RISK MANAGEMENT ANALYSIS

DD MATH

ERASMUS+ Program

DDMATH PROJECT

Digital learning in mathematics for blind students

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Project within the ERASMUS+ program – School Education Gateway – Action KA2 - Strategic partnerships for digital education KA226 – Convention n. 2020-1-IT02-KA226-SCH-09557

Digital learning in mathematics for blind students

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INTRODUCTION

The power of education transcends boundaries and limitations. At the heart of our shared mission lies the belief that every individual, regardless of their personal circumstances, has the right to access and benefit from quality education. The Erasmus+ project titled "DDMATH: Digital Learning in Mathematics for Blind Students" is designed to enhance inclusivity in education, leveraging digital tools to make mathematics education more accessible and engaging for blind students.

As we embark on this ambitious endeavor, it is crucial that we assess the capacities, identify the potential hurdles, explore opportunities, and guard against foreseeable threats. The purpose of this document is to provide a comprehensive review of these critical aspects, providing a detailed Risk Management analysis and a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis specific to the DDMATH project.

The Risk Management analysis focuses on three key areas: Project Management risks, Implementation risks and Financial risks. The objective is to pinpoint potential challenges and devise effective strategies to manage and mitigate these risks.

Furthermore, the SWOT analysis aims to assess the internal and external factors that can impact the project. By understanding our strengths, we can leverage them for project success. Recognizing our weaknesses will allow us to address and overcome them. Opportunities need to be identified and pursued for maximum benefit. Threats, once identified, can be proactively managed and minimized.

Both the Risk Management and SWOT analysis are dynamic processes, requiring constant updates and revisions as the project progresses and circumstances evolve.

The Project Management Committee (PMC) will be in charge of managing and controlling all the activities. This document should thus serve as a guiding framework, open to necessary changes and adaptations in response to the unfolding realities of the project.

1. RISK MANAGEMENT

The Risk Assessment for DDMATH project is based on Failure Mode and Effects Analysis (FMEA). Though this method was first developed for systems engineering, it has proven to be sufficiently powerful for risk analysis in all types of projects to examine potential failures in processes. It is used to evaluate risk management priorities for mitigating known threat-vulnerabilities.

FMEA helps select remedial actions that reduce cumulative impacts of life-cycle consequences (risks) from a systems or process failure (fault).

The analysis of the risks related to the project implementation includes several phases:

- Identification
- Analysis of the impact and the probability
- Contingency action or corrective actions (recovery plan)
- Implementation of the plan
- Follow up (track and control)

The initial analysis has led the PMC to consider three key areas of risks. For each of them specific threats has been defined.

1.1 Project Management Risks

- **Lack of Clarity in Roles and Responsibilities:** If the roles and responsibilities of the PMC are not clearly defined and understood by all members, this could lead to a lack of accountability and mismanagement of project tasks.
- **Ineffective Communication:** If the PMC fails to establish clear and effective communication channels, there could be misunderstandings, leading to delays, mistakes, or conflicts.

- **Poor Stakeholder Management:** If stakeholders' needs and expectations are not properly managed, it could result in lack of support and potentially derail the project.
- **Schedule Overruns:** There is a risk that the project might exceed the expected timeline due to unforeseen issues, poor estimation, or inefficient management.
- **Staff Turnover:** There is a risk of losing key team members during the project, which can cause delays and increase costs.
- **Compliance Risks:** There could be risks related to not complying with legal and regulatory requirements, such as data privacy laws and accessibility standards.

1.2 Implementation Risks

- **Insufficient Understanding of User Needs**: If the digital solutions are not designed with a thorough understanding of the needs of blind students and educators, the solutions may not be effective.
- **Technological Limitations:** There could be difficulties in integrating the new digital solutions with existing technologies used by the schools, or the solutions might not be accessible to all blind students due to varying degrees of visual impairment.
- **Inadequate Training:** If educators and students are not adequately trained to use the new digital solutions, the project may fail to achieve its intended results.

1.3 Financial Risks

- **Budget Overruns:** Unforeseen costs might arise during the project, causing the budget to exceed its limit. This could occur due to inaccurate cost estimation, unexpected problems, or changes in project requirements.

2. CLASSIFICATION OF RISKS

This procedure has the objective to classify the risk in order to establish the actions to be carried out:

- **Probability**
  Low: unlikely to occur (Value: 1)

  Medium: Quite possible. (Value: 2)

  High: more likely to happen than not. (Value: 3)
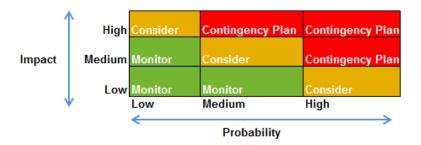
- **Impact**
  Output-Specific: risk relating to a specific output (Value: 1)

Project level: risk, which is generated at project level and implicates different outcomes of the project (but not the relationship between deliverables) (Value: 2)

Cross-Outputs: risk raised within a specific output that may affect the project success or require actions to be taken in another output (Value: 3)

The risks are labeled according to the following matrix:

The detected risks are labeled (green-orange-red) and then grouped into three groups:

- **Red label:** the risks that are considered to be the most serious and therefore require the closest monitoring with a medium-high probability of occurrence and medium –high impact in the project progress.
- **Orange label:** those which high impact on the project and a medium and high probability of occurrence. These kinds of risks must be considered and evaluated in order to decide how to react.
- **Green label:** risks with the lowest priority. They have a medium – low impact on the project and low-medium probability of occurrence. No measures should be taken but they must be monitored.

DDMATH identified risks are presented by level of risk in the next section.

The table shows the risk identified the level of risk (green, orange, red) and the partner responsible of monitor and contingency plan. During the project the partners will keep monitored these potential risks and in case new menaces will be identified the partners will label them according to the FMEA matrix.

DDMATH Low Risks Level

RISKS TO BE MONITORED		
ID	**Risk**	**Risk level**
R1.	Management - Ineffective Communication (probability 1 - impact 2)	
R2.	Management – Staff turnover (probability 1 - impact 1)	
R3.	Implementation – Compliance risks (probability 1 - impact 1)	
R4.	Implementation - Insufficient Understanding of User Needs (probability 1 – impact 2)	
R5.	Financial - Budget overruns (probability 1 – impact 1)	

DDMATH Medium Risks Level

RISKS TO BE CONSIDERED		
ID	**Risk**	**Risk level**
R6.	Management - Lack of Clarity in Roles and Responsibilities: (probability 1 – impact 3)	
R7.	Management - Poor Stakeholder Management: (probability 1 - impact 3)	
R8.	Management - Schedule Overruns (probability 1 - impact 3)	

DDMATH High Risks level

RISKS THAT REQUIRE A CONTINGENCY PLAN		
ID	**Risk**	**Risk level**
R9.	Implementation - Technological Limitations (probability 2 - impact 3)	
R10.	Implementation - Inadequate training (probability 2 - impact 3)	

3. RISK MITIGATION STRATEGIES

The top risk items will be monitored and tracked and reported regularly from the beginning of the project. To facilitate the monitoring process, the coordinator and the Output leaders will communicate promptly to the PMC all the potential menaces and problems.

3.1 Project Management Mitigation Strategies

The PMC can mitigate these risks through clear communication, defining roles and responsibilities, effective stakeholder management, and proactive scheduling. Regular team meetings and access to expert advice can help manage staff turnover and lack of expertise risks. Compliance risks can be addressed by ensuring all actions are in line with applicable laws and regulations.

3.2 Project Implementation Mitigation Strategies

A thorough understanding of user needs should be developed through extensive research and consultation.

Adequate training should be provided to educators and students.

3.3 Financial Risks Mitigation Strategies

Financial risks can be mitigated by careful budgeting, regular financial monitoring, and seeking additional funding if necessary.

3.4 Delay Risks Mitigation Strategies

During the document management process and, especially, during the review process problems related to delays in the document production or rejections of the document due to lack of quality or any other reasons may occur. The table below establish the action plan for that kind of issues:

Problem	Action Plan
Delays	**Communication:** any possible delay must be made known well in advance. As a general rule, a delay of N days must be made known **at least 2xN days before** the due date. For example, a delay of 7 days (1 week) should be communicated 14 days in advance.
	Recovery actions: must be defined and agreed between the deliverable editor and the Output leader in order to reduce the impact of the delay as much as possible. The Output leader communicates the Project Coordinator and the PMC about the decision.
Rejections	The output editor and the project coordinator will agree on a **recovery plan**
	If the project coordinator deems the problem as serious it should be brought before the **all the partners attentions** in order to explain the problem and take the necessary actions
	The Project Coordinator will **inform output responsible** about the problem and the corrective measures

In case of deviations, delays, non-conformities, issues or other problems that may be identified by the quality control process or which may arise during the project lifecycle, corrective actions should be planned to ensure the proper compliance of the quality standards. These corrective actions may include changes to the action plan, the quality assurance framework, methodologies, standards or guidelines (preventive action).

4 SWOT ANALYSIS

SWOT Analysis is a strategic planning tool that helps to understand the internal and external factors affecting a project's successful implementation. , an organization, or any other situation that requires strategic planning. By providing a clear understanding of the project's internal strengths and weaknesses as well as external opportunities and threats, it allows teams to strategize more effectively, make better decisions, and ultimately achieve their objectives.

The PMC has develop a SWOT analysis in order to support the risk management, facilitate the strategic planning, further identify the potential opportunities of the project and proceed with an informed decision making.

Strengths	Weaknesses
Experienced Management: Project Management Committee (PMC) has previous experience in handling similar projects	**Readiness of the schools/educators:** some schools are not ready for digital and distant learning processes for blind students.
Experienced Partnership: All the partners have a vast experience in the areas of digital learning solutions, maths education, or understanding the needs of blind students	**Dependency on Funding:** can be a weakness if the project proposed solutions depends too much on European funding for its sustainability.
International Collaboration: the collaboration and exchange of ideas from different countries and cultures will lead to innovative solutions.	**Potential Communication Barriers:** Being an international project, there might be language and cultural barriers affecting communication and cooperation.
Focused Objective: The project has a clear and specific objective – to develop	

digital solutions for teaching maths to blind students - which helps streamline the process and set clear goals.

Opportunities	Threats
Technological Advancements: The project can take advantage of the latest advancements in digital learning technologies to develop effective solutions. **Increasing Awareness:** With the increasing global awareness about inclusivity and accessibility in education, there's a growing market for such solutions. **Potential for Scalability**: The project has the potential to be expanded to other subject areas and to help other groups of students with special needs.	**Regulatory Compliance:** Meeting various international regulations regarding data privacy and accessibility can be challenging. **Technological Limitations:** There might be limitations in existing technology infrastructure in schools, affecting the implementation of the digital solutions. **Unexpected Pandemic-related Challenges**: Given the current global situation, there may be unforeseen challenges related to the pandemic, such as disruptions in collaboration, communication, or implementation.