

# Management of the International Educational Project on Teaching XR Technologies

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## Abstract

Ukraine has successful experience in the implementation of international educational projects. To support such projects, European Union holds the Erasmus+ programme for education, training, youth and sport. With such support, Ukrainian academics can implement their educational initiatives, so students receive a chance to gain more knowledge in related, or even quite new branches of knowledge. For an educator who has thought through the educational component of a potential project, the lack of skills in project development and management may be an obstacle to proper project submission. Understanding an educational project as a business process makes it possible to use project management methods and tools for modeling and implementing such projects. This paper examines Gantt charts, Osterwalder's business model, and other project management approaches as useful tools in designing and managing an educational project. The Alexander Osterwalder's Business Model Canvas is a laconic visual tool, used to describe and design a business model, enabling analysis of the customer types, key resources and activities, etc. This tool allows educational project developers to crystallize an understanding of educational values that will be given within a project, how to create educational activities, who the partners are, and what resources are needed to operate. According to the developed method of the educational project design and maintenance with project management tools, the adapted Business Model Canvas can be later transformed into a funding call application, as shown with Jean Monnet Module, the European Union initiative for higher education. The Jean Monnet Module application can be specified using the Gantt chart as a project management tool for planning and scheduling project tasks, as well as allocating resources. This paper demonstrates means and tools for educational project management used in a project for teaching XR technologies customized to match the demands of specialists in the education of children with special needs. Some online tools for developing the Business Model Canvas and Gantt charts are presented. Casually, the agile methodology was used to describe the educational project lifecycle.

## Keywords

international educational project; Jean Monnet Module; XR technologies; Business Model Canvas; Gantt

chart

## 1. Introduction

### 1.1. The problem statement

Students of Ukrainian higher education institutions have the opportunity to form their educational trajectory, supplementing it with elective courses. An additional tool for self-development is non-formal education, when students take specialized courses, such as those offered on online platforms (<https://ed-era.com/>, <https://prometheus.org.ua/>). Higher education institutions have regulated the possibility of including such courses in a student's academic record, and this benefits both students and teachers, especially when it comes to learning and teaching in IT specialties. The dynamics of the IT industry requires higher education institutions that teach IT students to actively respond to the emergence of new technologies.

Despite active collaboration with employers, the process of developing and integrating new courses into the curriculum proves to be time-consuming. The solution to this situation could be using the potential of non-formal education. The availability of such education provides an

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opportunity to deepen knowledge or try oneself in a new field [1]. It is a requirement of the time to ensure a convenient and self-regulated way of learning, especially when it comes to learning in the time of pandemic or war.

The use of non-formal education courses is convenient not only for the student, who gets access to educational diversity and can regulate the pace of learning on his or her own. It is also convenient for IT professors, who can engage students in the study of the most relevant areas of the industry without being limited by the number of students. Teachers are incentivized to develop modern, relevant, and in-demand educational content without waiting to implement the relevant educational course in university curriculum. This is especially true for educators working in the field of computer science and information technologies, where new technologies are evolving extremely fast.

To provide students with the knowledge and skills that meet the requirements of modern IT to ensure students' competitiveness in the labor market, teachers are ready to develop educational courses in their specialties, and such initiatives are strongly supported, including through funding from various sources. The European and global community demonstrate their understanding of the importance of education by actively funding educational projects. For example, the House of Europe project (<https://houseofeurope.org.ua/>) supports cultural and educational programs. The motto of the DAAD, the German Academic Exchange Service (<https://www.daad.de/en/>), is "Change by Exchange", and this initiative promotes students' and researchers' academic exchange, providing scholarships, internationalization, and academic collaboration. Erasmus+, an EU program for education, training, youth and sport, aims to support higher education. More specifically, the Jean Monnet Actions, which runs under Erasmus+, stimulates teaching and research on the European Union and encourages other countries to develop higher education practices.

Applying for funding means not only having an innovative educational idea but also careful planning of the process, sometimes the plan should extend to 36 months, as in the Jean Monnet Module [2]. Unfortunately, a lot of such ideas were not and might not be realized because of the academics' unfamiliarity with the process of project design and maintenance, as managing such international projects is still not as wide practice as it could be. Yes, the offices on international education exist at almost every higher education institution, as Ukraine actively collaborates in the scientific field, but educational projects are still not so widely applied. Such offices might provide useful information on the open calls for funding, on various possibilities of international cooperation, can explain specific features of the project design process, and be eager to help with the project design, but educators very often prefer keeping to themselves the idea of the educational project, and count on their own resources. Also, it is obvious that the text of a successful project will not be freely shared by its authors, as these texts present their authors' thorough, balanced, and hard work. That is why the educators who are willing to apply for an educational project cannot and should not count on learning from successful project applications. As a result, educators might be left with no tools for the preparation and implementation of their educational project. Developing a method for educational project design and management will contribute to the development of education of Ukraine. Thorough implementation of such method will increase chances of winning by submitting realistic, thought-through, and well-designed projects.

European Commission, being an executive body of the European Union, aims to support educational and scientific development. Researchers can suggest their idea of a project of inter-European cooperation and apply for funding. Ukraine has a successful history of its higher education institutions participating in international projects, and the EU Commission finds it possible to support Ukrainian researchers even now, in times of war. Special attention is paid to displaced researchers or other specialists from Ukraine, so they can find opportunities to become involved in ongoing EU-funded research and innovation projects. Even more, on its website (<https://euraxess.ec.europa.eu/ukraine>), over thirty EU member states and associated countries are offering housing, jobs, diploma recognition, and other services for Ukrainian displaced scientists.

Due to this support, numerous opportunities are open for Ukrainian researchers, and our country continues to integrate into European space.

To present the research on designing an educational project on teaching a range of educational courses in the design and implementation of modern information technologies, it is crucial to review the literature on Ukrainian higher education institutions (HEI) experience in international scientific and educational cooperation. Furthermore, an educational project shares many characteristics with a business process, and adopting a business modeling perspective could prove useful in the design and management of an educational project.

## **1.2. Analysis of recent studies and publications**

While researching the state-of-the-art international projects, in which Ukraine was a participant, eight papers were found in open access (August, 2023). These papers were analyzed using the Open Research Knowledge Graph (ORKG) tool. ORKG aims to present papers on a specific research problem in a structured manner, for example, as in [3]. In ORKG's comparisons, manually extracted from scientific papers, knowledge is presented as a grid. The author of such a comparison proposes which key aspects of the scientific papers being analyzed are important from the standpoint of the research issue (Fig. 1).

While working on such ORKG comparison of the features of the international projects, in which Ukraine was a participant, it was concluded that the aim of any project is its most innovative characteristic, and comparison [4] shows that such international projects have a diversity of aims, as presented in Table 1. The project aim clearly demonstrates which projects were inspired by unfortunate events of the war, when Ukrainians were dragged into traumatized experiences on different levels, from a single person [5] to an institution [6].

While researching scientific papers specifically on educational international projects, we have focused on seven open source papers [7], which showcased different characteristics of such types of projects. Every project as a participant has mentioned higher education institutions, which were joined by International student organizations, schools, European Foundations, etc. Also, the projects were described with their activities (workshop, summer school, webinar, round table, etc.), outcomes (articles, conferences, digital toolkit, website, learning platform, institutional development strategies, etc.), short and long-term impact, participation countries, project duration, and other properties. The diversity of education projects can be illustrated by the project aims (see Table 2).

It is worth mentioning that the number of international educational projects involving Ukraine is much higher than the number of papers that were found in open sources. As an illustration, in the year 2022, Lviv Polytechnic National University alone had 11 projects funded by Jean Monnet Actions. The results of such projects have been presented at many Ukrainian scientific platforms, for example, such annual conferences as the IEEE Computer Science and Information Technologies CSIT conference with ICT in education section (<https://csit.ieee.org.ua/>), ICT in education, research, and industrial application ICTERI (<https://icteri.org/icteri-2023/>), but not all of their publications are open-sourced.

## **1.3. Relevance of the educational project**

To comply with funders' demands, the object of the project should, among other qualities, be of high relevance and importance. In information technologies, one of the promising directions is virtual and augmented reality technology. Its rapidly developing software and hardware recently caused its price decrease, and, therefore, wider spread. Virtual (VR), augmented (AR), and mixed reality (MR), altogether referred now to as XR technologies, more and more often become a part of scientific and applied research, for example, for historic modeling in archaeology [8], art therapy in psychology [9], cardiology in medicine [10], measuring in cyber-physical systems [11] and many others. That is why designing a set of educational courses on XR technologies design and application seems to be relevant nowadays.

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	<div> <div>CONCEPT AND PRACTICE OF TEACHING TECHNICAL UNIVERSITY STUDENTS TO MODERN TECHNOLOGIES OF 3D DATA ACQUISITION AND PROCESSING: A CASE STUDY OF CLOSE-RANGE PHOTOGRAMMETRY AND TERRESTRIAL LASER SCANNING</div> <div>Contribution 1 - 2016</div> </div>					
	<div> <div>Impact of the participatory financing of international development projects on social capital of the local communities</div> <div>Contribution 1 - 2017</div> </div>					
	<div> <div>Erasmus+ Project «Integrated Doctoral Program For Environmental Policy, Management And Technology – Intense»: Progress Information And Planned Activity</div> <div>Contribution 1 - 2019</div> </div>					
	<div> <div>The "Ukrainian Science Diaspora" initiative in the wartime</div> <div>Contribution 1 - 2023</div> </div>					
research objective	Open-access information on Ukrainian international projects	Open-access information on Ukrainian international projects	Open-access information on Ukrainian international projects	Open-access information on Ukrainian international projects	Open-access information on Ukrainian international projects	Open-access information on Ukrainian international projects
contribution objective	Look into the practice of implementation of the EU project	describe a large-scale training and implementation programme of 'Trauma-Focused Cognitive	present an advanced project-oriented educational program	results of the study of the impact of the participatory financing on the social capital of the territorial communities of Sumy	overview of a progress on a project	outline the first steps taken by the initiative
social project	✗	✗	✗	✓	✗	✓
beneficiary	<div>displaced universities staff</div> <div>displaced universities students</div>	Ukrainian mental health care professionals	teachers of Kyiv National University of Construction and Architecture	local communities of Ukraine	students	Ukrainian scientists
field of knowledge	Education	psychology	geodesy	Value not reported in paper	environmental science	
participant: country	Ukraine	<div>Ukraine</div> <div>United States of America</div>	<div>Germany</div> <div>Ukraine</div>	Ukraine	<div>Austria</div> <div>Estonia</div> <div>Latvia</div>	Ukraine

**Figure 1:** The ORKG comparison

**Table 1**

The aims of international projects, in which Ukrainian institutions participated

Reference	Project aim	Year of publication
[6]	Rethinking and reinventing displaced universities and transforming them into centers driving social, intellectual, economic, and cultural development of local communities where they had been relocated	2022
[5]	Implement an evidence-based trauma-focused treatment for traumatized children and their families during the war in Ukraine	2023
[12]	Introduce Ukrainian teachers to terrestrial laser scanning technology for collection and processing of spatial data	2016
[13]	Promote local development of the territorial communities using financial policy tools	2017
[14]	To improve and enhance doctoral training	2019

[15]	Keep links with scholars who left Ukraine and join the efforts of different migration waves of Ukrainian scientists for the further rebuilding of Ukraine	2023
[16]	Modernization of curricula of pedagogical higher education institutions of Ukraine	2019
[17]	Provide theoretical and practical training for future doctors of philosophy (Ph.D.) regarding the implementation of university autonomy in Ukraine, taking into account the experience of EU countries	2023

#### 1.4. The social component of the educational project

Yet another relevant characteristic of any educational project should be its active social impact. As presented in Designing an educational project with a social impact by Vasyl Andrunyk and Tetiana Shestakevych [3], it is possible to put a strong social impact in an educational project. Authors of the [3] suggested designing educational projects in that way, so while conducting educational activities, students were taught to create a library of scenes of virtual and augmented reality. These scenes were tailored to meet the educational needs of children with autism, and are open to any participant in inclusive education.

#### 1.5. The research goal

Implementation of funded educational projects in higher education appears to be good practice for all the participants (or beneficiaries) of the process. Students are the ones who benefit from it most, as they receive an opportunity to gain knowledge they are interested in, which might differ from the education direction they have chosen. Students can explore new subjects or deepen and diversify their knowledge. HEI teachers can create up-to-date courses, enabling a wider range of students to learn now, instead of waiting for the course to be integrated into the university curriculum [18]. Additionally, by creating informal education courses, teachers can promote the elective courses they teach, and students who are choosing between such courses will have an understanding of what they can expect to learn. Such promotion of the courses benefits the HEI too; future students receive additional information on the educational activities of the University they consider applying to.

**Table 2**

The aims of international educational projects

Reference	Project aim	Year of publication
[19]	Foster close cooperation and strengthen relationships between the Czech Republic, Poland, and Slovakia	2010
[20]	Enable high school students to make the right choice of university education, based on their abilities and preferences	2022
[21]	Provide a digitalized infrastructure, enabling integration of the search for accommodation with the European student mobility initiatives	2023
[22]	Develop and implement open access ICT-based tools and environments to encourage learners to use digital learning methods	2020

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[6]	Rethink and reinvent displaced universities, and transform them into centers of social, intellectual, economic, and cultural development of local communities where they had been relocated	2022
[23]	Strengthen the institutional cooperation in the Higher Education area	2023
[24]	Promote technological and science culture in Math, Biology, Physics, and Portuguese language	2009

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When the idea of the educational project crystallizes, its authors prepare an application to funding institutions. The application form naturally differs between institutions and may be different within the same funding program from year to year. That is why it is advisable to use an independent tool of project management while working on the project design. Such project management tools should make it possible to implement different types of financing without affecting the main part of the project. The goal of this research is to consider using project management tools for educational project design and management. The objectives of the research are to 1) provide a rationale for considering an educational project as a business process; 2) apply business analysis techniques to educational project design; and 3) consider project management technologies to be used for educational project management. In this paper, an educational project with social impact [3] will be used as an illustrative example.

The scientific novelty of this paper lies in the method developed for educational project design and maintenance with project management tools, adaptable for various funding schemes. Also, for the first time, a structural model of mapping of educational project design to the funding call was introduced; such a model innovatively integrates project management tools implementation with funding call structure.

## **2. The results and discussion**

### **2.1. Concept of the project**

The educational project, initially introduced in [3], aimed to enhance students' proficiency in both hard and soft skills related to contemporary XR technologies, including virtual and augmented reality. Simultaneously, while realizing the project, it was planned to improve the IT support for inclusive education specialists. To reach this aim, working group members planned to conduct research on the state-of-the-art IT support for the education of children with special needs, and develop a set of video lectures as a methodological basis of an educational course on XR technologies. Additionally, a workshop on XR technologies was planned to be held. The workshop was designed so that students could learn to create assets of virtual and augmented reality technologies in compliance with the demands of educating children with autism. These XR assets as scenes of augmented and virtual reality would be made freely accessible on an XR assets library website. All the online activities were to be recorded and placed in the project's information resources. All significant events of the project were to be shared via a website and social media.

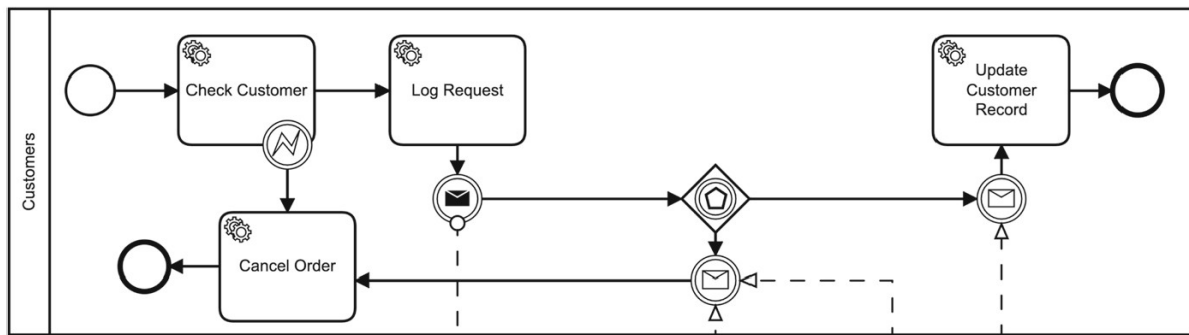
### **2.2. Educational project as a business process**

There are a lot of definitions of business processes, and in this paper, the next one is used: a business process is a set of functions in a specific sequence that finally deliver value for an internal or external customer, and an external event clearly defines the process's start [25]. Following such definition, the educational project realization can be considered as a business process. An educational project has its clear start, its customers (or beneficiaries) are students, teachers, and higher education institutions. An educational project consists of a set of educational courses (or

one, at the very least), and the project delivered values are knowledge – for students, and a free-access library of XR assets. The above-mentioned can be accepted as a rationale for considering an educational project as a business process. As a consequence, for educational project design and management, it is possible to use both business analysis and project management techniques and approaches.

### 2.3. The method of educational project design and maintenance with project management tools

Business process modeling has become an important and relevant domain of a formal description of some aspects of the physical and social world [26], [27], [28]. Different techniques, frameworks, and approaches to business process modeling have been developed. These tools provide a visual representation of business processes, and are of various complexity. For example, Business Process Modeling Notation (BPMN) has four core elements with various sub-elements, each with different meaning. Fig. 2 gives an example of partial BPMN model of the microservice (the Customer business responsibility) [29]. Learning the meaning of the elements might be challenging, and seems unnecessary if project developers are not accustomed to the BPMN notation yet.



**Figure 2:** Business Process Modeling Notation example [29]

In contrast to complexity of BPMN tool, the Business Model Canvas by Alexander Osterwalder and Yves Pigneur [30] has a determined structure of nine blocks, each labeled to map the meaningful edge of the business process. In this paper, the Business Model Canvas was chosen as a framework of business process modeling because of the balance of simplicity and functionality, taking into account that for the educators it might be the first business model introduced.

#### 2.3.1. Business Model Canvas

Alexander Osterwalder's Business Model Canvas allows one to describe, design, invent, and pivot a business model. The approach was developed focusing on strategic management and is applied to existing businesses, as well as to developing the new ones [31], both profit and non-profit [32]. Furthermore, in [33], the authors adapted Business Model Canvas to be used in educational field, namely, to offer a practical and quick tool to visualize, summarize, and present a research project.

Being visualized, Osterwalder's Canvas has nine key blocks, as in Fig. 3, and they name the business components that are to be considered and analyzed. It is advisable to consider these components in such order:

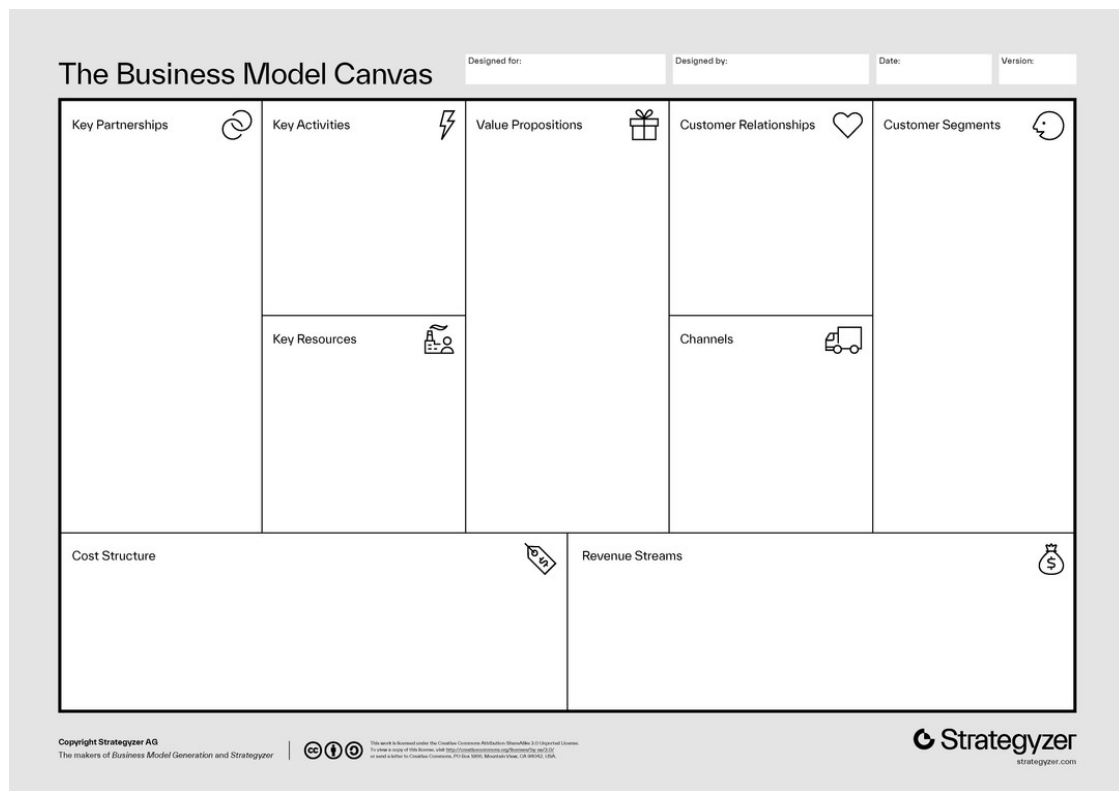
1. Customer Segments.
2. Value Proposition.
3. Customer Relationships.
4. Channels.
5. Revenue Streams.
6. Key Activities.
7. Key Resources.
8. Key Partners.

## 9. Cost Structure.

After project analysis, the Canvas should be filled in. It is easier to start filling it in by answering guiding questions. As described in a project concept, an educational project from [3] will be used as an example for the Business Model Canvas presentation. Table 3 contains each of the above-mentioned key blocks of the Canvas, guiding questions [34], and the Project's value for the educational project from [3].

### 2.3.2. Business Model Canvas for Jean Monnet Module

We will follow the footsteps of the Dutch scientists, who in [35] mapped the Business Model Canvas with enterprise architecture modeling standard. To show how the Business Model Canvas for educational projects correlates with the funding application, as an example of such funding, the Jean Monnet Action 2024 call for the Jean Monnet Module will be used. Figure 3 presents how the visualization of the Jean Monnet Module application structure corresponds to the Business Model Canvas added by SWOT analysis (for the latter, see [6]). Some Jean Monnet application's structure elements are filled in gray to indicate they are not to be filled in for the Jean Monnet Module application.



**Figure 3:** The original Business Model Canvas, retrieved from <https://www.alexosterwalder.com/>

In Table 3 a value of Project funding for the Revenue Streams block was given, and Project expenses for the Cost Structure key block. These values are rather unspecific, as the Revenue streams and Cost structure depend very much on the funding rules. For example, the Jean Monnet Module funding is provided for the teaching hours only. In the Jean Monnet Module funding case, an educational project's revenue stream is one and only – the funding from the EU Commission, and it is the teacher's fee.



## 2.4. Gantt chart in educational project design

While designing an educational project timeline, all its events should be planned to fit the project duration. Also, while preparing the timetable of the project, the load of the human resources should be considered. A project management tool that can be used in this case is the Gantt Chart.

The Gantt chart is a tool for visualization of project tasks completed over a period of time in comparison to the scheduled work duration. The Gantt chart typically includes two sections: the left side outlines a list of tasks and subtasks, and the right side has a timeline with schedule bars that visualize tasks. As an example, this tool can be used for project timeline design, as it is presented in Fig. 4. The chart was designed for the 4 quarters of the first year of the project (note that activity 7.5.4 Prepare final report is not mentioned in a Gantt chart, as the total project duration is 36 months). As tasks, the Key Activities (Table 3) of the educational project were used. Fig. 5 is a screen of the [onlinegantt.com](https://onlinegantt.com), one of the many online tools for the Gantt chart.

The idea illustrated in Fig. 4 can simplify the process of forming an educational project application, as using Business Model Canvas gives a broader perspective. When paired with a SWOT analysis matrix, a Business Model Canvas becomes a good tool for educational project designing and planning.

The Timetable (part 4.3 of the Jean Monnet Module application contents) can be designed having in mind the values of the Key Partner and Key Activities block. However, there exists an additional project management tool essential for designing and overseeing the project's timeline.

The [onlinegantt.com](https://onlinegantt.com) tool has several additional advantages, as it facilitates teamwork and enables the assignment of tasks to project human resources. Furthermore, it can be switched into Resource mode to assess the workload of project participants (Fig. 6). In a way, such a tool can be used as a human resource planning tool, and it is recommended to implement such (or similar) tool while creating a project working team to ensure that every member is informed of their tasks.

**Table 3**

Key blocks of a Business Model Canvas for educational project

Key block	Guiding question	Values
1. Customer Segments	What type of customers do you address?	1.1. Students/specialists who want to master the use of modern XR technologies in their professional activities
2. Value Proposition	Which values (services) do you create and offer? Which needs are you fulfilling for the beneficiaries?	2.1. An educational course on XR technologies with a practical component focused on the needs of inclusive education specialists 2.2. Library of XR assets of virtual and augmented reality
3. Customer Relationships	How are your relationships with your customers or beneficiaries?	3.1. Personal communication with students during their studies 3.2. Personal consultations on the use of the library of XR assets
4. Channels	Through which channels do you reach your customers and/or beneficiaries?	4.1. The project website – to spread information about the project and its upcoming events, video lectures, and for communication 4.2. Social media – for communication and feedback 4.3. Workshops – while teaching students 4.4. The website – as a library of the XR assets.
5. Revenue Streams	How much is your financial revenue?	5.1. Project funding
6. Key Resources	Which key resources are required to make your educational	6.1. Professional teachers with experience in teaching relevant courses, with relevant scientific publications and/or certificates of completion of internships on

	project work (physical, intellectual, human, financial)?	relevant topics 6.2. Premises with Internet connection and equipment 6.3. Working group for project support and management
7. Key Activities	Which key activities make the educational project work? Including marketing and dissemination activities	7.1. Create a working group 7.2. Analyze modern concepts of using XR in the education of students with special educational needs 7.3. Prepare video lectures of the course in XR technology 7.4. Hold the Workshops on virtual and augmented reality 7.5. Information support 7.5.1. Monitor project activities 7.5.2. Social networks support 7.5.3. Advertise workshop 7.5.4. Prepare final report 7.6. Manage XR assets library 7.6.1. Create the website of XR assets 7.6.2. Fill in the website with XR assets 7.6.3. Support the work of the site with XR assets
8. Key Partners	Who are your key partners?	8.1. IT companies working with XR
9. Cost Structure	What are your main cost items?	9.1. Project expenses

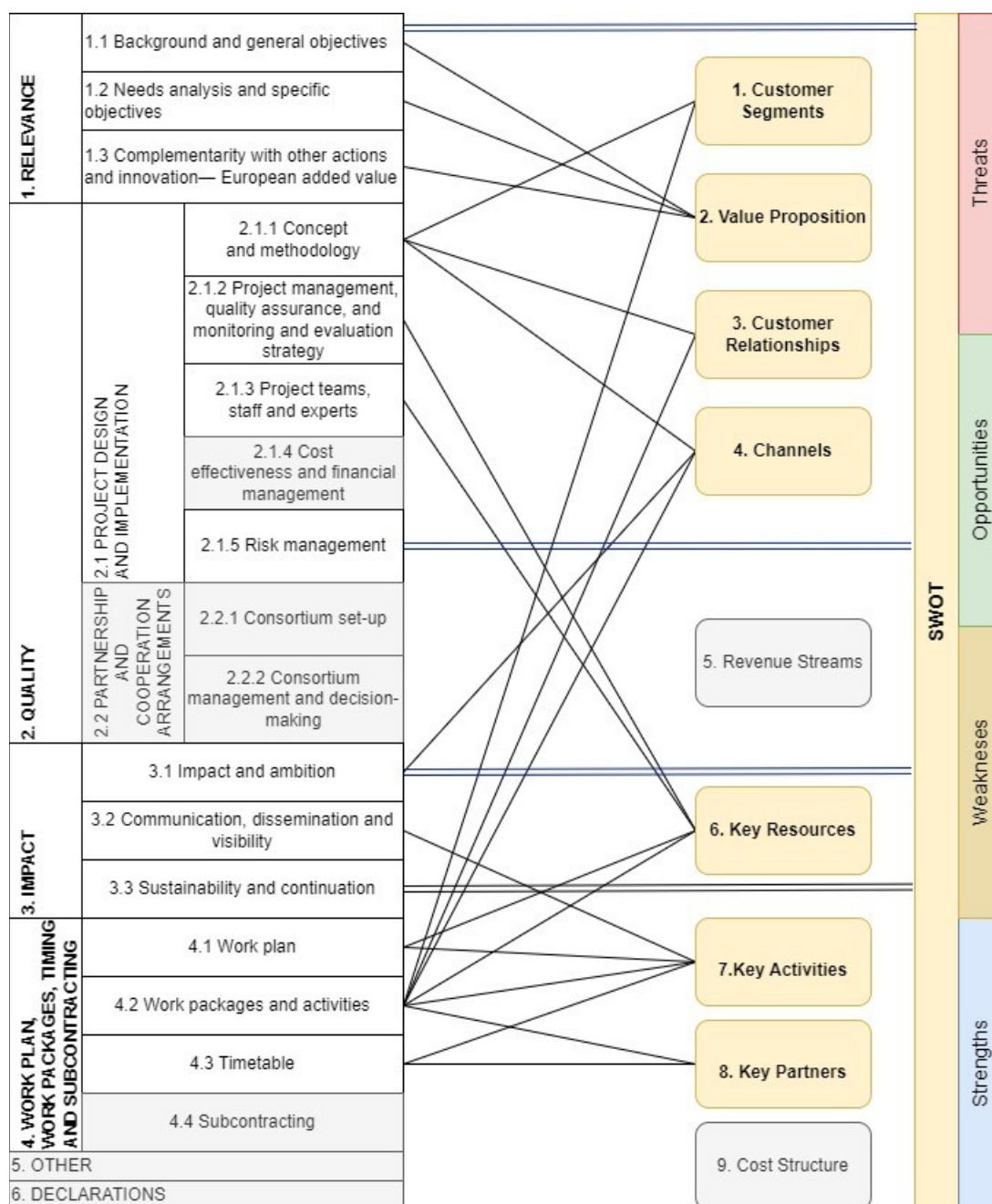
As mentioned before, there are a lot of tools, both online and offline, which can be used to develop Business Model Canvas collaboratively. The Miro has some pros for using it for the project design, as it allows online simultaneous teamwork, and provides dozens of templates that can be used in project management. Such software will be accessed by all the participants of the working group so that all are updated on project scheduling, overall workflow, document storage and sharing, time tracking, and quality management. In [3], the authors presented another project design approach. SWOT analysis was a step in strategic planning of the project, used to describe the strong and weak sides of the project, its threats, and opportunities. The SWOT analysis matrix was designed in Miro [36].

## 2.5. Educational project lifecycle planning

Yet another project management concept can be applied while planning the educational project lifecycle. As previously mentioned, information technology is a rapidly evolving and expanding field, and within a project, it is essential to regularly update all IT-related activities. In this particular educational project, such activities include:

- the analysis of the state-of-the-art XR technologies for the education of students with special needs,
- the preparation of the video lectures on XR technology, and
- the preparation of the workshop on an updated subject, to replenish the library of XR assets with the results of the workshop. As a result, the website hosting the assets library will be periodically updated with new XR assets after each workshop.

The project management concept we use here is an agile methodology (Fig. 7), as the project activities are iterative. Each cycle takes two semesters (12 months) aligning with the academic year in Ukraine.



**Figure 4:** The structural model of the mapping of Business Model Canvas for educational project to the funding application of the Jean Monnet Action 2024 (call for the Jean Monnet Module)

### 3. Conclusions and prospects for further research

Applying for educational project funding can be quite a challenge for university staff, as it requires project development and management skills. Ukraine is widening its experience in applying for educational projects funding, and in managing such projects. Application of project management tools will enable educators to plan their project, and in this paper, the most attention has been paid to Business Model Canvas and Gantt chart.

The Business Model Canvas is a tool for describing an educational project as a business process, as it can be mapped to demands of various funding calls. Educators should know what type of students they address, what services will be created and offered, which key resources are required to do the work, who are the key partners, etc. The foundation of the project application can be developed from the responses to these questions. Gantt chart is another project management tool

to be implemented, as it is crucial to plan project activities and consider what resources should be used to cover each task.

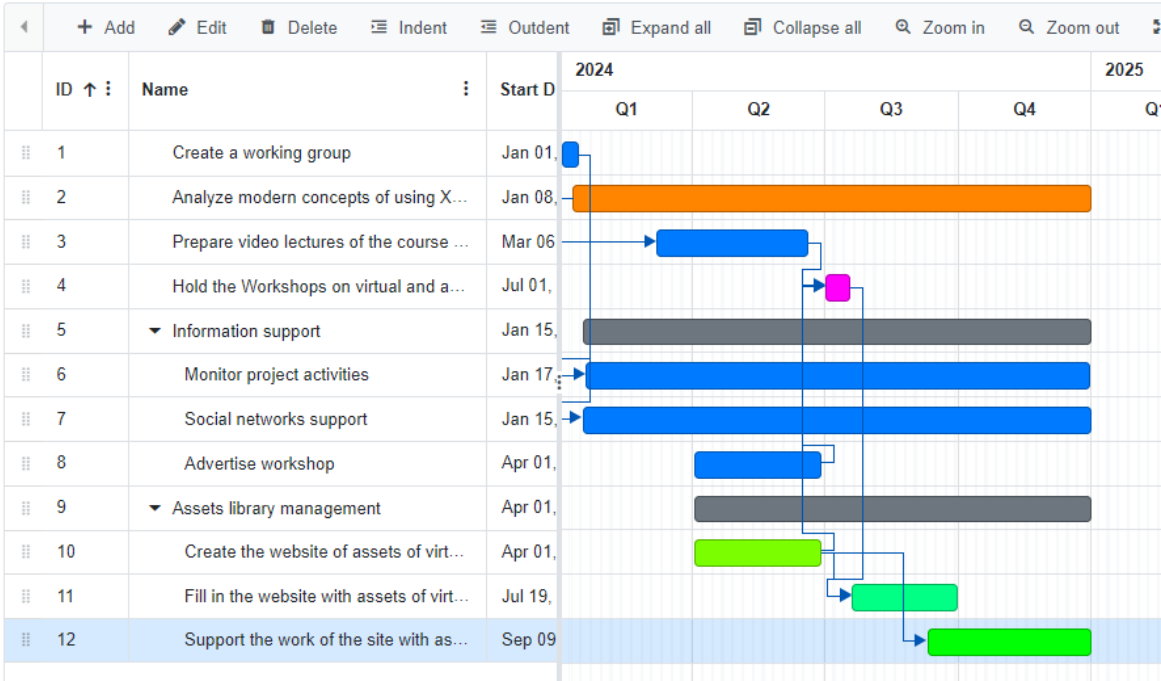


Figure 5: The Gantt chart for the first year of an educational project

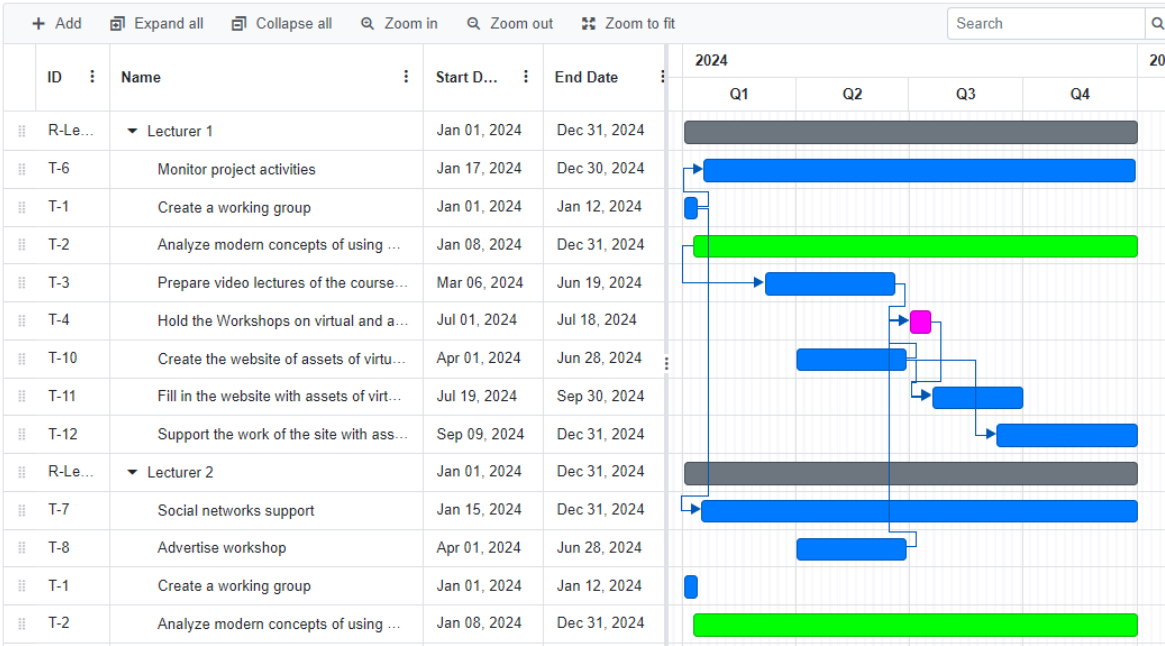
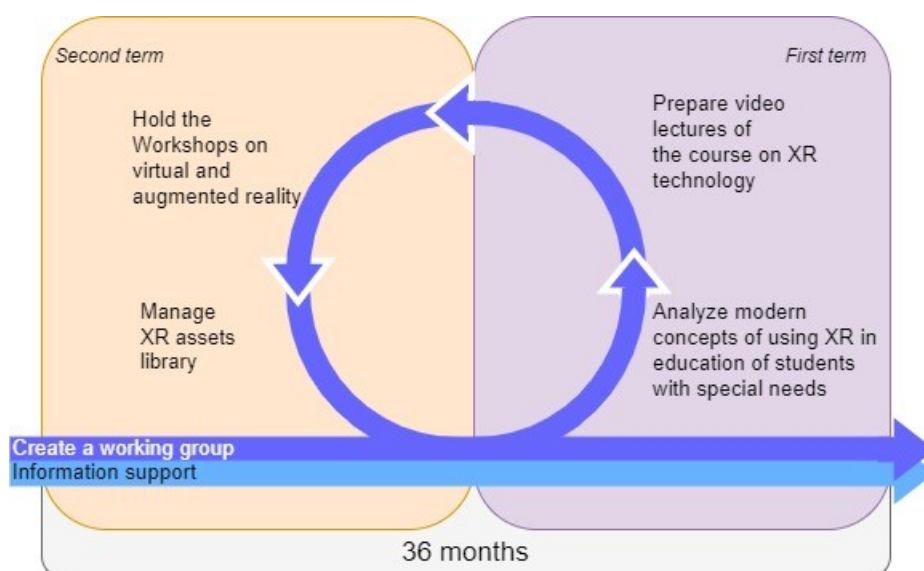


Figure 6: The Gantt chart in Resource view



**Figure 7:** Educational project lifecycle

In future research, more project management tools will be considered, which might be helpful in education project management, such as the responsibility assignment matrix, also known as the RACI matrix, PODSC tool, etc. Another future work direction is the qualitative and quantitative analysis of the method of educational project design and maintenance with project management tools. It can be realized in cooperation with the Project office, a structural division of the Lviv Polytechnic National University, which aims to improve the quality of the preparation of project proposals and the implementation of project initiatives of the University.

## Declaration on Generative AI

During the preparation of this work, the authors used GPT-4o and Grammarly in order to: Grammar and spelling check. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the publication's content.

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