Implementation of a trigonometric circle construal combined with physical computing

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Abstract

This work will provide a description of a lesson plan for implementation of a "trigonometric circle" using a construal created in the Construit environment and combined with a physical interface (Makey Makey). The trigonometric circle is a very basic lesson for understanding trigonometry at high school level in Greece. Through gaining knowledge of sine, cosine and tangent, a wide area of knowledge opens on various daily life problems. Within this work we prepare a lesson plan to teach this very important knowledge. The lesson plan is based on a construal. Making a construal is a way of using the computer to help us in making sense of a situation. It is introduced as a new digital method. The prepared worksheet can be used by any student to produce an artefact of the trigonometric circle step-by-step, working at their own pace. Construit is the environment used to produce construals. The learners build software artefacts that rely on construction by "making construals" using observables, dependencies and agents. Making a construal is a way of creating interactive open educational resources (OERs). Within this work we combine the ideas of constructionism with physical computing adding the Makey Makey technology as the user interface to move the slider within the construal.

References

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