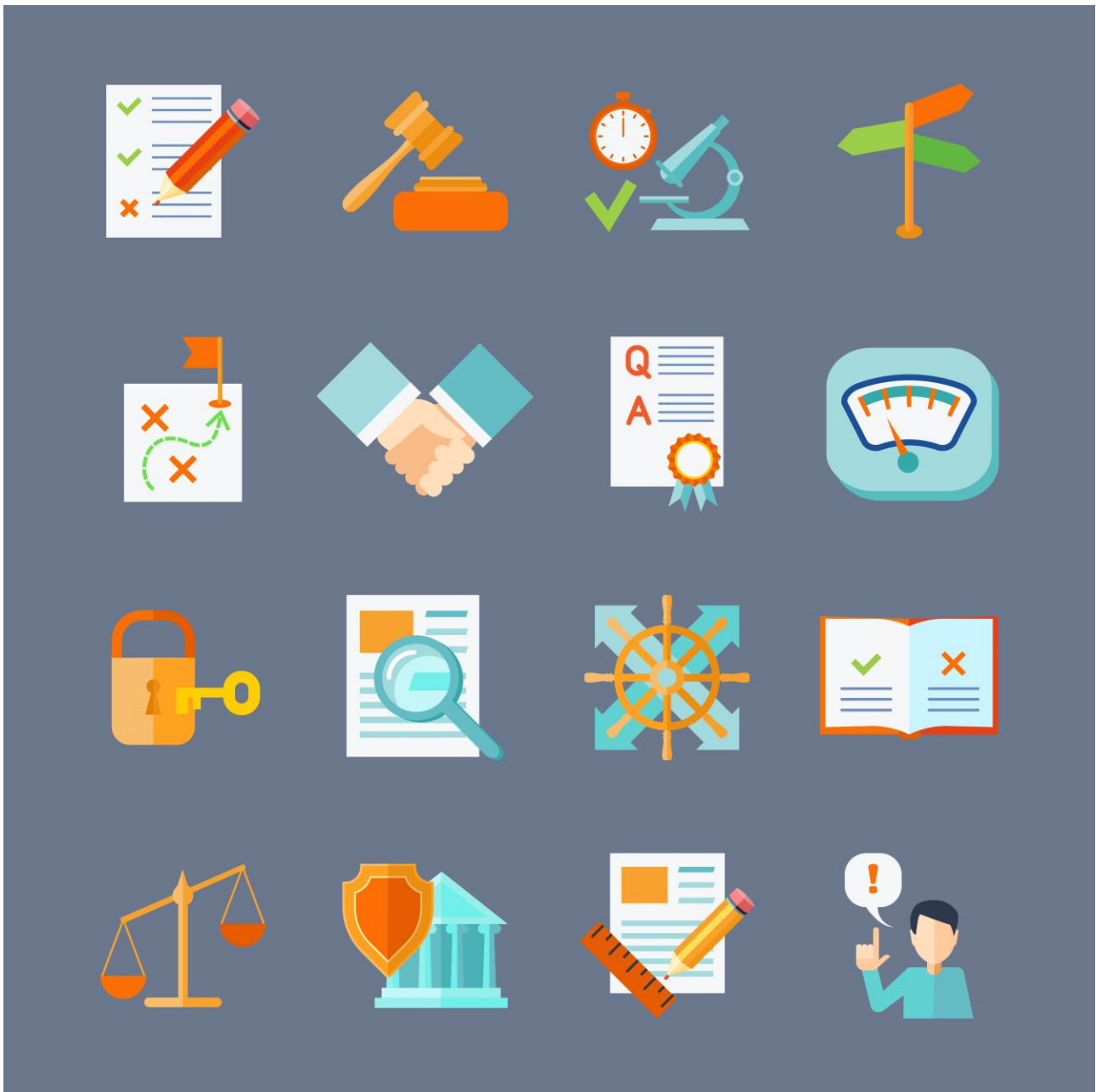


Mapping the challenges: Implementing the FRAMELOG in the field of Quality Assurance and Assessment



Project Acronym	FRAMELOG
Project Full Title	European framework for 'Knowledge Triangle' in the logistics sector
Output Title	Guidelines for addressing Quality Assurance and Assessment challenges within the FRAMELOG
Activity	O3 – A1 - Mapping the concrete challenges regarding the concrete implementation of FRAMELOG (in the field of Quality Assurance and Assessment)
Status & version (draft or final)	Final version
Responsible Partner	Effebi - Finance & Banking, Associazione per lo Sviluppo Organizzativo e delle Risorse Umane
Contributing Partners	UNIVERSITA DI PISA
Supporting Partners (in contribution order)	University Of National And World Economy Bulgarian Logistics Association Universitatea Transilvania Din Brasov The European Logistics Association AILOG

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1. Introduction

The aim of this activity is to define the real challenges the key players of the Knowledge Triangle (HEIs, businesses and research institutes) might encounter when implementing the FRAMELOG, with a specific focus on the quality assurance and assessment. Particular attention will be given to the HEI's perspective, considering their role of knowledge transfer dissemination within the triangle.

During the needs' analysis conducted for the preparation of the project proposal, Partners have already identified some specific challenges to be addressed:

- Learning needs analysis which takes into due consideration the demands of the logistic area
- Relevance of academic offer for research and for the labour market
- Course development and delivery with active involvement of the business sector
- Assessment and validation of skills and competences (acquired in formal, non-formal and informal contexts)
- Stakeholders' engagement (identification/selection, involvement, procedures, feedback loops between HEIs, business and research)

Moreover, during the previous project activities (in particular in O2) additional challenges have been identified:

- Embedding industry experts as teachers and/or lecturers into educational courses;
- Developing conjoint activities with business and research entities (e.g. educational visits to company's premises, organization of HEIs special events (seminars, workshops or conferences) with the involvement of business and research from the sector (short or long-term partnerships between research and business, etc.);
- Improving offer of internships and stages in logistics;
- Promoting thesis, Ph.D., research grants, fellowships and professorial chairs on logistics topics;
- Disseminating outputs regarding logistic projects' progress and results (e.g. online publications and public events for a wider diffusion, seminars, focus groups) academic thesis.

However, in order to better define these challenges, it is important to fully understand the contents of the 'European framework for 'Knowledge Triangle' in the logistics sector' (FRAMELOG) that have been defined through previous activities (O2):

- a. Seven key players in the Knowledge Triangle approach have been identified: HEIs - Higher Education Institutions, Company, Research Institution, University, Corporate University, Professional Associations and Research and Development Departments within companies.
- b. Partners defined specific criteria and indicators to be considered when analysing the level of implementation of FRAMELOG (O2-A1), using the Plan-Do-Check-Act cycle pattern. This tool is based on the roles of the key players in the Knowledge Triangle process and on the identification of those potential common points between the different players. Furthermore, Partners used the Plan-Do-Check-Act cycle pattern. Based also on the good practices collected for the Compendium of Good Practices (O1), Partners defined questions that enable the assessment of organization's current situation regarding the implementation of the FRAMELOG.
- c. Furthermore, Partners defined specific methods, instruments and related actions that can be used to achieve a higher level of collaboration between the Knowledge Triangle (O2-A2) once the self-assessment has been completed.
- d. In addition, Partners developed the Stakeholder Engagement Plan (O2-A3) aimed at defining communication strategies to engage and maintain relations with the potential key stakeholders of the Knowledge Triangle applied in Logistics.
- e. Ultimately, Partners provided practical guidelines for the effective implementation of the FRAMELOG (O2-A4). These Guidelines provide clear indications regarding the way HEIs can define organizational structures, design courses and training programmes, obtain relevant accreditation for courses, engage experts from the business sector in educational programmes, promote relevant activities necessary to implement an effective knowledge sharing approach in the logistic area. Moreover, in order to concretely support the logistics actors involved, every proposed action or process is accompanied by a pragmatic case study chosen around Europe as good practice in the specific aspect taken to consideration.

2. Methodology

In order to finally identify the most relevant challenges to be addressed in terms of Quality Assurance, Partners considered the results of the preliminary analysis previously presented, and based on these, they implemented the following research activities:

- a. Collection of existing good practices and analysis of the difference experiences in the logistics and supply chain management area.
- b. Considering the identified good practices, they conducted further desk research analysis for better understanding the weak points that organizations have the moment they try to implement the 'Knowledge Triangle' approach (FRAMELOG).

Based on these two main actions and considering the contents of the Framework, Partners listed several challenges they considered relevant and after open discussions within the Consortium, they made a decision of the final list of challenges the project should address.

The development of these challenges' list also stands on two European Quality systems for education ("European Standards and Guidelines", hereinafter also ESG, and The European Quality Assurance in Vocational Education and Training", hereinafter also EQAVET) and on the PDCA Quality model (Deeming cycle). ESG and EQAVET are respectively the two European Quality Assurance Frameworks for Higher Education and for Vocational Education and Training.

The Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) were adopted by the National Ministers of higher education in 2015 following a proposal prepared by the European Association for Quality Assurance in Higher Education (ENQA) in cooperation with some other organizations.

The ESG are aimed at promoting a common understanding of the Quality Assurance systems in the Higher Education Area for enhancing transnational cooperation and assuring the development of a European unique system. Engagement with quality assurance processes, in fact, improves transparency mechanisms and encourages mutual trust and better recognition of their qualifications and programmes within HEIs.

The European Quality Assurance in Vocational Education and Training (EQAVET) is the reference Framework addressing VET Providers and designed to offer a set of Indicators and tools for the implementation, monitoring and improvement of Quality Assurance systems. The 10 EQAVET Indicators are aimed at increasing transparency of qualifications and mobility of workers and students, facilitating the bridging process between general education and higher education and addressing the gap between labour market needs and labour force qualifications.

Both ESG and EQAVET refer to Quality Assurance as a continuous improvement cycle as a precondition for the development of a ‘culture of Quality Assurance’. As a consequence, the following list of challenges relies on the PDCA cycle, also known as Deming wheel, which refers to Quality Assurance for education and training, as a ‘cycle’ based on the following steps: Plan (Define goals and objectives); Do (Establish the procedure to ensure the achievement of settled goals); Check (Collect processing data and discuss the results); Act (Apply feedbacks and procedures for change).

The specific meaning of each of the PDCA process has already been defined in the Output 2. In particular, the “Plan” phase includes the core planning activities of an academic course, meaning a variety of activities that goes from the selection of contents of the course, through the choice of the most effective educational method, to the identification of the knowledge and of the core competences that will be gained by the students and to the planning of the support structure of the activities; the “Do” phase represents the actual teaching delivery within HEIs; the “Check” phase represents the results’ control of the previous phases; the “Act” phase regards the actions to be taken for enhancing the collaboration between the three points of the Knowledge Triangle.

Moreover, for this particular Output Partners will also consider the meaning of PDCA in relation to the quality managements systems. In this regard, the four stages represent the steps to be taken for setting up quality systems: Plan – define the Quality Plan engaging key stakeholders; DO – implement the specific activities for guaranteeing quality of services/products through customized quality tools and instruments; Check – analyse the efficiency of the quality objectives and tools implemented; Act – apply improvement measures for enhancing the quality system.

Such a map of identified challenges on Quality Assurance and Assessment for the implementation of the FRAMELOG will represent the basis for the development of a set of practical Guidelines addressed to the main key players of the Knowledge Triangle (HEIs, business and research) aimed at concretely supporting them in overcoming such challenges.

3. Challenges in implementing the FRAMELOG

This list is organized following the PDCA cycle, the same framework that has been used throughout the whole project activity. The meaning of every PDCA process has already been defined in O2, as summarized in the previous chapter.

Furthermore, the challenges take into account both the contents elaborated in the development of the FRAMELOG and the specific QA descriptors as they are defined by the EQAVET approach (<https://www.eqavet.eu/EU-Quality-Assurance/For-VET-System/Eqavetplus/EQAVET-Approach>).

Challenges in the Plan phase

PLAN

1. Integrate Knowledge Triangle in Quality Assurance Policies
2. Plan a methodology/procedure for the creation of a sustainable network of relevant stakeholders
3. Ensure appropriate human and material resources for the FRAMELOG implementation
4. Align the contents, programmes, lecturers, educational methods with business requirements and innovative results from research
5. Learning is student-centred and managed in collaboration with key players
6. Apply a competence-based approach to teaching/training
7. Obtain an official accreditation for the course

1. Integrate Knowledge Triangle in Quality Assurance Policies and QA Culture

All HEIs that have official recognition have in place a kind of Quality Assurance Management System since they are periodically monitored by the specific national/regional public bodies in the Member States. Moreover, they also have some European based QA standards that are invited to follow (e.g. ESG).

In addition, considering the results of the project previous activities, it was noticed that there are many HEIs active and/or interested to become more active in the implementation of the Knowledge Triangle.

However, the main difficulties HEIs have to deal with are related to the following aspects:

- Definition and implementation of QA with a systemic approach
- Spread of the quality culture and QA implementation at all levels within the organizations.
- Active involvement of HEIs governance and of the different actors of the Knowledge Triangle (business and research). This difficulty is rather common for the logistics and supply chain management area.
- Definition and implementation of the common points between QA and the Knowledge Triangle.

2. Plan a methodology/procedure for the creation of a sustainable network of relevant stakeholders

Although most of the HEIs structurally cooperate with external players (in particular with the business sector and research institutions), not all of them are used to have a concrete ‘Stakeholders’ Engagement Plan’ for facilitating the stakeholders’ (such as: guest professors, researchers, business professionals from the logistic and supply chain management area in particular) identification, attraction, participation in the academic activities to support students’ life (e.g. curriculum design, internships, theses, PhDs, scholarships, fellowships, funds etc.) and career (e.g. joint working transition plan and career preparation plan).

3. Ensure appropriate human (specialized, updated and trained staff) and material resources (facilities, infrastructures and technologies) for the FRAMELOG implementation

The “FRAMELOG” project core intention is based on the co-creation and co-management of the Knowledge Triangle in the logistic area, developing the collaboration between the actors involved. Therefore, also the organizational resources, in terms of lecturers, technical equipment, locations,

etc. should be shared among the key players. However, this is a challenge in most academic contexts and leads to difficulties in innovating academic education. In addition, in this context the challenge is even wider since it is based also on the difficulty that HEIs have in guaranteeing the responsibility and accountability of the resources involved (internal and external). For example, in many cases HEI's still have a rather 'traditional' structure, and although they are taking actions to modernize it for turning it into a more 'cooperative' structure, there is still room for improvement.

4. Align the contents, programmes, lecturers, educational methods with business requirements and innovative results from research

Despite the active collaborations among the different Knowledge Triangle players, it is still necessary to underline the fact that this cooperation does not always lead to concrete impact on the course contents and programmes development, identification of the most effective teaching methods or on the involvement of teaching experts in the delivery phase.

In most of the cases, the different collaborative actions are limited to specific events and/or training phases without guaranteeing a comprehensive implementation and impact on the actual connection of the academic offer to the labour market needs and trends and to the research innovations.

5. Learning is student-centred and managed in collaboration with key players

The student-centred approach is very much supported by European, national and regional educational policy goals since it is considered to be of high relevance in guaranteeing the quality of education and training.

Although there are many examples of HEIs which implement this approach, it is still difficult sometimes to focus on what students really need in terms of knowledge, skills and competences to develop for their future professional career. This difficulty is mainly due to the limited communication between HEIs and students and external players (research, business, community etc.) from the logistics and supply chain management area. Moreover, managing learning with a student-centred approach in collaboration with key players implies more complexity in planning and organising learning activities, since it requires an active engagement of all parties and, at the same time, individual approach in the learning process.

6. Apply a competence-based approach to teaching/training

During the different research activities conducted by the Consortium, it was noticed that the HEIs that provided specific case studies were engaged in improvement processes that involve the integration of competence-based approach in the academic offer and professional training, especially in the technical faculties, including the logistic and supply chain management area. In particular, this competence-based approach implies strong consideration of business requirements.

However, not all HEIs are active in implementing a competence-based approach in their educational programmes. Moreover, those HEIs that demonstrated to be engaged in applying this approach don't always manage to guarantee a systemic implementation and do not always refer to all stages of education (e.g. curriculum design, content development, teaching methods, delivery approaches and materials etc.).

For example, it was still noticed a mismatch between academic assessment methods/tools (prevalently based on the assessment of acquired knowledge with tools such as questionnaires) and working assessment methods/tools (prevalently based on the resolution of problems and, hence, on the assessment of acquired competences).

7. Obtain an official accreditation for the course

Although most of HEIs are accredited for their academic courses, it has been noticed that this is not very common for the professional training courses in the field of logistics and supply chain management area.

Having an accreditation for a specific professional training course might sometimes be difficult and generally it requires time and resources. In addition, in some Members States it is not easy to choose the most valuable accreditation to obtain as there are more than one accrediting bodies. In addition, based on national/regional legal requirements, professional qualifications can be accredited by public institutions (e.g. Ministry of Labour) and/or private institutions (e.g. professional bodies).

Furthermore, not all HEIs are aware that, for example, in the logistics and supply chain management field, there is also the opportunity to obtain a specific European accreditation.

Challenges in the Do phase

DO

8. Ensure continuous and aligned with business professional update/development for teachers and trainers



9. Learning takes place mostly through experimental and innovative practices/experiences in line with market needs and technical innovations



10. HEI's structure and overall organization include appropriate opportunities for cooperation among HEIs, business and research

8. Ensure continuous and aligned with business professional update/development for teachers and trainers

In each country there are different national based requirements regarding the professional background and professional development of teachers and trainers. Such a continuous training is also recommended and encouraged at European level (e.g. ESG and EQAVET Frameworks and Erasmus+ Mobility for teachers).

However, the continuous professional development of teachers and trainers is not always easy to guarantee and to monitor. In most of the cases HEIs don't manage to support (with financial resources) and to manage teachers and trainers' professional update. This challenge is due to the limited resources HEIs have at their disposal, to the internal organizational structure and also to the difficulty to guarantee continuous contact and collaboration with the business environment.

9. Learning takes place mostly through experimental and innovative practices/experiences in line with market needs and technical innovations

Most of HEIs are quite active in providing their students with the possibility to actually ‘touch’ and/or ‘experiment’ what they learn. Especially technical universities are quite well organized from this perspective. However, it is demonstrated at EU level that it is necessary to bring relevant improvements in this field in order to achieve Europe 2020 objectives in the field of education and training.

This challenge must be interpreted in two ways which are anyway linked one another:

- a. during the initial Project research, it has been noticed that, in order to comply with the present labour market needs and with the rapid technological innovations in the logistics and supply chain management area, it is necessary to enhance this capacity of HEIs. As a result, it is necessary to develop more practical instruments for facilitating learning (laboratories, demonstrators, experiments, simulations etc.)
- b. in order to make sure that these practical learning activities are really relevant for the labour market, it is necessary to design and deliver them with the involvement of business sector and research as well.

10. HEI’s structure and overall organization include appropriate opportunities for cooperation among HEIs, business and research

When it comes to actually delivery education, HEIs are still having difficulties in cooperating with external stakeholders. In many cases, they fail to manage efficiently the organization of learning activities that involve business representatives and researchers as well. In many cases, it is mainly due to the lack of information, communication and trust among the different players. But in some other cases, it might be also because of institution’s and student’s limited financial resources.

Challenges in the Check phase

CHECK

11. Develop longitudinal graduate tracking system: conduct effective joint data collection and analysis



12. Apply feedback loops mechanisms among the three sides of the 'Knowledge Triangle'

11. Develop longitudinal graduate tracking system: conducting effective joint data collection and analysis (e.g. market needs, unemployment rates, completion and placement rates)

With reference to Quality Assurance systems and particularly to Check phase, the graduate tracking system represents a priority in Europe (New Agenda for Skills, 2016) as the collection of several data can support the improvement of the Higher Education system itself. However, not only do HEIs face difficulties in collecting and comparing very different data, but in some cases, they also do not apply appropriate tools and evaluation methodologies for collecting and interpreting relevant data.

Moreover, the collected data are not always used for strategic planning and improving HEIs educational offer.

The development of a longitudinal tracking system could instead enhance Universities' capacity of guaranteeing the quality and relevance of the training programmes, in line with students' and Knowledge Triangle actors' actual needs and challenges.

As a consequence, such a system would ensure joint cooperation of key Knowledge Triangle actors and increase data comparability among countries.

12. Apply feedback loops mechanisms among the three sides of the ‘Knowledge Triangle’ (University, Research and Business)

As the Knowledge Triangle is mainly based on the cooperation between HEIs, Business and Research, such a collaboration should be applied not only for developing new programmes, contents and activities, but also to customize and correctly implement cooperation procedures and trends throughout all the education phases and beyond.

In particular, organizations (HEIs, Research institutions and business sector) register difficulties in maintaining active their collaboration also after the end of the education/training activities. During this phase they could have the opportunity to communicate information about the relevance of education/training, the actual implementation of competences built during the education/training activities, future needs and trends. Although all these organizations are aware of the relevance this stage has on the Knowledge Triangle implementation and on the overall quality of the education and training, they are still facing difficulties in improving their cooperation and communication in this regard.

Challenges in the Act phase

13. Periodically improve/update academic programmes (contents, delivery methods and stakeholders involved) and activities based on evaluation results and new market needs.

As quality assurance is a continuous process, once the ‘check’ phase has produced some results, the Quality cycle promotes the transformation of these results into inputs for the improvement and update of HEIs’ programmes and activities.

Students’ feedback and market analysis collected through different evaluation systems (graduate tracking system and feedback loops, for instance) provide a precious set of data that need to be read and interpreted from an innovative perspective.

However, although HEIs are aware of the relevance of valorising evaluation results for enhancing their educational offer, it was demonstrated that this process of improvement is not always inclusive enough. In most of the cases research and business representatives are not engaged with an active role in this stage and HEIs are mainly focused on the update of academic curriculum, activities and contents, and less on the cooperation with external key players.

4. Conclusions

The Education and Professional Training sector (ET) is undergoing major changes that lead to the need to address challenges of different types and coming from diverse stakeholders.

The implementation of Knowledge Triangle in the daily academic education and training, in particular for the logistic and supply chain management area, is one of these challenges and all key players are invited to take their responsibilities in this process of change.

The “FRAMELOG” project Outputs include the description of the key stakeholders and indicate also their roles and responsibilities for guaranteeing the efficient implementation of the framework. However, the changes proposed are not always easy to implement mainly because of several specific factors:

- a. Academic education and training in all sectors still has a so-called ‘traditional’ structure that faces limitations with regards to internal quality assurance systems in line with the European recommendations
- b. ET is becoming more and more a collaborative environment of knowledge sharing, co-research and co-working approaches and not all HEIs are ready to provide this type of education and training (mainly due to their organizational structure)
- c. Knowledge Triangle players are quite many (in developing the FRAMELOG, Partners identified seven relevant players), with different organizational structures and objectives

Due to these factors, Partners identified some specific challenges that might need to be addressed when implementing the FRAMELOG by the key players, in particular by HEIs.

These possible difficulties, that may occur during the entire Quality Assurance cycle: the Plan-Do-Check-Act pattern involves all the key players and can be addressed efficiently only with active cooperation among them, according to their specific role and expertise.