Coding Skills as a Success Factor for a Society

The University Consortium of Pori (UCPori) is a centre of 2 500 students, 170 experts and four universities operating networked in a multi-science environment. There are also local research centers working in the area with close connection to the business life. This project "Coding Skills as a Success Factor for a Society", which is funded by the regional council of Satakunta aims to investigate the different general practices and educational approaches concerning coding skills in Europe. Therefore, the main task of this preparatory project is 1) to gather international research network that will consist of professionals from the participatory countries (June-November 2015). The outcome of this collaboration is 2) the possible research application and eventually received funding for it in the future (2015 ->).

WHY:
Digitalization is one of the most promising ways to increase productivity in public sector and it is needed to reform the economy by creating new innovation related jobs. The implementation of digital services requires problem solving, design skills, logical thinking, understanding of how computers and networks operate and programming competence. These abilities can be considered as coding skills. Coding skills are required to understand how our society and services work, and it is seen as an important skill for the citizens of our societies. The Finnish ministry of Education has outlined that ICT-skills, coding in particular, will be a fundamental part of the Finnish curriculum in 2016. Until now, coding has not been an obligatory school subject in Finnish schools as it has been for example in UK and in Estonia where coding has been a center of attention through multiple viewpoints. Coding can be seen as a skill every citizen should master and it will be increasingly required in future job descriptions. Internet industry and Internet of Things will expand the amount of connected devices; also different sensor-based solutions will produce large user, device and environmental datasets. For the analysis of these data, logical thinking, problem solving and coding skills are required.
Like mentioned, the importance of having coding competence in the future and the actual impact of it on the society is widely acknowledged. However, the approaches enhancing the citizen's coding skills have not yet been studied adequately. It is crucial to get the information from the countries that are already executing coding as a subject in schools, but also from the informal solutions (different events, phenomena) that enhance and encourage coding activity in any form. There is a need for this type of international research network that will as a result of collaboration eventually produce a research funding application in order to come up with a larger framework around today's ICT-skills, coding skills, logical thinking and programming competence and so forth.

WHAT:
The project aims to build an international network for studying the methods countries have used to promote coding skills in recent history. The project will produce a research study of the methods used to promote coding skills especially in Estonia, Finland, USA, Italy and United Kingdom. The project gathers an international network of research partners together, and creates an action and funding plan for the research network. In addition, the project will promote the network during the EU Week of Code in 2015. In addition to the focus on coding as a part of curriculum, this project will also concentrate

on the economic and business factors and their impact on society. Also the informal activity around coding will be studied in order to get a wider perspective on the phenomenon of maker culture in general. One of the focuses is on the idea of empowering girls with coding skills with organizations such as Rails Girls, Girls Who Code and Girl Develop It. Also the Raspberry Pi foundation and phenomenon around it, European Unions Week of Code and global event Hour of Code, Stanford University's FabLab@School-model and different hackfests & hackathons will be studied during the preparatory project period. The research report on coding skills in larger scale will be published in the end of 2015. Later the actual research funding application will benefit from this gathered knowledge.

HOW:
In order to tackle the new situation and to study requirements coding-based curriculum and the overall maker-culture in general may cause, a multidisciplinary and international research network is needed. Through this academic collaboration it is possible to study the societal impact of coding skills as well as the best practices among its educational use. It is planned that the different solutions around teaching and practicing coding skills are compared within the participating countries and based on these findings; new applicable possibilities can be generated and processed.

University Consortium of Pori acts well as a base for multidisciplinary research approach around coding since it constitutes of several university units and professionals. The main aim of this preparatory project (June-October 2015) is to launch an international research network that will critically examine the different international approaches and measures taken by the participating countries around having the coding as a part of the curriculum. With this research network it is possible to compare and evaluate already existing approaches. Based on this knowledge, it is possible to define the best practices used around coding, to execute pilot tests and disseminate the results both nationally and internationally. The cooperation will take place through off- and online meetings.

TO WHOM:
The results of the future research project (which will take place after international collaboration between participating countries) would benefit both the educational boards as well as policy makers in Europe. Overall the significance of the project is to provide profound knowledge that can then be disseminated and utilized in various practices and in both organizational as well as in individual levels.

WHEN:
It is intended to gather an international network of research partners together and to start working in collaboration a funding plan by the end of 2015. For this, university consortium of Pori is prepared to travel to e.g. UK and Estonia in the next few months. First the appropriate and willing partners are contacted and brought together. The special research interests of each of the collaborators are defined. After that the suitable possibilities to apply funding from are examined. Time schedule and next steps of the actual writing of the application will be determined.

WHO:

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