2nd Newsletter

Editorial

We often use computers for computations based on scientific theory. But can computers also help us to explore our world in the search for science? With this as a pivotal question, several Construit! workshops have taken place the last 8 months aiming at giving participants hands-on experience of the JS-Eden online computing environment for constructing mental models of what we learn through experience, experiment and imaginative thinking.

This kind of learning is not just what scientists do in the lab - it is a central part of what we all do in our everyday life.

The users/learners are given the chance to find out for themselves by exploring computing practices that allow them to shed light on natural and artificial intelligence in inventing and playing games, solving puzzles, making music, optics … and, not least, shopping.

The second year's target is to enable the 'collaborative construal construction' and to establish mechanisms for interactive assessment and evaluation.

The numerous workshops with teachers, higher education students, secondary students and other interested learners that took place in Greece and in UK inform future technical updates as well as the development of new educational resources based on users' needs and requirements.

CONSTRUIT! team
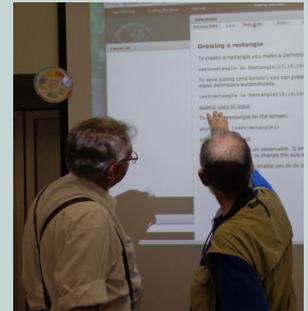
Learning activities with teachers in Athens (Greece)

The CONSTRUIT! team, with the support of the Local School Committees of the 7th and 4th municipal communities of Athens, organized a workshop on "Making construals from scratch" that lasted 3 hours and attracted the interest of 21 school teachers.

The workshop took place in the school ICT lab of the 2nd Upper Secondary Experimental School of Athens (Greece) on September 21, 2015.

The seminar was a response to teachers' previously expressed interest in exploring through practical tasks the construal making process.

After the completion of the workshop, the participant teachers were encouraged to reflect upon their experience and the educational value of the CONSTRUIT! practice through an open discussion with the members of the CONSTRUIT! team.

Last, the teachers documented their views and perceptions about the workshop and the CONSTRUIT! practice through an online questionnaire. Their feedback will inform future workshops and training seminars.

Snapshots from the workshop with teachers

A workshop with 15-16 years old students in Athens (Greece)

In the context of C2 learning activity, **25 students** enrolled in the 1st grade of the 2nd Experimental Lyceum of Athens participated in construal making tasks for 2.5 hours on September 22, 2015. The workshop was designed to introduce the basics of 'making construals' in the JS-Eden environment and help the students become familiar with the kind of things they could build with JS-Eden. By the end of the workshop the students could have created a fully animated solar system with 4 planets moving around the sun at their correct relative velocities.

A week after the session, students were asked to reflect on their experience in the form of a student diary. The diary requested students to comment on "what went well", "what did not go well", "what did you like the most", and "what did you like the least

(dislike)". Many of the positive comments were focused on the environment, the interaction with the group of experts and the English practice. A negative aspect that emerged was that there was too much content to cover in the available time. Students' comments inform the design of the forthcoming activities with secondary school students in Greece in April, 2016.
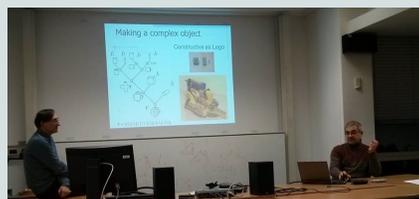

Workshop with students

C6 learning activity in Warwick (UK)

The Construit! team got together in Warwick (UK) on December 12-16, 2015 in the context of the C6 learning activity. The principal objective of C6 was to generate feedback to support the further development of the resources for making construals. Emphasis was particularly placed on the following two aspects:

• collaborative construal construction

• instrumenting construals for interactive assessment and evaluation

A number of presentations from different subject areas and from different perspectives (animation, educational robotics, visual computing, tools for sensing the physical environment and more) took place with the aim of inspiring and informing the development of the resources for making construals.
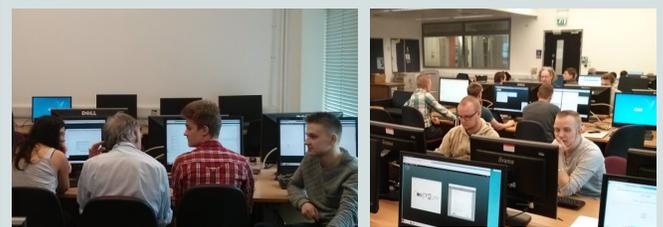

Dr. Valery Adzhiev and Prof. Alexander Pasko from NCCA (Bournemouth University) talking about interactive geometric modeling

In the context of C6 learning activity, Dr. Ilkka Jormanainen and Tapani Toivonen demonstrated how the CONSTRUIT! computing environment can be linked with Arduino, an open-source electronic prototyping platform for constructing interactive electronic objects that provides opportunities for establishing links between construals and physical objects in the real world.

Interfacing CONSTRUIT! environment with Arduino

The C6 learning activity was attended by two groups of higher education students, one from Comenius University in Bratislava (Slovakia), the other from the University of Eastern Finland. The students were engaged in construal-making tasks and gave feedback related to their experience. They made use of a brand new variant of the environment for making construals pioneered by Dr Nick Pope.

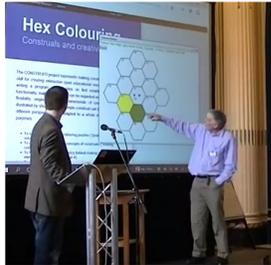**Engagement in Construal Making tasks**

Dissemination matters!
Publications, workshops and web presence

The last 8 months were remarkably productive in terms of dissemination activities. CONSTRUIT! was presented in a systematic way at several well-attended conferences in Europe and beyond. Activities include:

- Two papers related to the CONSTRUIT! project at the **Constructionism 2016 Conference** that was held in Bangkok (Thailand) on February 1-5, 2016.

- A poster at the **15th International Koli Calling Conference on Computing Education Research** in Koli (Finland) on November 19-22, 2015.

- An account of the project objectives, methodologies and tools given at the **FOSSCOMM 2015 Conference** that took place in Athens (Greece) on November 7-9, 2015

- A short paper at the **CELDA Conference** in Dublin (Ireland) on October 24-26, 2015.

- A CONSTRUIT! tutorial paper at the **International Conference on Interactive Technologies and Games** (ITAG 2015) that was held in Nottingham (UK) on October 22-23, 2015. In the context of the Conference, Dr. Meurig Beynon and Dr. Jonathan Foss also led the **CONSTRUIT! exploratory workshop**. During the workshop, more than 25 participants were involved in practical tasks.

CONSTRUIT! exploratory workshop

Moreover, in a short interview given at the ITAG 2015 Conference, Dr. Meurig Beynon outlined the main ideas and assumptions underpinning the CONSTRUIT! project. The interview is available online through ITAG Youtube channel.

The project is also promoted through the Open Education Europa portal that was launched by the European Commission as part of the Opening up Education initiative.

Press releases on several CONSTRUIT! learning events have also been forwarded to interested parties and representatives of school communities. The CONSTRUIT! Facebook and Twitter page are steadily gaining an increasing number of followers and specific posts are often replicated through other Facebook pages and Twitter accounts.

Upcoming events

- The next transnational project meeting and joint staff training course will be held in Athens, on April 15-19, 2015.

- Construit! team members will also join forces in **SciFest 2016** in Joensuu, Finland on May 12-14, 2016 .

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Helix 5

University of Eastern Finland