



## ICT to support students with additional support needs (ASN) and disabilities in education

by Dr Marta Kowalczyk-Walędziak  
Project 617443 CBHE-JP coordinator Gracienne Lauwers (prof. dr.)

<http://edulaweu.eu>



### Content: ICT for ASN in education

How can teachers **select ICT** to maximise benefits for students with additional support needs and disabilities



How to **find** and **evaluate** ICT to best support students with additional support needs and disabilities



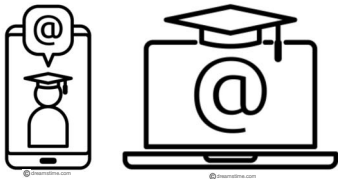
EVALUATE



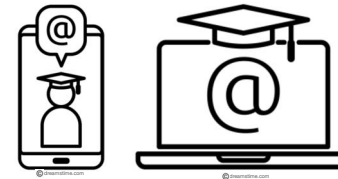
What does the **research** say about technology to support students with additional support needs and disabilities

RESEARCH

### ICT for ASN in education



### ICT for ASN in education



*'using technology for the sake of using technology, without careful consideration of the match between the end user's individualised needs and the functionality of the technology is an all too common mistake'*  
(Kennedy and Boyle)

## ICT for ASN in education



*'using technology for the sake of using technology, without careful consideration of the match between the end user's individualised needs and the functionality of the technology is an all too common mistake'*  
(Kennedy and Boyle)

## ICT for ASN in education



*'using technology for the sake of using technology, without careful consideration of the match between the end user's individualised needs and the functionality of the technology is an all too common mistake'*  
(Kennedy and Boyle)

How can teachers **select** ICT to maximise benefits for students with additional support needs and disabilities



How to **find** and **evaluate** ICT to best support students with additional support needs and disabilities



What does the **research** say about technology to support students with additional support needs and disabilities

**RESEARCH**

## How can teachers **select** ICT to maximise benefits for students with ASN

unsuitable

suitable

- suitable for the intended users and their environment

Ahmad, 2015

How can teachers **select** ICT to maximise benefits for students with ASN



- suitable for the intended users and their environment



- inexpensive and easy to purchase

Ahmad, 2015

How can teachers **select** ICT to maximise benefits for students with ASN



- suitable for the intended users and their environment



- inexpensive and easy to purchase



- easy to use

Ahmad, 2015

How can teachers **select** ICT to maximise benefits for students with ASN



- fit the students' **needs**, teachers' **capabilities**, and **expected learning outcomes**

How can teachers **select** ICT to maximise benefits for students with ASN



- fit the students' **needs**, teachers' **capabilities**, and **expected learning outcomes**



- examine the **choices** available, then carefully decide what ICT to use

### How can teachers **select** ICT to maximise benefits for students with ASN



- **fit** the students' **needs**, teachers' **capabilities**, and **expected learning outcomes**



- examine the **choices** available, then carefully decide what ICT to use



- create opportunities to **integrate** technology with other non-technological activities

### How can teachers **select** ICT to maximise benefits for students with ASN



- **fit** the students' **needs**, teachers' **capabilities**, and **expected learning outcomes**



- examine the **choices** available, then carefully decide what ICT to use



- create opportunities to **integrate** technology with other non-technological activities



- take responsibility for the implementation of ICT in the classroom, then **monitor** its true impact on student learning

How can teachers **select** ICT to maximise benefits for students with additional support needs and disabilities



How to **find** and **evaluate** ICT to best support students with additional support needs and disabilities



What does the **research** say about technology to support students with additional support needs and disabilities

**RESEARCH**

### How can teachers best **find** and **evaluate** ICT in order to maximise benefits



**EVALUATE**

**Finding** the right app. Teachers:

- **find apps** relevant to their target area (*such as supporting students with disabilities in academic instruction*) in iTunes, Google Play, or Top 10 lists to search for them in a targeted way and read the reviews of other users

iTunes Preview

App Store > Education

Google Play

Top 10 educational apps



Bouck, Satsangi, & Flanagan, 2016

## How can teachers best **find** and evaluate ICT in order to maximise benefits



EVALUATE

**Finding** the right app. Teachers:

- **find apps** relevant to their target area (*such as supporting students with disabilities in academic instruction*) in iTunes, Google Play, or Top 10 lists to search for them in a targeted way and read the reviews of other users
- **evaluate shortlisted apps**, using a tool or rubric to determine their potential appropriateness in supporting students with ASN or disabilities in academic contexts

iTunes Preview

App Store > Education

Google Play

Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

## How can teachers best **find** and evaluate ICT in order to maximise benefits



EVALUATE

**Finding** the right app. Teachers:

- **find apps** relevant to their target area (*such as supporting students with disabilities in academic instruction*) in iTunes, Google Play, or Top 10 lists to search for them in a targeted way and read the reviews of other users
- **evaluate shortlisted apps**, using a tool or rubric to determine their potential appropriateness in supporting students with ASN or disabilities in academic contexts
- **make time to use the app themselves**, carefully checking its quality and its relevance to the students' educational needs and goals, as well as their own pedagogical approach

iTunes Preview

App Store > Education

Google Play

Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

## How can teachers best find and **evaluate** ICT in order to maximise benefits



EVALUATE

**Evaluating** the chosen app. Teachers:

- **evaluate the app from a curricular perspective** (*does it properly teach and reinforce the academic concepts and standards they want their students to learn in line with*)

iTunes Preview

App Store > Education

Google Play

Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

## How can teachers best find and **evaluate** ICT in order to maximise benefits



EVALUATE

**Evaluating** the chosen app. Teachers:

- **evaluate the app from a curricular perspective** (*does it properly teach and reinforce the academic concepts and standards they want their students to learn in line with*)
- **evaluate whether students will be able to navigate the features of the app independently**, or if additional support would be needed

iTunes Preview

App Store > Education

Google Play

Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

## How can teachers best find and **evaluate** ICT in order to maximise benefits



**Evaluating** the chosen app. Teachers:

- **evaluate the app from a curricular perspective** (does it properly teach and reinforce the academic concepts and standards they want their students to learn in line with)
- **evaluate whether students will be able to navigate the features of the app independently**, or if additional support would be needed
- **investigate the interface of the app** (can the app be personalised or customised in terms of settings and content)

iTunes Preview

App Store > Education



Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

## How can teachers best find and **evaluate** ICT in order to maximise benefits



**Evaluating** the chosen app. Teachers:

- **evaluate the app from a curricular perspective** (does it properly teach and reinforce the academic concepts and standards they want their students to learn in line with)
- **evaluate whether students will be able to navigate the features of the app independently**, or if additional support would be needed
- **investigate the interface of the app** (can the app be personalised or customised in terms of settings and content)
- **reflect on the motor skills required to interact with the app** (actions such as swiping, pinching, and zooming may be problematic for students who have physical impairments)

iTunes Preview

App Store > Education



Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

## How can teachers best find and **evaluate** ICT in order to maximise benefits



**Evaluating** the chosen app. Teachers:

- **evaluate the app from a curricular perspective** (does it properly teach and reinforce the academic concepts and standards they want their students to learn in line with)
- **evaluate whether students will be able to navigate the features of the app independently**, or if additional support would be needed
- **investigate the interface of the app** (can the app be personalised or customised in terms of settings and content)
- **reflect on the motor skills required to interact with the app** (actions such as swiping, pinching, and zooming may be problematic for students who have physical impairments)
- **consider the progress monitoring capacity of the app** (can the app offer students timely or meaningful feedback on their efforts? And does it keep any records that the teacher can review)

iTunes Preview

App Store > Education



Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

## How can teachers best find and **evaluate** ICT in order to maximise benefits



**Evaluating** the chosen app. Teachers:

- **evaluate the app from a curricular perspective** (does it properly teach and reinforce the academic concepts and standards they want their students to learn in line with)
- **evaluate whether students will be able to navigate the features of the app independently**, or if additional support would be needed
- **investigate the interface of the app** (can the app be personalised or customised in terms of settings and content)
- **reflect on the motor skills required to interact with the app** (actions such as swiping, pinching, and zooming may be problematic for students who have physical impairments)
- **consider the progress monitoring capacity of the app** (can the app offer students timely or meaningful feedback on their efforts? And does it keep any records that the teacher can review)
- **reflect honestly on how their students would feel about the app, software, or device** (would they truly enjoy it or find it annoying? After all, this is the single most vital deciding factor in choosing ICT)

iTunes Preview

App Store > Education



Top 10 educational apps



Bouck, Satsangi,  
& Flanagan, 2016

How can teachers **select ICT** to maximise benefits for students with additional support needs and disabilities



How to **find and evaluate ICT** to best support students with additional support needs and disabilities



What does the **research** say about technology to support students with additional support needs and disabilities

**RESEARCH**

## What does the research say about technology to support students with ASN



**ASSISTIVE TECHNOLOGY CAN GREATLY SUPPORT STUDENTS WITH DISABILITIES**

## What does the research say about technology to support students with ASN



**ASSISTIVE TECHNOLOGY CAN GREATLY SUPPORT STUDENTS WITH DISABILITIES**

Computers with specialized software can be used to record, edit and share ideas, help in completing assignments on time and improve motivation.

## What does the research say about technology to support students with ASN



**ASSISTIVE TECHNOLOGY CAN GREATLY SUPPORT STUDENTS WITH DISABILITIES**

Computers with specialized software can be used to record, edit and share ideas, help in completing assignments on time and improve motivation.

Use of multimedia, concept mapping or organizing software, and dictation with speech recognition can improve the writing skills of children and adults with learning difficulties (Batorowicz et al., 2012).

## What does the research say about technology to support students with ASN



- making learning more **fun and attractive** than traditional approaches *(Maza (2021) many technological devices are outfitted with vibrant colours and engaging designs that can fuel a student's empowerment for learning)*

## What does the research say about technology to support students with ASN



- making learning more **fun and attractive** than traditional approaches *(Maza (2021) many technological devices are outfitted with vibrant colours and engaging designs that can fuel a student's empowerment for learning)*



- increasing students' **autonomy** and counteracting challenges particular to students' personal ASN *(Robb (2018) ,the use of iPads and other touchscreen devices can increase access to learning for students with fine-motor challenges')*

## What does the research say about technology to support students with ASN



- making learning more **fun and attractive** than traditional approaches *(Maza (2021) many technological devices are outfitted with vibrant colours and engaging designs that can fuel a student's empowerment for learning)*



- increasing students' **autonomy** and counteracting challenges particular to students' personal ASN *(Robb (2018) ,the use of iPads and other touchscreen devices can increase access to learning for students with fine-motor challenges')*



- **individualising** students' learning *(Robb (2018) ,it's beneficial for teachers to understand how apps can be personalised to meet the child's individual needs')*

## What does the research say about technology to support students with ASN



- making learning more **fun and attractive** than traditional approaches *(Maza (2021) many technological devices are outfitted with vibrant colours and engaging designs that can fuel a student's empowerment for learning)*



- increasing students' **autonomy** and counteracting challenges particular to students' personal ASN *(Robb (2018) ,the use of iPads and other touchscreen devices can increase access to learning for students with fine-motor challenges')*



- **individualising** students' learning *(Robb (2018) ,it's beneficial for teachers to understand how apps can be personalised to meet the child's individual needs')*



- **reducing** the amount of cognitive processing required for learning *(via offering additional time and alternative, digital spaces for learning)*



## What does the research say about technology to support students with ASN



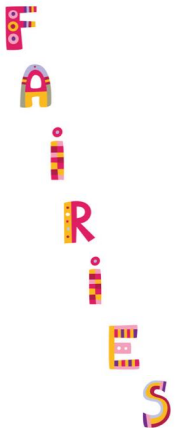
- making learning more **fun and attractive** than traditional approaches (*Maza (2021) many technological devices are outfitted with vibrant colours and engaging designs that can fuel a student's empowerment for learning*)
- increasing students' **autonomy** and counteracting challenges particular to students' personal ASN (*Robb (2018) ,the use of iPads and other touchscreen devices can increase access to learning for students with fine-motor challenges'*)
- **individualising** students' learning (Robb (2018) ,it's beneficial for teachers to understand how apps can be personalised to meet the child's individual needs')
- **reducing** the amount of cognitive processing required for learning (via offering additional time and alternative, digital spaces for learning)
- facilitating a creative, cooperative, and **inclusive learning environment** (*Burke & Hughes (2018) ,one key benefit of using tablet devices, such as iPads, is that they are generally seen as everyday items, therefore do not carry any stigma for any student who might be offered one to use'*)

## What does the research say about technology to support students with ASN



- making learning more **fun and attractive** than traditional approaches (*Maza (2021) many technological devices are outfitted with vibrant colours and engaging designs that can fuel a student's empowerment for learning*)
- increasing students' **autonomy** and counteracting challenges particular to students' personal ASN (*Robb (2018) ,the use of iPads and other touchscreen devices can increase access to learning for students with fine-motor challenges'*)
- **individualising** students' learning (Robb (2018) ,it's beneficial for teachers to understand how apps can be personalised to meet the child's individual needs')
- **reducing** the amount of cognitive processing required for learning (via offering additional time and alternative, digital spaces for learning)
- facilitating a creative, cooperative, and **inclusive learning environment** (*Burke & Hughes (2018) ,one key benefit of using tablet devices, such as iPads, is that they are generally seen as everyday items, therefore do not carry any stigma for any student who might be offered one to use'*)
- enhancing motivation towards and **engagement** in learning

## What does the research say about technology to support students with ASN



- making learning more **fun and attractive** than traditional approaches (*Maza (2021) many technological devices are outfitted with vibrant colours and engaging designs that can fuel a student's empowerment for learning*)
- increasing students' **autonomy** and counteracting challenges particular to students' personal ASN (*Robb (2018) ,the use of iPads and other touchscreen devices can increase access to learning for students with fine-motor challenges'*)
- **individualising** students' learning (Robb (2018) ,it's beneficial for teachers to understand how apps can be personalised to meet the child's individual needs')
- **reducing** the amount of cognitive processing required for learning (via offering additional time and alternative, digital spaces for learning)
- facilitating a creative, cooperative, and **inclusive learning environment** (*Burke & Hughes (2018) ,one key benefit of using tablet devices, such as iPads, is that they are generally seen as everyday items, therefore do not carry any stigma for any student who might be offered one to use'*)
- enhancing motivation towards and **engagement** in learning
- improving vocational, independence, and social **skills** (*for example, giving students tools for alternative modes of communication, other than speaking and writing*)

## C What does the research say about the challenges of using technology

- high **costs** of devices and software

C  
I

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers

C  
I  
L

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers
- **logistics** issues (e.g. purchase and distribution)

C  
I  
L  
R

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers
- **logistics** issues (e.g. purchase and distribution)
- **rapid** pace of devices and software becoming obsolete

C  
I  
L  
R  
L

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers
- **logistics** issues (e.g. purchase and distribution)
- **rapid** pace of devices and software becoming obsolete
- **lack of connections** to local or national curricula, or to the specific learning challenges individual students face

C  
I  
L  
R  
L  
E

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers
- **logistics** issues (e.g. purchase and distribution)
- **rapid** pace of devices and software becoming obsolete
- **lack of connections** to local or national curricula, or to the specific learning challenges individual students face
- increasing physical and academic inclusion but potentially **at the expense of social inclusion**

C  
I  
L  
R  
L  
E  
S

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers
- **logistics** issues (e.g. purchase and distribution)
- **rapid** pace of devices and software becoming obsolete
- **lack of connections** to local or national curricula, or to the specific learning challenges individual students face
- increasing physical and academic inclusion but potentially **at the expense of social inclusion**
- **safety and security** of students online (e.g. the creation of accounts using personal, traceable details)

C  
I  
L  
R  
L  
E  
S  
L

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers
- **logistics** issues (e.g. purchase and distribution)
- **rapid** pace of devices and software becoming obsolete
- **lack of connections** to local or national curricula, or to the specific learning challenges individual students face
- increasing physical and academic inclusion but potentially **at the expense of social inclusion**
- **safety and security** of students online (e.g. the creation of accounts using personal, traceable details)
- **lengthy**, challenging process of attempting to select the best device/software option

C  
I  
L  
R  
L  
E  
S  
L  
P

### What does the research say about the challenges of using technology

- high **costs** of devices and software
- **insufficient** technical knowledge and skills on the part of teachers
- **logistics** issues (e.g. purchase and distribution)
- **rapid** pace of devices and software becoming obsolete
- **lack of connections** to local or national curricula, or to the specific learning challenges individual students face
- increasing physical and academic inclusion but potentially **at the expense of social inclusion**
- **safety and security** of students online (e.g. the creation of accounts using personal, traceable details)
- **lengthy**, challenging process of attempting to select the best device/software option
- **potentially disruptive qualities** (because devices have so many functions and apps, they provide plenty of opportunities for distraction when bored)

## ICT for students with additional support needs and disabilities in education



iTunes

Google Play



ICT

How can teachers **select ICT** to maximise benefits for students with additional support needs and disabilities



How to **find** and **evaluate** ICT to best support students with additional support needs and disabilities



EVALUATE



What does the **research** say about technology to support students with additional support needs and disabilities

RESEARCH



Erasmus+ MELINC project team

Vrije Universiteit Brussel (Belgium)

University of Bialystok (Poland)

EduLaw (Belgium)

Mongolian National University of Education (Mongolia)

Dornod University (Mongolia)

Khovd State University (Mongolia)

<https://edulaweu.eu>

<https://melinc.eu>

Music: CGI Snake by Chris Zabriskie is licensed under a Creative Commons Attribution license (<https://creativecommons.org/licenses/by/4.0/>)  
Source: <http://chriszabriskie.com/divider/> - Artist: <http://chriszabriskie.com/>