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information presentation

[print] [? Conference Program

time format: [24 hours] [12 hours AM/PM]

Sunday, June 24th 2018

DOC 0a (12:00 - 17:00) Doctoral Consortium A

chair: Don Passev

Ars Electronica Center (Upper

With the participation of: • Prof Dr Christine Bescherer, University of Education Ludwigsburg, Germany • Dr Jaana Holvikivi, Helsinki Metropolia University of Applied Sciences, Finland • Dr Keith Turvey, University of Brighton, UK Stefan Pasterk. Analysis and Comparison of Computer Science Curricula and Project Content in Primary and Secondary Education Eleanor Overland. Computing Curriculum Policy - The implications for Teachers in English Secondary Schools Elisa Reci. The Impact of the Teaching Process on the Quality of Teaching Marisol Santacruz. Paths of reflexive selection of digital resources to teach geometry by elementary teachers Maud Plumettaz-Sieber. Teaching Computer Science with Games Toward Knowledge Institutionalization

- 25 Rasha Essam (EG): A professional development programme in reference to Laurillard's conversational framework for supporting teachers in the design, development, and implementation of CSCL activities Presenter: Essam, Rasha
- Maud Plumettaz-Sieber (CH): Teaching Computer Science with Games Toward Knowledge Institutionalization Presenter: Plumettaz-Sieber, Maud
- 49 Cathy Brady (GB): Spontaneous Speech using Skype From Language Learners to Language Users how using online video calling can support spoken language in Modern Languages classrooms in England - a longitudinal study. Presenter: Brady, Cathy
- 52 Elisa Reci (AT): The Impact of the Teaching Process on the Quality of Teaching Presenter: Reci, Elisa
- Eleanor Overland (GB): Computing Curriculum Policy The implications for Teachers in English Secondary Schools Presenter: Overland, Eleanor
- 59 Elisabete Pires (PT): Programming in new environments: challenges and the future of innovation. The Internet of Things (IoT) start with the students

Presenter: Pires. Flisabete

- 63 Marisol Santacruz (CO): Paths of reflective selection of digital resources to teach geometry by elementary teachers Presenter: Santacruz, Marisol
- Stefan Pasterk (AT): Analysis and Comparison of Computer Science Curricula and Project Content in Primary and Secondary Education Presenter: Pasterk, Stefan
- 70 Daniel Siebrecht (DE): Source code as informatical form of representation Didactical analysis of textual in contrast to graphical programmes

Monday, June 25th 2018

DOC 0b (08:30 - 12:00) Doctoral Consortium B

chair: Don Passev

Room SR2

With the participation of: • Prof Dr Christine Bescherer, University of Education Ludwigsburg, Germany • Dr Jaana Holvikivi, Helsinki Metropolia University of Applied Sciences, Finland • Dr Keith Turvey, University of Brighton, UK Elisabete Pires. Programming in new environments: challenges and the future of innovation Daniel Siebrecht. Source code as informatical formof representation—Didactical analysis of textual in contrast to graphical programmes Rasha Essam. A professional development programme in reference to Laurillard's conversational framework for supporting teachers in the design and implementation of CSCL activities Cathy Brady. Spontaneous speech using Skype: From Language Learners to Language Users - how using online video calling can support spoken language in Modern Languages classrooms in England - a longitudinal study

REG (10:00 - 12:30) Registration 2nd Floor Main Hall

OC (12:30 - 13:30) Opening Ceremony Welcome to OCCE!

Anton Knierzinger (Organizing Committee)

Sindre Røsvig (IFIP TC3)

Ronald Bieber (Managing Director of the Austrian Computer Society)

Gerald Futschek (Austrian Delegate in IFIP TC 3)

Regina Fechter-Richtinger (Representing the Major of Linz)

Doris Lang-Mayerhofer (Councilor for Culture and Tourism, Linz)

Official Opening:

Heidrun Strohmeyer (Representing the Minister of Education, Science and Research)

Introduction to the conference:

Cathy Lewin & Eric Sanchez (IPC co-chairs(

FPS 1.1 (13:30 - 15:00) Fullpaper Session 1.1

chair: Lawrence Williams 5N-2 Floor)

SR-2 (2nc

22 Sayaka Tohyama (JP), Yugo Takeuchi: How to Improve Children's Understanding of Code? - A Preliminary Study using the Jigsaw Method for Computer Programming in Elementary School

Presenter: Tohyama, Sayaka

1 of 6

61 Amir Mujkanovic (AT), Andreas Bollin: Personality-based Group Formation - A Large-Scale Study on the Role of Skills and Personality in Software Engineering Education Presenter: Bollin, Andreas

Yoshiaki Matsuzawa (JP), Kazuyoshi Murata, Seiichi Tani: Multivocal Challenge toward Measuring Computational Thinking: Bebras Challenge vs Computer Programming

Presenter: Matsuzawa, Yoshiaki

FPS 1.2 (13:30 - 15:00) Fullpaper Session 1.2

chair: Raymond Morel

- 24 Jaana Holvikivi (FI), Leenu Juurola, Maija Nuorteva: Collaboration platform for public and private actors in educational games development
- 34 Mary Webb (GB), Megan Tracey, William Harwin, Ozan Tokatli, Faustina Hwang, Ros Johnson, Natasha Barrett, Chris Jones: An investigation of the importance of haptics for promoting understanding of difficult concepts Presenter: Webb, Mary
- 74 Eric Sanchez (CH), Sylvia Mueller, Nicolas Kramar, Antoine Widmer, Elsa Paukovics: Students' Conducts during a Digital Game-Based Museum School

Presenter: Sanchez, Eric

FPS 1.3 (13:30 - 15:00) Fullpaper Session 1.3

chair: Andrew Fluck

P-A (1st Floor)

41 Mathew Hillier (AU), Nathaniel Lyon: Writing e-Exams in pre-university college

62 Bastian Küppers (DE), Ulrik Schroeder: Students' Perception of e-Assessment - A Case Study from Germany Presenter: Küppers, Bastian

75 Nikoleta Yiannoutsou (CY), Nuno Otero, Wolfgang Mueller, Stalo Neofytou, Miltos Miltiadous, Thanasis Hadzilacos: Hanging Pictures or Searching the Web: Informing the design of a decision-making system that empowers teachers to appropriate educational resources to their school's infrastructure Presenter: Yiannoutsou, Nikoleta

(15:00 - 15:30) coffee breal 2nd Floor Main Hall

(15:30 - 17:00) Austrian Projects

We need to address the omnipresence of digital technologies, their increasing accessibility and power to shape action and perception, through the development of learners' understanding and application of creativity, computational thinking, media literacy and digital citizenship. This endeavor is not simple about adaptation to a new technology and its associated culture. It is a big challenge for education systems.

This session will give you an overview about ideas, projects and strategies how digital education is implemented in the Austrian education system. Among all the projects currently running in our country we have selected projects which might be of interest to an international audience. We hope this we be a starting point for a fruitful discussion through the whole conference.

Austrian projects has two parts. First we start with a plenary session where seven projects will be presented. Afterward we will give the chance for personal talks with the presenters within the framework of the Austrian Projects Forum.

Speakers:

Martin Bauer: "eEducation Austria -digital competences for all"

Head of department IT/4, IT-Didactics and Digital Media at the Austrian Federal Ministry of Education, Science and Research

Johann Stockinger: "ECDL - Computing and Rocotics Module"

Senior Researcher

Austrian Computer Society

Astrid Leeb: "Education Group - Professional Support for Teachers"

Head of EduResearch

Wolfgang Rauter: "The Seamless Learning Project" -

Researcher at the Department of Interactive Media and Educational Technologies an Danube University Krems

Markus Hohenwarter: "GeoGebra - A free math apps that created a global community."

School of Education at Johannes Kepler University Linz

Marlene Miglbauer: "Virtuelle PH"

Deputy Head of Virtuelle PH at University College of Education Burgenland

Gerhard Nussbaum: "AsTeRICS and 4D-Jovstick"

ViceCEO and CTO at Competence Network Information Technology to Support the Integration of People with Disabilities

(17:00 - 18:00) Austrian Forum

Main Hall

P-A (1st

Center

2nd Floor

Main Hall

Austrian Projects Forum

WR

Informal discussions with the presenters of the Austrian Projects.

WG 3.3 (17:00 - 18:30) Working Group 3.3 WG 3.4 (17:00 - 18:30) Working Group 3.4

Floor) P-B (1st Floor) (19:00 - 21:30) Welcome Reception Ars Electronica

In the lobby of Ars Electronica Center. All participants of OCCE.2018 are invited to join the reception.

Tuesday, June 26th 2018

(08:30 - 09:00) Start THU (09:00 - 10:00) Keynote 1 chair: Eric Sanchez

Empowering students for Learning in the Digital Age through effective use of IT in education

There is a general agreement around the world for the necessity to teach students the skills that will empower them as learner, citizen and practitioner in the digital age. Though digital technology has been introduced in schools and universities more than one decade ago, it remains in many cases underused or used in a different way than planned. In addition, whereas stakeholders are usually enthusiastic for new technology, educational practitioners remain skeptical or even reluctant. Using the technology acceptance model as a general frame of reference, this talk will address 3 questions: How to empower

2 of 6 25/06/2018, 11:29 teachers for an effective use of technology in education? How should technology be used to empower students? How should educational technology evolve to more easily integrated in education? The talk will be illustrated by recent research findings from the TECFA lab.

(10:00 - 10:30) coffee break

DOC 1a (10:30 - 12:00) **Doctoral Consortium 1**

chair: Don Passev

Room SR2 (2nd floor)

Poster session

FPS 2.1 (10:30 - 12:00) Fullpaper Session 2.1

chair: Therese Keane

P-A (1st Floor)

- 33 Riko Kelter (DE), Matthias Kramer, Torsten Brinda: Teachers' perspectives on object-oriented programming environments for secondary education
- Fatima Djelil (FR), Eric Sanchez, Pierre-Alain Muller: Investigating Learner's Behaviours when Interacting with a Programming Microworld An Empirical Study Based on Playing Analytics Presenter: Djelil, Fahima
- 50 Monica Banzato (IT), Paolo Tosato: Exploratory Study on the Effort Perceived by In-service K12 Teachers from Scientific Areas not Specialized in CS and Complete CS Novices Presenter: Banzato, Monica

FPS 2.2 (10:30 - 12:00) Fullpaper Session 2.2

chair: Lawrence Williams GS

- 76 Toshinori Saito (JP): Reflecting on educational support for learning computing among socially disadvantaged youths How did it work in terms of human development in a developed country? Presenter: Saito, Toshinori
- Amber McLeod (AU), Kelly Carabott: Who's teaching the teachers? Viewing the ICT content of a teaching degree through the eyes of pre-service teachers Presenter: McLeod, Amber
- 73 Elisa Reci (AT), Andreas Bollin: A Teaching Process Oriented Model for Quality Assurance in Education Usability and Acceptability

Presenter: Reci, Elisa (12:00 - 13:00) Lunch breal

AUS 1 (13:00 - 14:30) Austrian Panel 2

2nd Floor GS

ICT and Vocational Education

Co-Chairs:

Jaana Holvikivi - IFIP Wilfried Nagl - AT

Members:

Ronald Bieber - OCG Dr. Sabine Huber - INTEL

Today, young people face a challenging situation. Whilst they have the opportunity to benefit from powerful digital technologies which open up new learning opportunities they also need to deal with handling and making sense of such devices in their professional life.

Digital technologies also enable young people to re-invent their world and society through being active creators and producers rather than passive consumers of knowledge and information. At the same time, the job market is shifting and young people now require a range of digital skills to meet employers' needs. There is currently a lack of clarity regarding what those skills should be when digital technology will be part of nearly all of our work.

We will discuss ICT in vocational education seen not only as challenge for schools with technical or commercial background, not only the demand coming from industry but as a a personal chance for our students and a societal challenge because education can be seen as the mechanism to trigger the impact of

Austrian Panels is a seria of sessions within OCCE, 2018 dealing with the topics which the Austrian government will be introduce into the Austrian EU Presidency in the second six month of 2018. From the results of this panels in combination with expertise within IFIP TC3 position papers will be produced and provided to the decision makers.

FPS 3.1 (13:00 - 14:30) Fullpaper Session 3.1

chair: Gerald Futschek

SR-2 (2nc Floor)

- 23 Andrew Fluck (AU), Christopher Chin, Dev Ranmuthugala: Transformative Computational Thinking in Mathematics A comparison by student age Presenter: Fluck, Andrew
- Andreas Bollin (AT), Peter Micheuz: Computational Thinking on the Way to a Cultural Technique A Debate on Lords and Servants Presenter: Bollin, Andreas
- 69 Jo-Yu Lee (TW), Mary Webb, Sue Sentance: A Case Study of Undergraduate Student's Perception of Creativity in Computer Animation in Taiwan Presenter: Lee, Jo-Yu

SYM 1 (13:00 - 14:30) **Symposium 1**

P-A (1st

35 Kwok-Wing Lai (NZ), Amina Charania, Margaret Cox, Cathy Lewin, Don Passey, Barry Quinn, Roger Sherman, Mary Webb, Toshinori Saito, Miriam Judge: Rethinking learning in the digital age: Implications for the Learner Presenter: Lai, Kwok-Wing

coffee break (14:30 - 15:00)

2nd Floor

CPS 1 (15:00 - 16:30) **Case Presentation 1**

chair: Anton Knierzinger GS

37 Chris Shelton (GB): Learning Computational Thinking: Analysing instructional videos Presenter: Shelton, Chris

- 65 Ryszard Gajewski (PL): Motivation Towards Learning Computational Thinking Tertiary Education Case Study Presenter: Gajewski, Ryszard
- 36 Lawrence Williams (GB), Lloyd Mead, Paul Sebuliba, Beth Mead: A Cross-agency project, for Occupational Therapists and Further Education students with language and learning difficulties and disabilities, based on Healthy Eating recipes, undertaken at Lambeth College, south London, using Scratch 2.0 to develop computa

Presenter: Williams, Lawrence

DOC 2a (15:00 - 16:30) Doctoral Consortium 2

chair: Don Passev

Room TB0 P-A (1st

'Publishing from your doctorate' - run by Dr Keith Turvey, University of Brighton, UK

FPS 4.1 (15:00 - 16:30) Fullpaper Session 4.1

chair: Sue Cranmer Floor)

Hana Voňková (CZ), Miroslava Černochová, Hasan Selcuk, Jan Hrabák, Kateřina Králová: The application of anchoring vignettes in the analysis of selfassessment of ICT skills: - A pilot study among Czech secondary school students Presenter: Černochová, Miroslava

3 of 6

66 Maina WaGioko (KE), Louisa Kadzo: CURRICULUM REFORMS FOR EMBEDING DIGITAL LITERACY IN KENYA SCHOOLS - Curriculum Development Status

Presenter: WaGioko, Maina

40 Mathew Hillier (AU), Nathaniel Lyon: Student experiences with a bring your own laptop e-Exam system in pre-university college Presenter: Hillier, Mathew

SPS 1 (15:00 - 16:30) **Short Paper Session**

SR-2 (2nc Floor)

28 Halvdan Haugsbakken (NO): Using digital storytelling in online course design to challenge funnel participation in MOOCs

44 Halvdan Haugsbakken (NO), Inger Langseth: Designing a MOOC Action-Task-Force Presenter: Haugsbakken, Halvdan

71 Matthias Ehlenz (DE), Thiemo Leonhardt, Ulrik Schroeder: A Learning Analytics Approach in Web-based Multiuser Learning Games - Towards a learner-centric analytics

Presenter: Ehlenz, Matthias

(17:00 - 18:30) res.

K2

WG 3.1 (17:00 - 18:30) Working Group 3.1

WG 3.7 (17:00 - 18:30) Working Group 3.7

DIN

(19:00 - 21:30) Conference dinner

Floor) Restauran Klosterhof (in front of the conference building)

P-A (1st Floor)

P-B (1st

Wednesday, June 27th 2018

(08:30 - 09:00) Start WED (09:00 - 10:00) Keynote Gerfried Stocker

chair: Anton Knierzinger Main Hall

Education for an unemployed - free future (10:00 - 10:30) coffee break

CPS 2 (10:30 - 12:00) Case Presentation 2

2nd Floor

chair: Torsten Brinda

P-B (1st Floor)

2nd Floor

72 Daniel Siebrecht (DE), Kathrin Haselmeier: The idea of a common European framework of reference for informatics Presenter: Siebrecht, Daniel

64 Paul Nieya (BW): Inclusive education - assistive and adaptive technology provision in developing countries. - The case of Botswana primary and secondary schools.

Presenter: Nleya, Paul

45 Manuel Reisinger (AT), Barbara Sabitzer: Cross-curricular Digital Literacy Strategy - A Learner and Teacher Project

Presenter: Reisinger, Manuel

FPS 5.1 (10:30 - 12:00) Fullpaper Session 5.1

chair: Kwok-Wing Lai GS

KLEOPATRA NIKOLOPOULOU (GR): Motivation and mobile devices' usage at school: Pupils' opinions Presenter: NIKOLOPOULOU, KLEOPATRA

Bent Andresen (DK): Digital disruption in youth education in Denmark Presenter: Andresen, Bent

81 Mr Dean von Schoultz (ZA), Porfessor Kerry-Lynn Thomson, Professor Johan van Niekerk: A Personal Informatics Approach for Academic Internet Self-efficacy in a South African University

Presenter: von Schoultz, Mr Dean

UN (10:30 - 12:00) UNESCO Meeting (invitation-only)

P-C (1st Floor)

BY INVITATION ONLY !!!

(12:00 - 13:00) Lunch break (12:30 - 13:00) Fireside chat 2nd Floor

83 Shaun Nykvist (AU), Christopher Blundell, Michelle Mukherjee: Active learning through creative inquiry: What are the challenges? Presenter: Nykvist, Shaun

AUS 2 (13:00 - 14:30) **Austrian Panel 1**

GS

Implementation Strategies for ICT in Education

Panel:

Co-chairs:

Raymond Morel

Anton J. Knierzinger

Members:

Bent Andresen

Kleopatra Nikolopoulo

Davide Stori

Stefan Länge

The strategies for implementing ICT, digital media, computational think and all the other aspects needed to prepare education for the digital age are manifold and of different success. In the session we will discuss the situation from a global perspective based on examples of good practice presented by the panelists. Content, didactic approach, means of integration into school and influence of education on the impact of technology in our society are aspects to be discussed. We will speak about the role and the importance of teachers in the process and we will try to find the bottlenecks and present success stories.

The target of the session is to identify the most important factors of success and to find the suitable ways which can lead to what is stated in the title of the conference "Empowering Learners for Life in the Digital Age".

FPS 6.1 (13:00 - 14:30) Fullpaper Session 6.1

chair: Cathy Lewin

P-A (1st Floor)

- 21 Veruska De Caro-Barek (NO): Innovation in language teaching and learning: What do we need to make a MOOC for language learning genuinely innovative? - Sharing work in progress experiences as a MOOC developer at NTNU, Trondheim, Norway Presenter: De Caro-Barek, Veruska
- 20 Rasha AlOkaily (IQ): The Role of Audiovisual Translation in Mediating Foreign Language Learning Activity Theory Perspective Presenter: AlOkaily, Rasha
- Sue Cranmer (GB): Disabled children's digital use practices to support formal learning. Presenter: Cranmer, Sue

SYM 2a (13:00 - 14:30) Symposium 2a

SR-2 (2nc Floor)

Mary Webb (GB), Charoula Angeli, Christine Bescherer, Ivan Kalaš, Amelie Labusch, Yaacov Katz, Peter Micheuz, Maciej M. Sysło, Joyce Malyn-Smith Malyn-Smith: Advances in Conceptualizing, Developing, and Assessing Computational Thinking Presenter: Webb, Mary

(14:30 - 15:00) coffee break

2nd Floor

DOC 3a (15:00 - 16:30) **Doctoral Consortium 3**

Room SR2 chair: Don Passev (2nd floor)

'Reflecting backwards and reflecting forwards' - run by Professor Don Passey, Lancaster University, UK

FPS 7.1 (15:00 - 16:30) Fullpaper Session 7.1

chair: Lawrence Williams GS

68 Stefan Pasterk (AT), Max Kesselbacher, Andreas Bollin: A Semi-Automated Approach to Categorize Learning Outcomes into Digital Literacy or Computer Science Presenter: Pasterk, Stefan

51 Djordje Kadijevich (CS): Cultivating computational thinking through data practice Presenter: Kadijevich, Djordje

Halydan Haugsbakken (NO): What does sharing mean on an Enterprise Social Media Platform – informing or information-overload? - What does sharing mean on an Enterprise Social Media Platform – informing or information-overload? Presenter: Haugsbakken, Halvdan

SYM 2b (15:00 - 16:30) Symposium 2b

P-A (1st Floor)

(16:30 - 20:00) Social Activities

Meeting Point: Court of the Conference Buildina

Thursday, June 28th 2018

(08:30 - 09:00) Start THU 2nd Floor chair: Cathy Lewin Main Hall

(09:00 - 10:00) Kevnote 3 Authentic and Contextual Learning with ICT for the most marginalized Adolescents in India

This keynote will present an example of an initiative seeded at Tata Trusts (philanthropy in India) called the Integrated approach to Technology in Education (ITE). The initiative aims for authentic learning within the curriculum, to foster 21st century skills and bridge the digital and learning opportunities for the most marginalized adolescents. Here both digital literacy and the use of OER becomes part of the teaching and learning process wherein the focus is on students' creating their own learning artifacts using ICT. The role of the teachers here is to design the lessons and activities, and choose resources to scaffold

the creations of their students. Within the context of rural, remote, urban ghettos, tribal and Muslim minority students and communities, examples of ITE practice demonstrate equity, agency, and knowledge construction; thus, bridging the learning, digital, and opportunity gaps. This project based approach using ICT within the curriculum illustrates knowledge deepening and creation by students as well as their acquisition of 21st century skills; the community projects by students also foster value building.

AUS 3 (10:30 - 12:00) Austrian Panel 3

2nd Floor

(10:00 - 10:30) coffee break **Inculsion and Equity Issues with adaptive Technologies**

GS

Panel: Co-chairs: Amina Charania

Klaus Miesenberger

P.T. Nleva - Botswana

Don Passey - IFIP

ICT is the key technology of the future. Equal accessibility is the key and accepted foundation for better inclusion and equity in the information society for the broadest range of users including those with disabilities using the improving potential of adaptive technologies. Accessibility to digital technology is accepted as a fundamental human right, best expressed in the UN-Convention on the Rights of People with Disabilities signed and approved by more than 160 countries) and following this implemented in national law.

Inclusion and equal accessibility have also big potential for improved business and socio economic impact in an ageing society. And science and technology provide viable and proven technologies, methods, techniques and standards for implementing accessibility.

But the resons of inequity towards digital technology are various and the implementation of accessibility is lacking behind due to missing awareness, education and incentives. Also the availability, adaptivity and personalisation of Assistive Technologies, which is to be driven by the service sector for people with disabilities, is lagging behind. Iclusion and equity issues have to be discussed when we see digital technology as a means to create a more just world. This panel intends to address this gap between potential and uptake of technologies supporting inclusion and wants to come up with a set of recommendations.

FPS 8.1 (10:30 - 12:00) Paper Session 8.1

chair: Rosa Maria Bottino P-B (1st Floor)

- Yaacov J Katz (IL): Social Networks as Learning Delivery Platforms: Academic Achievement and Attitudes of Students Yaacov J Katz, Bar-Ilan University and Michlala - Jerusalem Academic College Presenter: Katz, Yaacov J
- 42 Mathew Hillier (AU), Andrew Fluck: Robust networked e-Exams with Moodle Presenter: Hillier, Mathew

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55 Keiji Emi (JP), Shinzo Kobayashi: Practice of Blended Learning of Next Generation Agricultural Human Resources Development Using Wearable Cameras and Drone Cameras - the "WAZA" Method Presenter: Emi, Keiji

CS (12:00 - 13:00) **Closing Session**

Main Hall

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