

EDUCATORS' TRAINING NEED ON PROJECT MANAGEMENT IN DIGITAL CONTEXT: CASE STUDY ON ROMANIAN SECONDARY EDUCATION SYSTEM

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ABSTRACT

The main goal of this research article is to underline the importance of educators' training needs on project management in a digital context. The main areas of focus are: gain an overview on the people with tertiary education attainment; identify the main use of the Internet in education; contribute to the current body of knowledge on project management training in digital context. The digital context changes the way that the projects are managed, representing a trigger for education in order to acquire competences in: project management and writing (17%); educational platforms and digital tools (14%); financial education (13%); counselling and personal development (13%).

KEYWORDS: *continuous learning, digitalization, education, project management.*

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1. INTRODUCTION

The fast-growing digital technology has an important contribution to radically transform the educational system. It is important to make the distinction between the concepts of "digitization", "digitalization" and "digital transformation". According to research, digitization underlines the process used in the transformation towards digital, while digitalization refers to the integration of the technology in various fields. (Gray & Rumble, 2015) In the specialised literature, studies focus on project management digitalization. Digital transformation represents the operation and delivery system for digital diffusion. (Marnewick & Marnewick, 2022) Moreover, the fact that technologies are becoming affordable and their evolution is fast growing represents an incentive for technology adoption in various fields, especially, in education. Digital transformation is a complex journey, focusing on: role changing, new skills, leadership approaches, managerial changes. (Zoppelletto et al., 2022) However, "digital tools are very important and upskilling is the key" (Zoppelletto et al., 2022).

The "ability to operate in global and digital value chain" (Wiechmann et al., 2022) leads to innovation, with "people being at the centre of this digital revolution" (Montero Guerra et al., 2023). In education, professors represent the main strategic asset and they have a huge responsibility to improve their skills. Digital technologies come together with new working methods in project management, in order to be more productive on one hand, and, on the other hand, to be more sustainable. This transformation has "important benefits on the environment" (Meghisan-Toma et al., 2021). Cristea et al. (2023) underlined "the pivotal roles of digital transformation, innovation, internet access and living standards in shaping education quality".

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The main objectives of this research paper are:

- Gain an overview on the people with tertiary education attainment;
- Identify the main use of Internet in education;
- Contribute to the current body of knowledge on project management training in digital context.

The paper is structured on the following sections: literature review on project management, tertiary education attainment, Internet use; data and methodological framework; results and discussions; conclusions.

2. BACKGROUND

2.1 Project management

The main outcomes of the impact of digitalization on project management are the organisational growth and project management skills (Figure 1). In the current context, skills are becoming more complex, since the project managers need to cope with more complex demanded competences due to technology arise (Internet of things, Artificial intelligence, Smart objects etc.). (El-Sabaa, 2001, Marnewick & Marnewick, 2019).

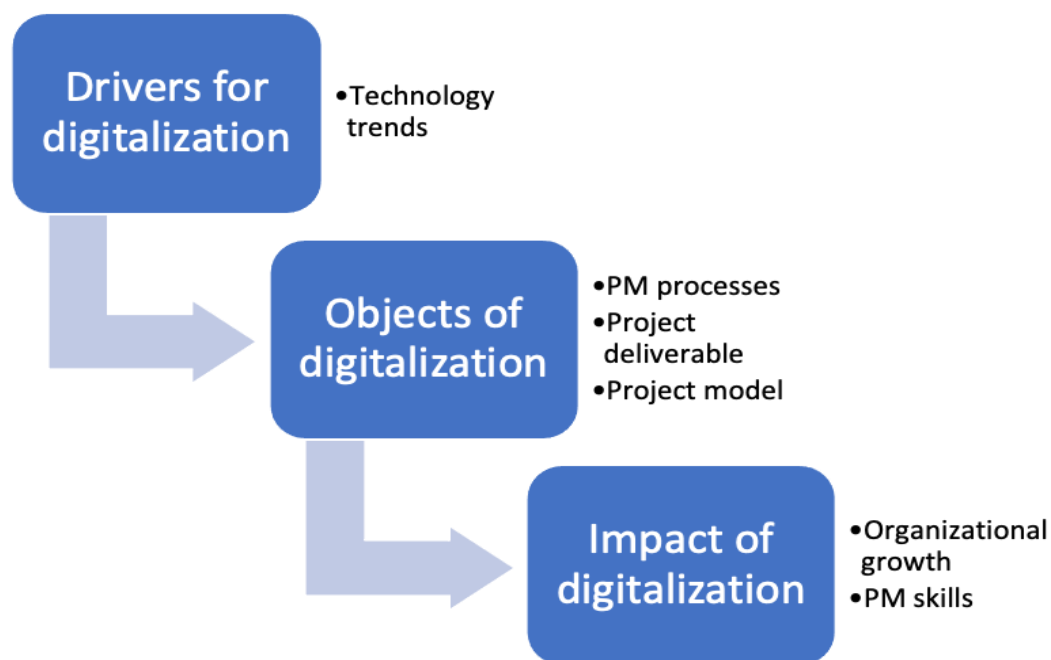


Figure 1. Digitalization and Project management
Source: adapted from Marnewick and Marnewick, 2022

2.2 People with tertiary educational attainment

Tertiary education attainment refers to the share of the population aged between 25 years old and 64 years old that have completed tertiary or equivalent education. The results of Figure 2 show the percentage of the population aged between 25 years old to 64 years old that have completed tertiary or equivalent education, during the period from 2019 to 2022. At the European Union level, the percentage grew from 31.6% in 2019 to 34.3% in 2022. Romania is in the last position regarding the percentage of the population aged between 25 years old to 64 years old that have completed tertiary or equivalent education with 18.4% in 2019, 18,7% in 2020, 18.8% in 2021 and 19.7% in 2022. As we can see, there is a need for this type of education in Romania.

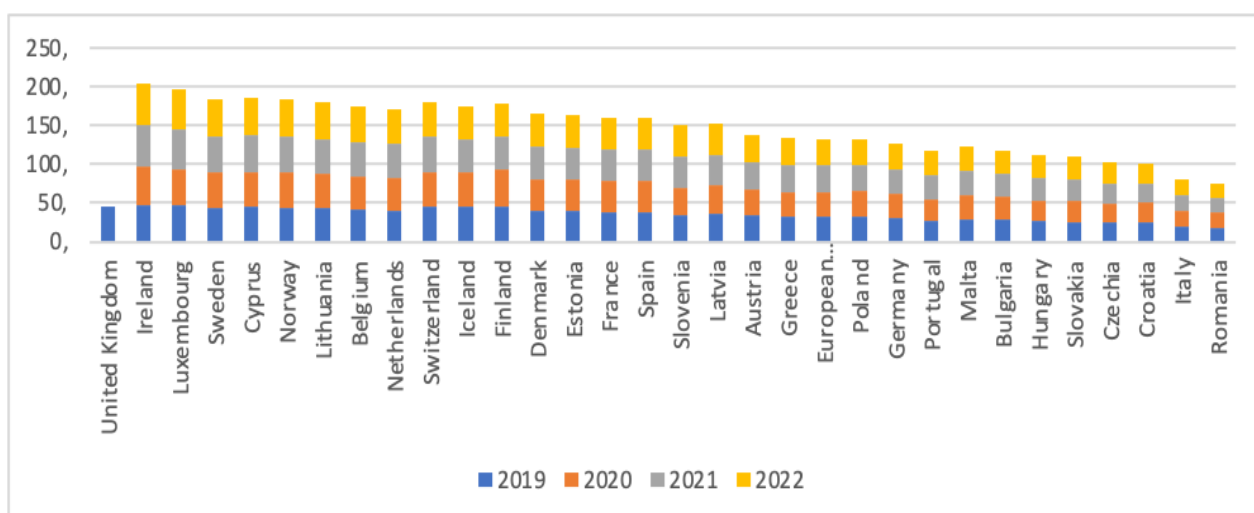


Figure 2. People with tertiary educational attainment (2019-2022)

Source: adapted from <https://ec.europa.eu/eurostat/cache/digpub/keyfigures/>, accessed september 2023

2.3 Internet activities

The indicator Internet activities reflects the share of people aged between 16 years old to 74 years old who usually do some activities on the Internet (percentage of individuals who used Internet in the last 3 months to do an online course of any subject; percentage of individuals who used Internet in the last 3 months for online learning materials; percentage of individuals who used Internet in the last 3 months for communicating with instructors or learners using audio or video online tools (e.g. Zoom, MS Teams, Google Classroom); percentage of individuals who used Internet in the last 3 months for participating in learning activities for professional/ work related purpose; percentage of individuals who used Internet in the last 3 months for participating in learning activities for private purpose). The unit of measure is the percentage of individuals who used the Internet in the last 3 months.

The results of Figure 3 show the percentage of individuals who used the Internet in the last 3 months to do an online course of any subject, during the period from 2019 to 2022. At the European Union level, the percentage grew from 9.82% in 2019 to 18.27% in 2022. Romania is on the last position regarding the percentage of individuals who used the Internet in the last 3 months to do an online course of any subject with 4.11% in 2019, 4.2% in 2020, 5.71% in 2021 and 3.83% in 2022.

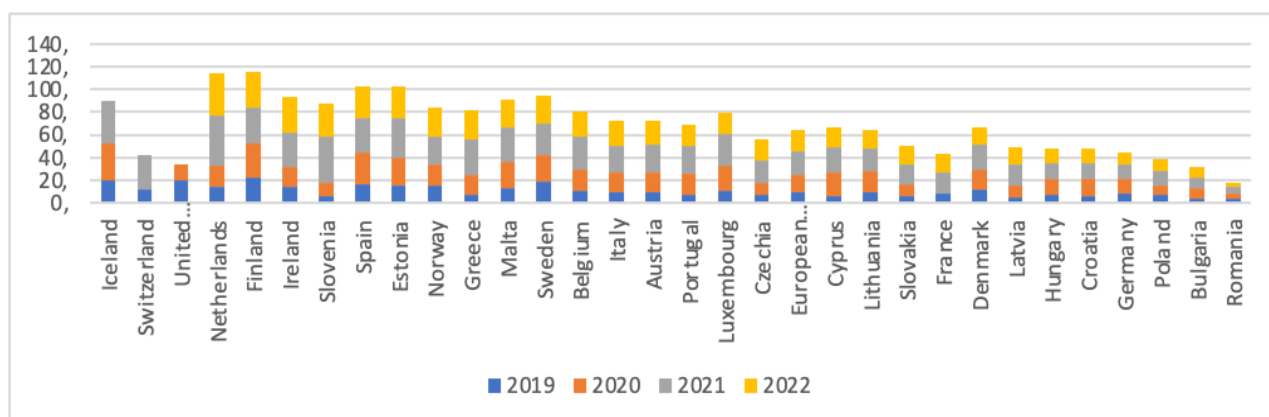


Figure 3. Internet use: doing an online course of any subject (2019-2022)

Source: adapted from

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The results of Figure 4 show the percentage of individuals who used the Internet in the last 3 months for online learning materials, during the period from 2019 to 2022. At the European Union level, the percentage grew from 18.01% in 2019 to 22.97% in 2022. Romania is in the last position regarding the percentage of individuals who used Internet in the last 3 months for online learning materials with 16.58% in 2019, 8.10% in 2020, 9.87% in 2021 and 6.63% in 2022.

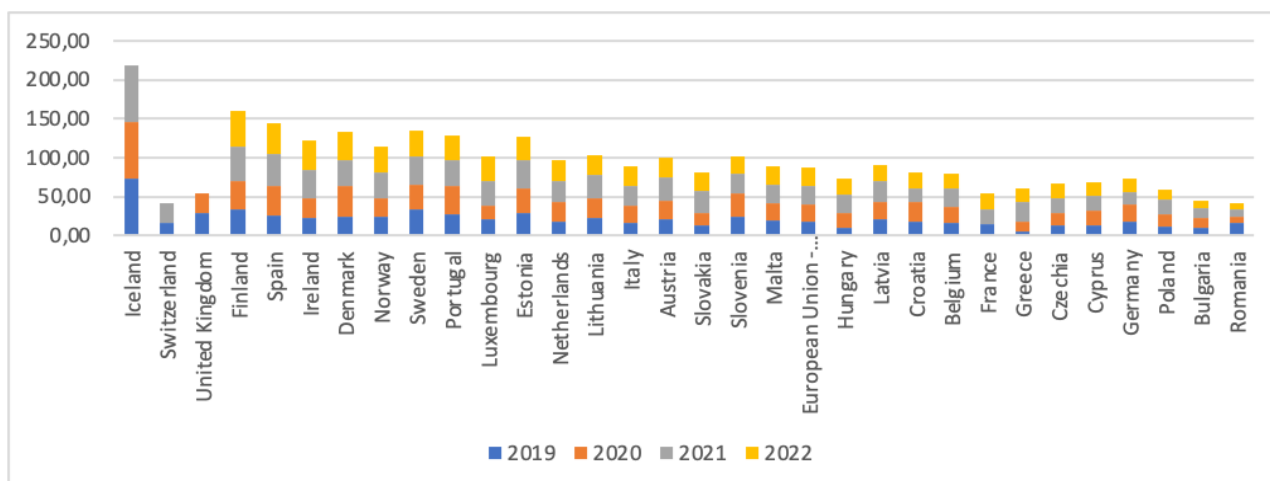


Figure 4. Internet use: use of online learning materials (2019-2022)

Source: adapted from

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The results of Figure 5 show the percentage of individuals who used the Internet in the last 3 months for communicating with instructors or learners using audio or video online tools (e.g. Zoom, MS Teams, Google Classroom), during the year 2022. At the European Union level, the percentage was 20.09% in 2022. For Romania, the percentage was 4.44% in 2022.

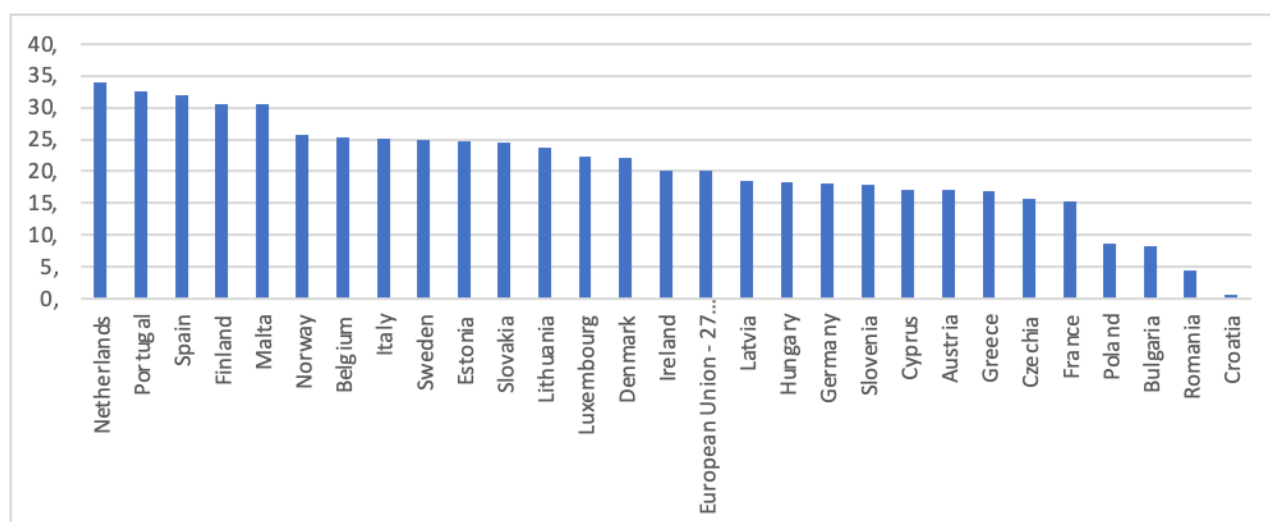


Figure 5. Internet use: Communicating with instructors or learners using audio or video online tools (e.g. Zoom, MS Teams, Google Classroom) (2022)

Source: adapted from

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The results of Figure 6 show the percentage of individuals who used the Internet in the last 3 months for participating in learning activities for professional/ work related purposes, during the year 2022. At the European Union level, the percentage was 18.90% in 2022. Romania is in the last position with a percentage of 3.63% in 2022.

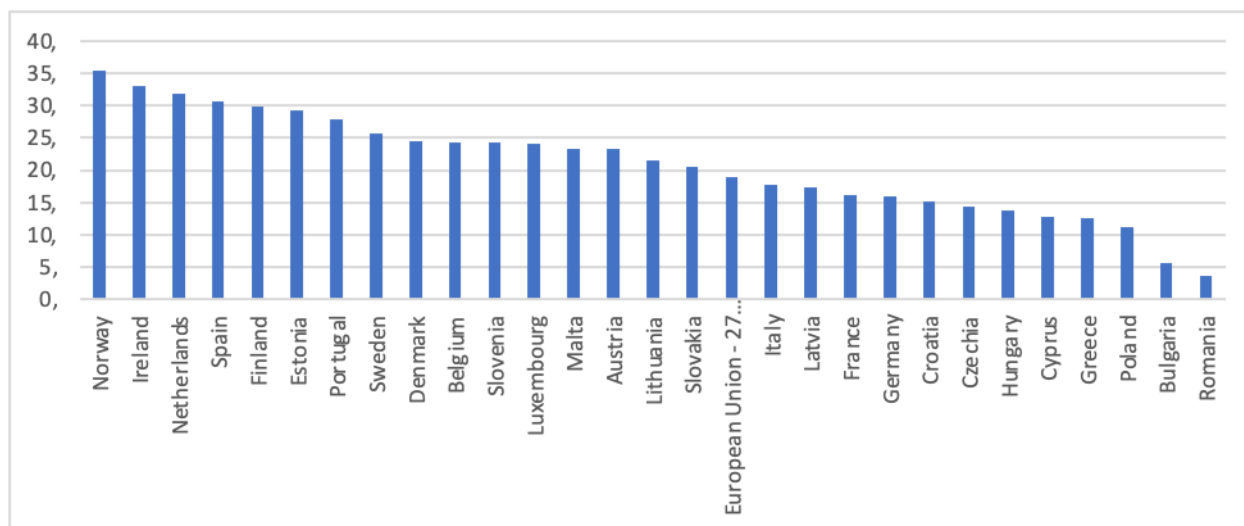


Figure 6. Internet use: participation in learning activities for professional/ work related purpose (2022)

Source: adapted from

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The results of Figure 7 show the percentage of individuals who used the Internet in the last 3 months for participating in learning activities for private purposes, during the year 2022. At the European Union level, the percentage was 13.27% in 2022. Romania is in the last position with a percentage of 3.49% in 2022.

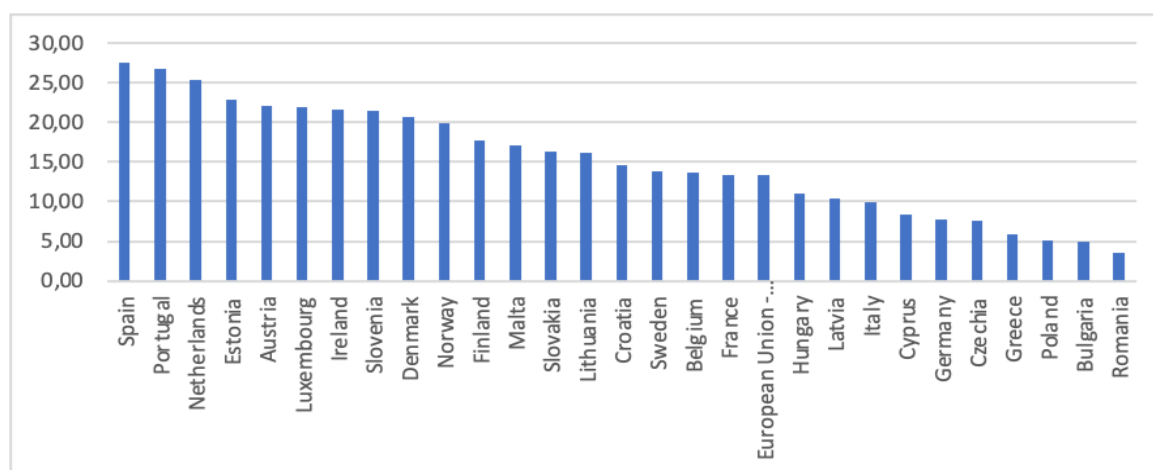


Figure 7. Internet use: participation in learning activities for private purpose (2022)

Source: adapted from

https://ec.europa.eu/eurostat/databrowser/view/ISOC_CI_AC_I__custom_28361/bookmark/table?lang=en&bookmarkId=e7425257-0c5e-4b58-8e71-2ccaa3293fd4, accessed september 2023

3. DATA AND METHODOLOGICAL FRAMEWORK

House of Didactic Body Bucharest from Romania has an important contribution in supporting the schools and educators for continuous improvement of the teaching activities through innovation and reforms.

Thus, House of Didactic Body of Bucharest offers a series of accredited programs addressed to school teachers (Accredited Programs, 2023):

- CRED- Relevant Curriculum, open education for all. Level II training – secondary education;
- CRED- Relevant curriculum, open education for all. Level II training- primary education;
- Management of the efficient implementation of the National Curriculum – Manager CRED;
- Digital education resources: creation, use, evaluation. Training level 2;
- Online class and homeschool;
- Digitalization in the evaluation of the pupils’ competences;
- Project Management in a digitalized context;
- Management of the school inclusion;
- Educational platforms and online assessment tools.

3.1 Impact study

The program entitled “*Project Management in a digitalized context*”, organised by the House of Didactic Body of Bucharest is addressed to teachers and also auxiliary staff from primary and secondary educational systems.

The training offer on Project Management in a Digital Context is based on the results obtained from a research on a previous program entitled “*Educational Projects Management*”, which registered a number of 138 respondents, teachers within the secondary schools from Bucharest.

Based on the results of the impact study, the conclusions drawn were the following:

- Teachers are interested in following continuous training courses that will give them the proper tools to face the current and the future challenges of the Romanian school system within the context of the physical mobility restrictions, determined by the danger of SARS-CoV-2 virus;
- Teachers are looking for courses related to Project Management in a digital context, considering that the contemporary school places an important focus on project-based learning experience and on expanding online relationships, especially with partners from other countries;
- Teachers are interested in initiating and implementing educational projects, both individual and institutional;
- Teachers have a desire to travel and get to know other European educational systems and methods, with the goal of broadening the pupils’ cultural horizons, favouring the development of transversal communication, digital, civic and entrepreneurial skills.

3.2 SWOT analysis of the Training Program “*Project Management in a digitalized context*”

In order to complete the assessment of the need for a program in the field of project management in digital context, SWOT analysis was made (Table 1).

4. RESULTS AND DISCUSSIONS

4.1 Training interests for teachers within the secondary educational system from Romania

The descriptive research focused on identifying the training interests of teachers is based on 110 responses, gathered using a questionnaire. The respondents represent the teaching staff from pre-university education in Bucharest, mainly secondary school teachers (75%). Descriptive statistics was used for the analysis of the responses.

The respondents' interest in various topics to be addressed by continuous educational programs underline the following aspects (Table 2):

- Project management and writing (17%);
- Educational platforms and digital tools (14%);
- Financial education (13%);
- Counselling and personal development (13%)

Table 1. SWOT analysis of a program in the field of project management in a digitalized context

Opportunities	Threats
● Teachers' access to digital resource bases at the European level; ● Existence of a generous offer of programs financed by European funds (POCU, Erasmus+, ROSE, PNRR); ● Increasing the attractiveness of professions aimed at project management in general and, Project management in digital context, especially with emphasis on communication in online environment; ● Establishing international relations with educational partners from other countries, using online workspaces;	● Decrease in the number of international projects that are based on physical mobility based on the restriction for easy movement between countries, due to COVID-19 pandemic; ● Changes in the curriculum in the new context of restrictions imposed by COVID-19 pandemic, together with a delay in establishing a well-defined framework plan; ● Existence of restrictive conditions that reduce the access of small/ rural school units to access external funds (according to the guidelines- general conditions and specific conditions within POCU)
Strong points	Weak points
● Development and evolution in the teaching career; ● Getting familiar with digital work platforms; ● Professionalization of the activity of educational project manager with digital support; ● Blended learning format of the program that facilitates a better management of free time; ● Competent trainers and experts in the subjects covered; ● Existence of digital resources at school level; ● Implementation of online tools/ digital resources in different stages of the project	● Possible difficulties in approaching the training program by the trainees without sufficiently developed digital skills; ● Possible difficulties in approaching the training program by the trainees without any communication skills in a foreign language; ● Potential technical/ Internet connection issues;

Source: adapted by the authors

Based on the research findings, the implemented program in the field of project management in a digitalized context has had the following objectives:

- Designing and planning a project in a digitalized context;
- Teamwork;
- Coordinating the activity of the entire team both from the perspective of a physical, usual interaction and, also, from the online perspective;
- Achieving the project's objectives in a predetermined time;
- Understanding the project, the process and the role of the manager;
- Understanding how to select project team members in a digitalized framework;
- Defining the results in a digitalized context;
- Generation of ideas;
- Motivating the project team;
- Communication as a project management tool (face-to-face and online);
- Providing effective feedback;
- Crisis management;
- Managing projects in partnership;
- Identifying the problem and solving it by project (problem tree/ solution tree);
- Defining the general objective/ specific objectives to be achieved in a project;
- Establishing the target group to address to;
- Analysis of needs/ context/ justification of the need for the project;
- Identifying the optimal partnership for achieving the objectives in relation to the target group;
- Training of the management/ implementation team- necessary human resource;
- Establishing the indicators;
- Defining project activities- correlated within the implementation period and budget categories (Gantt, budget);
- Correlation of the expected results with projects activities;
- Information/ dissemination/ promotion;
- Transversal skills to be achieved/ acquired;
- Risk management;
- Sustainability of the project.

Table 2. Training interests for teachers within the secondary educational system from Romania

	Thematic for training programs	Percentage (%)
1	Project management and writing	17
2	Educational platforms and digital tools	14
3	Financial education	13
4	Counselling and personal development	13
5	Civic spirit and social responsibility	11
6	Didactics of the course	11
7	Inclusive education	10
8	Other	10
9	Educational management	1

Source: adapted by the authors

5. CONCLUSIONS

In conclusion, digitalization context changes the way that the projects are managed, representing a trigger for education in order to acquire competences in: project management and writing; educational platforms and digital tools; financial education; counselling and personal development. In Romania, there is a need for education in a digital context, since this country often occupies the last positions in terms of Internet use. The outcomes of this research can be used for further proposals of accredited programs tailored to school teachers and, also, can be enriched by other concepts linked to project management: waterfall project management methodology, agile management methodology or hybrid project management.

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