

Flexible Delivery of Statistics

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1. Summary

In this paper I discuss the move from being a classroom teacher of statistics to a teacher who is developing learning resources for on-line delivery to students. The change is from a classroom teacher where flexible delivery has meant drawing on the sights, sounds, movement, quiet and live shows to a teacher feeling the constraints of translating activity based programs to technologically based programs. In the talk I discuss possible ways of enriching on-line resources, so that the learning experience is not second the classroom learning experience.

2. Flexible delivery: one view

Flexible delivery is an approach to education that allows the "duration, intensity, place, method, delivery and media of instruction to change to reflect the learning objectives, the needs of the student, the subject and course requirements and the judgement of the teacher. The aim of flexible delivery is to enhance the educational experience and to increase participation in it." (20/4/01, http://www.uow.edu.au/admin/personnel/awards/ac_enterp00/ac_enterprise00-P5-33.html). It is a mode of delivery that has associated with its delivery a space, time and often technology dimension.

3. Flexible delivery: another perspective

Flexible delivery is about providing multiple, alternative pathways to learning and, for catering to the learning needs of the student. For me this has been through appealing to the students different senses. As a classroom teacher of statistics, my preferred mode of teaching has been through activities, questioning and storytelling and at times lecturing (telling students how it is, defining and demonstrating). Activities have been used to loosen and tighten (Kelly, 1955) students' thinking. My typical introduction to lecturing in statistics involves a dance, followed by questioning of students and a debriefing as to students' ideas about learning statistics. In a typical lecture a game may be played, students questioned about outcomes and following this a debriefing as to the nature of the statistical theory involved or the formalising of definitions. My role as teacher has been to anticipate the students' responses and to weave those responses, anticipated and not anticipated, into appropriate statistical theory. The art in teaching has been to surprise students with their knowing. My task now is to translate the subject based on the dance or game for the three hundred students to a subject delivered through technology. However, there was an interim position before adopting this technology driven approach to flexible delivery.

4. The interim position

If students are to participate in lectures students need to be free to think and act. One way of providing students with this freedom is to provide handouts and, as I discovered, to provide on-line learning resources. It was only when I asked a student 'how are you finding the lectures?' and he responded 'oh, I never go, I get the lecture notes from the web' that the spectre of teaching the subject via the web was raised. However, materials that may be a brilliant support for a lecture based delivery system may be a dismal failure in providing a stand alone subject. It was the suspicion that the alternative pathway, on-line delivery, is an inferior pathway that has spurned the development of

further resources. It is in this context that the focus of my presentation is based upon enriching on-line resources.

5. On-line solutions

The online solutions to be discussed include:

- A comprehensive manual for laboratory work
- An assessment package
- A writing style that encompasses an activity, think and answer, debrief sequence
- The use of a computer based management system, WebCT including lecture notes, worked solutions, communications, calendar of activities, quizzes
- The development of appropriate graphics
- The development of video materials to connect on-line students to a classroom context
- The development of video materials to provide a real world context
- The inclusion of applets which demonstrate statistical theory
- The development of a CDROM

REFERENCE

Kelly, G. A. (1955a). *The Psychology of Personal Constructs: A theory of personality*. (Vol 1). New York: Norton.

University of Wollongong (20/4/01). *University of Wollongong (academic staff) enterprise agreement, 2000 to 2003*.

http://www.uow.edu.au/admin/personnel/awards/ac_enterp00/ac_enterprise00-P5-33.html

RESUME

Dans cette communication, j'analyse les changements amérés par le passage de professeur de statistiques dans une salle de classe à professeur développant des ressources pédagogiques destinées à être envoyées aux étudiants par ordinateur. Dans une salle de classe la flexibilité de l'enseignement est basé sur les sons, les images, le mouvement, les silences ou les performances en direct. Dans ce changement, le professeur doit traduire des programmes basés sur tout un ensemble d'activités en programmes basés sur la technologie. Dans cette communication je parle des moyens possibles d'enrichir les ressources offertes dans un enseignement par ordinateur afin que l'expérience d'apprentissage par ce procédé ne soit pas inférieure à celle offerte par la salle de classe.