

**Skills & Knowledge on Assistive Technology in Early childhood  
inclusive education**

GA-N°2020-1-BE02-KA201-074810

**Intellectual Output 1  
Task 1.1: Literature Review and Methodological  
framework**

**Short Version Summary Report**

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# 1 Introduction

## 1.1 Background information

This Document is a summary report of the literature review on inclusive technology for ECEC, during the SKATE Project. The aim was the collection of data and information from scientific journals and books, conference proceedings from European and international conferences about technology supported learning in early childhood education. The review and analysis of literature specifically concerned issues of inclusive education in early childhood and the role of educators' practices in using technology, in order to define best practices, new strategies, barriers, factors for success and failure, as well as the possible implementation of the Universal Design for Learning in Early Childhood Education. The analysis is anticipated to help the consortium identify the main aspects of the theoretical and methodological framework of the project, in order to define individualized educational pathways in inclusive settings for all learners, and specifically children with disabilities and/or special educational needs.

## 1.2 Methodology

For the collection of resources, a Resources Collection Tool, as a template worksheet for all partners, was developed. The template included nine (9) categories (spreadsheets) of resources: Curricula, Individual courses, Books/Handbooks, Reports, Publications Empirical, Publications Theoretical/Conceptual, Publications Literature Reviews, Policy documents, Examples of Other Practices.

Information for each category was extracted directly from the resources based on the nature of the resource, in an effort to record e.g. the main aims, target audience, description of good practices and/or relevant research work. A total of 230 Resources were initially collected. However, during the analysis process it was observed that in content some of the resources were not exactly responding to the exclusion and inclusion criteria, which were then further refined and strictly implemented, resulting to a revised set of a total 89 resources. These resources were analysed based on the three-level analytical framework.

The main aim of the first level of analysis 'Thematic categorisation of resources per resource type' was to identify resources based on the three main pillars of the project: Inclusive Education, Technology for Inclusion and Early Childhood Education. Hence, at this level the resources were mapped according to the focus of their content in relation to three categories: (a) Documents and papers related to issues of Inclusive Education in Early Childhood Education in general (b) Documents and papers related to issues of Integration of Technology in Early Childhood Education in general and (c) Documents and papers that discuss and investigate specifically the use of technology in Early Childhood Education for Inclusion. Furthermore, the second level of analysis 'Identification of strategies, barriers and opportunities in the various components of teacher education curricula and classroom practices', the aim was to identify what strategies, barriers and opportunities are discussed in resources that represent (a) curricula and teacher training and education session and (b) classroom practices. For both types of resources barriers, opportunities and strategies were explored in each component of the teaching and learning process, i.e., the environment, the tools and materials, the activities applied, and role of educators and parents. Lastly, the aim of the third level of analysis 'Mapping Opportunities and Good Practices with Universal Design for Learning (UDL)' was to map the opportunities and best practices identified in the second level with the principles and guidelines of the Universal Design for Learning (UDL). The analysis took into consideration resources that discussed opportunities and good practices and either directly made a link to Universal Design for Learning, or described methods, tools and adaptations that are used for accessibility and learning design for all, including differentiation, even if UDL was not explicitly mentioned in the resource. In

summary, at this level, the analysis described the approach(method), and/or the tools/means and/or the adaptations used in order to implement UDL for each, and how this are aligned to one or more UDL principles and guidelines.

### 1.3 Findings towards the Methodological and Theoretical Framework

The above resources' analysis was an exercise that is expected to help the consortium in order to define best practices, new strategies, barriers, factors for success and failure, in relation to the implementation of (assistive) technology in early childhood education, towards the aims of inclusive education. Based on this, the theoretical and methodological framework of the project will be defined, outlining the role of the environments, tools, materials, educators and parents in the implementation of technology in ECEC for inclusion. This framework is presented in Diagram 1 below.

The framework provides a basis for the competency framework and guidelines for educators' professional development and the definition of the learning programmes that will be developed and piloted during the project. In summary, and based on the framework presented in Diagram 1, the learning programmes will aim at competencies development on the three main pillars of the project: (a) Inclusive Education, (b) Early Childhood Education, (c) (Assistive) Technology integration into learning, in order to achieve technology enhanced inclusive early childhood education. Within this context the theoretical framework is grounded on the theory of Early Childhood Education Pedagogy and Inclusive Pedagogy. Hence ECE and Inclusive Pedagogies compose the theoretical foundation of the project, while at the same time they are considered the final objective of SKATE.

The methodological framework towards this object is suggested as presented in Diagram 1, starting from the bottom of the diagram, as follows:

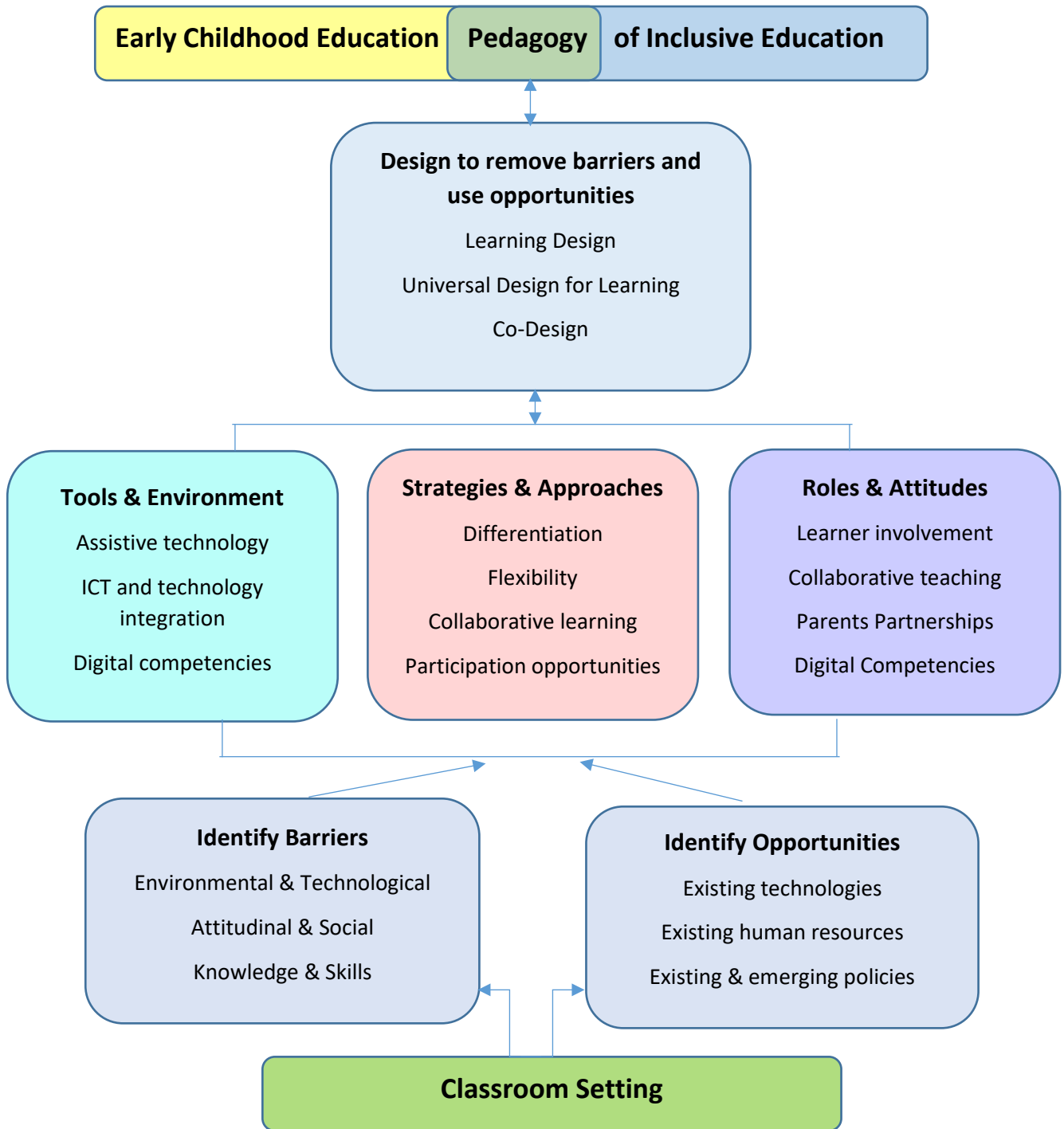
At a first level the SKATE approach aims at

- Developing educators' skills to acknowledge and identify barriers in the use of (assistive) technology for inclusive education in Early Childhood Education. This includes identification of barriers to accessibility of the (learning) environment, to access technology and tools, to the acquisition of digital competencies, to the acquisition of knowledge and the development of strategies for inclusive education practices.
- Developing educators' skills to acknowledge and identify opportunities in the use of (assistive) technology for inclusive education in Early Childhood Education: what are the existing human and technology resources available, what are the existing skills and knowledge and what policies are in place (or emerging) that can be exploited as facilitators.

At the next level and after identifying barriers and opportunities in relation to tools, environment and the human factor, the SKATE approach aims at:

- Developing educators' digital competences for the use of (assistive) technology
- Developing educators' pedagogical competences for the integration of technology in the learning process in ECEC
- Developing educators' competences for differentiation and UDL with the use of (assistive) technology
- Promoting collaboration of educators and parents for co-designing learner-centred learning process and activities
- Empowering learners' participation in inclusive activities with the use of (assistive) technology

Diagram 1: Theoretical and Methodological Framework of the SKATE Curricula



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## Annex 1: List of Abbreviations

ECE: Early Childhood Education

ECEC: Early Childhood Education and Care

SKATE: Skills & Knowledge on Assistive Technology in Early childhood inclusive education

UDL: Universal Design for Learning