenges for those who are not native speakers of English (Drubbin and Kellog, 1399). Moreover, the supremacy of the English language in the field of science, including education, research, publications, seminars, workshops, conferences and scientific symposia, could lead to

poorer outcomes in the field of research and development because of the possible exclusion of those not able or not willing to adapt. It might also contribute to the gradual elimination of other languages and other cultures, with unknown consequences for the advancement of science and technology. This paper discusses the potential benefits and demerits of using English as a single language of science.

MATERIALS AND METHODS

A general search was carried out in bibliographic databases such as Science Direct, PubMed, Google scholar and Web of Science to get available information about the predominant languages used in writing scientific articles. The role played by English language in the dissemination of scientific knowledge through various means such as journals, web, education and research was analyzed. The relative importance of language learning in the curriculum of science scholars is also examined. Language biases in the comparison, evaluation and ranking of journals is also studied.

RESULTS AND DISCUSSION

Globalization is one aspect of the larger phenomenon of modernization, which describes societies characterized by progressive growth in the complexity of communications (Charlton and Andras 869). Despite its inevitable problems, globalization is a generally desirable phenomenon, since it enables increased efficiency, effectiveness and capability of societies and thereby, potentially benefits most people most of the time (Charlton and Andras 869). Globalization in business, education, research, politics, culture and other aspects of our everyday life is viewed by many as an inevitable reality. Scientific research was one of the first global communication systems, especially at its most advanced levels and high quality scientific research and education at post doctoral level is essentially global. The lower levels of science education at doctoral, undergraduate, and even school teaching levels is also getting globalized progressively (Falagas *et al.*, 655). The increasing role of English in science can be observed through the analysis of the language used in scientific journals. These journals, either in print or web, play an

important role in the advancement of science, since they are one of the main channels used by scientists for the dissemination of their discoveries and inventions (Bordons and Gomez, 189). The ratio of the number of research articles published in English and in the official languages of various countries during 1996 to 2011 was studied by Weijen (7). The results of the study show that the use of English has continued to rise strongly in the Netherlands, Italy and the Russian Federation during 1996 to 2011 (Weijen, 8). The trend in using English language in scientific publications increased to a certain extent in Germany, but remained relatively stable in France, Spain and China (Weijen, 8). However, in Brazil, the ratio between the use of English and Portuguese was decreasing, although this might be due in part to an increase in the coverage of Brazilian journals published in Portuguese in various bibliographic databases. However, overall, the use of English continues to increase over time (Weijen, 8).

Biodiversity in every ecosystem is viewed as an important factor in the maintenance of a balanced and healthy environment (Falagas *et al.*, 655). A similar diversity in languages and cultures plays a significant role in the advancement of science. It is estimated that below 15% of the world's population speaks English, with just 5% belonging to native English speaking community. For scientists whose mother tongue is not English, writing research articles and projects, applying grants from universal funding institutions, preparing presentations, and communicating directly with other scientists in English is much more challenging than it is for native speakers of English (Drubbin and Kellogg, 1399). Moreover, when an article is submitted in an international journal published in English language by a scientist belonging to non English speaking nation, the manuscript reviewers often focus on criticizing their English, rather than evaluating the scientific results and logics. This makes it difficult for their manuscripts to get a fair review and, ultimately, to be accepted for getting published. Therefore, the difficulties faced by the nonnative speakers of English needs to be recognized and alleviated by the global scientific community. Reviewers and editors can suggest the authors to seek

assistance from experts or professional editing agencies in preparing and revising the manuscripts. In addition the journals should employ copyeditors, to correct any lingering errors in language and grammar before final acceptance and publication of an article. The problems faced by the scientist who are non native speakers of English can be alleviated to a certain extent by introducing a curriculum giving special thrust on language learning aiming at achieving proficiency in the language. Language biases also play key role in the comparison, evaluation and ranking of journals based on impact factor, due to the simple fact that the science citation indices also covers non-English language journals of which the papers have a considerably lower impact than those in the English-language journals.

The fact that English is the lingua franca of science is not likely to change anytime soon (Drubbin and Kellogg, 1399). In this context, it seems logical to consider that English should be used in international scientific journals, mainly those covering basic research and aiming at reaching the global community, while national languages should be the most appropriate choice for those journals oriented towards the national readers, generally those focusing topics of local interest (Bordons and Gomez, 190). Moreover, advancement of science and technology depends on the elimination of hurdles faced by nonnative speakers of the English language and this can best be achieved when all members of the scientific community work together for the betterment of humanity.

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