THE PROBABILITY MAP TOOL TO SUPPORT ACTIVE LEARNING

Luis Ojeda Silva, Sergio Parra Arenas, and Irma Molina
Universidad Austral de Chile, Chile
lojeda@uach.cl

If we always do the same as we did before, we will always achieve the same results. Improving requires change. The only permanent thing is change.

In our current world we have the need to educate and train our students to adapt to a changing society where they are faced with an increasing demand of knowledge in many domains, including an ability to learn how to adapt to this reality. This challenge in fact requires students to acquire not only the available knowledge, but also efficient self-learning abilities. This demand is clearer as information unfolds in multiple ways and students become used to contact with a great diversity of tools that mediate their learning in interactive small classrooms. Unilateral magistral lectures do not challenge the students’ cognitive construction process. In other words, if we want to prepare students to understand the society in which they live a substantial change is required in the teaching provided; since improvements are based on changes.

In this work we describe the development of didactic material to support active lessons, which combines PowerPoint presentations and Excel computation macros. The material includes a series of computer presentations focused on the probability content. The aim is to improve the students teaching-learning processes in these topics, since the technological point of view serve to interact with random phenomena, as well as to control and enlarge access to the information. The students will stop being mere receivers of knowledge and become active protagonists in their own learning, which will contribute to increase their self-esteem and satisfaction. The material offers students the possibility to go beyond the unit objectives in their study process. They will be able to freely explore the programs and carry out repeated trials of random experiments, adapt to diversity of probability models and increase retention of probability concepts. All of this will increase motivation and interest in learning probability due to the great wealth of attractive resources in the material and the free possibility of interacting directly with the contents. The material offers links to web pages where students can find additional information, news ideas, while respecting their different rhythm of work and learning styles.

In the presentation we will describe the general design of the didactic material and provide some examples of the same.