

Discussion on IPM 46: International co-operation in research on statistics education

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Nowadays our world is too competitive and collaboration is not emphasised enough. Cooperation is natural and beneficial, however, for those involved in the different aspects of statistics education and this has been recognised by the IASE in organising this Invited Paper Meeting and in choosing Theme for the forthcoming International Conference on Statistics Education, ICOTS-7, to be held in Brazil in 2006. I am glad to have been given the chance to react to these examples of how this cooperation can be carried out.

Global communication as well as increasing interest and respect for complementarity in education are leading to a number of successful international cooperative statistics education research and educational programmes. One such example is the Juarez Lincoln Marti Education project (<http://facultyweb.cortland.edu/~matresearch/>), which I was happy to follow at a distance for a number of years. Scientific and pedagogical workshops in Spain, Mexico and Venezuela, collaboration in setting the statistics curriculum in Argentina, exchange and scholarship programs, and donations of teaching materials contributed to the improvement of education in Iberoamerica, as well as to strengthening the understanding between different research teams and centres.

The multiple training efforts by the Department of Biostatistics of North Carolina University at Chapel Hill and by the International Clinical Epidemiology Network (INCLIN) sets another good example of Interdisciplinary cooperation for research. This collaboration is essential to develop statistics itself, since many central statistical concepts and procedures arise from research problems in other subjects. At the same time non-statistician researchers, whatever subject he or she is working in, benefits by having statisticians as part of their teams, and thus assuring their problems will actually be solved.

International exchange is a well-known way of improving the quality of teaching, learning and research. The Brazilian academic exchange experiences were promoted from different institutions to facilitate international scientific collaboration both of Brazilian researchers in foreign countries and vice-versa. In her presentation Clarice Demetrio describes her own experience as a foreign doctoral student in the United Kingdom and how later she started collaborative research and built links with prestigious colleagues. This was the starting step for statisticians from several countries to visit Brazil, give talks, teach short courses and do research. Later she also spread the acquired knowledge through courses in Brazil and other Latin America countries and helped young Ph.D. students to get travel funds to develop abroad part of their research.

These are just examples of other similar projects that have been carried out in different countries and pose different problems to statistics education. Collaborators have

varied professional backgrounds, strengths, interests and experiences that at the same time enhance and pose some challenge to research (see papers at the IASE Round Table Conference, Batanero, 2001). It is often the case that non statistician collaborators have minimum training in statistical methodology or may not be conscious of the relevance of data quality for the research results. Bangdiwalla offer us sound arguments to suggest that we should help these researchers to expand their level of statistical literacy, as a necessary prerequisite to assure standardise procedures across sites and personnel in multi- centre research. In doing this he is at the same time expanding the meaning of the very concept of statistical literacy (Gal, 2003), which is not just related to basic abilities but that will depend on personal contexts and necessities. Examples suggested by Bangdiwalla include study design, quality assurance principles, study conduct and monitoring procedures, as well as principles of statistical analyses. He also warns us about the importance of being respectful with the different cultures, background and styles of interaction in an interdisciplinary or international collaborative programme. We all have to learn to profit of diversity, in addition to complementing each other in working together.

Romeu points to language barriers as another reality that difficult international cooperation. Even when we tend towards having English as the main scientific international language, this is far from be achieved in several geographical areas, where, however, there is valuable research which deserves to be known and taken into account. Perfect English fluency should not be the main criteria for scientific acceptance and the international community is responsible to help researchers with language difficulties to integrate. This probably will require flexibility in accepting some other languages for communication, or helping translate main statistics education works to other languages when possible.

Putting freely available materials at Internet is another collaborative action carried out in the different projects described in this Meeting. This type of collaboration is increasingly more frequent today and is contributing to the democratization of knowledge. Getting updated in scientific journals and bibliography is today extremely expensive and for this reason researchers from developing countries as well as students anywhere are being more dependent on materials available at Internet. This fact has also being recognized by the IASE, which is preparing a series of listing of Statistical Literacy materials available at Internet as a part of the International Statistical Literacy Project.

In summary, collaboration is an important research and reflection theme for all who are engaged in research and teaching. It is true that implementation of such training programmes may be seen as a costly investment by companies or research centres. However, the presenters are suggesting different ways to reduce costs and showing how the opportunity to educate our collaborators today will reduce future costs. Modest programs or actions might also have a “multiplying” effect, when the people who benefits of that collaboration reproduce the training actions at their countries or centers. In the particular case of statistics education this will assure that young statistics educators will soon be able to follow our steps and continue expanding the scope of statistics education.

REFERENCES

- Batanero, C. (2001). (Ed.), *Training researchers in the use of statistics*. Granada: International Association for Statistical Education e International Statistical Institute.
- Gal, I. (2003). Expanding conceptions of statistical literacy: an analysis of products from statistics agencies. *Statistics education research journal*, 2(1).