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European Commission Consultation on Opening Up Education Additional comments by the Interactive Software Federation of Europe¹

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A review of studies carried out for the Commission by European Schoolnet² confirms broad positive benefits of ICT for learning modes such as cognitive processing, independent learning, critical thinking and teamwork and that ICT enhances a student-centred learning approach. However, while these benefits would lend themselves to new pedagogical approaches, the majority of teachers have not used ICT in such a way. If ICT has a positive impact on learning, it has yet to revolutionise processes at schools.

ICT for learning is not only improving learning but has the potential to transform the learning and teaching processes and offer novel ways of education and training next and together with more traditional schooling. The impact of ICT use on learners is closely related to its potential to innovate the teaching and learning approaches. The reviewed studies showed that learner-centred guidance, group work and inquiry projects result in better skills and competencies and that interactive forms of e-learning can lead to a more reflective, deeper and participative learning, learning-by-doing, inquiry learning, problem solving, creativity, etc all play a role as competencies for innovation and can be enriched and improved by using e-learning.

The challenge is to nurture new and innovative learning approaches, to ensure that teachers and parents are aware of their potential and to support them in curricula, teaching guidelines, and teacher training.

A recently published study by the Joint Research Centre on "[Creative Learning and Innovative Teaching](#)" highlights the potential of ICT in enabling innovative and creative school environments and concluded that although technologies can act as a platform to foster innovative teaching they are far from exploited for creative and innovative purposes in the classroom.

- More research should be undertaken on how technologies are appropriated by teachers, in order to support them in developing more efficient pedagogical usage of the technologies for learning. Results also demonstrate that the potential of new technologies cannot be exploited unless teachers' proficiency in using ICT and the quality of ICT in schools is improved, software in different languages is provided and more space for interaction between teachers and students is allowed.

¹ The Interactive Software Federation of Europe (ISFE – www.isfe.eu) was established in 1998 to represent the interests of the European video game sector towards countries of the European Economic Area, international institutions and the general public. It comprises 11 major publishers and 16 European trade associations.

² The ICT Impact Report, A review of studies of ICT impact on schools in Europe, EUN for DEA (2006)

- There is a strong need for pedagogic training which empowers teachers with the required ICT skills to help their students become digitally competent on the one hand, and for guiding students towards more exploratory and creative interaction with ICT tools on the other hand.
- Finally, it concluded that best practice examples show that enabling interaction between teachers and outside experts could be highly beneficial in terms of learning in innovative and creative way.

ISFE, the Interactive Software Federation of Europe, has led the way in all of these three fields. ISFE represents the European videogame industry which produces entertainment and educational software for use on personal computers, game consoles, portable devices and mobile phones. It is the fastest growing part of the European creative sector and has great potential to improve the quality and efficiency of educational and training systems and enhance creativity and innovation at all levels. Therefore, ISFE has always been devoted to contribute to the research on the educational potential of games, the development of appropriate training for teachers and the creation of partnerships between industry and educational institutions:

Mediapro (<http://www.mediapro.org>)

ISFE participated in the Mediapro project studying the trend towards increased appropriation of new digital media, including games, by young Europeans. The study identified a growing gap between the use of digital tools at school and in all other environments. Schools have, however, an important role to play in the process of acquisition of media skills. The industry was, consequently, extensively committed to explore how commercial games could be used in the classroom.

Teaching with Games (www2.futurelab.org.uk/projects/teaching-with-games)

The Teaching with Games project was a one-year study designed to identify the factors that would impact the use of games in school and describe the processes by which teachers plan and implement games-based learning in existing curricular contexts. It also aimed to provide recommendations for future games-based learning approaches for teachers, developers and policy makers.

The project consisted of two main strands of activity: two surveys of representative samples of students and teachers aimed at eliciting a broad overview of attitudes to computer games for learning, and case studies of 12 teachers in four secondary schools who were using three commercial computer games for teaching in diverse subject areas in formal classroom time.

A number of factors were significant in influencing the process by which games can be appropriated for use in schools: the technical infrastructure of the school, institutional and professional factors (including the organisation of time and space in the school, cultures of collaboration/knowledge sharing in the classroom), the extent to which games can be appropriated to meet specific needs, and last but not least, the individual teachers' professional background and personal experience of games play. Using games in a

meaningful way within lessons depended far more on the effective use of existing teaching skills.

Games in Schools (GiS) (<http://www.isfe.eu/objectives/education/games-schools>)

In 2006 ISFE engaged in a second project under the name “Games in Schools” exploring with a much wider scope how commercial games are and can be used in schools. The research was conducted by European Schoolnet and based on a survey of more than 500 teachers in 8 European countries, several case studies and interviews with policy makers. It revealed that games are increasingly used as a teaching tool although some teachers still encounter difficulties in integrating them into the curriculum and also because of a lack of equipment, and the reservations of parents and their colleagues about the use of electronic games.

The examples of teachers who use electronic games in their teaching are not so numerous, but are nevertheless growing in number. The practices that were analysed seem to confirm a positive impact on increased motivation and progress in certain skills (social, intellectual, spatio-temporal, etc.). Teachers strongly prefer games which allow differentiation of learning (each pupil learns in his/her own way and rhythm) and associate them with more traditional teaching aids to enable a better retention of the information learned by the pupil.

The study made it possible to bring to light four different conceptions of the use of games in the classroom: games can be useful to support for pupils in difficulty, games are capable of modernizing the teaching methods in educational system, games can contribute to the development of advanced skills, and, finally, games can be associated with media education and help acquire the key-competences for future citizens who will live in a society made up of virtual worlds.

Games in Schools Handbook (<http://www.isfe.eu/objectives/education/handbook-teachers>)

As part of the Games in Schools project, a Handbook for Teachers was written by Dr. Patrick Felicia, researcher at the Waterford Institute of Technology in Ireland. It offers appropriate training enabling teachers to combine digital with more traditional teaching tools. The Handbook provides the necessary information to understand the educational benefits of digital games and to learn how to use them as educational and motivational resources. After reading this handbook, teachers should be able to make informed decisions on the choice and use of digital games in the classroom, and obtain all the benefits digital games can offer. The handbook is offered for free in 8 languages on the [ISFE website](#).

eTwinning Games in Schools Learning Lab (<http://www.etwinning.net/en/pub/index.htm>)

ISFE entered into an Agreement with EUN to organize a “Games in Schools” Learning Laboratory on the eTwinning platform. eTwinning is an online community funded and run by the European Commission connecting 90,000 schools via an online platform. Teachers from all participating countries are able to meet virtually, exchange ideas and practice examples, learn together in Learning Events and engage in online-based projects.

We have now run two Games in Schools Learning Labs which were immediately fully booked with participants from across Europe. They featured 5 different workshops with following titles: Why use computer games; using games for thematic learning; what games are out there that will help children learn; what can we learn from games; designing games; why is it

important to teach about games. The courses provide for interaction between participants through blog and forum and require teachers to do "in-class" activities.

The success of these labs demonstrates that a growing number of teachers views electronic games as an information and communication technology capable of modernizing the teaching methods implemented by the educational system. As a non-traditional teaching tool, games used in the classroom give rise to many interchanges between teachers about their practices. Games can address the need to improve the balance between theory and practice in initial teacher education. They have the ability to bring the school environment closer to pupils' everyday reality and provide for a practical, but challenging learning environment promoting genuine collaboration between users, who can experiment, make mistakes and learn by doing.

Next Gen skills campaign (<http://www.nextgenskills.com>)

Over the past 18 months reforming ICT and developing new qualifications in Computer Science has been the subject of much debate and research in the UK education system. UKIE, the national association that represents the UK's interactive entertainment industry, has been leading the campaign across sectors to change the old ICT curriculum and re-introduce Computer Science in schools. The NESTA-Next Gen report, http://www.nesta.org.uk/publications/assets/features/next_gen, argued that the challenge for the UK's education system is to embed essential ICT skills and Computer Science across the wider curriculum and equip the next generation with the knowledge needed to grow this country's digital, creative and high-tech economy. Further work by the Royal Society has illustrated current skills shortages and barriers to development, including OER, in the education system <http://royalsociety.org/education/policy/computing-in-schools/report/>.

Since its launch in November 2011 the Next Gen Skills campaign has made significant progress, with the outdated ICT curriculum being removed in favour of a new Programme of Study which includes the fundamentals of Computer Science. The new curriculum places heavy emphasis on a short teaching framework developed in the classroom by the use of 'wiki curriculum materials', or online resources. All major examining bodies have now produced a Computer Science qualification, removing a major barrier to take-up. The Department for Education is considering the incorporation of Computer Science as a 'fourth science' in the new English Baccalaureate. On 19th October the Secretary of State for Education Michael Gove announced extra government funding for Computer science teachers, to address a serious skills shortage in this field.

Digital Games for Empowerment & Inclusion (DGEI)
(<http://is.jrc.ec.europa.eu/pages/EAP/eInclusion/games.html>)

The Joint Research Centre is currently investigating the potential of digital games to support social inclusion and empowerment. The objective of the report, commissioned by DG CNECT, is to provide a better understanding of the industrial, market, social opportunities and limitations of Digital Games for empowerment and as a tool for socio-economic inclusion of people at risk of exclusion. It also aims to identify how policy actions could address the challenges identified.

The research literature and case studies shows that digital games-based approaches provide adaptable, motivating and engaging techniques that can be used to support disengaged and disadvantaged learners and enhancing employability and integration into society. This is not a surprise. Education and training systems often do not provide sufficient targeted support for pupils to cope with emotional, social or educational difficulties. Responding to the different learning styles of pupils and helping teachers to address the variable needs of mixed ability groups of students is still a challenge for schools.

A great majority of the teachers in our Games in Schools survey confirmed that pupil motivation is significantly greater when computer games are integrated into the educational process. This increased motivation sometimes seems to be linked to the greater self-confidence that some pupils develop when using games in the classroom. Games can help people who encounter difficulties in cognitive, methodological or social learning (slow learning, lack of organisation in work, resistance to rules and evaluation, etc.). They can reconcile the pupil with school learning, allow repetition, identify errors in a non-traumatising way, make the rules of the games easier to accept, help the pupil to understand his or her way of learning, etc. They have a great potential to reduce early school leaving.