



ICT Competences in Art Education – Sample Finnish Practices

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Abstract

In the renewed Finnish National Core Curriculum (hereafter the FNCC), information and communication technology (ICT) is one of the seven transversal competences that combine knowledge, skills, values, attitudes, will and the ability to use the competence. Teachers are encouraged to integrate the competences across school subjects and all learning (FNBE, 2014). This study focuses on ICT competences in art education by examining the teacher students' outcomes of art courses that apply ICT in studying, learning and teaching. The courses took place at the Department of Teacher Education at the University of Helsinki. ICT is applied in all art education courses, and the outcomes for this study were selected on the basis of their varying focuses.

Keywords: ICT, art education, augmented reality, video, animation

ICT in art education is generally understood as tools, materials and/or techniques in art. However, as a competence, ICT is a more profound concept that includes technology literacy, and the creating and deepening of knowledge (see UNESCO, 2011). Since 1985, Finnish art education has focused on the ways ICT can be used to enhance visual thinking, learning and teaching, studying, creating and performing (Paatela-Nieminen, 2005). Integrating digital texts in multi-sensorial and multiliteral ways is constitutive to ICT (Paatela-Nieminen & Itkonen, 2015). In addition to professional software and applications for knowledge creation, many schools utilize freeware programs and applications that are available to all. New media applications and environments enhance exploration among real, mixed, virtual and augmented realities in ways that would not be possible without ICT. These intertextual and intermedial worlds mix fantasy and reality in ways that have the potential to enhance and stimulate learning and creativity in art education. These worlds also challenge art education pedagogies to apply ICT in ethical and humanistic ways. Next, we focus on areas that integrate ICT into art education.

Augmented reality enhancing experiences

Our first case is from a course entitled *Art Education Didactics* (5 ECTS, taught by Paatela-Nieminen). It is part of an Art Education Minor (25 ECTS), and the students are future class teachers, kindergarten teachers and textiles teachers. The students examined the FNCC and specifically the art

education syllabus from their own perspective: pre-primary, basic, upper-elementary or adult learning. They developed a project plan in groups and a lesson plan for a desired target group individually. The students integrated ICT in the form of augmented reality (AR) into their art education lesson plans to see if, how and why augmented reality could or should be applied in art education.

According to Haller, Billingham & Thomas (2007), augmented reality (AR) combines digital content with the real world in such a way that a user sees virtual objects on top of the real world. This differs from virtual reality (VR) in that VR immerses the user in the digital world. Wider mixed reality (MR) combines both virtual and augmented realities into a real one (ibid. vi). In the course above, augmented reality was applied by inserting digital video clips onto a photograph. As a mobile phone or an iPad is directed towards a photograph it becomes magically “alive”, i.e. a free application called Aurasma recognises a trigger image/photograph and opens a video that starts to run. For the reader of this article to see these AR examples, and since the images/photographs may not necessarily work from the screen, the trigger images (Images 1.-16.) first need to be

printed. Next, the Aurasma application should be downloaded to a mobile or tablet. To see the outcomes, the reader needs to sign up with the channel *MinervaPlaza’s Public Auras* and then follow it. Alternatively, the video clips (without the Aurasma trigger images and the “magic” to become alive) can be found here <https://vimeo.com/album/3854969>.

Students developed shared themes for their lesson plans in three groups. In the first group, which focussed on paper art, all

Aurasma

IMAGES

Ordenar por: Preconfiguración | Fecha | Orden alfabético | Reproducciones | Me gusta | Coment. | Duración

Kiasma
hace 3 meses

Kiasma - Colour
hace 3 meses

the members had a unique and personal view about paper art per se and on how AR might be helpful in learning (Images 1.-4.). They applied AR with the aim of developing an interest

in the subject and created explicit guidelines in the form of digital video clips to show how to make paper art (e.g. baskets and flowers), how to add humour, playfulness and curiosity (e.g. flowers, butterflies), and how to playfully and ironically comment on and question the whole subject (e.g. paper glider). This group showed that AR can be joyful and fun as well as imaginative and instructive.

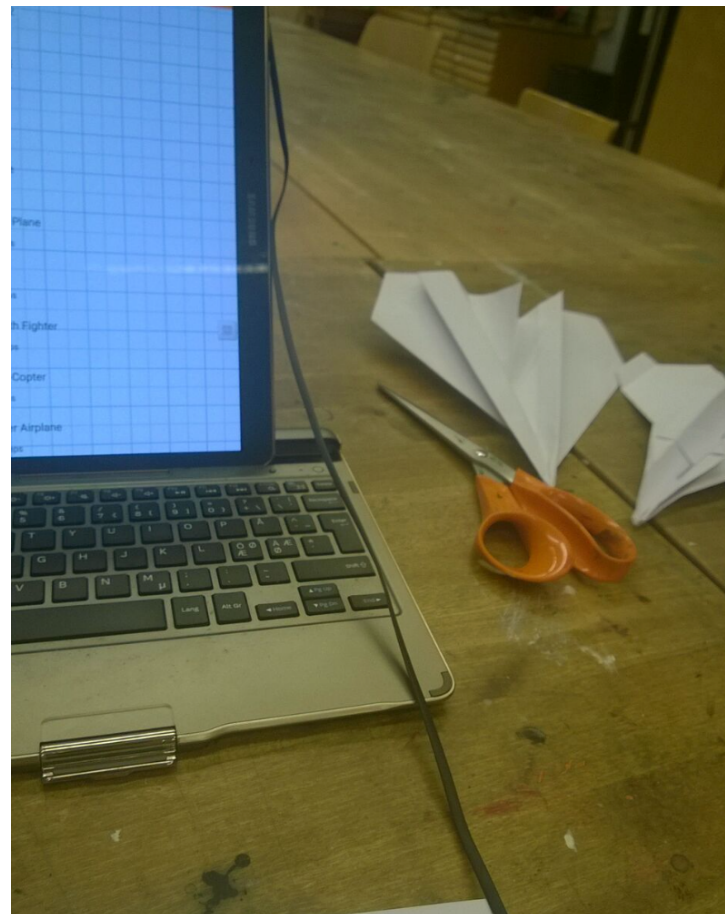


Image 1. Lassi Korhonen



Image 2. Sonja Löfström

Image 3. Ama Essel

Image 4. Heidi Voutilainen

The second group focused on architectural and design elements and they chose to study in Kiasma, the leading contemporary art museum in Finland. Guided by their personal interests, they took digital videos (Images 5., 6. – 10.) of light and shadow, texture, colour, form and space. The videos show how the camera was applied as a tool for investigating space and elements. For example, the camera imitates the sense of touch when filming adjacent textural surfaces: it is almost possible to feel the uneven, shiny, smooth and/or cold materials. Since the museum space is generally greyish, some fantasy colours were added later using video-edit in another video. For visual exploration, the Kiasma group applied AR scientifically, and in expressing personal experiences of the special elements, they did it artistically.



Image 6. Elina Määttänen



Image 7. Essi Rajantie



Image 8. Meiju Perttunen



Image 9. Johanna Kurikka





Image 11. Rudolf Koivu

The third group explored how to be creative without using conventional art materials. Their starting point was the illustration of a mermaid by the Finnish illustrator, Rudolf Koivu (see Jaatinen, 1992), (Figure 11.). Students played with the mermaid illustration as a model, and each student made a mermaid with the materials made available to them (Figures 12.-14.). One mermaid was constructed both two- and three-dimensionally by utilizing vegetables, another was made from different types of brownish-coloured flour, and the last one from vegetable peels of different colours and coloured with dyes from berries. The varying intense and artistic interpretations of the mermaid demonstrated how to be creative with available materials. Their ideas may be taken further, for example, by including other natural materials such as leaves, sand and flowers.



Image 12. Mia Syväkangas



Image 13. Tinka Ripatti



Image 14. Miisa Mäkeläinen

The students arranged a half-day pop-up exhibition (Video 1. Pop-up exhibition

<https://vimeo.com/album/3854969/video/164220074>; Images 15.-16.) at the University to get feedback on their AR experiments. According to the questionnaire given to the visitors, the AR examples were seen to be funny, inspiring, motivating and exciting. The visitors saw the potential for transdisciplinary group work in learning and teaching. They also suggested ideas such as treasure/artwork hunting for small children by looking for hidden AR triggers. Their critical comments had to do with technology: people were staring at their mobile devices instead of sharing ideas with each other, and technology was seen as alienating.



Images 15.-16.

ICT as a means of scientific and artistic meaning-making

Our second case, *Art education didactics I and II* (both 4 ECTS) is a course for kindergarten teacher students. The courses were taught by Leena Knif and planned in co-operation with Sinikka Rusanen. Both courses apply ICT for pre-primary education: various image cultures, multi-literacy and multiple knowledges (FNCC, 2014). Knif's students in course I produced animations: characters, settings and scripts for iPad and iStopMotion. Knif taught the students animation techniques as a way of summarizing their experiences of the course, and the students produced narratives for their animations that combined all the art work they had done during the course. The animation characters were based on students' studies of media, popular culture, design products and objects and the setting was designed after examining various environments. The manuscript of the animation was the last part and it rounded up all these studied topics.

The kindergarten teacher students found animation simple to perform and a good way of exploring film as an art form (Image 17.). This was especially so for those students who were not familiar with making animated images and for those who felt insecure in expression. They gained confidence in their artistic abilities and were proud and happy about their end products. Animation-making had a clear effect on their attitudes towards art education. The example below is a playful narrative that creates new meanings in-between characters and objects, and in relation to image-building components such as angle of view, sound and light. A new layer, a story of diversity,

was added to process. <https://vimeo.com/channels/animaatioverstas/145615781>

Image 17



For course II, Knif's students documented their experiences of filming with iMovie. Using an iPad as a tool, they studied a space/place as it might look through the eyes of children. The aim was to study film as art and as a tool for studying the child's experiential understanding of space. For example, they explored space from a low perspective or tried to set their minds to that of a child's mental feelings and thoughts. The reader of this text may see in the examples below how the places were studied. The data was interpreted using video as a research tool and also as a means of artistic expression and the delivery of a message as a multi-sensory experience. Meaning-making through exploration, art and moving image techniques were integrated into practice. In these examples, it is possible to experience the studied space and relate yourself to children's thinking.

<https://vimeo.com/channels/lto/157423656> and <https://vimeo.com/channels/lto/156548462>



Image 18. Kuinka karhu sai töpöhännän, by Jami, Ellen ja Venni, class 2A.

Our third case is from the *Teacher Practicum* at Viikki Teacher Training School of the University of Helsinki. Paatela-Nieminen observed classes run by Päivi Okkonen-Sotka, a class teacher, who assigned a pair of teacher students the task of teaching animated folktales. The pupils' creative process integrated tasks: developing stories and scripts, modelling characters from clay, painting scenery for the set, writing a few speech bubbles for others to follow the narration, and animating the story with iPads. In the example, *How the bear*

got a short tail, a bear and a cat meet under a clear and starry sky (see Image 18). The bear admires the cat's fish and asks where it is from. The cat directs the bear to the lake. The bear then fishes with its (then) long tail, which, suddenly, breaks off. Since then, bears' tails have been short. These animations show how pupils integrate texts as digital words and images into animations.

Discussion

Our practices show that, as a set of competences, ICT is multifaceted when integrated into art education. In our cases, augmented reality (AR) was integrated into lesson plans and art education didactics. The examples show how teacher students can integrate arts, e.g. music, still photos and video, into their art education lesson plans. AR entertains but also enhances educational purposes. It may be used to increase motivation for learning because it can be disguised as 'a game' or 'a hunt' for knowledge in the form of hidden information in trigger images. All the examples were filmed and edited in groups, which also enhances intersubjective learning. The work done by the kindergarten teacher students' demonstrates how attitudes towards art education may change when making animations is made easy. They also show how videos may be used as a tool for creating understanding about children. The students reported that the simplicity of the applications used made it possible to concentrate more on the expression and thus the ability to enhance the message in the film. Learning group work skills and combining visual and verbal text was an

integral part of the Viikki Teacher Training School animation process.

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