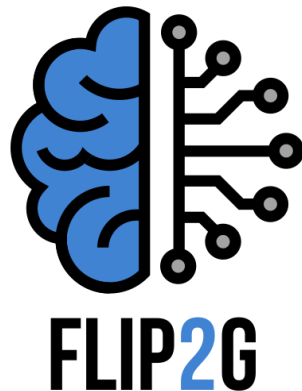




Deliverable 7.1

Quality Assurance Plan

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Abstract:	This document includes the methodology to be followed for assuring quality and managing risk in FLIP2G. In specific, it describes the methodology for performing SWOT analyses, risk analysis and monitoring and deliverables' peer reviews, and it documents the initial SWOT analysis and risk analysis performed by partners.
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Keyword List:	Risk, quality, SWOT, plan, monitoring
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Consortium

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List of Abbreviations

The following table presents the acronyms used in the deliverable in alphabetical order.

<i>Abbreviation</i>	<i>Description</i>
CA	Consortium Agreement
EACEA	Education, Audiovisual and Culture Executive Agency
IPR	Intelligence Property Rights
SWOT	Strengths Weaknesses Opportunities Threats
WP	Work Package

Executive Summary

The Flip2G project aims to establish a Knowledge Alliance between higher education institutions, schools and private companies that will boost skills development and introduce novel, data-driven approaches to education and training.

WP7 is the Quality Assurance work package for FLIP2G. Its main aim is to provide quality monitoring mechanisms that will guarantee the results' superiority as well as the timely progress of the project. A quality assurance strategy and a corresponding plan will specify the procedures and criteria for the overall quality assurance of the project results and will provide co-ordination of the testing and quality checks that will be undertaken in the course of the work of the other WPs.

The present deliverable is the first deliverable of WP7, D7.1 – Quality Assurance Plan. Its purpose is to specify and schedule the actions to be executed within the project's duration for the overall quality assurance of its outcomes.

More specifically, this deliverable focuses on the following aspects and analyses:

- The initial SWOT analysis for the FLIP2G project as well as the methodology for conducting it within the project.
- The initial risk analysis for the FLIP2G project as well as the methodology for conducting it within the project.
- The delineation of the peer reviewers for each technical deliverable the FLIP2G project as well as the process to be followed for conducting peer reviews within the project.

The initial SWOT analysis revealed that the project is good positioned in management and operational aspects. The size and composition of the consortium, the decision-making processes as well as the collaboration and communication among partners, the existence of a clear work-plan and their scientific and technical capacity are considered strengths of the project. Contrary to these, the least strong items are the unclear areas that need clarifications around financial issues as well as the methods for measuring project's success. Partners also identified a set of opportunities and threats. The most important opportunities relate with FLIP2G's potential to create innovative pedagogy on applying PBL with flipped classroom model in serious games, the novel combination of flipped classroom in serious games and learning analytics as well as the increase in motivation for self-directed learning and engagement with from an early age . The most important threats relate to the little experience with training with games in secondary education and the potential lack of innovative outputs from trainings.

The initial risk analysis identified 28 risks for the project. The most important risks relate to difficulty to identify functionalities of serious games that should be included within a PBL flipped course, difficulty to identify all elements of the PBL model and the flipped classroom model that should be incorporated within a gaming environment, difficulty to create the gaming environment and difficulty in creating courses and incorporating content within the game for all audiences to apply to trials. The consortium has set up and reports plans for risks' mitigation and will be closely monitoring risks on a monthly basis in order to make sure than even if they occur this will be with minimum

effect to the project. Finally, the peer-review process and the allocation of the peer reviewers to each technical deliverable are described in detail.

1 Introduction

1.1 Scope

This deliverable presents the procedures to be followed by the FLIP2G consortium in order to assure high quality of results and effective risk monitoring and mitigation.

1.2 Audience

The intended audience for this document is the FLIP2G consortium and the European Commission.

1.3 Structure

The structure of the document is as follows:

- Section 2 presents the methodology for applying SWOT in FLIP2G as well as an initial SWOT analysis.
- Section 3 presents the methodology risk monitoring in FLIP2G and as well as an initial risk analysis.
- Section 4 details the peer review process.
- Section 5 concludes the document.

2 SWOT Analysis

The SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis is adopted as a suitable method for performing project self-evaluation. In this section, we briefly present SWOT analysis, define the methodology for applying SWOT in FLIP2G and present the results of the initial SWOT analysis conducted by the consortium partners.

2.1 Defining SWOT

The SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis refers to commonly-used planning tool for analysing and evaluating the status of an organisation or a project, by identifying and isolating key issues that affect performance to facilitate the formation of effective strategies. The SWOT analysis approach addresses this issue from a two-fold perspective: from an external appraisal (external analysis of threats and opportunities in an environment) and from an internal appraisal (internal analysis of strengths and weaknesses in an organisation or project). Figure 1 illustrates the rationale of SWOT by categorising its components to internal and external as well as positive and negative.

	<i>POSITIVE</i>	<i>NEGATIVE</i>
<i>INTERNAL</i>	Strengths	Weaknesses
<i>EXTERNAL</i>	Opportunities	Threats

Figure 1. SWOT analysis concept

With regard to the selection criteria for using SWOT as an evaluation method, apart from its simplicity and effectiveness, it is stressed that in general, an effective strategy is one that takes advantage of the opportunities, avoids the threats (or turns them into opportunities), builds on the strengths and minimizes the weaknesses (or takes action to eliminate them). The dynamic and unrestricted nature of the external environment can seriously hamper the process of detailed strategic planning, whilst internal factors are, or at least should be, more easily manageable. An effective strategy should be adaptive to the circumstances, taking into consideration the changes of internal and external factors that may influence the achievement of the objectives.

2.2 Applying SWOT in FLIP2G

There will be an initial and interim SWOT analysis for FLIP2G conducted respectively at the beginning (M2) and the middle of the project (M18). The initial SWOT analysis is documented in the present deliverable in the next section. The interim SWOT analysis will be documented in deliverable D7.2 – Interim Quality Assurance Report in M18. The aim of the two SWOT analyses is to validate and evaluate important parameters of the adopted work plan and to investigate means for maximizing the potential of the strengths and opportunities, while minimizing the impact of the weaknesses and threats.

A different approach will be adopted for performing the internal and external analysis. Both approaches are specified in detail in the next subsections.

2.2.1 Internal analysis

From an internal viewpoint the SWOT analysis focuses on the study of strengths and weaknesses in an organisation or project.

In order to identify project's **strengths** and **weaknesses** we first identify a list of relevant items as regards managerial and technical aspects of the project, as in Table 1. Then, each partner rates each item for the current project status. Each item is rated according to a 5-point scale for the calculation of the average rate:

1. Not satisfactory,
2. Some problems,
3. Medium,
4. Good,
5. Excellent

Apart from rating, each partner may also provide a comment on the rate or a suggestion for improvement. Based on partner input, the mean value of the rating for each item is calculated. Thus, each item may be categorised as:

- **Strength** - if its mean value is greater than or equal to 4.00;
- **Weakness** - if its mean value is less than 3.00;

All other items, with average values that fall between 3.00 and 4.00 are characterised as Neutral items.

Table 1. Internal SWOT analysis, Strengths / Weaknesses template

No.	Item	Rating	Comment / Suggestion
1	Size of consortium		
2	Composition of consortium		
	...		

2.2.2 External analysis

From an external viewpoint the SWOT analysis focuses on the analysis of threats and opportunities in the project's environment.

In order to identify project's **opportunities** and **threats** each partner in the consortium completes Table 2 and Table 3 with respect to opportunities or threats identified and relevant suggestions on how to exploit the opportunities and overcome the threats.

Opportunities: any external circumstance or trend that favours the achievement of the objectives (e.g. new technologies that improve the project results or development of new markets). Useful opportunities can come from such things as:

- Changes in technology and markets on both a broad and narrow scale
- Changes in government policy related to our field of research
- Changes in social patterns, population profiles, etc.

A useful approach for seeking opportunities is to look at the strengths of the project to check whether these open up any opportunities. Alternatively, by looking at the weaknesses of the project, new opportunities could open up in order to eliminate weaknesses.

Threats: any external circumstance or trend that will influence unfavourably the progress towards the achievement of the defined goals (e.g. an unfavourable situation in the market, the establishment of strong competitors, unfavourable governmental regulations or technological advancement).

- Key questions to be asked in order to identify threats include:
- What obstacles do we face?
- Could any of our weaknesses seriously threaten our project?
- What is our competition doing that we should be worried about?
- Might the technology become obsolete?

Carrying out this analysis may be illuminating – both in terms of pointing out what needs to be done, and in putting problems into perspective.

Table 2. External SWOT analysis, Opportunities template

No.	Opportunity	Suggestion
1	E.g. developing markets, creation of new market segments etc.	
2		
...		

Table 3. External SWOT analysis, Threats template

No.	Threat	Suggestion
1	E.g. technical problems, lack of interest etc.	
2		
...		

2.3 Initial SWOT analysis

This section presents the results of the initial SWOT analysis as identified.

2.3.1 Internal analysis results

As previously mentioned, internal analysis focuses on studying the strengths and weaknesses of the FLIP2G project. The results of the internal SWOT analysis are depicted in Table 4 and are structured as follows:

- The first two columns denote the number and description of the item, i.e. the items to be rated as strengths or weaknesses,
- The third and fourth column denote the average rate allocated by the consortium partners, as well as the characterisation assigned – either S for Strength or W for Weakness,
- The fourth column includes provided comments or suggestions.

Table 4. Initial internal SWOT analysis for FLIP2G, Strengths / Weaknesses

No.	Item	Rating		Comment / Suggestion
1	Size of consortium	4,5	S	Size is appropriate for the project's objectives.
2	Composition of consortium	4,0	S	Good coverage and mix between partners representing different sectors, with however a limited representation of the private and public sectors. Important to involve the organisations that signed letters of consent.
3	Collaboration between participating partners	4,2	S	Good kick off meeting and alignment of aims across Consortium.
4	Communication between participating partners	3,8	S	Early stages of project, initially good, will need to be revisited as more work packages run in parallel to ensure communication is effective.
5	Consortium meetings	3,5	N	Limited scope for Consortium meetings throughout the project.
6	Exchange of information - level of transparency between related WPs and involved partners	3,5	N	Initially good, no problems foreseen.
7	Technological innovativeness	3,8	S	Process for research in place, strong technical partners.
8	Scientific/technical capacity of partners for the specific project	4,0	S	Experienced partners in their respective areas.
9	Sufficiency of resources (budget, time)	2,8	W	Unclear areas that need further clarifications especially with regards to

				travel and events.
10	Existence of clear objectives and measurable results	3,8	S	The discussions carried out during the kick off meeting clarified the project objectives and organized the work to be done.
11	Existence of clear work plan to achieve project's objectives	4,0	S	Initially good. Clearer work plan needed for further work packages to ensure this continues.
12	Existence of clear methods to measure project's success	3,0	N	In progress. The combination of PBL, flipped classroom, learning analytics and games is novel and calls for new research design.
13	Sufficiency of risk management methods	3,0	N	In progress.
14	The availability of useable results for dissemination in several countries.	4	S	In progress.

2.3.2 External analysis results

As previously mentioned, external analysis focuses on studying the opportunities and threats of the FLIP2G project. The results of the external SWOT analysis are depicted in xx and xx respectively.

Table 5. Initial external SWOT analysis for FLIP2G, Opportunities

No.	Opportunity	Suggestion
1	Potential to create innovative pedagogy on applying PBL with flipped classroom model in serious games	Apply learning design and test in higher and secondary education.
2	Novel combination of flipped classroom in serious games and learning analytics	Explore a novel research area.
3	Size and reach of Consortium	Utilise European reach of consortium to strengthen dissemination of outputs from project
4	Changes in available technologies	Ongoing monitoring of technological progress of learning platforms and functionalities
5	Increase motivation for self-directed learning and engagement with from an early age	Execute pilots in secondary education courses

Table 6. Initial external SWOT analysis for FLIP2G, Threats

No.	Threat	Suggestion
1	Little experience with training with games in secondary education	Difficult to attract the interest of secondary education students. Creation of an attractive and engaging gaming environment with

		interesting scenarios.
2	Lack of uptake of project outputs	Research and user testing phases in initial year of project essential. Need to strengthen established network to maintain relationships throughout the three years. Build upon network through utilising events and other dissemination activities attended or planned through the consortium or the project.
3	Project outputs become out dated over the course of the project due to change in user requirements	Thorough testing of skills/needs by all partners.
4	Lack of innovative outputs from trainings	Definition of associated KPI required. Structure of trainings tested and designed to ensure outputs.

3 Risk Management

This section illustrates the overall process for the risk management of the FLIP2G project. On the one hand, it provides a maintained overview of all individual activities and on the other hand, it determines the different procedures available to prevent risks from happening and for dealing with risks should they occur. Our risk management plan involves continually:

- **Measuring risk:** identifying what the risk factors are
- **Assessing risk:** estimating what is the probability and impact of these risk factors.
- **Monitoring risk:** analysing what is the current status of a particular risk
- **Managing risk:** preventing or handling risks.

In this section, we define the methodology for managing risk in FLIP2G and present the results of the initial risk analysis conducted by the consortium partners.

3.1 Analysing Risk in FLIP2G

Typically, three characteristics are used for the assessment of a risk:

- **probability** of occurrence of the risk (Pr),
- **impact** or effect of the potential damage (Im), and
- **risk factor** or overall risk estimation (RF).

The risk factor or overall risk estimation is calculated based on the probability of occurrence and the impact of the damage, usually by multiplying these two characteristics. Hence, we assume that:

$$RF = Pr * Im$$

Measuring the probability of occurrence and the impact of the damage in a integer scale from 1 to 10, where value 1 represents a low probability (or low impact) and value 10 represents a high probability (or high impact), the risk factor is assigned a value between 1 and 100. We can depict this relationship with the risk matrix in Figure 2. This matrix may be used for easily calculating the risk given the probability and impact of a risk.

Furthermore, this risk matrix is a useful tool for visually depicting the different risk levels in the project. In specific, we define as:

- **Low risk:** any risk with $RF < 10$ (white zone of the risk matrix),
- **Medium risk:** any risk with $10 \leq RF < 40$ (gray zone of the risk matrix),
- **High risk:** any risk with $40 \leq RF < 70$ (light blue zone of the risk matrix),
- **Very high risk:** any risk with $RF \geq 70$ (blue zone of the risk matrix).

10	10	20	30	40	50	60	70	80	90	100
9	9	18	27	36	45	54	63	72	81	90
8	8	16	24	32	40	48	56	64	72	80
7	7	14	21	28	35	42	49	56	63	70
6	6	12	18	24	30	36	42	48	54	60
5	5	10	15	20	25	30	35	40	45	50
4	4	8	12	16	20	24	28	32	36	40
3	3	6	9	12	15	18	21	24	27	30
2	2	4	6	8	10	12	14	16	18	20
1	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10

Figure 2. Risk calculation matrix

Table 7 shows the risk registry, a template table for recording and managing risks in FLIP2G. Each of the columns can be defined as follows:

- **No.** This is the number of the risk. Numbers have the format of X.Y. X denotes the WP number (either 1-6 for WPs 1-6, or 0 for risks applying to the overall project), and Y is an incremental number for the specific WP (or the overall project is X=0).
- **Risk.** This is the description of the risk.
- **Effect.** This is the effect(s) if the risk actually occurs.
- **Pr.** This is an integer value between 1 and 10 denoting the probability of the risk occurring.
- **Im.** This is a numerical value between 1 and 10 denoting the impact of the risk of it finally occurs.
- **RF.** This is the total risk estimation and it is determined by using the risk matrix in Figure 2.
- **Mitigation measures (to reduce probability and/or impact).** The actions to be taken for reducing either the probability of the risk occurring or the impact of it are described here.
- **Pr*.** This is an estimation of the probability of this risk after the proactive measures described previously have been taken.
- **Im*.** This is an estimation of the impact of this risk (if it occurs) after the proactive measures described previously have been taken.
- **RF*.** This is the total risk estimation after the proactive measures described previously have been taken.
- **Contingency measures.** This is the description of the actions to be taken if the risk actually occurs.

The risk analysis is conducted by all project partners for each work package and for the overall project. WP leaders, in specific, are responsible for preparing and monitoring the risk analysis for their work package.

There will be an initial and interim risk reporting for FLIP2G, conducted respectively at the beginning (M2) and the middle of the project (M18). The initial risk analysis is documented in the present deliverable in the next section. The interim risk analysis will be documented in deliverable D7.2 – Interim Quality Assurance Report in M18.

Nonetheless, WP leaders are responsible for **continuously monitoring the risks** relevant to their work package throughout the project life. For this reason, the risk registry of the initial risk analysis will be made available online in the project's Google Drive where all partners have access. WP leaders will be responsible to update the risk registry as soon as any change regarding risks takes place, and review it **at minimum once per month**.

Table 7. Risk registry template

No.	Risk	Effect	Pr	Im	RF	Mitigation Measures	Pr*	Im*	RF*	Contingency Measures
General Project Risks										
0.1										
0.2										
WP1 Risks										
WP2 Risks										
WP3 Risks										
WP4 Risks										
WP5 Risks										
WP6 Risks										

No.	Risk	Effect	Pr	Im	RF	Mitigation Measures	Pr*	Im*	RF*	Contingency Measures
WP8 Risks										

3.1 Initial Risk analysis

In the initial risk analysis, the consortium has identified 28 risks for the overall project. These are analysed in the risk registry in Table 8.

The most important risks identified are:

- Difficulty to identify functionalities of serious games that should be included within a PBL flipped course
- Difficulty to identify all elements of the PBL model and the flipped classroom model that should be incorporated within a gaming environment
- Difficulty to create the gaming environment
- Difficulty in creating courses and incorporating content within the game for all audiences to apply to trials

Table 8 FLIP2G Initial Risk Analysis

No.	Risk	Effect	Pr	Im	RF	Mitigation Measures	Pr*	Im*	RF*	Contingency Measures
General Project Risks										
0.1	Lack of effective performance of the consortium	Project results of poorer quality	7	9	63	The consortium has been carefully selected according to their particular abilities and liability for effectively accomplishing successful research technology development. Performance will be constantly monitored by both the Project Coordinator and the WP leaders.	5	9	45	The coordinator will be responsible for finding out the source of the problem and come up with a solution such as allocate or recruit new, more skilful staff or, in more extreme cases, replace the problematic partner with a different one.
0.2	Retreat of a partner from the consortium	Potential deviation in work plan	5	8	40	The Project Coordinator will constantly monitor the level of partners' commitment to FLIP2G. The specific mitigation measurements will be established in the Consortium Agreement.	3	8	24	Either distribution of the withdrawer's assigned work among the rest of the RTD partners or its replacement by a new partner with similar expertise.
0.3	Personnel alterations	Potential effect on the work plan and partners' communication	7	3	21	Partners will reduce probability by trying to keep the same employees assigned to the same roles in the project and build robust working processes. Partner organisations will employ more than one person in this project and will ensure a smooth process for responsibilities' re-	6	3	18	All partners will try to communicate knowledge of the project to the new team members in order to familiarise them with the project work and integrate them smoothly in the project team. The online

						allocation in order to ensure continuation as much as possible.				documentation in the website private area will also contribute to this.
WP1 Risks										
1.1	Difficulty to gather high quality results from the literature review on serious games	Low quality of requirements can lead to non-appropriate results.	7	8	56	The FLIP2G consortium will collaborate on generating homogenous and high quality feedback on serious games	5	8	40	WP leader will explore and engage additional resources to gather input.
1.2	Difficulty to identify functionalities of serious games that should be included within a PBL flipped course	Inappropriate gaming environment design for a flipped classroom model	5	7	35	The FLIP2G consortium and the WP leader in particular, will carry out thorough research on the field and the Knowledge Alliance will decide the more appropriate and relevant functionalities to incorporate within PBL-based flipped courses	6	2	12	WP leader will explore and engage additional resources to gather input.
WP2 Risks										
2.1	Difficulty to identify all elements of the PBL model that should be incorporated within a gaming environment	Low quality FLIP2G flipped classroom model	5	7	35	The FLIP2G consortium includes AAU, which is a pioneer in PBL, and can provide valuable knowledge on the PBL model.	3	7	21	WP leader will explore and engage additional resources to gather input.
2.2	Difficulty to identify all elements of the flipped classroom model that should be incorporated within a gaming environment	Low quality FLIP2G flipped classroom model	5	7	35	Partners such as AAU, Mandoulides, Northumbria and Revheim have experience in flipped courses and can provide insights and expertise.	3	7	21	WP leader will explore and engage additional resources to gather input.
2.3	Difficulty to understand the FLIP2G model	Potentially limits the impact of the FLIP2G model.	6	6	36	Ongoing brainstorming sessions along with thorough research of the current State of the Art will ensure the design of a high quality data-driven learning model.	5	5	25	AAU will describe and communicate the FLIP2G model and continuously discuss how it can be implemented
WP3 Risks										
3.1	Difficulty to create course		2	7	14	Discussions and brainstorming	1	8	8	This is a very low risk and

	designs					sessions will facilitate the documentation of the different needs for different sectors (e.g. university, secondary education) and design the courses accordingly				ongoing monitoring by co-ordinator should ensure that this will not happen.
3.2	Difficulty to create the gaming environment	No environment will be available for the project	4	9	36	The FLIP2G partner Nurogames has extensive experience in gaming development and is responsible for the task.	5	8	40	This is considered a very low risk.
3.3	Difficulty to include PBL and LA modules within the gaming environment	Difficulty to apply the FLIP2G model in the game software with no corresponding modules	7	7	49	The FLIP2G consortium includes experts in gaming and LA technologies (Nurogames, Artelnicis) that will ensure the high quality configuration and development of the technologies required.	5	7	42	Depends on the modules that are found but could be mitigated with testing some few modules at a time.
3.4	Delay in the actual delivery of the game	Game gets launched too late	4	5	20	The Project timescale is very well created and balanced in such a way to allow enough time for the required development	2	5	10	Constant checking on milestones can be performed by the co-ordinator.
WP4 Risks										
4.1	Trial deployment based on successful completion of Task 3.2	Potential delay of outputs from Task 3.2 will delay start of WP4	2	4	8	Nurogames lead Task 3.2 and will collaborate strongly with Artelnicis who will lead WP4. This will ensure the completion of work to deadlines in order to begin WP4	1	4	4	Nurogames will continually update Consortium partners on progress to ensure planned trials are not affected.
4.2	Difficulty in creating courses and incorporating content within the game for all audiences to apply to trials	Potentially limits the relevance of the trials to participants	3	6	18	Ensure user testing of courses and content is applied and features of the game meet the needs established through WP1 and WP2.	1	6	6	Artelncis with Nurogames, AAU and UOM will oversee the WP4 tasks.
4.3	Students do not participate in the trials	Potentially limited use and user testing	7	8	56	Each trial partner will make sure to gather members of their target groups in order to participate in the trials.	4	8	32	Aside from expressions of interest gathered already, all partners will continue

		regarding suitability of trials								to maintain relationships with potential participants and establish interest from additional parties as the project progresses
4.4	Limited number of innovative results (e.g. learning analytics visualizations in the game, game scenarios etc.) are generated during the trials	Potentially limits the impact of the project to the audiences	6	6	36	The FLIP2G Consortium will define the scope of an innovative output in the bounds of the project. Creative ways will be sought in order to produce innovative outcomes from the trials. Trials will be designed with outputs in mind. All partners coordinating or delivering trials will be involved in the design process to ensure suitability for audience, length of trial etc.	4	6	24	Ongoing monitoring required throughout trials to optimise outputs, transferring outputs that are not fully developed to other trials for potential completion.
4.5	Limited number of trials	Potentially limits the testing of developed results and suitability of trails for evaluation.	4	7	28	Partners will endeavour to organize as many trials as possible.	2	6	12	Establish how to utilise gathered results from trials run. Request consortium partners inform WP lead of other training opportunities to complete required number of trials to enable in depth evaluation.
WP5 Risks										
5.1	Difficulty to evaluate the validity of the results	Difficulty to draw homogenous conclusions and assess the added value of each result.	3	8	18	The FLIP2G consortium will consult the already set success indications on the project results when performing evaluations, along with a robust evaluation methodology that will be planned.	1	8	8	Partners will utilize existing evaluation models and frameworks that will guide the evaluation process.
5.2	Difficulty to interpret the Learning Analytics results	Problems providing insights to educators and	2	6	15	Arelnics and UOM have extensive expertise on Learning Analytics. All	1	8	8	Further study on the exploitation of learning

	from the trials	learners through learning analytics				partners will closely examine the analytics results and produce insights for successful evaluation.				analytics will be carried out.
WP6 Risks										
6.1	Conflict arises over potential IPR issues for future exploitation	Created knowledge during project cannot be utilized and/or existing tools cannot be employed.	5	8	40	IPR management will be covered in the Consortium Agreement before the start of the project. IPR for all newly created knowledge will be shared by the Consortium. The tools will be created using open source software where possible.	4	8	32	Issues connected with IPR will be solved by discussions within the consortium and will be addressed in the updated exploitation plans.
6.2	Difficulty to reach the indicated numbers of activities and events for results' dissemination	Problems in promoting the project's results.	4	8	32	All partners will engage in dissemination activities and will utilize their networks and communication channels for sufficient dissemination activities.	2	8	16	All partners will organize themselves activities and events for the dissemination of the results and reach to stakeholders for participation.
6.3	Solution fails to find new adopters before the project end	The project results fail to have an impact on educational practice.	7	7	49	Exploitation activities will begin from Month 1 of the project. All partners will be involved in the promotion of FLIP2G and its results as well as coming up with an appropriate business plan to ensure sustainability. All partners have experience in spinning off successful products from EU projects which helps to minimise risk.	6	7	42	Failure to find new adopters will be identified and dealt with before the end of the project. Moreover, further dissemination activities may be planned.
6.4	Outdated website	Reflect poorly on the project as a whole or discourage potential interest in the project from external sources	5	8	40	Channels of communication will be established between all project partners, to ensure that any new information can be uploaded to the website the soonest possible. If the	6	8	48	Other dissemination channels will be also employed in order to overcome problems with the website.

						project partners do not volunteer news updates, the website developer is responsible for retrieving updates periodically.				
WP8 Risks										
8.1	Partners fail to meet key delivery milestones leading to the project falling behind schedule	Deviation in work plan and possibly in results' quality.	6	8	48	Use of project management principles, regular calls, meetings and a shared document repository, will help the experienced AAU Project Managers coordinate the project. A small consortium facilitates closer relationships between the partners. Risk monitoring will ensure any potential issues/risks are identified and corrected asap.	5	7	35	The consortium will decide appropriate corrective actions, e.g. release of draft versions of the late outputs in order for the next tasks to be able to progress although the final output was not yet delivered.
8.2	Partners unsure of vision for the project	Potential work plan deviations.	8	8	64	The first meeting for FLIP2G contained an interactive vision workshop to ensure all partners help shape the overall vision and are on the same page. All work for the project must constitute a step in achieving the vision. The resulting vision statement will be reviewed every 6 months.	2	8	16	The consortium plans to consider replacing the project coordinator with a new, more skilled person..
8.3	Inadequate partners' coordination	Potential deviation in work plan and objectives' accomplishment.	7	7	49	Project management will be responsible for efficiently managing the consortium and ensuring that each partner will be acting according to his assigned responsibilities and roles.	5	6	30	If conflicts over financial issues do occur, the consortium plans to confront them by organizing a meeting for partners to negotiate having the coordinator as a leader. Standard voting procedures will be followed according to the

										provisions of the CA. In case, however, of extreme financial issues, the consortium will follow the appropriate, European legal procedure.
8.4	Conflicts over financial issues	Potential deviation in work plan and results' quality.	7	7	49	FLIP2G consortium, having the coordinator as a leader, will be responsible for assessing and examining costs, spending, and excess issues on budget for ensuring the appropriate distributing of the project's budget.	5	7	35	In case of serious problems in the communication of the partners, the coordinator will be responsible for organising a meeting to find out and confront the communication problems. Standard voting procedures will also be followed according to the provisions of the CA.
8.5	Failure in partners' communication	Project's accountability and financing is endangered.	3	8	24	In order to ensure succesful communication channels between partners, FLIP2G plans to organise teleconferences as well as plenary meetings at short uniform intervals.	2	8	16	Coordinator will draw the attention of all partners to the importance of these reports for the overall project and will request immediate actions for all organisations (including the coordinator's organisation), such as dedication of more personnel etc., in order to complete this task.

4 Peer Review of Deliverables

The FLIP2G consortium is committed to delivering results of outmost quality. For this reason the consortium decided to adopt a peer review process for all technical deliverables of the project.

4.1 Peer review process

The following peer review process will be followed within FLIP2G:

1. The deliverable lead partner (usually the WP Leader or Task Leader) is also responsible for coordinating the peer review process and ensuring that it is completed in a timely fashion. The deliverable lead partner will provide the pre-final version of the deliverable as well as all other needed documentation and assistance to the assigned reviewer.
2. The reviewer will then perform a full review of the deliverable validating it according to technical/scientific value, relevance to objectives, structure of the deliverable, clarity of content, etc. The review results will be reported in an official form provided by the consortium.
3. The deliverable lead partner will address each of the reviewer comments in the deliverable and document relevant answers. Only after the reviewer comments are addressed the deliverable will be considered as final and will be submitted to the European Commission.

Some other considerations for the peer review process are as follows:

- *Planning of the peer review process.* The reviewer should have a few days to assess the provided material. In addition there should be enough time after the peer review in order to revise the deliverable according to the feedback and recommendations provided by the reviewer. It is within the responsibilities of the deliverable lead partner to ensure that the peer review process starts and finishes in time both for fully exploiting its outcome and without causing any delays to the actual submission of the deliverable.
- *Provision of the necessary material and support.* The deliverable lead partner is responsible for contacting the reviewer and providing all the necessary material for performing the review. This includes the deliverable to be reviewed along with all appendices and contributing material, the review report form, and, in the case of an external reviewer, the technical annex so that the matching between objectives and results of the deliverable may be assessed. Where relevant, other results of the project that are in relation to the content of the deliverable should also be provided to the reviewer. In overall, the reviewer should be assisted during her/his reviewing work by the deliverable lead partner in order to guarantee that s/he has all necessary material available and to make sure that the review will be done according to the specification herein.
- *Feedback to the project.* The assessment of the reviewer (review report) and the resulting modifications in the deliverable (in the form of replies for each recommendation/comment if it was tackled or not and in what way) have to be documented by the deliverable lead

partner and made available to the project coordinator. Of course, the deliverable has to be revised again to accommodate changes proposed by the reviewer.

- *Payment of the reviewer.* No payment has been foreseen in the budget for deliverables' review, so FLIP2G deliverables' reviewing is considered a voluntary, free-of-charge task.

4.2 Review report

For facilitating and formalising the review process a review report template has been prepared and is provided in Annex A of this document. This review report will be completed for each reviewed deliverable. It includes 3 sections: evaluation, recommendation and comments.

In the **evaluation** section, the reviewer is requested to evaluate the deliverable against the following criteria:

- **Technical/scientific value.** Are the results depicted in the respective deliverable worth mentioning of the scientific point of view? Is the regarded technical area covered sufficiently? Are the results relevant in comparison to other research activities in this area?
- **Structure.** Is the structure of the deliverable sensible and logical?
- **Clarity of content.** Are the results depicted in a way that other readers – who are not directly involved in this project but have a certain relation to the topic – can clearly understand the contents of the deliverable?
- **Relevance to objectives.** Are the deliverable results covering the objectives of the project and of the respective work package in particular?
- **Applicability of results (if relevant).** Are the results applicable in the domains of this project?

Then, the reviewer should summarise his/her **recommendation** regarding the overall deliverable choosing between three distinct options: whether the deliverable has sufficient quality as it is, whether it needs minor re-writing, or whether it needs major-rewriting. For the latter two options, the reviewer should justify the chosen option and provide guidelines relevant to the proposed re-writing.

Finally, in the **comments** section, the reviewer is requested to propose specific modifications for the deliverable and provide a rating for the importance of each of the proposed modifications.

4.3 Allocation of reviewers

All technical deliverables of FLIP2G will be peer reviewed, which essentially means that only management deliverables (deliverables of WP7 and WP8) will be excluded from the peer review process. The list of all deliverables subjected to peer review is available in Table 9. The table also includes the partner responsible for each review. For objectivity reasons, the review partner is always different than the leading partner. The reviewer may be employed by the review partner or not. However, the reviewer should preferably not have been involved in the deliverable creation.

The empty information on the Table for deliverables due after the first year of the project will be updated in the Interim Quality Assurance Report for the corresponding deliverables.

Table 9. Reviewers and deadlines for FLIP2G deliverables

Deliverable	Leader	Nature	Diss Lev	Reviewer	Indicative dates due		Submission to EC
					To Reviewer	Reviewed	
D1.1 Review on serious games for education and training	Nurogames	Report	PU	Mandoulies	10/3/2019	15/3/2019	31/3/2019
D2.1 Review of flipped classroom model	AAU	Report	PU	Northumbria	10/3/2019	15/3/2019	31/3/2019
D.6.1 Dissemination plan and material	AAU	Report	PU	UOM	10/4/2019	15/4/2019	30/4/2019
D1.2 Requirements for gaming environments in education and training	Nurogames	Report	PU	Artelnics	10/9/2019	15/9/2019	30/9/2019
D2.2 FLIP2G flipped classroom model	AAU	Report	PU	UOM	10/9/2019	15/9/2019	30/9/2019