



**HAL**  
open science

# A review of technologies to collaborate and co-educate students with special educational needs and support their schooling

Eric Meyer, Isabeau Saint-Supery, H el ene Sauz eon, C ecile Mazon

## ► To cite this version:

Eric Meyer, Isabeau Saint-Supery, H el ene Sauz eon, C ecile Mazon. A review of technologies to collaborate and co-educate students with special educational needs and support their schooling. Colloque international Education et In egalit es, MITI CNRS, May 2023, Paris, France. hal-04154325

**HAL Id: hal-04154325**

**<https://inria.hal.science/hal-04154325>**

Submitted on 6 Jul 2023

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destin ee au d ep ot et  a la diffusion de documents scientifiques de niveau recherche, publi es ou non,  emanant des  tablissements d'enseignement et de recherche fran ais ou  trangers, des laboratoires publics ou priv es.



Distributed under a Creative Commons Attribution 4.0 International License

Une revue sur les technologies pour collaborer et coéduquer les élèves à besoins éducatifs particuliers et soutenir leur scolarisation

*A review of technologies to collaborate and co-educate students with special educational needs and support their schooling*

Meyer<sup>1</sup>, Saint-Supery<sup>2</sup>, Sauzeon<sup>1,2</sup>, Mazon<sup>1,2</sup>

1. Centre de recherche Inria de l'université de Bordeaux, équipe-projet FLOWERS

2. INSERM BPH, équipe ACTIVE

MEYER Eric, Ph.D

Postdoctoral fellow - INRIA – FLOWERS Team-project

Colloque Education et inégalités – 15 au 17 mai - Paris

# Introduction

## International public policy on inclusive education

- Salamanca Framework for Action on Special Needs Education in 1994
  - > UK : good practice in 2001, USA : IDEA in 2004, France : governmental reforms in 2005 & 2013
- Most common form: Inclusive Education (Nilholm & Göransson, 2017)
  - > Inclusion in mainstream classroom
- Individualized Educationnal Plan

## First key : collaborative team approach

- > multidisciplinary team composed of teachers, administrators, parents and service providers (Lyons et al., 2016)

## Second key : assistive technologies

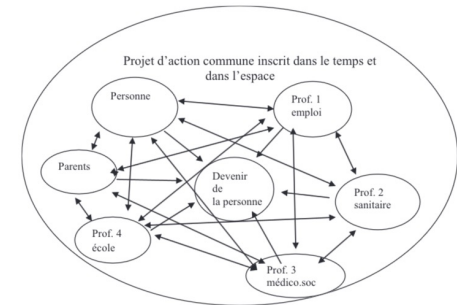
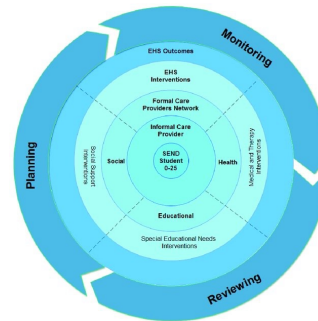
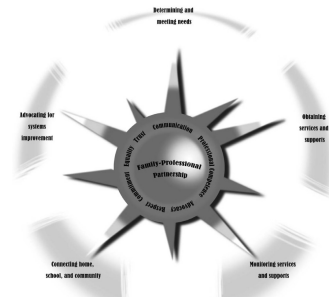
- > Educational technologies (McNicholl et al., 2021; Pontikas et al., 2022)
- > digital education system (Cinquin et al., 2019)

# Introduction

## Parents-teachers collaboration

- > Well-being of children (Martinez et al, 2012)
- > Better academic performance and social adjustment (Jolilowski & Morris, 2019)
- ❖ Several barriers : lack of continuities, ≠ in the use of strategies and expectations, ≠ in perception (Roberts & Simpson, 2016)

## Whole collaboration : family-school-community collaboration



# Problematic

**Our aim is to provide an overview of technologies that focus on collaborative process into the child's educational community including family, school, and care parties**

**RQ1. Domain characterization:** Is there existing literature that deals with digital technologies for supporting stakeholders' collaboration to foster the school inclusion of children with special education need and disabilities? Who are the targeted children? Which journals and conferences have published them? How has the field evolved? What are the studies purposes ?

**RQ2. Design of technologies:** How are these technologies designed? What are the technologies purposes? What functionalities do they offer to support collaboration? What are the obstacles to their development?

**RQ3. Main outcomes:** What research methods were used? What are the findings in terms of evaluation?

# Method

## Search strategy

- **Databases:** Scopus, Web of Sciences, EBSCOhost, Pubmed and IEEE Xplore
- **Research question:** Collaboration AND Stakeholder AND Inclusion AND (Autism OR special need) AND Pupil AND Technology NOT College
  - > & associated terms
- **Inclusion criteria:**
  - > Uses of a technology for collaboration
  - > Goal = inclusion
  - > Student with SEN & in K12
  - > Collaboration between at least two stakeholders

## Study selection

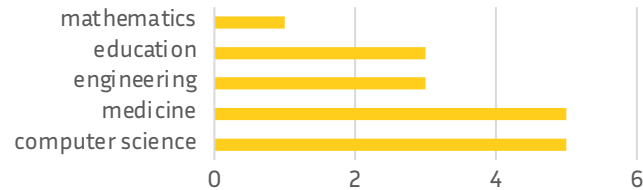
- **Records indentified : 1673**
  - > Duplicate = 313
- **Records screening : 1360**
  - > Selection on title - abstract
- **Reports assessed for eligibility : 129**
- **Studies included : 10**

# Result

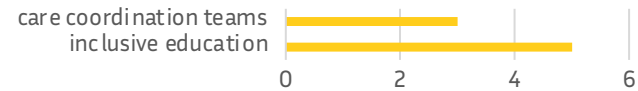
## RQ1: Domain characterization

- 7 technologies & 1 digital strategy
- Since 2016
- 7 different countries

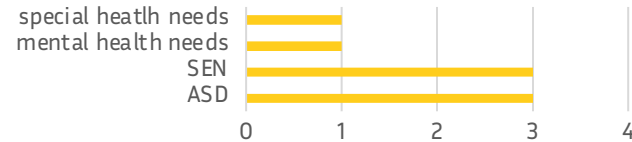
### Scientific fields



### Aim of technology

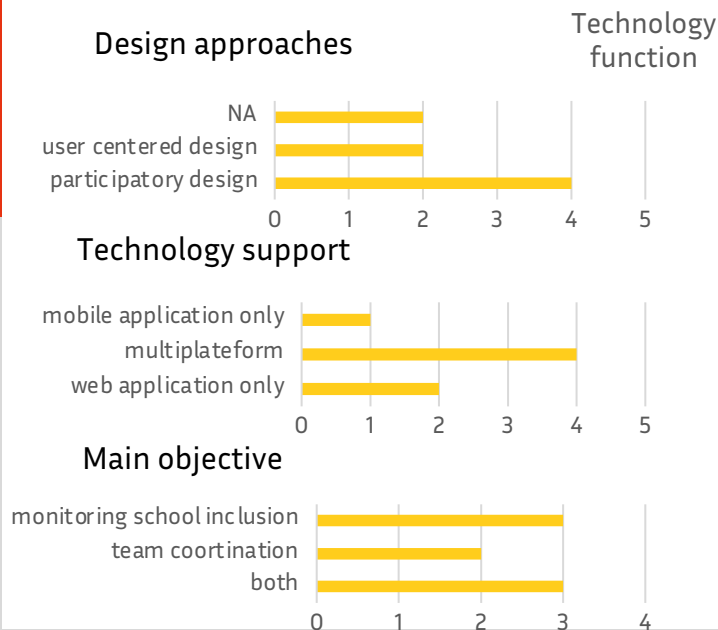


### Student's needs or disabilities

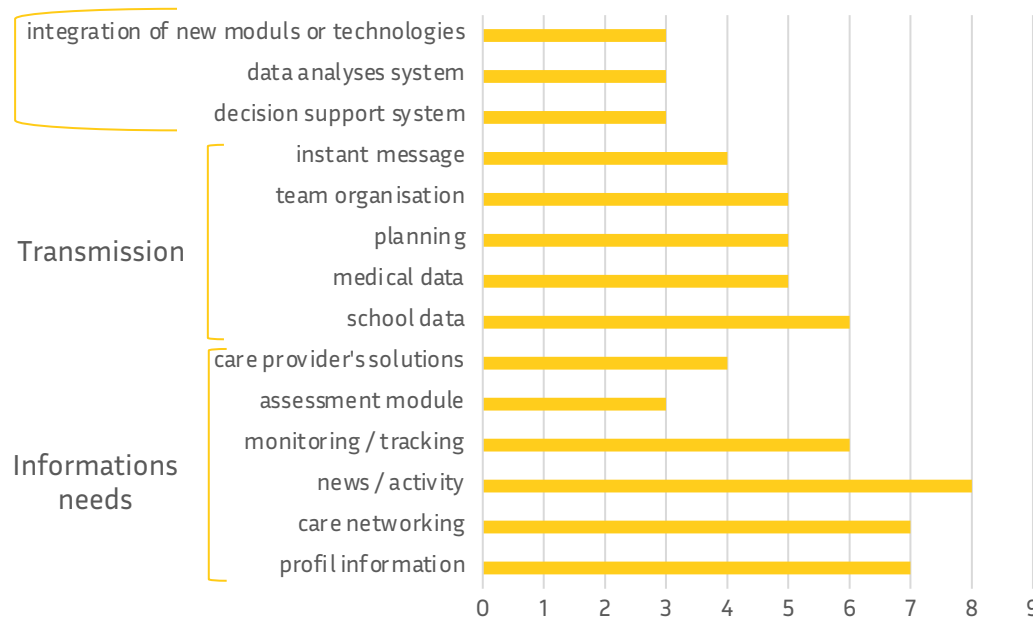


# Result

## RQ2: Design of technologies



## Shared information or features

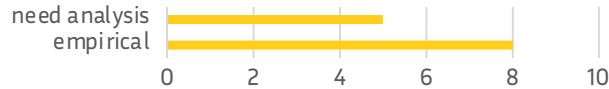




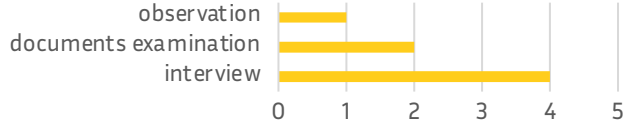
# Result

## RQ3: Main outcomes

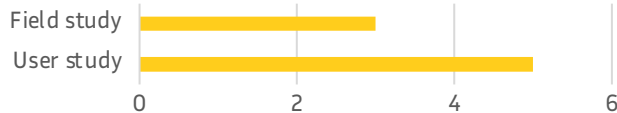
### type of result



### method for need analysis



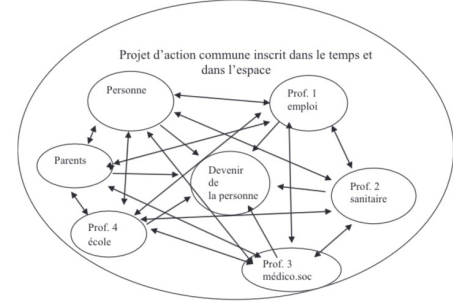
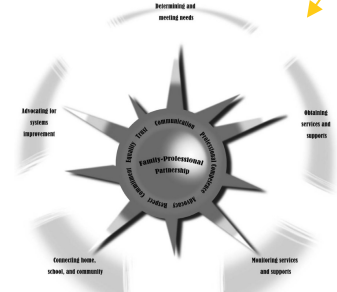
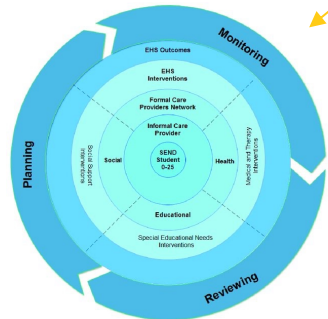
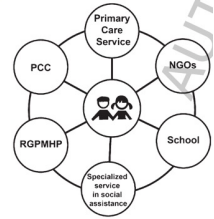
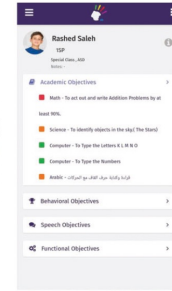
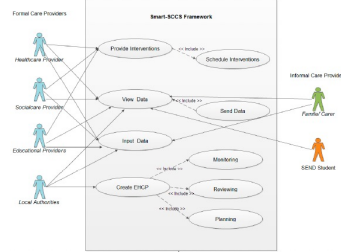
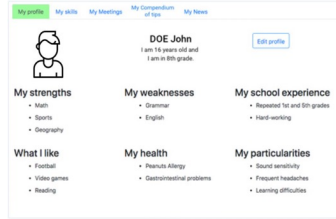
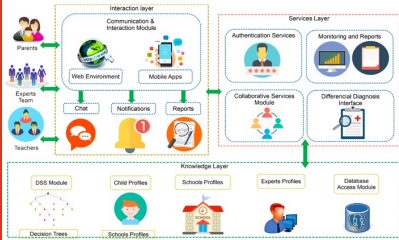
### method for empirical study



- facilitating communication among stakeholders,
- all information in one place,
- minimizing effort and time required,
- possibility to assess the child,
- plan a project & coordinate interventions,
- integrate other technologies,
- ensure data security

- good usability,
- interface by categories & tables,
- positive attitude to use technologies,
- interesting to share ≠ types of information
- can facilitate collaboration

# Discussion



# Discussion

**Collaboration, coordination or communication ?**

**Challenges of collaborative and coeducational technologies**

**Methodological limitations of the studies**

**And next?**

# Merci !

Suivez-nous sur / follow us on:

<https://flowers.inria.fr/projet-tous-ensemble/>