## LEARN<sub>24</sub>

16TH INTERNATIONAL CONFERENCE ON EDUCATION AND NEW LEARNING TECHNOLOGIES PALMA (SPAIN) 1ST-3RD OF JULY 2024



# CONFERENCE PROCEEDINGS



### EDULEARN<sub>24</sub>

16TH INTERNATIONAL CONFERENCE ON EDUCATION AND NEW LEARNING TECHNOLOGIES PALMA (SPAIN) 1ST-3RD OF JULY 2024

## CONFERENCE PROCEDINGS

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### **Preface**

The EDULEARN24 Conference Proceedings include the papers presented at the 16th International Conference on Education and New Learning Technologies, held in Palma, Spain, from the 1st to the 3rd of July 2024. EDULEARN aims to offer a platform for lecturers to share valuable research and insights on the changing world of education and learning and teaching technologies.

This year, participants from over 80 countries engaged in networking activities, plenary sessions, parallel thematic sessions, and workshops. Renowned educational experts delivered keynote speeches, which are available at IATED Talks: iated.org/talks/.

EDULEARN24's focus was on the topics listed here: Educational Trends and Experiences, Pedagogical Methods and Innovations, Educational Research and Technology in Teaching and Learning.

The International Program Committee of EDULEARN24 included lecturers and researchers from around the world who conducted a blind peer review process to ensure the quality of the final publication. Among the points evaluated were the content, relevance to the field, structure, clarity, originality, and alignment with conference topics and disciplines.

IATED is committed to publishing high quality, original research papers and maintaining high ethical standards. All authors included in these Proceedings signed a copyright transfer form and the publication ethics guidelines, which can be found at https://iated.org/publication\_ethics.

Finally, we extend our heartfelt thanks and best wishes to all members and delegates who contributed to the EDULEARN24 Proceedings.

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### **EDULEARN24 Keynote Speakers**

### Manu Kapur – ETH Zurich (Switzerland)



Keynote speech: When and How Flipped Learning is Effective

In my talk, I will argue that the current levels of enthusiasm for flipped learning are not commensurate with and far exceed the vast variability of scientific evidence in its favor. I will share findings from an analysis of 46 meta-analyses as well as a meta-analysis of 173 studies specifically coding the nature of the flipped implementation for active versus passive learning activities. Findings suggested that most flipped learning interventions

under delivered on the promise of active learning. I will then use the findings to propose a more specific model for flipping which I have developed with my colleagues—The 4 F Model: Fail, Flip, Fix, and Feed--whereby students are asked to first engage in generating solutions to novel problems even if they fail to generate the correct solutions, before receiving instruction. I will end by deriving implications of the 4F model and future research.

### Biography:

Manu is currently the Director of the Singapore-ETH Centre, and a Professor of Learning Sciences and Higher Education at ETH Zurich, Switzerland. Before this, he worked in Singapore and Hong Kong, heading learning sciences labs and initiatives. Manu is widely known mainly for his work on learning from productive failure. For more information, visit www.manukapur.com

### Pattie Maes – MIT (USA)



Keynote speech: Using Generative AI to support more engaging learning experiences

Generative AI (GenAI) presents us with an opportunity to personalize AI experiences and make them more engaging. Maes will present several prototypes and experiences that her research group has created that use GenAI in novel ways to create personalized, interactive and engaging learning experiences in the domains of language learning, critical thinking, public speaking, history and self development. She will review the results of

qualitative and quantitative studies of these systems and their impact on the learning experience and outcomes.

### Biography:

Pattie Maes is the Germeshausen Professor of Media Arts and Sciences at the MIT Media Lab. She runs the Fluid Interfaces research group, which does research at the intersection of Human Computer Interaction and Artificial Intelligence with a focus on applications in health, wellbeing and learning. She is particularly interested in the topic of cognitive enhancement, or how wearable, immersive and brain-computer interface systems can actively assist people with issues such as memory, attention, learning, decision making, communication, wellbeing, and sleep. Maes is the editor of four books, and is an editorial board member and reviewer for numerous professional journals and conferences. She has received several awards: Netguru selected her for "Hidden Heroes: the people who shaped technology (2022), Time Magazine has included several of her designs in its annual list of inventions of the year; AAAI gave her the "classic paper 2012" prize, awarded to the most influential AI paper of the year, Fast Company named her one of 50 most influential designers (2011); Newsweek picked her as one of the "100 Americans to watch for" in the year 2000; TIME Digital selected her as a member of the "Cyber Elite," the top 50 technological pioneers of the high-tech world; the World Economic Forum honored her with the title "Global Leader for Tomorrow"; Ars Electronica awarded her the 1995 World Wide Web category prize; and in 2000 she was recognized with the "Lifetime Achievement Award" by the Massachusetts Interactive Media Council.

### **Conference Tracks & Sessions**

The EDULEARN24 conference program is available online at https://iated.org/edulearn24

### ORAL SESSIONS MONDAY

Virtual & Augmented Reality (1)

Enhancing Skills in the GenAI Era

Assessment and Evaluation Strategies (1)

Employability Trends and Challenges (1)

Service Learning

Teachers and Students Wellbeing and Support

Exchange & Mobility Programmes

New Trends in Architecture and Engineering

Adult Learning

Virtual & Augmented Reality (2)

AI in Education (1)

Assessment and Evaluation Strategies (2)

Employability Trends and Challenges (2)

**Environmental Awareness** 

Students Self-Efficacy and Learning Awareness

Virtual & Augmented Reality in Health Sciences

GenAI in STEM Education

Adult and Lifelong Learning

Chatbots in Education

AI in Education (2)

Assessment Redesign with GenAI

Entrepreneurship Education

Education for Sustainability (1)

Minorities & At-Risk Students Inclusion

New Technologies in Health Sciences Education

Mathematics Education

Early Childhood & Primary Education

LMS & Learning Analytics

Students and Teachers Views on GenAI

Feedback for Learning

Project-Based Learning

Education for Sustainability (2)

Diversity & Inclusion Issues

Health Sciences Education

**Teaching STEM** 

Tutoring & Coaching

### POSTER SESSIONS MONDAY

Emerging Technologies in Education Challenges in Education and Research

### **ORAL SESSIONS TUESDAY**

Knowledge Management Systems

Coding at Schools

Serious Games

Curriculum Design

ICT Skills among Teachers (1)

Bullying & Digital Abuse

Data Literacy Skills

Teaching Physics in Schools

Language Learning Innovations

m-Learning

Programming in Higher Education

Game-Based Learning

Problem-Based Learning

ICT Skills among Teachers (2)

Student Engagement

Digital Literacy

Engaging Students in STEM

Foreign Languages Technologies

Distance and Online Learning Experiences

Personalized Learning through AI

Gamification & Game-Based Learning

Creativity & Design Thinking

Pre-service Teacher Experiences

Student Wellbeing

Soft & 21st Century Skills

Experiences in STEM Education

Al in Language Learning

Technology Enhanced Learning (1)

Challenges of GenAI in Education

Active & Experiential Learning

Blended Learning

Professional Development of Teachers

Assistive Technologies

Innovations in Business Education

Experiences in Engineering Education (1)

Collaborative International Learning Experiences

Technology Enhanced Learning (2)

Coding & Computational Thinking

Team Work & Collaborative Learning

Quality in Education

**Educational Management** 

Special Education

Fostering Innovation and Experiential Learning in Tourism Education

Experiences in Engineering Education (2)

Internationalization of Universities

### POSTER SESSIONS TUESDAY

Pedagogical Innovations in Education Educational Trends and Experiences

### VIRTUAL SESSIONS

### **DIGITAL & DISTANCE LEARNING**

Distance Education in Times of Crisis
e-Learning Experiences
Blended & Mobile Learning
Hybrid and HyFlex Teaching
MOOCs & Open Educational Resources
Learning Management Systems & Virtual Learning Environments

### DIGITAL TRANSFORMATION OF EDUCATION

Digital Transformation
Data Science & AI in Education
Learning Analytics & Educational Data Mining
Digital Technologies and Resources for Distance Learning
21st Century Skills

### INNOVATIVE EDUCATIONAL TECHNOLOGIES

Technology Enhanced Learning Videos and Social Media in Education Virtual & Augmented Reality Generative AI in Education Chatbots & Robots

### **ACTIVE & STUDENT-CENTERED LEARNING**

Pedagogical Innovations Gamification & Game-based Learning Active & Experiential Learning Problem & Project-Based Learning Developing Soft and Transversal Skills

### ASSESSMENT, MENTORING & STUDENT SUPPORT

Assessment & Evaluation Mentoring & Tutoring Student Support & Motivation Student Wellbeing

### **MULTICULTURALITY & INCLUSION**

Multicultural Education Diversity Issues Inclusive Education Special Educational Needs

### **TEACHER TRAINING & ED. MANAGEMENT**

Teacher Training and Support Professional Development of Teachers Educational Management ICT & Digital Skills

### **EDUCATIONAL STAGES & LIFE-LONG LEARNING**

From Pre-school to Secondary Education Vocational Training Higher Education & Labour Market Transition Life-long & Workplace Learning

### **QUALITY & IMPACT OF EDUCATION**

Quality in Education Experiences and Challenges in Curriculum Design Mobility & International Projects Sustainability & Social Impact of Education University-Industry Collaboration Links between Education and Research

### **STEM EDUCATION**

STEM Experiences Mathematics & Statistics Engineering Education Computer Science Education

### LANGUAGE LEARNING AND TEACHING

Foreign Languages New Technologies in Language Learning Language Learning & Translation Studies

### **DISCIPLINE-ORIENTED SESSIONS**

Architecture & Interior Design Education Health Sciences Education Business & Tourism Education

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# TECHNOLOGICAL INNOVATION IN THE DIGITAL TRAINING OF ADULTS WITH DIFFICULTIES THROUGH AN ADAPTED PLATFORM

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### **Abstract**

Through the work carried out over 2 years, a new educational model has been generated to develop second-chance schools by promoting the inclusion of young adults through training in entrepreneurship and employability in the third sector. To this end, a mixed training process has been used involving students in learning processes for the creation and management of social entities, simultaneously developing the educational competencies of the adult curriculum. This educational model has focused directly on the socio-economic and educational characteristics of the target audience, adults between 18 and 35 years old with significant obstacles to their social integration, derived from the various causes that impact early school leaving, or the barriers imposed on migrants with problems to validate or continue the training processes developed in their territories of origin.

We aim both to motivate people who have lost the habits and drive to learn, as well as do so in a series of skills and knowledge necessary to develop their work or entrepreneurial drive in the field of management of social entities in the third sector and the development within their social development projects. These objectives are developed through an innovative methodology that combines digital learning, providing a wide autonomy to the student, with a personalized tutorial follow-up that decisively boosts their motivation and resilience. One of its innovative aspects is the ability to involve students and motivate their work through a "learning-by-doing" process that leads to the development of their educational competencies matching the official adult curriculum thanks to a process of generating competences and work practices and the possibility of creating their own organization receiving the required prior funding.

One of the keys to our work is the creation of a new technological framework that includes an innovative e-Learning platform that provides a framework that is as friendly and as close as possible to the personal situation of our target audience, adapting it to the second chance model in adult education that we are developing under the name "E2.0C". In this way, we provide a digital environment that is similar to that of any real educational center and therefore avoids resorting to tools that may pose a barrier or limit accessibility to training. Our interface has a look especially adapted to a new model of second chance adult education through an inclusive virtual campus that reproduces the familiar spaces and elements of a physical school: secretary's office, classrooms, library, cafeteria, laboratory... all of them are virtual spaces in which to carry out all the activities related to the training and learning of new knowledge and skills.

We want to not only offer a new digital training tool, but also provide all the necessary elements so that any social or educational entity can launch its own E2.0C educational center (2.0 second chance center) along with the necessary software, plans, and appropriate documents to shape, strengthen, and replicate new educational centers that contribute to disseminating our pedagogical objectives of social reintegration.

Keywords: Education, training, third sector, entrepreneurship.

#### 1 INTRODUCTION

In the European Union, early school leaving is defined as that which occurs among young people between 18 and 24 years of age with a basic level academic qualification and who did not continue in the formal

educational environment or receive other additional training [1]. This is a significant social problem, with different levels of impact depending on countries and regions, which has been tackled in recent years thanks to the EU initiative and the consequent national policies, standing at 9.7% in 2021, reaching the target of below 10% by 2020 set in the *strategic framework for European cooperation in the field of education and training* [2]. The starting point was a complicated situation in which the average percentage of school dropouts in the EU stood at 13.8% in 2010, a figure that concealed a very uneven picture in which some countries like Spain (28.2%) or Portugal (28.8%) had very high figures. At the beginning of this decade, the general reduction in percentages cannot hide the fact that some are still worrying. Such are the cases of Spain (16%), Romania (15.6%) and Italy (13.1%), which exceed the European average [3].

When assessing the causes of the phenomenon and the issues influencing it, two should be highlighted: on the one hand, the level of education attained by parents, and on the other, the reasons given for dropping out of school. The relationship between the parents' level of education or qualifications and school dropout is inversely proportional: the higher the level of education, the lower the dropout rate, and vice versa. 26.1% of cases of early dropout occur in families in which the parents have a basic level of education. At the other end of the scale, only 2.9% of dropouts occur in families with parents with higher education. Regarding the motivation to leave school, just under half of the young people who do so in the EU as a whole plan to start working (42.3%), the rest do so without any other concrete perspective, while almost one in four (23.7%) say that they do not want to study or work [4]. School dropout impacts especially peri-urban environments affected by poverty and unemployment, as well as certain social groups: vulnerable groups, people with functional diversity, migrants, ethnic minorities, etc. In addition to external factors, there are other very personal aspects like low self-esteem, health situations, motivation problems, self-responsibility, study habits, etc. emphasizing motivational skills over merely capacitive ones in the etiology of the phenomenon [5]. In the institutional and academic spheres it is worth pointing out the curricular rigidities or the specific training deficiencies of the teaching staff as elements that contribute to the distance of certain students from formal education.

Early school leaving is addressed from multiple perspectives with a combined strategy that considers the diversity of causes that affect the phenomenon [6]. A specific and innovative initiative in this area has been developed under the name "Virtual lifelong learning centres E2.0C: an opportunity to promote the inclusion through educational action and social participation". It is a project funded by the European Union through the Erasmus+ Programme, in which seven social entities of the European third sector belonging to five countries have participated with the aim of generating innovative tools to deal with early school leaving and work for the integration of young adults and migrants without specific studies with obstacles caused by economic, social, educational, or cultural barriers through education and training to work or undertake in third sector entities.

# 2 METHODOLOGY

The methodology we have adapted is based on the European initiative of second chance schools or E2O (in French the acronym is E2C – *école de la deuxième chance* – with France being one of the countries that has promoted them the most). These centres are aimed at the integration of young people who have dropped out of school in order to reintegrate them into the education system or provide them with basic training for their access to the labour market in better conditions, an initiative promoted by the European Commission through its 1995 White Paper on education and training [7]. In this project, in addition to the methodological experience of E2C centres (adapted teaching paces, reinforcement of motivation, internships in companies, diversification of educational resources, etc.), we have added 2.0 methodologies, for which we have developed an innovative learning platform along with all the necessary resources and tools so that those entities interested can develop their own E2.0C centres. To these two dynamics (E2C and 2.0) we also add the third sector of the social economy as a motivating element as well as an important space to develop practical learning and enter the labour market, also through entrepreneurship. The associative fabric in Europe moves a very significant workforce estimated at more than 29 million people (13% of the EU's active population) who work in it either on a paid or voluntary basis [8].

Participating in the activities of a non-profit social entity, NGO, association... is a significant incentive to motivate young adults to train and integrate socially. That is why we have developed a methodology that combines training in the field of management of social projects and third sector entities, with that of the *learning by doing* dynamic and the acquisition of work experience through direct collaboration in internships in social entities in other European countries. This methodology contributes to strengthening the employability possibilities of these young adults in the third sector, as they have carried out volunteering activities as part of practical training, especially considering that different criteria are used

for job recruitment in the social sector than those in the private sector, placing emphasis on vocation, social commitment, the obstacles the person has faced, and their training and experience in the sector.

Our methodology intends to develop comprehensive actions that can affect various particular situations with the aim of contributing decisively to the social integration of the beneficiaries. A substantial part of this is the help and personalised advice to motivate and establish effective and lasting links between the training environment and young adults in situations of exclusion or at risk of it. To this end, the knowledge of the management of projects and social entities is adapted to the specificities of the adult training curriculum in terms of the acquisition of competences, capabilities, and skills, to guarantee their autonomy and social integration. In this way, an educational proposal is clearly differentiated from regulated training centres, resorting to more informal and innovative frameworks for the configuration of adapted spaces and itineraries that strengthen the link between students and the training action. In this line, individual tutorial attention is a key tool for methodological work to achieve the integrative objectives sought, reinforcing basic issues like self-knowledge, self-esteem, autonomy, and personal motivation.

# 3 RESULTS

The results of our project can be found on their own website: https://www.education2chance.eu/, where there is information about all the resources needed to start up an E2.0C center.

The technological framework in which this adapted methodology is developed is one of our most important results: a digital learning platform that provides content in various formats in an accessible way, enabling the development of training anywhere and at any time, facilitating freedom of access to content compatible with the parallel development of scheduled synchronous teaching activities (lessons, conferences, workshops, debates...) all of it within a framework that reproduces a physical school in which students can find spaces and tools adapted to simplify the procedures for accessing and carrying out their training.

Our platform allows any trainer from an entity interested in our methodological model to build their own E2.0C center, which will have a secretary office, adapted synchronous and asynchronous virtual classrooms, an open library with materials and bibliography, a laboratory for virtual volunteering practices, a cafeteria where they can interact with other peers through various formats (forum, chat, direct messaging...) a space for the preparation of physical and virtual mobilities... The objective of creating this platform is to provide students with a less rigid and easier to operate environment than other tools in use, so they can be more easily attracted and linked to the training resources of the E2.0C center.

Within this framework, diverse and varied training content can be developed around the creation and management of social projects and third sector entities within the European framework, thanks to the INCLUED network developed by the entities promoting this project to integrate all those interested in participating in the promotion and development of this innovative formula of training and social integration through volunteering in the third sector.

The contents of these E2.0C training centres can be structured in different ways and combined with various digital formats on the basis of specific sessions that culminate in a self-assessment knowledge test that allows the student to know the extent of their own understanding of new knowledge and, when appropriate, the need to reinforce it. This type of test consists of questions with alternative answers of which only one is correct and takes place throughout the development of the contents also as a self-evaluation. Only at certain selected points of the training will the tests be used by the entity leading the centre to assess the knowledge acquired and provide the appropriate certification for it. These sessions will be supported by the development of synchronous meetings with teaching tutors or with experts in the subjects of non-profit or third sector organisations of the social economy in the classrooms and spaces of each virtual centre. The platform thus allows the development of virtual lessons, masterclasses, direct or deferred tutorial attention, group work in a shared space or documents, in order to provide the framework to develop a part of our methodology focused on practical training through the development of social projects, executing their planning and development in parallel to the progress in the training content taught that will reinforce practical learning. This can be carried out both individually and in groups, also counting on continuous tutorial attention, guiding users in a practical learning journey in the management of projects and entities with a cumulative and interrelated nature, which must culminate in a great final result.

Our training methodology and our results include various documents and procedures that allow the construction of new E2.0C virtual training centres through templates that, with slight adaptations, facilitate this objective for any interested social entity. This also culminates with the possibility offered to its users to carry out paid internships for one month in the member entities of the INCLUED network,

preferably in countries other than where they live, as an effective way of putting into practice the training received at the E2.0C center. In these internships, they will be able to carry out functions like those of project and entity manager, thus consolidating the knowledge acquired and facilitating their conditions of employability in non-profit or third sector entities at the end of the training cycle, or that they can even undertake their own associative project. To this end, the INCLUED network itself is committed to helping them at all levels, including financing needs through mechanisms like solidary banking and other similar facilitating instruments. Our ultimate goal is to provide real employment and inclusion opportunities.

## 4 CONCLUSIONS

At the moment we are culminating the development of our project by carrying out pilot tests with twenty participating adults with different profiles and degrees of exclusion, which is allowing us to introduce the necessary improvements and adaptations to achieve optimal results. In this project we have tried to combine various methodological and educational strategies to build a new and inclusive format of training in the field of social action. At the same time, we have contributed to the creation of a network of non-profit and third sector social economy organisations that is promoting the growth of a series of E2.0C centres that will offer young adults between the ages of 18 and 35 excluded from the education system and the world of work the possibility of breaking down their barriers and start on new paths, resuming the path of formal training or entering into work tasks or undertaking their own initiatives in the social sector. We are convinced that we are opening new avenues both for social inclusion and for the strengthening of non-profit and third sector organisations through new perspectives for the training of their future technicians. Our tools and results will also provide teachers and trainers in the field of adult lifelong learning with a new and very interesting possibility to shape new methodological paths in their daily work, while increasing their professional skills and strengths.

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