



ANNUAL SEMINAR REPORT (D7.2-3)



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ABSTRACT

The Special Educational Needs network (SENnet: <http://sennet.eun.org>) part-funded by the European Commission's Lifelong Learning programme, organises each year a conference describing its activities in the three areas of activity in the network: the integration of learners with special needs into mainstream schools, innovative learning environments and raising teacher awareness. This third report describes two 2014 events.

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INTRODUCTION

The Special Educational Needs network (SENnet: <http://sennet.eun.org>) part-funded by the European Commission's Lifelong Learning programme, is a network of education ministries, national agencies and key organisations working in the area of ICT to improve access to learning for students with special educational needs (SEN).

The network organises each year a workshop presenting its activities in the three areas of activity in the network: the integration of learners with special needs into mainstream schools, innovative learning environments and raising teacher awareness. This report describes two 2014 workshops (D7.2-3) in Brussels and Zürich which included contributions from partners.

Further information about SENnet can be found at <http://sennet.eun.org>. The authors welcome comments and can be contacted at the address above.

TABLETS AS ASSISTIVE TECHNOLOGY: 21 OCTOBER, BRUSSELS

All presentations and Case Studies are accessible [here](#)

Chair: Jan de Craemer, Education Ministry, Belgium Flemish Community

Aims:

- to understand how tablet computers can support students with special needs drawing on research, SENnet case studies and early outcomes of the Creative Classrooms Lab (CCL) project on how tablets support innovative teaching and learning
- to jointly design inclusive tablet activities for SEN students

Present (28): Jale Akbas (TR), Roger Blamire (EUN), Ida Brandão (PT), Jan de Craemer (BE), Leo Højsholt-Poulsen, Katja Engelhardt (EUN), Line Knudsen (DK), Patricia Lotti (IT), Jan Rottier (BE), Ursula Simmetsberger (AT), Pille Tina-Kuusik (EE), Jochen Vrancken (BE), Jaanika Aas (EE), Darryl Bedford (UK), Stefan Bonn (DE), Helene Braund (BE), Robert Conings (BE), Sue Cranmer (UK), Maria Terasa di Prospero (IT), Sandrine Geuquet (BE), Carmen Guidetti (IT), Marco Iannacone (IT), Marc Lontie (BE), Francesca Neiviller (IT), Argeroula Petrou (EL), K. Belgin Ustunel (TR), Nele Vandenbulcke (BE), Beate Znoj (BE).

TABLET COMPUTERS IN SCHOOLS, AND FOR STUDENTS WITH SPECIAL NEEDS

Katja Engelhardt, European Schoolnet

Video: <https://www.youtube.com/watch?v=4UuKmeDuAXs>

- Tablets as ‘must have’ consumer items, tablet sales expected to overtake PCs in 2015, tablets quickly moved into schools
- Tool to enhance teaching and learning: tablets provide easy access to learning opportunities, information, organisational systems, communication, emotional support
- Unique features: touchscreen offers immediate feedback, sensory input and experiences (‘element of tactile learning’), possibility for highly individualised use via apps, support move to cloud-based and web-based software (easy to switch between devices)
- Advantages: mobile, include variety of activities, tablets used by all students
 - tablets replace assistive technologies in some cases
- Early research evidence: Tablets for Schools report (UK, 2013), Curtin University (Australia, 2013), Kennedy Krieger Institute (US, 2013) – autistic children, Lancaster University – visually impaired (UK, ongoing)

TABLETS FOR VISUALLY IMPAIRED STUDENTS: EARLY FINDINGS FROM A UK STUDY

Dr Sue Cranmer, University of Lancaster, UK

Video: <https://www.youtube.com/watch?v=TrYzWfwbS6Q>

Overview

- Very little research which examines how students with special needs experience and develop appropriate uses of digital technologies but practitioners with huge expertise
- Tablets are often used as assistive technology (to assist learning) but less as a catalyst for learning (to enable learning, possibly through collaborative/ interactive activities)

Small-scale study

- ongoing pilot small-scale study about how young people with visual impairments in mainstream schools use digital technologies for learning in North West of England:
 - School visits including interviews, observations in the classroom, interviews with the support team
 - so far 7 interviews (all but one secondary school level)
- Observed benefits of tablets: can zoom/ bring closer to eyes, avoids carrying large textbooks or laptop, more reliable than laptop with magnification, quicker to start, internet more fun than textbook- more interactive, touchscreen easier to use than mouse, can take photos/ zoom in/ change colors, connects home and school for some students, can see what is written on screen through enlarging letters
 - enables more independent, self- directed learning
 - potential to reduce stigma
 - enables young people with visual impairments to participate in mainstream classes
- Challenges: issues with extended pieces of writing (better with external keyboard), some documents too large to email (difficulty getting them into ipad), not allowed to use ipad in exams (can use laptop and magnification), not everything is available electronically, not everything is of adequate quality, teachers do not always anticipate well what a student can access or have time to prepare what is needed, tablets can take too long to navigate electronically
- one challenge for further research is to reach young people, as they are protected by strong gatekeepers

Questions & discussion

In reply to Leo Højsholt-Poulsen, Sue Cranmer stated that iPads led the way so far because of their accessibility features. In reply to Marc Lontie, she further explained that in 2 of the 3 schools involved all students had tablets. Marc Lontie commented that it is for the school management to decide which tablets are used. While iPads offer the better accessibility features until now, other providers are catching up.

EDITOUCH: A TABLET SPECIALLY DESIGNED TO SUPPORT CHILDREN WITH DYSLEXIA

Marco Iannacone, Italy

Video: <https://www.youtube.com/watch?v=5DnohdMOI3c>

- EdiTouch is a small start up that provides a complete solution (hardware and software) at a price comparable to that of tablets already on the market
- Interface and main programs of the Android tablet have been designed with the support of speech therapists and specialists in learning disabilities

- Tablet with high readability fonts, possibility to increase space between letters and lines (avoid crowding effect)

About dyslexia

- Dyslexia cannot be prevented or cured, but it can be managed with special instruction and support
- Children with dyslexia are entitled by law (in most EU countries) to have specialized educational and support services

Problems with PCs as assistive tool for dyslexic students

- traditional PC-based compensatory tools complex to use for young children
- Use of the computer in class is often rejected by the child who feels “different”
- a tool as complex as a PC is sometimes a source of distraction for children
- PCs are not optimized for readability by default: default text to speech libraries are not good in reading aloud Italian, fonts are small and do not simplify reading
- Traditional compensatory tools and PCs are a major cost for families

Trial with 8 schools in Rome – goal and activities

- In the school years 2012-2014, a multidisciplinary team composed by doctors, nurses and speech therapists (ASL Roma D), together with the University of L’Aquila conducted a 18 month trial
- Goal: to assess the psycho- educational effectiveness of a tablet specifically designed as a compensatory tool in a conscious and inclusive environment
- Teachers, parents and students received training, to use the tablet both at school and at home
- Trial included over 400 students from 8 schools in Rome, 219 of them certified with SLD received the tablets
- Issues of schools: lacking link to health care system, lack of proper connection between school-home, high number of school drop-outs

Method of the trial

- Target A group consisting of primary and secondary school children (9-6 years) with SLD certification and control group B
- A-B-A Design: pre-test, treatment using the tablet equipped with specifically designed and tested software, post- test
- Individual case studies and multivariate modes by type of treatment

Results

- Teachers were forced to adopt new ways of teaching, not all teachers supported the use of tablet computers in school
- 58% of students want to use the tablet more at school, 54 % want to use it more at home
- Around 70% of parents think that the tablet enables students to have more autonomy and be less stressed.

ITALY, PATRIZIA LOTTI

- **Case Study on use of iPad by autistic student Robert**
- Libr@ project started last school year, providing all lower secondary students with iPads and digital textbooks
- Robert decided to go to this school because of this project, as with everybody using tablets he does not feel different from his mates
- R. is suffering from a spastic tetraplegia, needs tablet to speak
- he is supported by professionals inside and outside of school, his school mates
- R. follows an individualized education plan, eventhough curriculum teacher and SEN teacher include him in most group activities
- teaching methodology is based on microteaching and interdisciplinary small units so that R. can work with images, vides, pictures and short sentences
 - helps R. to understand and memorize, minimize efforts and maximise outcomes
- R. uses two tablets, one for alternative augmentative communication and one for running specific apps for content learning
 - use of tablets enables a more inclusive learning environemnt

PORTUGAL, IDA BRANDÃO

- **Case Study on use of tablet by student with delayed psychomotor development** showing characteristics of pervasive development disorder (poor coordination and impaired balance, poor coordination eye- hand, difficulty to focus and keep attention to a task, poor verbal expression)
- Educational measures: personalized educational support, individual curricular adjustments, assessment process adjustments, assistive technologies
- SEN teacher support to use tablet in different learning contexts, supervised use of tablet together with other materials (teacher has to adapt materials)
- Outcomes (1): tablet is user friendly and intuitive, student enjoys working with it, stimulates learning, tablet useful and mobile in different learning contexts, customization allows access to many materials
- Outcomes (2): better attention focus, better fine motor skills, tablet as facilitator recognized by school, student and family

TURKEY, JALE AKBAS

- **Case Study on the use of tablets by autistic students**
- The aim is for students to be oriented in their daily lives and start using educational technologies like tablets, e.g. make them learn reading and understanding texts, learn time telling (clock), to express themselves
- Teacher uses tablet to introduce basic concept to students
- as reward, students can play games
- 4 students and 2 teachers (one is parent or volunteer)

AUSTRIA, URSULA SIMMETSBERGER

- **Analysis of the influence of the use of tablets in an Upper Austrian school with integration classes**
- Students are between 6 and 14 years old, 8 iPads in use since 2012
- Very individualized teaching
- Rather small apps are used, such as GoTalk Now, MetaTalk DE
- Video Case Study on Martin-Boos-Schule for children with severe disabilities
- Outcomes: higher levels of concentration, easier to use, longer attention span, higher level of motivation, improved communication
- Teacher training and concepts for the use are important

BELGIUM, JOCHEN VRANCKEN

- **Centre Ganspoel organizes the support of children, young people and adults with Visual or Visual-multiple disabilities** (supports 162 students in 151 schools)
- not all assistive tools are user friendly
- for 2 years now exploring possibilities of tablets/ smartphones
- for the moment not possible to get funding for these tools
- Examples of use with visually impaired: filming with the smartphone during a trip to bring images closer so that the visually impaired can follow along, integration of e-books on tablets (zoom, speech, write capabilities), braille display linked with bluetooth to iPad so that the classroom teacher can read what the student notes
- Problems: large differences between the systems, the possibilities offered by a mobile system to one student cannot be generalized, wifi is often needed to use apps, there is no refund when testing, administration responsible for refunds cannot follow technological developments, fast evolution of apps and settings makes it hard to follow
- Possibilities: tablets help integration of the visually impaired student (tablets are more known by teachers and fellow students), student can sit at different places in the classroom, easy to carry tablet to other places, no power sockets needed (if battery is well charged), for some students tablets with e-books and workbooks can replace expensive conversions, tablets are considerably less expensive than traditional assistive technologies
- Case Study video describes how student uses tablet with magnifier/ app

Questions and discussion

Marc Lontie commented that note taking becomes more difficult at secondary level, as notes on the blackboard are less structured and note taking involves more interaction. Therefore, his schools uses expensive tools like cameras that focus on smart boards etc. Moreover, only students with a certain level of sight can benefit from tablets. Jan Rottier added that in Belgium Flanders there was an agreement with publishers to produce two versions of textbooks, one with tags and one with world/braille conversion for visually impaired.

DENMARK, LEO HØJSHOLT-POULSEN

- **Case Study on 6 students (aged 6 – 10), in a SEN class**
- Use of the app “Write to read” to increase their motivation and skills to work with the written language
- Objective: students learn the shape and sound of the letter, reading from left to right, that text is composed of letters, etc.

- Outcome: big differences in how students benefitted from the app, app motivates students so write complete sentences

ESTONIA, PILLE TINA-KUUSIK

- **Käo Põhikool is a school for students with special educational needs** – severe and profound cognitive/developmental and multiple learning disability
- school provides children with special needs with opportunity to study while receiving rehabilitation during the school day
- learning and educational activities are based on individual study plan (IEP)
- tablets are used since 2012
- the first idea was to develop working alternative and augmentative communication(AAC) system for tablet PC
 - Estonian grammar is quite difficult (e.g. our language has 14 cases)
 - Käo Basic School did not have enough time and enough knowledge to develop working AAC system for tablets
- Tablets are now used as learning device in every subject: to stimulate senses, develop cognitive skills, develop general and fine motor skills, enable students with special needs to participate in activities like singing, playing instruments they could not play otherwise, making choices, reading a poem or a story etc.

TABLETS AND COLLABORATIVE LEARNING

Darryl Bedford, Teacher of the Deaf and Apple Distinguished Educator, London

General setting

- work with deaf students in school
 - being deaf impacts on their social/ emotional/ intellectual development
 - mental disabilities because of isolation (90% of students go home with no possibility to communicate)
- better refer to learning differences, not disabilities
- a lot of technology, apps available: start with something small and go from there
- a lot of accessibility features benefit all students
- curriculum should be designed to meet diverse needs, minimize barriers and allow students to take risks/ develop own ideas
- as students get older, assistance disappears

Challenge based learning projects

- challenge based learning projects easier in primary schools, schools for students with special needs, e.g. “Can you hear sound?” (“[sensory learning](#)”)
 - deaf students explore ways to experience sound, create music clips, develop new relationship to sound
 - collaboration project between 3 schools: hearing students try to communicate their understanding of sound to deaf audience
- important for students to learn from each other, also students with special needs have something to offer, teacher to be facilitator

Use of tablets

- use tablets to explore, design, perform, use all senses

- in order for technology to be transformative: do something that would otherwise not have been possible
- create iPad challenges, e.g. make a word cloud, make a poem, mind map
- there needs to be balance between using iPad and writing on paper
- ebooks help students with language delays to form sentences
- students use cards describing skills for self-assessment

Questions & discussion

Roger Blamire asked how work in groups and students' self-assessments of their skills were assessed. Darryl Bedford replied that the idea was not to label students, but to encourage positive labels, students can use the assessment cards and modify them.

Useful links:

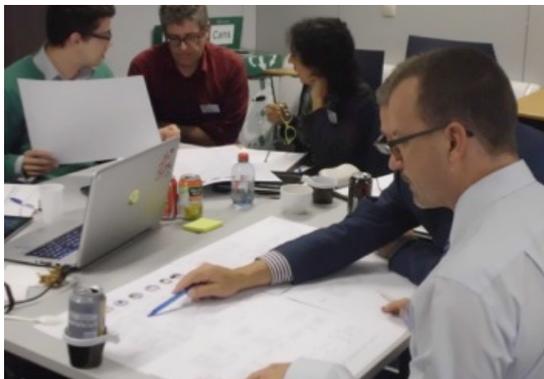
- Sensory learning: <http://vimeo.com/101683238>
- Can you see sound? <http://vimeo.com/87005287>
- Skills for life:
<https://dl.dropboxusercontent.com/u/6995822/Skills%20for%20life%202.zip>

GROUP WORK: DESIGNING INCLUSIVE COLLABORATIVE ACTIVITIES WITH TABLETS

Workshop to design inclusive learning activities in learning stories designed in the [Creative Classroom Lab](#) project

The scenarios developed within the CCL project follow a one-size fits all approach. They propose 7 collaborative classroom activities such as dreaming, exploring and making. The workshop participants were divided in groups in order to adopt the scenario in view of a particular student with special needs.

- [School to school collaboration](#): commemorating World War I
- [Collaboration and assessment](#): tracking progress innovatively in group activities
- [Liberating learners](#): using innovative tools for developing independent learning skills



OUTCOMES OF GROUP DISCUSSIONS

“Liberating learners (independent learners)”

- principles emerging to underpin that learning activities have to be accessible to as many as possible, e.g. communication must be provided in as many ways as possible
- use different communication methods (visual, audio, multimedia)

“iGroup” (Collaboration and assessment)

in “Explore” phase:

- for students to form own questions
- also use virtual learning environments, outside the classroom, theatre
- use tablets also to collect, research, observe, mind map, communicate
- include experts via Facetime and Skype
- use blogs to collaborate/ share knowledge
- reflection phase should be linked to learning experience
- necessary to not only reflect on process and product but also skills and knowledge, e.g. creative thinking, questioning skills, finding and understanding context.



REVIEW AND CONCLUSION

The aim of the workshop was to provide a snapshot of the state of the arts of how tablets are used in special needs education. As the Case Study videos are very useful, one aim is to still maximize their impact. Sue Cranmer commented that it was very useful to look at different impairments, as a lot of mainstream studies do not make a difference, which makes it difficult to get meaningful results. Roger Blamire asked where more European cooperation was needed in this field. In the view of Darryl Bedford, it was needed to connect different schools and cultures. Another comment was that it would be nice to hear from the children themselves, as in most European projects only teachers and parents get to express themselves. Marco Iannacone added that European cooperation would make a cross country project possible, reaching out to a larger number of students.

MOBILE LEARNING, ASSESSMENT AND INCLUSION: EMINENT CONFERENCE 13-14 NOVEMBER 2014

There were two sessions: a workshop (38 attended) and a plenary (150 delegates).

WELCOME AND CONTEXT

Jan de Craemer, Education Ministry, Belgium Flemish Community

Tablets are becoming increasingly popular in schools. They present unique opportunities and challenges both in assessment and the inclusion of the 15% of Europe's students with special needs in mainstream education. The aim of this workshop is to broaden the discussion of shifting assessment paradigms to include learners with special needs.

We will present insights from two EUN projects with a particular focus on tablets; the Special Educational Needs network (SENnet) and the Creative Classrooms Lab (CCL). Video case studies of SEN students using tablets in mainstream classrooms in six countries and the work of the CCL project with its focus on collaboration and assessment this year will shed light on concrete opportunities that tablets provide. In addition other results from SENnet on digital content and teacher education will be outlined and future plans discussed.

SENNET AND THE SPECIAL NEEDS EDUCATION WORKING GROUP IN 2014

Roger Blamire

- 15- 20 per cent of all students may have a disability
- trend is to integrate students with special needs in mainstream schools
 - not all teachers were prepared and got enough support for these students
- at European Schoolnet, there was not a lot of activity on the topic prior to Jan de Cramer's agreement to chair the special needs working group four years ago
- the SENnet project enabled peer exchange: evaluation has shown that visiting different countries has more impact than attending conferences
 - problem: funding does not allow teacher to travel
- project provided input to events/ conferences, next: eTwinning conference , Rome
- within the project, relevant research was conducted, videos collected, online CPD courses developed

Leo Højsholt-Poulsen

- area of special needs education is a debated one
- the aim was to improve the availability and access to online resources to support learners with SEN
- prioritized 200 SEN resources, tagged them and entered them into Learning Resources Exchange
- tagged existing resources according to SENnet application profile
 - existing approaches predominantly tag according to disease or disability
 - a (SEN) 'tag' should be on the type of support the resource provides
e.g. – text to speech, visual enhancing etc.

TABLETS AND SPECIAL NEEDS: THEMATIC STUDY AND CREATIVE CLASSROOM LAB ACTIVITIES

Silvia Panzavolta

- third thematic report “Tablet computers and learners with special educational needs” just published, divided in two parts (literature review + Case Studies)
- increased use of tablets: latest statistics: 7000 tablets in schools
- features underlined by researchers: interaction design, tablets have friendly interaction, usable via touchscreen/vocal command, portability
- advantages: personalization, possibility to have immediate feedback, students are more in control of own learning, student motivation
- market of apps is improving
- so far, only small case studies exist, not possible to generalize information which students with SEN benefit most from using tablets
- tablets seem to offer benefits to children with low vision, attention disorders, communication disorders, dyslexia, low motoric skills
- still lacking evidence on how tablets can be used in inclusive way

Jochen Vrancken

- Centre Ganspoel (Belgium) organizes the support of children, young people and adults with visual or visual-multiple disabilities
- support for the students, teachers, school team, parents so that students have the opportunity to follow the mainstream school curriculum providing adaptations and tools
- tools used range from small low vision aids to high-tech tools
 - not all tools are very user friendly
 - tablets seem to provide solutions to problems encountered
- for two years, looking into new solutions using tablets and smartphones
- teachers have to experiment a lot themselves
- one of the biggest advantages of iPads is the price
- in Belgium, tablets are currently not recognized as assistive technology and therefore not refunded
- advantages: social and emotional benefits, students are better accepted
- classroom practice seems to echo findings from the literature
- part of assessment not visible in video: student with special needs Roberto cannot speak: some exams have been modified because of Roberto
 - the whole class is benefiting from the way Roberto is assessed

Leo Højsholt-Poulsen

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- Outcome: big differences in how students benefitted from the app, app motivates students so write complete sentences

TABLET COMPUTERS IN SCHOOLS AND STUDENTS WITH SPECIAL NEEDS

Katja Engelhardt, European Schoolnet

- tablets as 'must have' consumer items, tablet sales expected to overtake PC's in 2015, tablets quickly moved into schools
- tool to enhance teaching and learning: tablets provide easy access to learning opportunities, information, organisational systems, communication, emotional support
- unique features: touchscreen offers immediate feedback, sensory input and experiences ('element of tactile learning'), possibility for highly individualised use via apps, support move to cloud-based and web-based software (easy to switch between device)

Roger Blamire

Thematic study

- privacy is an issue: parents do not want video with visually impaired student to be public
- tablets were not initially produced as educational tools
- project is looking at tablets in general, not a particular brand
- apple/iPad is currently the market leader, has accessibility features built in
- new trend BYOD raises new challenges for class management

Creative Classrooms Lab project

- this year CCL teachers work on three scenarios with implication for special needs
 - 1) Assessment and collaboration
 - How to assess individual contributions to group work?
 - 2) School-to-school collaboration
 - 3) Liberating learners (independent learners)
 - learning to learning: improve study skills of students
- assessment and inclusion of students with special needs is a concern across topics

Universal Design for Learning

- UDL concept not well known
- refers to the necessity of having several modes of access to information/learning
- this could include:
 - allowing for more time for written tasks including note-taking, copying, tests
 - reducing copying elements of assignments and tests
 - offering the student an alternative project such as an oral report or visual project
- if there are obstacles for one student, there are problems probably for several students.

PLENARY SESSION

Roger Blamire

Key points for policy-makers were presented.

SENnet activities:

- 2014 activity report (<http://sennet.eun.org>)
 - Peer learning visits to Portugal and Estonia
 - Pilot MOOC on SEN and ICT, adapted in six countries

- Growing network: [facebook.com/groups/SENnetwork/](https://www.facebook.com/groups/SENnetwork/)
- 600+ resources tagged in [LRE SENnet collection](#)
 - Extended vocabulary based on resources' affordances, *not* disability
- Study on tablet computers and inclusion
 - Eight video case studies, inc. BE, IT, DK
- CCL scenarios and inclusion
- Assessment and special needs: some considerations

Conclusions and recommendations

- Keep a perspective on special needs when discussing ICT in schools
- Pupils in SEN context can benefit a lot from technology, sometimes technology is **vital** to their well-being
- But full educational potential is yet to be explored (using them in an inclusive way)
- Ensure easy access to these devices for pupils with SEN
 - Remove budgetary, pedagogical and accessibility barriers
- Sharing examples and networking (between ministries, schools, industry etc.) is important. The SEN WG will look over this task
- If pupils follow a didactical process with ICT they should be allowed to be assessed by ICT
 - And what does this mean for SEN?