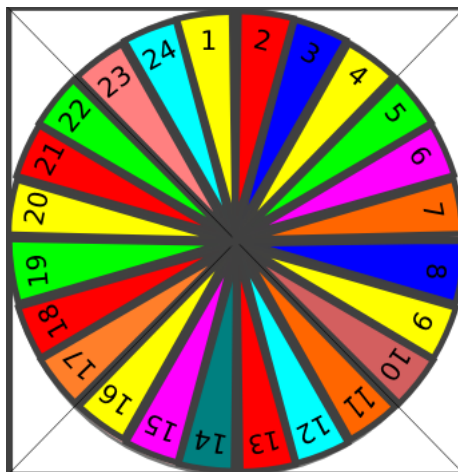


A *CLIL* activity for the technology workshop:
The wheel of Technology.
Didactic guide

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Abstract

This paper describes how to make a device in the technology workshop that can be used as a *CLIL* reinforcement activity for different subjects.

1 Introduction

The Technology subject in Secondary Education is ideal to practise the *CLIL* methodology. First, the technology workshop offers the possibility of designing, making and checking classroom projects (*project-based learning*) that can be made in groups (*co-operative learning*). The manipulation of materials and tools is always motivating for our pupils, so that the learning process becomes more profitable.

The proposal described here consists of different kinds of activities:

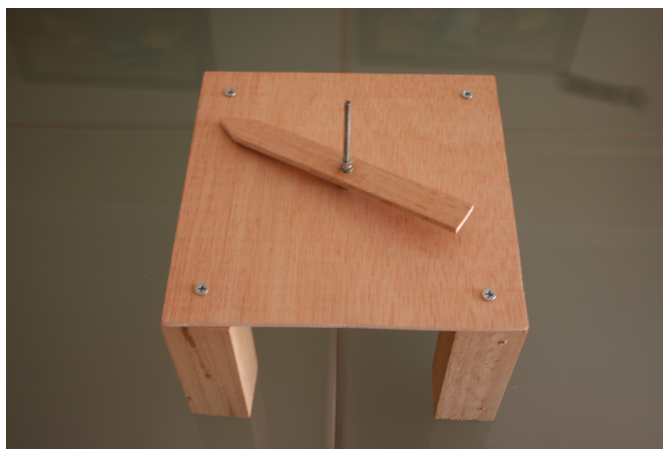


Figure 1: Picture of the wheel

- In the workshop: woodworking (drawing, marking, cutting and shaping as well as health and safety regulation when working).
- ICT classroom: drawing software.
- Reinforcement activity: selection of questions & answers.

This project can be easily made by ESO 1 students. It perfectly fits the subject syllabus (woodworking and structures) and can be used as a game to reinforce any subject.

2 The workshop project: making the wheel

The whole activity set consists of three different components: the wheel, the boards and the questions and answers sheets.

2.1 The wheel

The wheel can be easily made in any High School technology workshop, as a project for ESO 1. The wheel shown in fig. 1 was made with the following indications:

1. Main board: square made of plywood, 5 mm thick and section 20 cm x 20 cm. A hole in the centre of diameter $\phi = 4 \text{ mm}$.
2. Legs: Wood stick, 10 cm long and 3 cm x 3 cm section.
3. Spinning arrow: Plywood, width = 2 cm and length = 10 cm. A hole in the centre of diameter $\phi = 10 \text{ mm}$ to insert a brass ring. If we don't have the ring, just make a 4 mm hole.

4. Threaded rod shaft, diameter $\phi = 4\text{ mm}$. A few nuts and washers to place it properly.

2.2 The boards

The device admits different boards, depending on the topics we are interested in. To design the boards one can use a vector graphics software, like *Inkscape*, available for both *Linux* and *Windows* platforms. Fig. 2 shows a few examples.

To make sure the boards don't break when the arrow spins, it is highly recommended to protect them, for example with a plastic cover with the help of a laminator.

2.3 Questions and answers

Once the boards have been designed (and so the topic selected) , we have to decide what sort of questions, topics or practical tests we want our pupils to review and the format of these questions. We have different possibilities:

- Short answer questions.
- True/False questions.
- Short explanation of a concept.
- Math exercise.
- Drawing activity.
- Picture identification.
- Vocabulary learning.

3 CLIL input

3.1 Working multiple intelligences

Depending on the proposed questions and practical tests, working multiple intelligences can be easily achieved. Let's see a few examples:

- Linguistic intelligence involves the use of language, and this is guaranteed through the vocabulary activities.
- Logical-mathematical intelligence can be worked carrying out mathematical operations.
- Visual/spatial intelligence is achieved by means of drawing activities and constructing the device structure.
- Naturalist intelligence can be covered by means of specific activities related to science.
- Interpersonal intelligence is naturally developed when working in groups.

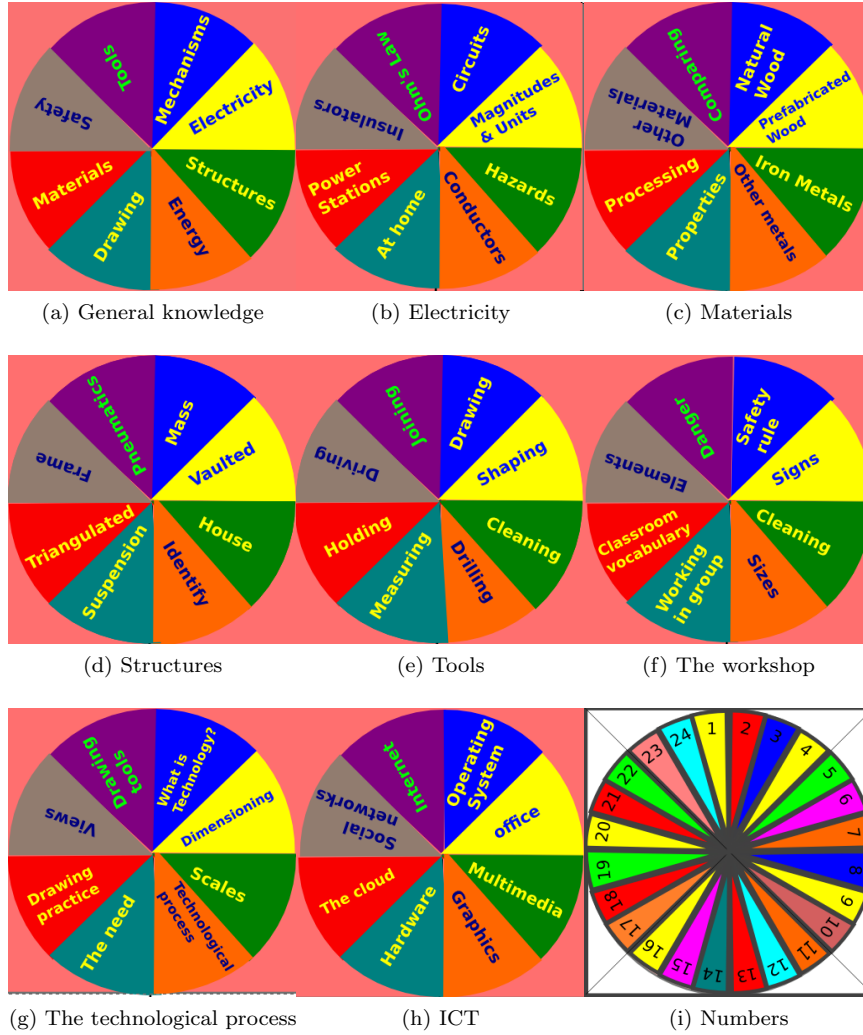


Figure 2: Board examples

3.2 CLIL core features

The proposed activity integrates different subjects, favours peer-co-operative learning, responds to different learning styles, uses current materials from the media and other sources and increases the student language awareness, i.e., the main CLIL core features are integrated.

4 Acknowledgements

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¹CEFIRE Valencia, 2014.