Session C1

Training Junior Statistical Staff in Developing Countries

Session C5

The Use of Government Statistical Offices as a Resource in the Teaching of Statistics

Organisers:	Shibdas Bandyopadhyay (Calcutta, India) Len Cook (Wellington, New Zealand)
Invited Speakers:	Shibdas Bandyopadhyay (Calcutta, India) Len Cook and Valmai Copeland (Wellington, New Zealand) and Denis Farrell (Sydney, Australia) I P David and T A Mijares (Manila, Philippines) Dominique Ladiray (Malakoff, France)
Contributed Papers:	Sir John Boreham (Sevenoaks, England) Kenneth Bryson (Voorburg, The Netherlands) Brian Doyle and Graeme Brown (Noumea, New Caledonia) Ulf Jorner (Orebro, Sweden) Sam Tulya-Muhika (Kampala, Uganda) Karin Winqvist (Orebro, Sweden)
Short Presentations:	Chen Jixin (Beijing, China) Teresa Ng (Hong Kong) M G Sardana and K Kumar (New Delhi, India) Suwito Sugito and Darmosuwito Sukayat (Jakarta, Indonesia)

Introduction

In ICOTS 2, there was a session on Teaching Statistics in Developing Countries. From the experiences drawn from ICOTS 2, it was decided to include in ICOTS 3 a session on the Training of Junior Staff for Government Statistical Offices. The session was to have two sides, one relating to the developed and the other relating to the developing countries.

The papers in the two sessions span a number of common concerns, and in the Conference Proceedings they have been placed together.

The papers are in several groups. Those by Bandyopadhyay, David and Mijares, and Cook, Copeland and Farrell, provide an overview of the training needs and types of training.

The papers highlight:

(a) the stark differences in the resources available to statistics in developing countries compared to those with well-established systems;
(b) the need to see the level of numeracy and resourcing of those in the statistical office with that of the country in total;
(c) the uncertainty with which computerisation can be fully employed in developing countries without a computer culture;
(d) the comprehensiveness, diversity, and depth of vocational training for statistics office work;
(e) the need for courses to take place inside the country, and to relate to national issues and concerns;
(f) the need for courses to reflect the culture of those being taught;
(g) the potential loss from statistical work of highly trained statisticians and other experts so that their skills can be used in other government areas, or commerce;
(h) the dependence on regional institutes and training programmes for providing a significant element of statistical education in many, but not all, developing countries;
(i) the existence of innovative schemes such as the training schools in Indonesia and the Philippines;
(j) the need to recognise a great divergence in the academic background of statistical office recruits, when comparing country situations, Pacific Island countries;
(k) the interdependence of the statistical office with other functions of government;
(l) the capacity of the statistical office to support teaching initiatives, using its own experienced and skilled resources to provide lecturers;
(m) the potential for the use of statistical office materials to support case studies in survey operation and design;
(n) the use of the statistical office as a place of employment for trainees, to gain experience.

Specific scenarios for executing training programmes are addressed in the papers by Sardana and Kumar, Chen Jixin, Sugito and Sukayat, and Ladiray, and are oriented around the establishment of statistical training schools in India, China, Indonesia, and France.

These training schools provide a national facility for the training of statisticians who produce or use statistical data. They reinforce the in-service training of statistical personnel, by providing a diversity of courses in modern statistical methods, as well as planned outposting while under training. The training schools also provide a firm basis for the standards of statistical activity in the country, by putting vocational training on a consistent and wide basis, and providing refresher courses for experienced staff.

The papers by Boreham, Doyle and Brown, Jorner, and Winqvist comment on specific aspects of statistical training.

In the West Indies, a training programme emphasising local relevance across the community of numeracy has become the cornerstone of training programmes involving local teachers and in-service training.

The emphasis on the vocational element is described in the paper by Jorner who examines the vocational aspects of statistical office training, and contrasts this with academic teaching. This paper emphasises the importance of training as an integral part of organisational policy, and the applied focus of training in statistics.

The paper notes that goals of vocational training and student motivation are entirely different from academic ones. Vocational training is an investment, connecting training with the work actually being performed and linked to productivity changes.

Winqvist outlines a particular "Statistics in Action Course", which is designed to present and carry out phases of a survey in a proper order. After training, a small-scale survey is carried out, and statistical theory and practical problems are discussed against the background of the actual survey.

The course is unusual in that a real statistical survey is performed, mainly by the participants in the course. It illustrates the inter-connectedness of the different phases of a survey. The participants have a large influence on the content of the course, and the group-work creates an atmosphere of cooperation. This is valuable for future work.

The sessions emphasise that good statistical training consists of:

(i) teaching resources, independent of the context of the course;
(ii) teaching resources, defining the local context of the course;
(iii) teaching systems consistent with the culture of the students;
(iv) teachers competent in statistics as well as team building and similar skills;
(v) on-the-job applications, as part of the training.

The paper by Ng identifies how official statistical data is used to encourage the use of statistics.

The paper by Sam Tulya-Muhika compares the characteristics of statistical information gathering and of the African environment for statistics. The low standing of statistics is described as reflecting the quality of economic management, as well as a more fundamental side effect of African sociology. The Statistical Training programme for Africa is outlined by describing its training needs, input requirements, training infrastructures, programmes, and syllabuses. The paper suggests that the training of statisticians be linked to the areas of concentration at any time of international agencies. They also should span data processing, development studies, economics, politics, sociology, and industrial and other applications. The essential element is the establishment of statistics as an integral part of economic management and other activities, rather than a separate study. The statistical element of the training is to be well founded in

fieldwork, as well as teaching/lecturing.

The paper adds another dimension to that of David and Mijares, Boreham, Doyle and Brown, and Bandyopadhyay.

Ken Bryson of The Netherlands outlines a range of practical and methodological concerns of using videos, in the context of Africa, that have wide application. Bryson notes that video training can, in fact, increase the demands on teachers, as it becomes more student centred, hence giving the teacher the burden of responding to the needs of each student, at the prompting of the student. As such, teachers need to modify their teaching.