

## Information about the context

**School:** I.I.S.S. "G. Salvemini"  
**City:** Fasano (BR) **Country:** Italy

**Educational level and number of students:** Vocational Education and Training for Cooks and Hotel Managers – n. 16 students (first experimentation) n. 23 students (second experimentation), 14-15 years of age.

**Topic:** Combi Oven Convention Steamer

**Main subject domain(s):** Physics and Italian language.

**Duration:** 2 months (first experimentation); 3 months (second experimentation).

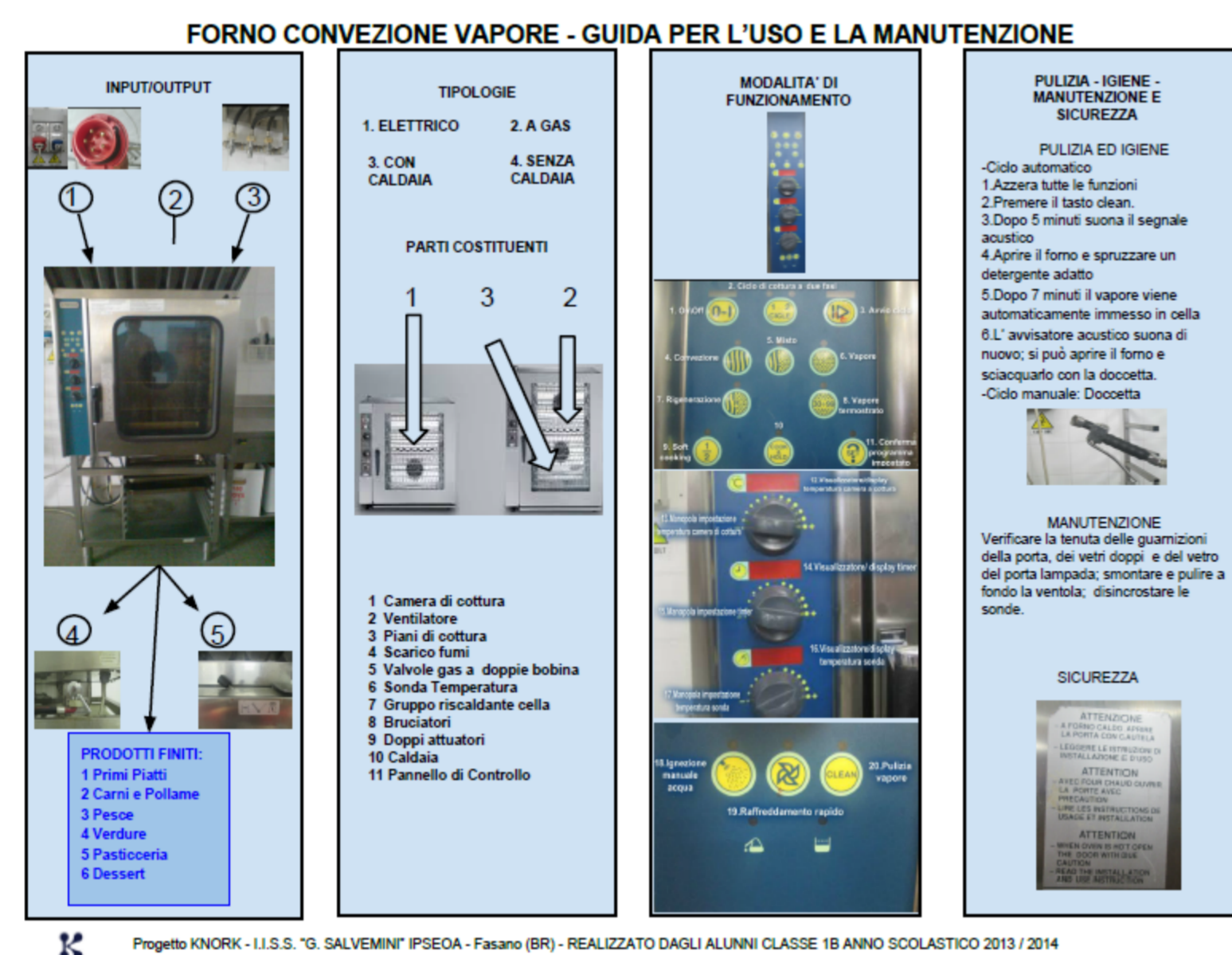
**The object:** Guide for Combi Oven-Convection Steamer (paper format for 1° experimentation; video format for 2° exp.).

**The educational problem:** difficulties to teaching Physics; the "distance" between the education of school and the workplace.

**Why we choose to adopt TLA:** to identify new tools for teaching in order to implement an educational process stimulating and motivating for students and decisive for a quality vocational training.

## How were the Design Principles applied

Design principles	Implementation in the case
DP1: Organizing activities around shared objects	The Object have been presented to the students through a <u>Brainstorming</u> . Topics of discussion have been: Types of guide; Who could we involve to realize the object; What information should be included in the guide. As outcome of the Brainstorming the following <u>areas of investigations</u> and parts of the guide have been singled out: Input/Output, Parts of the Oven, Operating Mode, Cleaning Hygiene and Maintenance, Safety. The paper version of the guide for Combi Oven-Convection Steamer has been hanged close to the oven in the professional kitchen of the school. The guide <u>summarizes the oven convection steamer</u> and assists users for an efficient use of it. <u>Possible users</u> of the object created shall be: Teachers and students of the Kitchen Course, restaurant owners, home users.
DP2: Supporting integration between personal and collective agency and work	The guide has been divided in <u>4-5 sub-objects</u> ; each sub-object have been assigned to one <u>group of work</u> ; Each group consists of four/five students with a <u>specific role</u> (Communicator, Researcher, Linguist, Technician). The integration between the groups is important to obtain a high quality final object. We tried build connections among groups during the <u>object review activities</u> when each group presented to the whole class their job (draft, Rev1, Rev2...). During this activities teacher helped students to <u>find links and discrepancies between the various groups</u> . An adapted version of <u>Jigsaw</u> was used to disassembling and reassembling the groups.
DP3: development and creativity through knowledge transformations and reflection	A <u>review phase</u> , carried out by the students themselves and with teachers, helped to <u>reflect on the job done</u> . In this way the cognitive investigation of the object "oven" has been <u>expanded and consolidated</u> . The concrete goal has been <u>to create together a guide</u> as a great, natural "shared object" for the students. Also the involvement of the cook teacher (end users of the guide) during the object review has been very important.
DP4: Fostering long-term processes of knowledge advancement	Comparing the preliminary knowledge needed for using the oven with the information contained in the guide students were producing supported <u>reflection on the effectiveness</u> of the produced document (draft) for a correct use of the oven. <u>Bad practices</u> in using the oven due to lack of knowledge were identified.
DP5: cross-fertilization of knowledge practices and artifacts	Comparison with the cook teacher to: - <u>identify the minimal knowledge</u> about the use of the oven; - <u>identify typical bad practices in using of the oven</u> ; Comparison with a retailer or catalog of a typical oven to find the main technical aspects for the choice of the oven.
DP6: Providing flexible tools for developing artifacts and practices	<u>Hardware:</u> Laptop, video projector, Smartphone and digital camera; <u>Software:</u> Gmail, Google Drive, piZap (Facebook). Google Drive has been used for document sharing and as <u>tools to build the guide paper format</u> ; Smartphone and digital camera to produce photographic surveys on the oven and to produce videos; piZap for image processing activities.



Progetto KNORK - I.I.S.S. "G. SALVEMINI" IPSEOA - Fasano (BR) - REALIZZATO DAGLI ALUNNI CLASSE 18 ANNO SCOLASTICO 2013 / 2014

Guide for Combi Oven-Convection Steamer Paper Format

## Main results

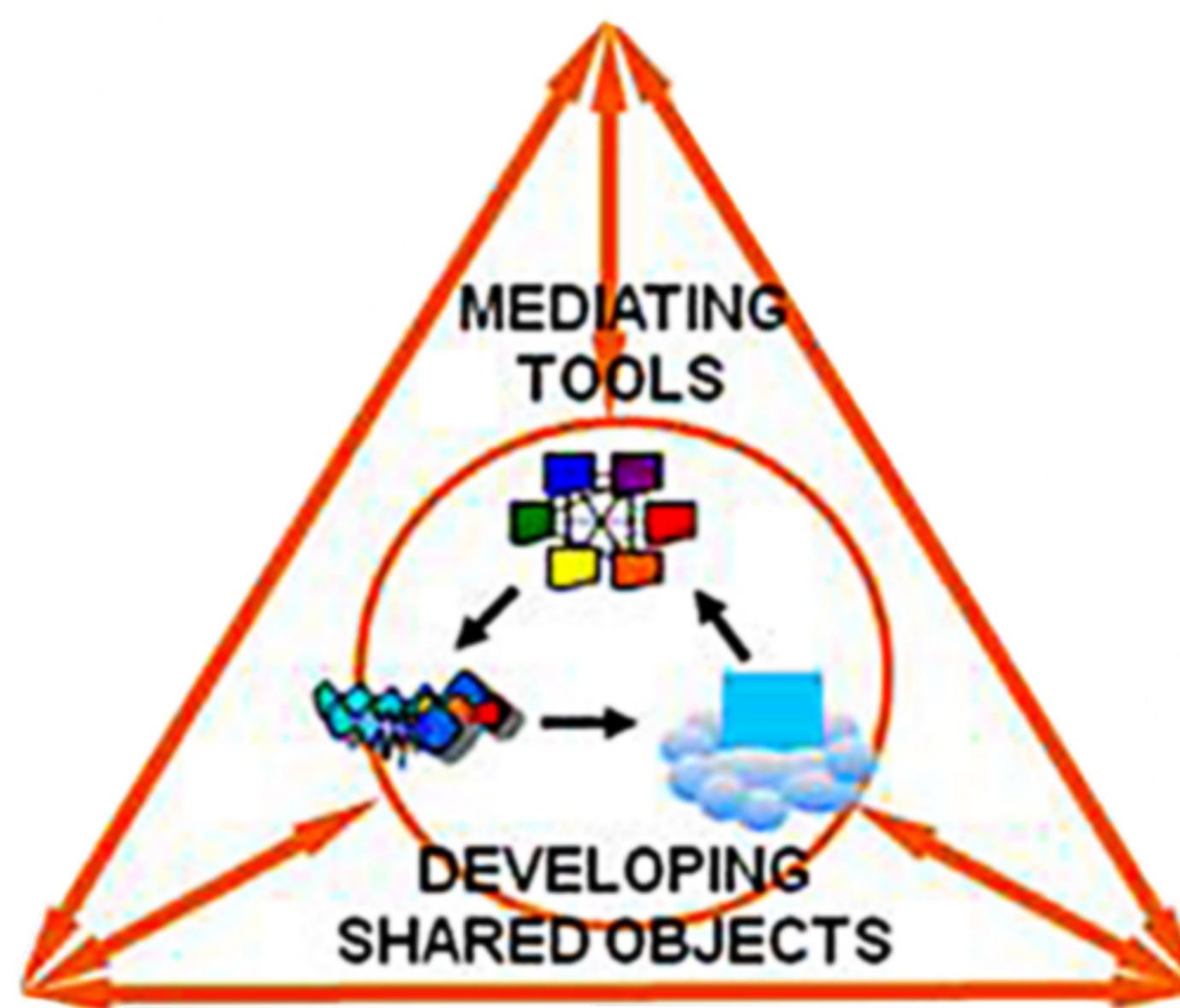


The object on line:  
<http://www.salveminiencoding.eu/knork/index.htm>

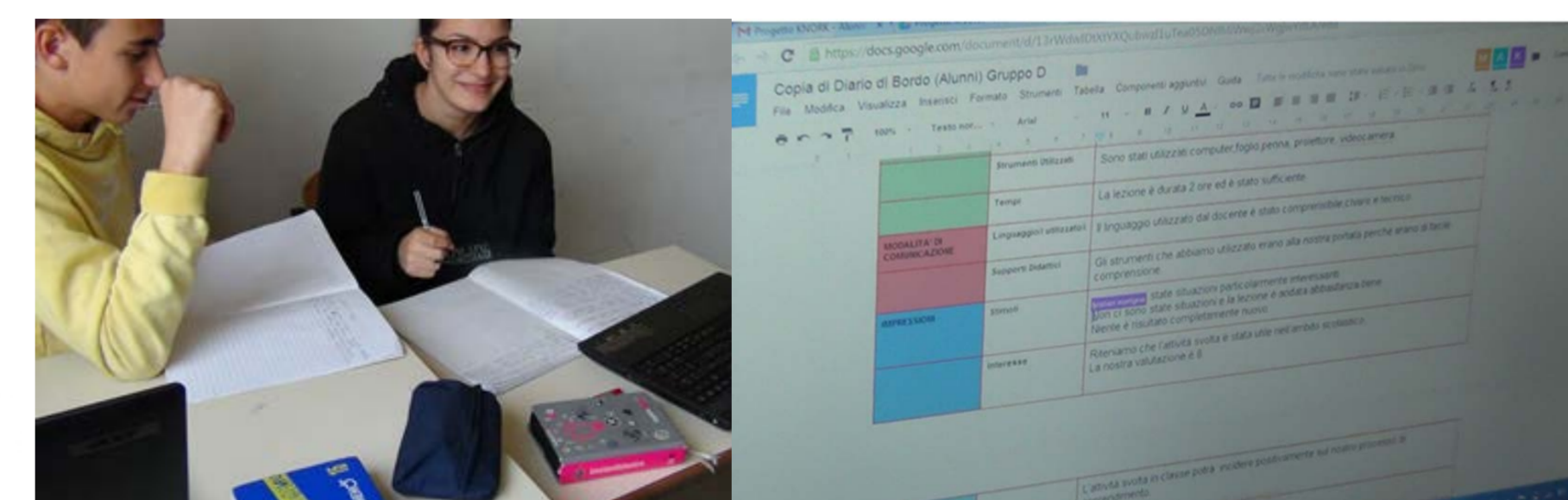


Guide for Combi Oven-Convection Steamer Video Format

### "AUTHENTIC" USE OF THE OBJECT



Web quest; document analysis and synthesis



Logbook and shared writing with Google Drive



Video Recording



Workgroup presentation to the whole class

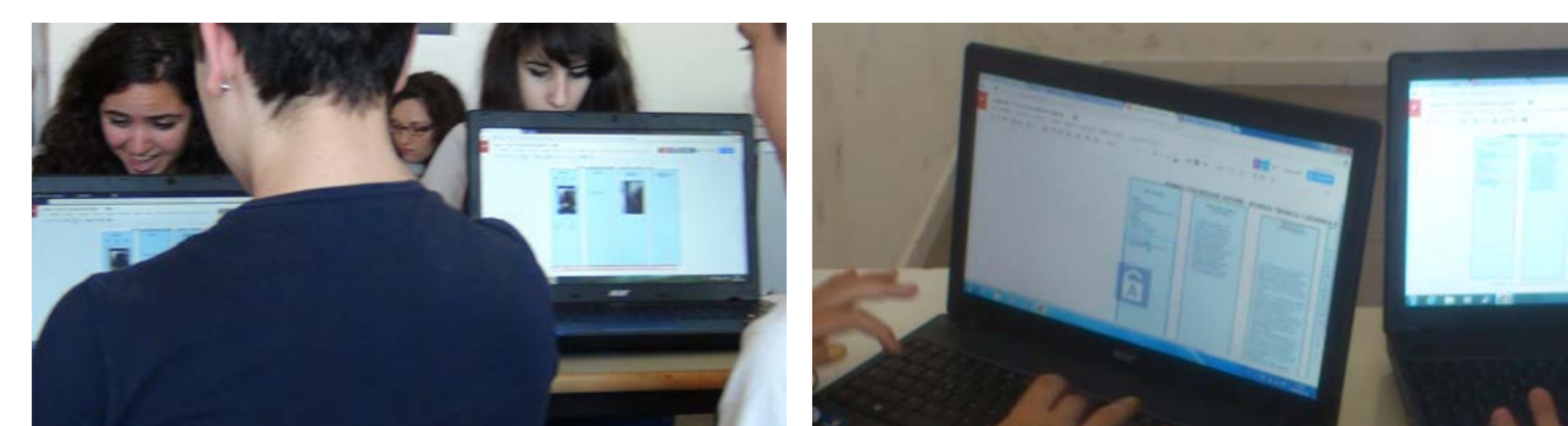


Image and text processing; building of different sections of the guide

## Main challenges/constraints/problems

Technical problems have slowed activities and were pretext for distraction from the goals (trouble connecting to the wireless network, efficiency of the notebook batteries,..). The poor basic skills in the use of technologies and basic software by some students often creates the need to train at the use of the technologies.

## Strengths and Further developments

Strengths: Technology was first a tool to be learned, at the end it became a tool to perform collaborative activities. Tools, technologies and workgroups supported participation to the activities, stimulated creativity for solving problems collaboratively, helped students to take decisions themselves (example: piZap). Further developments: To improve the object realized through review from real end users; To develop new guide on other equipment used in kitchen laboratory.