

ADIDACTIC ACTIVITY FOR THE INVERSE TRIGONOMETRIC RATIO

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In this report we deal with the design of software that has been programmed in the Program of Mathematics Education (PROME) hold at the National Polytechnic Institute (named IPN for the Spanish Instituto Politécnico Nacional) of Mexico. In PROME we do research on the mathematics teaching-learning processes; PROME also offers a Master Degree and a PhD Degree in Mathematics Education, both are on line. The programmed software is one of the first results of a project co-sponsored by National Council of Science and Technology and the Government of the State of Veracruz. The project is titled “Design, development and generation of on line didactic materials for teaching mathematics in the school system of Veracruz” (Register number CONACYT108952). We used Java[®] language for the programming of the adidactic activity (AUTHORS, 2010).

As Java applets already are used in education our question is ¿which are the new aspects our programmed activities offer? Under constructivism approach we know that people learn with the interactions with objects (Chevallard, Bosch & Gascón, 1998), we agree with this idea and this is why the basement of the project is the interactions student-computer that applets provide. It is also necessary to determine many variables: what information should the applet show on computers’ screen, how and why information is presented, and how the applet collects information from the student. This artificial place where interactions happen is called “environment” (Chevallard, Bosch & Gascón, 1998).

Many applets available in the web and designed by other researchers give to students some means to interact with the computer. Our proposal’s novelty is the implementation of an adidactic situation in the environment; in other words, a school mathematics problem given by the teacher to the student to be solved (Brousseau, 1997). This solving procedure leads the student to build new mathematical knowledge. We call adidactic activity to the couple of a computer program and an adidactic situation.

This poster includes one adidactic situation to study inverse trigonometric ratio.

References

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