

Italian Scratch Festival

Alberto BARBERO¹, Eleonora PANTO²

DSCHOLA Association – Torino - Italy

¹Istituto Istruzione Superiore “G.Vallauri” - Fossano - Italy

²CSP – Innovation in ICT - Torino – Italy

alberto.barbero@vallauri.edu

eleonora.panto@gmail.com

This paper illustrates the experience of the Italian Scratch Festival organized by the Association Dschola in 2012 and 2013. The idea of promoting with a contest the use of a programming language like Scratch for the teaching of computer technology during the first two years of technical institutions, results from a process that began some years ago within the Association following the reform of upper secondary schools. The simplicity and directness of the Scratch language, along with the inclusion of multimedia, make it a good tool to motivate students to learn the basics of programming.

1. Introduction

The reform of the upper secondary schools, that provided for the introduction of information technology during the first two years in almost every kind of school, did not specify how this introduction was to be accomplished. However, assigning the subject to a technology matter rather than a science unto itself has left ample room for experimentation and the use of creative teaching methods. In this context, the actions promoted by the Association Dschola, in collaboration with the Department of Informatics of the University of Turin and the CSP are taking place so as to develop educational and pedagogic experimental teaching methods.

1.1 Dschola Association

Dschola is a cultural non-profit organization founded in 2004. The founding members are some schools of Piedmont and Valle d'Aosta which have cooperated as a network since 2001. The purpose of the Association is to promote the enhancement of the schools' information technology culture, educational innovation and the sharing of knowledge through Information and Communication Technologies (ICT). In addition, the Association provides initiatives to support schools in the use of ICT in teaching, including Share.Dschola, for free technical guidance and for hosting the websites of more than 200 schools. Since 2009 Dschola has also offered a Support Service for Schools with technical advice, training and conferences.

1.2 CSP – Innovation in the ICT

CSP – Innovation in the ICT is a consortium of non-profit companies consisting of public administrations, universities and delegates from the entrepreneurial world. CSP is a research organization committed to activities for the experimental development and the industrial research and is recognized as a Research Laboratory by the Italian Department for University and Scientific Research. CSP participates in various projects for the adoption of new information and communication technologies in schools and for the scientific dissemination.

2. The debate about the curriculum

The main objective for the members of the Association Dschola is to innovate and experiment with the use of ICT in teaching. With the recent reform of the upper secondary schools, the new disciplines in computer science allow the introduction of the concepts of logic and basic programming into classes as early as the biennium. This is an opportunity not to be missed in which information technology can finally be appreciated and given dignity without disguise and without transforming it into something else. Dschola immediately engaged in the research and experiment of computer tools suitable for an audience of adolescents with the purpose of identifying a possible trail that would allow the acquisition of competencies and programming skills without excessively burdening the curriculum. In 2010 the Association Dschola started a path of study and reflection on the teaching of computer science during the first two years of secondary school, with training initiatives in the use of the kit Arduino and its language Processing. The Association also organized several conferences: "Arduino at School" in 2010 and "From Book to Video Game: the future of information technology in school" in 2011. It was at this latter conference that "Scratch", a block language created by researchers at MIT MediaLab in Boston, was presented and identified as an instrument suitable for the teaching of programming during the biennium for the intrinsic characteristics of the language, that uses visual elements constructed so as to minimize syntax errors and doesn't require specific skills to use, as well as being particularly suitable for multimedia storytelling.

2.1 Scratch: programming as a game

Scratch is a programming language created with the goal of introducing young students to the basic concepts of programming and problem solving through a tool that appeals for its playful aspect but, actually, provides exercises to the students in logic and reasoning. In fact, it allows for the processing of variables and lists of values, provides controls for selection and iteration, allows for the creation of increasingly complex animations, offers the possibility of running multiple processes simultaneously and to have them interact with messages, manages the implementation of event-driven paradigm and much more. The code encoding is done by stacking blocks of different shapes and colors, depending on the function and category, that

connect to each other as in the game of Lego (see fig.1). Scratch is an open source, free to download from the website scratch.mit.edu. It is stable, versatile and ideal for video game applications development, animated graphics, hypertext and also for the implementation of the classic applications that one develops when learning programming from “scratch”. The Scratch website, in 2.0 web style, offers free manuals, galleries, information materials, explanatory videos, discussion forums, and allows for the download of more than 3 million completely free projects with the Creative Commons license or the upload of your own projects in order to share them with other users around the world.



Fig.1: The script for calculating the area of a triangle

3. The Italian Scratch Festival

The Vallauri Institute, one of the founding schools of the Association Dschola, organized during the "Scratch Day 2011" the first “Vallauri Scratch Day” contest held within the school for students in the introductory classes of the technology sector with the aim of promoting the study of computer programming by rewarding the best projects developed using Scratch. Scratch Day was an initiative launched by the creators of Scratch in order to bring together from all over the world Scratch enthusiasts with initiatives, meetings and round tables. Last year 186 events were organized in 44 countries around the world (see fig. 2). The competition at Vallauri attracted more than 30 projects and ten of them were selected for the final judgment. At the award ceremony, representatives of the Department of Informatics of the University of Turin and the CSP - who shared with the Association this particular path of study

for the teaching of computer science - were invited as judges and experts. The significant



Fig.2: The countries in which events were organized for Scratch Day 2012

number of projects submitted at the competition has further strengthened to the Association the validity of Scratch as an aid to teaching and, as a result, Dschola proceeded to organize training seminars for its members and launched the first "Italian Scratch Festival" with the objective of sharing best practices and promoting the best works of students from the first two years of Italian secondary school.

The 2012 Edition saw a great interest and was well attended, with 24 schools from across Italy responding to the appeal and with some 40 projects submitted, many of which were excellent. The final day was attended by experts and entrepreneurs from the world of video games who judged the projects and designated the winners of the competition. Given the success of the initiative, Dschola decided to organize the next edition for May, 2013. The competition is open to the students in the first two years of secondary school and fun and educational projects developed in Scratch can be submitted. To enter the contest one must read the rules and fill in the online form (www.associazionedschola.it/isf) indicating the referent teacher for the Institute. The projects from the participating schools submitted to the Italian Scratch Festival will be posted by the Association in its web site after registration. A jury of experts will select 10 Scratch projects that will participate to the final competition on May 18, 2013, in Turin at the "Scratch Day 2013" and prizes will be awarded to the top 5.

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