

# External Evaluation Interim Report

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## ALIEN Project: Active Learning in Engineering Education

Program: Erasmus+

Action: Capacity Building for Higher Education

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## Executive Summary

The aim of the ALIEN (Active Learning in Engineering) project is to improve the quality of higher education by providing more motivating, stimulating and effective learning contexts that prepare students for their professional life by allowing them to actively develop the required competences. The underlying goal of the project, derived from its funding by the Erasmus+ Capacity Building for Higher Education programme, is to put in contact Engineering Faculties from different parts of the world to reinforce the sharing of expertise and experiences.

In the scope of the project the ALIEN consortium wants to design, implement and validate an Active Learning context based on PBL (Project/Problem) methodologies addressing real-life issues related to science, technology, engineering and math (STEM) concepts. The methodology will be supported by a Virtual Learning Environment integrating a set of digital tools that will allow teachers and students from Europe and Asia (and eventually other regions) to experiment, collaborate and communicate in an extended and multinational learning community that will also include other stakeholders like researchers.

External evaluation is part of the project's approach to Quality Assurance, defined and integrated in WP7. It complements the internal monitoring process and provides formative and summative results that contribute to the success of the project. This report focuses on the formative aspects and presents recommendations for the second half of the funding period. It is based on the analysis of products and results, documents and reports, communication between partners and interviews with key project members. A note of caution is due at this moment: as a result of several administrative issues deriving from public tender practices in Portugal, the formalization of

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the external evaluation contract took much longer than anticipated and, as a consequence, it was only possible to follow the final months of the first half of the funding period. Therefore, the following conclusions and suggestions result from the work done in that period.

The most striking factor in the first half of the project were the initial administrative difficulties in finalizing the contract with the funding agency, completing the agreements with the partners and proceeding with the initial fund transfer. These steps seemed to have started already late and were made more complex by the fact that most Asian partners were not familiar with EC procedures. We can fully understand the difficulties of these initial steps and we have to accept that inevitably this led to a delay in the development of the actual project tasks. Initially there was a 5-months delay in the beginning of the project (signing of the contract took three months, then signing agreements with partners and transferring/receiving funds took at least another two months) which has been partly recovered by the consortium. Nevertheless, there is still an estimated 3-month delay at this moment.

On the positive side, we can state that:

- The proposal made a clear identification of the target groups needs and, as a consequence, the expected objectives and results of the project are clear. The adopted development methodology is adequate to these objectives, results and target group;
- The tasks and results that have been completed so far are looking quite good and promising. There are no major issues that might prevent the same to happen in the second half of the funding period;

- After some initial difficulties, all of the partners are clearly committed to the project, communicating and sharing information. Their involvement is directly related to their expertise and background. A few problems with some partners have been successfully overcome by the coordinator. In particular, the level of dialogue between the Asian and European partners is quite good;
- The level of dissemination is good but could be improved and, above all, should be more balanced between partners. There have been some good dissemination activities carried out but this could still be reinforced.

As recommendations for the final half of the project we would like to propose:

- Give special attention to the next stages of implementation, considering the existing delay. Next there are key activities towards project success. A close link to the funding agency should be maintained. In particular, to assess the possibility of extending the project deadline in case the delay is not recovered in the next few months;
- Be focused to overcome pedagogical and technical challenges that will surely appear in the next tasks of WP3 and WP4;
- Increase the level and scope of dissemination activities and ensure that all the partners are involved. Coordinate with other networks and organizations to achieve the maximum impact possible in the sector;
- Carefully consider the sustainability of the project results after the funding is finished, based on the key outcomes of the project.

## External Evaluation Methodology Objectives

A comprehensive external evaluation methodology is part of a complete quality management plan that establishes procedures, criteria and resources for monitoring and evaluating (internally and externally) the progress of the project and its intermediate and final results in the light of the assumptions established in the original proposal and contract. As such the external evaluation has formative and summative objectives:

As a formative tool, it aims at providing insightful data and recommendations that contribute to the success of the project, providing an external and independent overview of activities, development and results. Therefore, it must proceed in parallel with the normal schedule of the activities of the project.

As a summative tool, it provides valuable data on the accomplishment of the projects' objectives and results.

### *Objectives and Questions*

The evaluation data and comments are addressed at the project stakeholders, including coordinator, partners and financing bodies. Therefore, it must contextualize the analysis and recommendations under the objectives, priorities and rules of the underlying program, in this case the Erasmus+ Capacity Building for Higher Education.

The major questions to be addressed are:

- Did the project correctly address the identified stakeholders' needs, including the primary target groups, the project partners and others?
- Does the project present an appropriate development path that leads to the proposed outcomes?
- Did the project create the conditions for an effective partnership?
- Did the project clearly define and present coordination, management and financing arrangements?
- Does the project include a thorough monitoring and evaluation system?
- Did the project accomplish the expected objectives and results?
- Did the project disseminate the results and had an impact with European and Asian dimension?
- Did the project create the conditions for an effective sustainability of results after the funding period?

To answer these questions, the external evaluation focus on the following aspects:

**Management of the project:** evaluate the way the project is managed, in terms of monitoring and control of activities. Assess if there are clear coordination and management procedures. Evaluate the project leadership.

**Consistency between work plan and activities undertaken** during the lifetime of the project: assess whether the activities are carried out in accordance with the proposed work plan. Evaluate the adequacy of the approach, methodology and work plan.

**Allocation of resources:** assess whether the allocation of resources for the project are in line with the activities of the project, and, in particular, if it corresponds to an effective implementation of the budget.

**Partnership:** assess whether there is clear evidence of a genuine partnership, with collaboration and involvement and adequate task and resource distribution.

**Goals, results and products:** assess whether the project results and products are in accordance with the aims and specifications stated in the original proposal. Assess whether the project had the expected impact on target groups and beneficiaries.

**Dissemination and exploitation:** assess the scope and effectiveness of the dissemination and valorization plans and its activities. Assess the sustainability that the project may have after completion of the financing.

These aspects are further characterized in the following criteria:

- Management of the Project:
  - Quality of management procedures and tools for the project
  - Quality and effectiveness of the leadership
  - Scope of the monitoring and evaluation procedures
  - Consistency between work plan and activities undertaken:
  - Effectiveness of activity implementation
  - Respect for the original work plan, adequate justification when it has not happened and measures adopted
  - Scope of the internal indicators for measurement of quality, impact and performance



- Allocation of Resources:
  - Effectiveness of the participation of the human resources (category, number, work days/month, etc.)
  - Effectiveness of the use of other resources (equipment, travel and accommodation, sub-contracts, other items, etc.).
  - Global assessment on the Return on Investment by the funding agency
- Partnership:
  - Effectiveness of the communication between partners
  - Development of positive attitudes and confidence between partners
  - Level of commitment to the project by each partner in the context of a consortium
  - Added value created by the European consortium
- Goals, results and products:
  - Quality and level of compliance with the proposed objectives and results
  - Degree of effective integration of activities / results of the project in the processes of the participating institutions
  - Degree of effective integration of activities / results of the project in the processes of other, external, institutions
  - Innovation in the approaches and results

- Dissemination and Exploitation:
  - Effective impact in the target audience
  - Support and communication with other projects and organizations in the same area
  - Support and communication with funding agencies and entities
  - Quality of the process of dissemination
  - Quality of promotion of the European dimension and the project's contribution to the implementation of EC policies
  - Quality of the actions taken to ensure sustainability of the results

## External Evaluation Methodology

The methodological framework for the external evaluation follows the project through the following steps:

- Detailed analysis of the proposed project and the relation with the overall process of quality assurance
- Detailed analysis of the current state of the project compared with what was proposed
- Analysis of the logic and context in the scope of the Erasmus+ Capacity Building for Higher Education programme
- Detailing criteria, indicators and data collection tools
- Definition of the work plan of the external evaluation
- Online meeting with the project coordinator and key partners
- Continuous improvement of the External Evaluation Methodology in line with the project's quality assurance plan

### Initial Phase of the Project Evaluation (until March 2019)

- Follow up of project activities
- Implementation of the work plan for data collection
- Maintain the area of the External Evaluation in the project platform
- Analysis of documentation and communication tools
- Analysis of results
- Interviews with some selected partners (locally or at distance)

- Meetings with the coordination team
- Delivery of the Intermediate Report of External Evaluation
- Recommendations for the final part of the project

Final Phase of the Project Evaluation (until October 2020)

- Follow up of project activities
- Implementation of the work plan for data collection
- Maintain the area of the External Evaluation in the project platform
- Analysis of documentation and communication tools
- Analysis of results
- Interviews with some selected partners (locally or at distance)
- Meetings with the coordination team
- Meetings with partners
- Delivery of Final Report of External Evaluation
- Analysis of the project process and results

***Data Collection Tools***

- Project platform (at Dropbox)
  - Administrative documents
  - Reports and documents
- Results
  - Contents and platforms
  - Other deliverables

- Dissemination activities
  - Reports and evidence
  - Social network tools
- Meetings
  - Minutes
- Partnership
  - E-mailing
  - Interviews and questionnaires
- Internal monitoring data
  - Reports and questionnaires

## Criteria Grid

1. Project management				
Criteria	Data Collection Tools	Identified Strengths	Identified Weaknesses	Suggested Improvements
a. Quality of management procedures for the project, including the tools used for that purpose	Project proposal, WP reports, project reports, meeting minutes, partner interviews, project platform.	<p>The Steering Committee has clear responsibilities. The same is true for WP leaders. The coordinator created a well-structured file sharing platform.</p> <p>An agreement has been signed between the coordinator and the partners that defines roles and responsibilities.</p> <p>Templates for cost reporting were provided by the coordinator.</p> <p>Partners reported a good project management been carried out.</p>	<p>Administrative workload was a difficulty for some partners in the beginning.</p> <p>Some partners were not familiar with EC procedures and could not react quickly.</p> <p>The large number of partners has created some management issues.</p>	<p>Consider one-to-one online meetings to support specific partner's needs.</p> <p>Use other communication channels more frequently, like video-conferencing, to follow this particular critical phase of development and the next steps of implementation.</p>

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b. Qualities and effectiveness of the leadership	Self-assessment questionnaires, partner interviews	Leadership is clearly identified and personalized (partners know who to address for issues).		Act quickly on evaluation and monitoring data to establish contingency measures if needed.
c. Scope of the monitoring and evaluation procedures	Project reports, meeting minutes, internal evaluation report, self-assessment questionnaire	A complete internal and external monitoring and evaluation approach has been setup. Different tools are available for that purpose. Partners have access to those tools and know exactly what they have to do.	Administrative workload is a difficulty for some partners and that could affect performance in the critical steps to be faced.  Late contract of the external evaluator introduced some issues on this criterium.	Consider improvements in the WP reports to provide more information.  Consider including a specific internal evaluation session in the next international meeting agenda.  Invite the external evaluator for a consortium meeting.

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<b>2. Consistency between work plan and activities undertaken</b>				
<b>Criteria</b>	<b>Data Collection Tools</b>	<b>Identified Strengths</b>	<b>Identified Weaknesses</b>	<b>Suggested Improvements</b>
a. Effectiveness of activity implementation	Project proposal, WP reports, project reports, meeting minutes.	<p>The proposed methodology is adequate to the objectives of the project.</p> <p>Activities that took place so far have been effective and with impact.</p>	The degree of involvement of all the partners is not the same.	The second part of the project and, more particularly, the piloting stage with this large number of partners will require a strong coordination effort.
b. Respect for the original work plan, adequate justification when it has not happened	WP reports, project reports, meeting minutes.	Activities follow the original work plan but with a delay.	<p>Project is running with 3-month delay.</p> <p>This could also be an opportunity for partners to adjust and overcome</p>	Strive to go back to the original plan. If that is not possible request an amendment for an extension of the project period. This should be

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and measures adopted			technical and pedagogical challenges.	decided in the next consortium meeting.  Consider one-to-one on line meetings to support specific partner's needs.
c. Scope of the internal indicators for measurement of quality, impact and performance	WP reports, project reports, meeting minutes	The proposal identified a set of indicators for each WP.		Assess the indicators to monitor the project progress.

### 3. Allocation of Resources

Criteria	Data Collection Tools	Identified Strengths	Identified Weaknesses	Suggested Improvements
a. Effectiveness of the participation of the human resources (category,	WP reports, project reports, meeting minutes, internal	Staff involved in the project has competencies		The implementation stage will mean new challenges to the

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number, work days/month, etc.	evaluation report, self-assessment questionnaire, partner interviews.	that are clearly adequate for the project.		partners. Nevertheless partners as Engineering Faculties should be able to easily implement those activities.
b. Effectiveness of the use of other resources (equipment, travel and accommodation, sub-contracts, other items, etc.).	Project and WPs Reports.	The resources relate mostly on staff, travel and subsistence costs to events and equipment acquisition. Their use has been effective to a large extent.	Equipment acquisition by Asian partners to setup their PBL Labs has been slow.	Ensure that all PBL Labs are setup and all the equipment is acquired.
c. Global assessment on the Return on Investment by the funding agency	WP reports, project reports, meeting minutes, internal evaluation report questionnaire			Not applicable at the moment.

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4. Partnership				
Criteria	Data Collection Tools	Identified Strengths	Identified Weaknesses	Suggested Improvements
a. Effectiveness of the communication between partners	Project e-mails, WP reports, self-assessment questionnaires	The level of communication is high.  The dialogue between Asian and European partners is good,	The frequency of the online meetings is not adequate.	Use online communication channels more frequently
b. Development of positive attitudes and confidence between partners	Project e-mails, WP reports, self-assessment questionnaires	The f2f meetings have been very important in establishing this relation.  There are no visible problems between partners.		Reinforce the use of collaborative work between partners.

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c. Level of commitment to the project by each partner	Project e-mails, WP reports, self-assessment questionnaires	All the partners have been involved in the project. The multiple competencies that partners have are very relevant to the project. A good partner structure reinforces the project development.	There are different levels of involvement between the Partners that should be taken in consideration in the next phases.	The consortium should build strengths based on multiple existing experiences and so promoting mutual commitment and benefice.
d. Added value created by the consortium	Project e-mails, WP reports, self-assessment questionnaires, project portal			Still early to assess but key evidences start to be seen.

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5. Goals, results and products				
Criteria	Data Collection Tools	Identified Strengths	Identified Weaknesses	Suggested Improvements
a. Quality and level of compliance with the proposed objectives and results	Results, tools, contents and piloting	The quality of the available results so far is quite good.		The partnership should manage to incorporate feedback from the end users along the project development cycle to reach excellence.
b. Degree of effective integration of activities / results of the project in the processes of the participating institutions	WP reports, self-assessment questionnaires	The results are directly related to the current procedures and processes of the partners. They can easily be reused.		Make sure that all the partners are involved in the use and exploitation of the results.  The implementation phases should open space for the necessary localization and adjustment to the specific target groups.

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c. Degree of effective integration of activities / results of the project in the processes of other, external, institutions	WP reports, self-assessment questionnaires			Still early to assess but should be a concern for the consortium.
d. Innovation in the approaches and results	Results, community tools	The basis in terms of contents and platforms has already been developed.		It should be a key issue for the second half of the project.

6. Dissemination and Exploitation				
Criteria	Data Collection Tools	Identified Strengths	Identified Weaknesses	Suggested Improvements
a. Effective impact in the target audience	Dissemination activities log	The level of dissemination is already good especially with the online channels.	Not all the partners have been equally	Increase the level of dissemination by all the partners.

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		The actual stage of project development offers increased opportunities for further dissemination actions.	involved and a wider scope can be achieved.	
b. Support and communication with other projects and organizations in the same area	Project portal, project reports dissemination reports, (other external evidence)			Contact with other networks, associations and projects related.  EACEA could have initiatives to foster this networking that should be considered.
c. Support and communication with funding agencies and decision/government entities	Project portal, project reports dissemination reports, (other external evidence)	Participation in the coordinators meeting in Brussels.		Keep this involvement and challenge further involvement of other EACEA funded networks and projects.

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d. Quality of the process of dissemination	Project portal, project reports dissemination reports, (other external evidence)	The WP leader produced a very good document that organizes dissemination and a report that assesses the existing activities.		Follow closely the guidelines for dissemination.
e. Quality of promotion of the European dimension and the project's contribution to the implementation of Community policies	Project portal, project reports dissemination reports, (other external evidence)			Still not applicable.
f. Quality of the actions taken to ensure sustainability of the results	Project portal, project reports dissemination reports, (other external evidence)			Still not applicable.



## Interim Analysis and Recommendations

**Did/Does the project correctly address the identified stakeholder's needs, including the primary target group, project partners (and respective roles), individuals, the final beneficiaries, etc.?**

The proposal made a clear definition of the stakeholders and their needs. The results address those needs in a very innovative way.

**Did/Does the project present an appropriate development path that lead to the proposed outcomes?**

The proposed development path is clear and well-structured and the level of results achieved indicate that the development path is appropriate. However the project is running 3-month late. The consortium should be focused in recovering that delay and overcome pedagogical and technical challenges associated to the development and implementation stages.

**Did/Does the project create the conditions for an effective partnership?**

All the tools are in place and the meetings have been lively and with good discussion. The competencies of the partners are adequate to the project objectives. Communication and collaboration are effective and partner's commitment is recognized. The already available tools and methodologies are adequate to the mutual support needed.

**Did/Does the project clearly define and present coordination, management, financing and dissemination arrangements?**

Individual responsibilities are clear and leadership is manifest. The other management arrangements are in line with best practices. There are good tools for management and partners are able to use them. Project management is recognized as good and effective. The administrative workload associated to the project could require specific support to some of the Partners.

**Did/Does the project include a thorough monitoring and evaluation system?**

The project has a complete approach to the monitoring and evaluation, with internal and external activities. Internal monitoring tools (internal reports, questionnaires, etc.) are available, used and effective.

**Did the project accomplish the expected objectives and results?**

As mentioned before, the project is running late. That had impact on the produced results but what is available has quite good quality.

**Did the project managed to disseminate the results and had an impact with European and Asian dimension?**

The level of dissemination is good but could be improved and all the partners should be involved with their different capabilities. In the actual project stage there are increased conditions for further actions.

**Did the project created the conditions for an effective sustainability of results after the funding period?**

It is still early to fully analyze this aspect although the target groups are quite interesting. This is important because sustainability is a challenging issue.

Porto, Março 31, 2019



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