
VIRTUAL AND MOBILITY ACTIVITIES TO PROMOTE DUAL LEARNING APPROACH IN HIGHER EDUCATION: THE EURODUALE PROJECT EXPERIENCE

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Summary

EuroDuaLE is an Erasmus+ KA2 project (2015-2018) which aims at promoting innovative and more flexible teaching and learning methods to make highly skilled people an asset for modern societies, reducing unemployment for future graduate generations. Building on existing good practice (i.e. Germany) the goal of EuroDuaLE is to find cost-effective ways for EU Members States to establish and expand the apprenticeship approach, with the development of an integrated transnational Dual Learning framework, where Higher Education Institutions and relevant stakeholders in the labour market establish a synergy and provide students with new curricula, combining formal training and training on-the job, physical and virtual mobility. Nowadays, Dual Learning Systems mainly apply to VET and more technical professions; EuroDuaLE intends to expand the dual scheme to Higher Education Institutions, where students acquire a wider range of knowledge and competences, offering more comprehensive programs, yet including professional and technical training on-the-job. 13 partners from 6 different countries (Italy, Germany, Belgium, Netherlands and Spain) designed, implemented and evaluated a pilot activities of dual learning programmes at European level during the academic year 2016-2017. The Roma Tre research group is partner of EuroDuaLE project and, besides contributing to the various project intellectual outputs, is in charge of evaluating all the related activities. The present paper is focused on the evaluation processes carried out by the Roma Tre team and presents the methodology, the tools and the results obtained within the virtual mobility learning activities, in the framework of the creation and implementation of dual learning pathways at European university level.

State of the art

The crisis which has been affecting the Western world during the last decades, indeed, force to the adoption of different solutions, especially those who have as a target the youngest segments of population, particularly affected by unemployment, as a result of global recession. According to Education at a Glance (OECD, 2017), in most OECD countries, the unemployment rate among younger adults (25-34 years-old) is still very worrying. In general, the risk of unemployment is almost twice higher for younger adults than who have not reached tertiary level of education. Furthermore, the rate of inactive people is more widespread among those who do not have a high level of education. The crisis has boosted the capacity of the impact education can have with the purpose of facing the trends described in

various reports of international organizations which deal with the study of phenomena related to the growth and development of Western countries. In the Education at a Glance (OECD, 2016; p.92), OECD identifies the grounds for this situation, arguing that they may lie in the fact that the market has extremely shrunk, often protecting the oldest generations to the detriment of the youngest, or because the field of study where such young people are specialized were too overfilled or not in line with the labour market needs. High youth unemployment sometimes coexists with greater difficulties in filling vacancies. This indicates imbalances in the labour market, due to skills mismatches, not only technical but also transversal, and limited geographical mobility. Therefore, as recommended by CEDEFOP, tackling youth mismatch and unemployment should be a priority for policy makers. This applies both to vertical mismatch or over-education and to horizontal mismatch, that is, mismatch between a worker's field of study and the content of his/her job (Verhaest et al., 2017). Therefore, the quality of higher education curricula is called into question, as learning programmes are, sometimes, not in line with the labour market and its demands. The European Commission is supporting EU countries and higher education institutions in modernising their education programmes to provide graduates with high-level skills and transferable skills in the rapidly changing labour market. The European Commission has clearly stated in the 2020 Strategy the will for a smart, sustainable and inclusive growth, increasing significantly the investments for higher education, research and innovation. Europe increasingly need people with the right combination of transversal competences, digital skills, creativity and adaptability, together with solid technical knowledge depending on the specific field. It is fundamental to improve the quality and relevance of education provided by Higher Education Institutions; strengthen the interconnections between education, research and business; foster international mobility of students, teachers, staff and internationalize the teaching in itself with ITC tools and virtual mobility (Silvio, 2003).

EuroDuaLE project respond to this call for innovative and more flexible teaching and learning methods to make highly skilled people an asset for modern societies, reducing unemployment for future graduate generations. To facilitate youth integration in the labour market and stimulate job creation, and actual placement, there is need to close the gap between labour demands and people actual training and competences. In this context, Dual Learning Systems seem to have the potential to substantially increase the employability of young people at the end of the educational experience. The strength of dual learning is the possibility of combining theory with practical applications, in cooperation with industries, companies and chambers of commerce (awarding students' qualifications at the end of the dual learning path). EuroDuaLE project aims at promoting and developing dual learning experience at European level, encouraging HEIs to systematically integrate mobility activities into programs, and developing new form of cross-border cooperation to support the quality improvement of higher education, also through new forms of transnational apprenticeship and traineeships to foster youth employability in a global dimension.

Methodology

The first phases of the EuroDuaLE project consist in analysing and understanding the context in which the European dual learning approach should take place and which are the main issues to take into consideration for a successful implementation of the EuroDuaLE model. With particular reference to young people, the EU Commission launched several programmes to address the problem of youth unemployment: Youth Employment Initiative in 2013 with the aim of strengthening measures defined in the Youth Employment Package; Youth Employment Package in 2012, including Youth Guarantee and the European Alliance for Apprenticeships; Youth on the Move with Youth Opportunities Initiative (consisting of actions supporting people who left school or training to return to school or enrol in vocational training or graduates to get a first work experience) and Your first EURES Job. Among these main measures, some of them (Your first EURES Job, allocations from the ESF to support cross-border mobility schemes, Erasmus+) aim to increase youth mobility in the view of supporting young people to find a job, traineeship or apprenticeship in another EU country. More recently, to support intra-EU labour mobility, the reform of the European network of public employment services (EURES) and related increased resources aim to increase transparency by sharing information about jobseekers and job vacancies, to better support job search and recruitment across Europe and to better connect jobseekers and employers in Europe (Intellectual Output 1, available at http://www.euroduale.eu/images/documents/O1_english.pdf).

EuroDuaLE partners also produced an Analysis of existing dual learning programmes and drivers for employability, with the aim to explore the state of art of existing dual learning programmes, analysing how they are implemented, regulated and managed, in which frameworks they are comprised, what are the best practices, experiences and the effects of dual programmes (Intellectual Output 2, available at http://www.euroduale.eu/images/documents/O2_english.pdf).

Basing on analyses collected in O1 and O2, EuroDuaLE partners defined how to implement dual experiences in the context of HEIs (Higher Education Institutions), which are the core of EuroDuaLE framework. Features of the framework to be defined are: a European dual learning curriculum (or more curricula), defined through dialogue and collaboration among teachers, students, graduates and labour market actors, drawing on new methods of teaching and learning such as e-learning and work-based learning; a scheme for the mobility activities; a system of evaluation of competences acquired during the dual learning experience. Partners developed a "prototype", composed by common principles and practices, which can be applied in different sectors, nations and contexts. The leading idea is not to add a bit of practical learning to the "normal" curriculum, but to well coordinate theoretical and practical learning and to combine the learning places, learning concepts and learning methods, so that the needed competences and skills can be developed optimally (Intellectual Output 3, available at <http://www.euroduale.eu/images/documents/Intellectual-Output-3.pdf>).

Virtual and Mobility Activities to Promote Dual Learning Approach in Higher Education: The EuroDuaLE Project Experience

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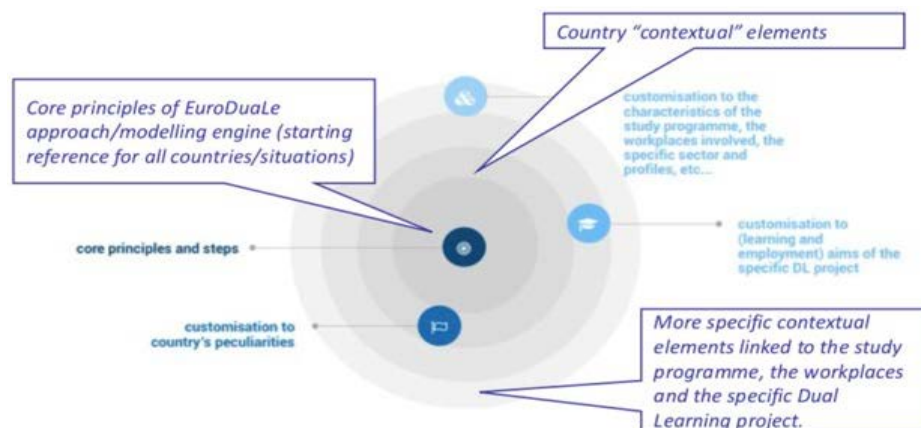


Figure 1. The Core components of Dual Learning in EuroDuaLE Methodological Framework (<http://www.euroduale.eu>)

Intellectual Output 4 completes the process started in IO3, being the second step in the design of a cooperation scheme for transnational dual learning. Basing on methodological model designed in O3, Partners worked on practical aspects and implications of the transnational cooperation framework. The Handbook is a practical support for participants, in which the process of implementation of EuroDuaLe is defined step by step. In particular, basing on the previous analysis, Partners will define: organisations involved; learning activities; a regulatory framework that would allow HEIs to participate in dual learning programmes; a schedule for the evaluation of competences. The Practical Handbook aims to guide designers (HEIs, companies, associations, social parts, policy makers) of similar experiences through the real implementation of the model, but it will also contain a toolkit to help different stakeholders with management practices (The Handbook is available at <http://www.euroduale.eu/images/documents/Intellectual-Output-4-final2.pdf>).

Partners, after defining the methodological framework (O.3) and the practical handbook (O.4), they foresaw a piloting phase, where the cooperation framework for dual learning mobility was put in place and evaluated against the real experience. A number of students was selected by the Universities involved to enrol in the dual learning programme combined with a period of work abroad. A total of 30 students has been involved, selected as follows:

- 9 students for each Italian University (UNIMORE, University of Padua);
- 9 students from the German University (Otto-Von-Guericke University of Magdeburg);
- 7 students from the Belgian University (UC Leuven);
- 5 students from the Spanish University (University of Seville).

Mobility happened in two forms: 25 days of Virtual Mobility over a period of about 2 months and 15 days of physical mobility.

Virtual Mobility has a great potential to contribute to the internationalisation and opening up of HE by creating international, collaborative experiences for educators and students as well as equal possibilities of participation in exchange programs, including those who are unable to travel for social, financial, or other reasons (EuroPACE, 2010; De Gruyter et al., 2011).

EuroDuaLE Virtual mobility experience addresses the need of enhancing transparency and providing accessible opportunities for achievement of Virtual Mobility Skills by supporting higher education teachers and students in acquiring and developing key competences needed to successfully design, implement and participate in Virtual Mobility Actions, including cooperation, leadership, intercultural, foreign language and digital skills. Virtual Mobility emphasizes cross-border collaboration with people from different backgrounds and cultures working and studying together, aiming at the enhancement of intercultural understanding and the exchange of knowledge by using information and communication technologies (ICT) to obtain the same benefits as one would have with physical mobility but without the need to travel (Schreurs et al., 2006; Tereseviciene et al., 2011). In this sense VM can be considered as a source for a successful participation in today's global and digital society and a condition for starting a dual learning programme in foreign country context.

EuroDuaLE Virtual mobility experience was carried out through the use of a series of online courses (OERs and MOOCs) made available through a Moodle platform dedicated to the students involved. The courses, chosen by the students' academic tutors, mainly concerned transversal skills such as critical thinking, communication, collaboration, creativity and team working. The online courses and resources were not created by the project partners but selected from a first analysis and collection of OERs on Virtual Mobility skills. The mobility phase was carried out thanks to the collaboration between 3 main actors: the sending university, the receiving university and the host company. The sending university selected the students for the dual learning experience on the basis of internal and national regulations. The receiving university had the task of searching and selecting a company aimed at hosting the students identified by the sending university, taking into the university course field of study and learning objective. Then, the selected company filled in, together with the university tutor and the student involved, the learning agreement, the core of the dual learning experience to be implemented in 15 days.

The Roma Tre research group, coordinated by A. Poce, took part in different intellectual output and led the evaluation (Intellectual Output 6) of all the activities carried out within the project itself: partners' meetings, multiplier events, outputs activities and the pilot phase. As the scope of the evaluation is to assess the validity and transferability of the core elements of the EuroDuaLE framework, the evaluation tools and results produced in the pilot phase should be considered important for the definition of future development of dual learning path definition, at European and university level. Partners involved in the pilot phase had the possibility to evaluate the different steps of the experience, in terms of clearness of the learning objectives, collaboration between HEI – Student – Company, technical and transversal skills development, connection between curriculum and work experience, helpfulness of HEI tutor and Company tutor in problem-solving, effectiveness of transnational aspect. The Roma Tre research group designed and implemented the evaluation tools used during the pilot phase and analysed the evaluation data. Part of the analysis carried out are presented in the following paragraph.

Evaluation of the dual learning experience

In order to compare perceptions and experiences of the 3 group of participants involved in the project, it was developed a self-assessment survey. The self-assessment survey gives a chance to all the EuroDuaLe parties (students, sending university, receiving university and company tutors) to express their opinion and level of satisfaction regarding the different phases and parts of the mobility experience. The survey has three versions, students' version, company tutor version and the academic tutor version.

The self-assessment survey was made available in two forms, pdf document and an online version (Google® forms). All three versions of the self-assessment survey were made available from the 19th of March 2018. In this paper we will show the responses on the surveys which were collected on the 1st of July 2018 and including 23 students (6 from Belgium, 5 from Spain, 5 from Italy and 6 from Germany) out of the expected total number of 30 students. The questionnaires include both close questions on Likert scale (1 = *strongly disagree*; 2 = *disagree*; 3 = *undecided*; 4 = *agree*; 5 = *strongly agree*) and open ended questions. In the following table, it is described which sections are investigated by each questionnaire. Common sections among questionnaires were thought to compare the participants' perceptions about common themes (e.g. Virtual Mobility and Physical Mobility) in order to see whether there are coherent perspectives or not.

Table 2: Evaluation indicators for the three different groups of respondents

	Virtual Mobility – Digital platform and contents	Physical Mobility – Organizational aspects	Physical Mobility – Relevance of the experience	Skills self- assessment
Students	X	X	X	X
Academic tutor	X	X		
Company tutor		X	X	

Analysis and findings

Here will be presented some descriptive data collected from the students' questionnaire.

Virtual Mobility – Digital platform and contents

In the virtual mobility part of the self-assessment questionnaire, 3 students out of 23 chose not to answer that part. More than half of the students have found the online platform user friendly and about the 10% of the students didn't think that it was much intuitive. About 50% of the students thought the log book was useful whilst about 30% didn't. Most of the students think that contents were well organized while about 34% are undecided and less than 20% thought that materials were not well organized. In the same way, more than 50% agreed that web contents were sufficient whilst about 28% was undecided and less than 20% thought that they were not sufficient. Overall $\frac{1}{3}$ of the students thought that Virtual Mobility was integrated with the physical mobility, $\frac{1}{3}$ was undecided and $\frac{1}{3}$ didn't agree.

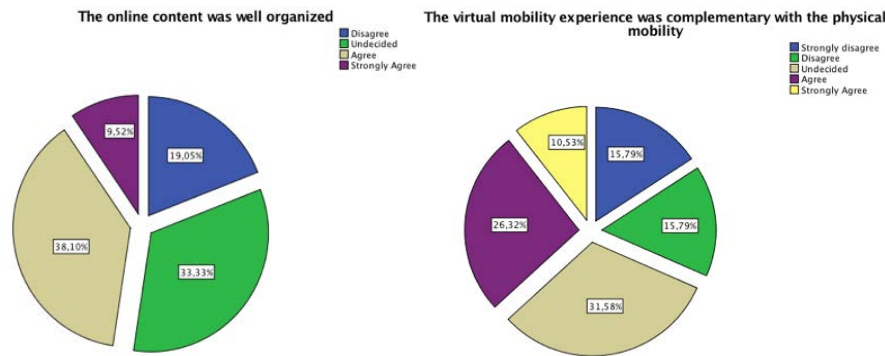


Figure 2 - 3. Evaluation results of students' virtual mobility experience

Physical Mobility – organizational aspects

Regarding the placement phase, students were asked to express their opinion on the experience. Almost all students agreed that the organizers of the placement (receiving company, sending university and receiving university) were helpful in solving their problems and offered sufficient support to them. There are some reservations regarding the duration of the placement (15 days), about 26% of students are undecided on whether the duration of the placement was sufficient, about the 30% of students believe it was sufficient and fulfilled the objectives specified in the learning agreement, while the 40% disagree.

Physical Mobility – relevance of the experience

From the pie charts below, all students had an overall positive placement experience, which can be seen in their expressed opinion on the statement “A placement abroad, and not locally was beneficial to my professional curricula”. The students felt the placement experience was beneficial to their field of study. Students believe that having a placement abroad has improved their professional curricula more than what a local placement would have.

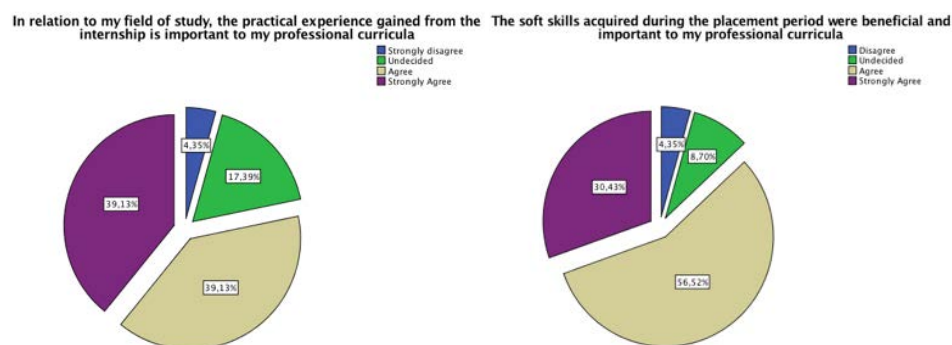


Figure 4 - 5. Evaluation results of students dual learning experience



Figure 6. "Project" and "Experience" Link of words in the open-ended question "Describe in few words your overall experience in the EuroDuaLE project" (made by voyant-tools.org)

Physical Mobility – Skills self-assessment

Students were asked to self-assess their skills after the placement experience (Poce et al, 2015). The table shows that four skills are well developed ($3.5 < \text{average} < 4$) which are planning, collaboration, communication and attitude to research. Students perceive that communication skills are the most developed with an average of 3.9. Four skills are sufficiently developed ($3 < \text{average} < 3.5$) which are critical thinking, problem solving, digital skills and creativity whilst only one skill is poorly developed ($\text{average} < 3$) that is entrepreneurship. The student perceptions are coherent with their professional experience. Indeed, they were not required to develop their own business idea but they were introduced into workplaces in a foreign country, where they needed to learn how to collaborate and communicate in an international work team.

Table 2: Soft skills self-assessment data

	Average	SD
Entrepreneurship	2.8696	1.32474
Creativity	3.0000	1.27920
Digital skills	3.3043	1.25896
Critical_thinking	3.3043	1.10514
Problem_solving	3.4783	0.94722
Collaboration	3.5238	0.92839
Planning	3.7826	1.04257
Attitude_to_research	3.8261	1.19286
Communication	3.9565	0.70571

Conclusive remarks

The overall experience was assessed positively by all the participants, although there is room for improvement. Students thought that the placement experience was relevant for their curricula and recognized that the professional experience helped them to develop soft skills, more specifically communicative and collaborative skills. The organizational relationship among students, host university, sending university and company worked without difficulties.

As regards virtual mobility experience, it has proved to be a good educational tool for starting dual learning experiences at university level: through activities of transversal skills development, students have had the opportunity to acquire theoretical knowledge that they put into practice during the mobility experience at the foreign company. This experience of using virtual mobility in contexts of dual learning has allowed to highlight the possible future evolutions of the tool within the apprenticeship learning path. Virtual mobility can be used to promote culture and language knowledge of the foreign country where the future apprenticeship will take place, or it can be the tool through which the company will assign the first work tasks or develop the necessary technical knowledge before the mobility phase. Thanks to the supervision of the academic tutor in the construction of virtual mobility pathways, the whole experience will be well-defined from a pedagogical point of view and will be built with the joint contribution of two dual learning training institutions: university and company.

However, some challenges emerged from the participants' answers. First of all, it could be useful to think about the duration of the placement, because it was a critical aspect for students. The pilot phase carried out within the project cannot be defined in terms of dual learning, but in terms of short apprenticeship experience: the extension of the duration of the experience is necessary in order to talk about a dual learning system at university level.

The data here presented are preliminary. We are still collecting data from students, university tutors and company tutors' questionnaire in order to compare the perceptions of the all participants.

References

1. Bannan-Ritland, B. (2003). The role of design in research: The integrative learning design framework. *Educational Researcher*, 32(1), 21-24. doi:10.3102/0013189X032001021
2. De Gruyter, J., Achten, M., Op de Beeck, I., & van Petegem, W. (2011). Virtual Mobility: Definition and Types. In Achten M., Op de Beeck I., & van Petegem W. (Eds.), *Home & Away Forum: Conference Proceedings*. EuroPACE ivzw: Heverlee.
3. EuroPACE, (2010). Retrieved November 15, 2010, from Interests – Virtual mobility: <http://www.europace.org/interest3.php>
4. European Centre for the Development of Vocational Training – CEDEFOP (2010). *The skill matching challenge. Analysing skill mismatch and policy implications*. Luxembourg: Publications Office of the European Union. ISBN 978-92-896-0485-7
5. OECD (2016). *Education at a Glance 2016: OECD Indicators*. Paris: OECD Publishing. <http://dx.doi.org/10.187/eag-2016-en>
6. OECD (2017). *Education at a Glance 2017: OECD Indicators*. Paris: OECD Publishing. <http://dx.doi.org/10.1787/eag-2017-en>

7. Poce, A., Agrusti, F., Re, M. R. (2015). Sviluppo di uno strumento di valutazione delle risorse aperte (OERs) – Analisi dei dati raccolti: abitudini nell'uso della tecnologia e di scrittura. *CADMO, Giornale Italiano di Pedagogia sperimentale. An International Journal of Educational Research*, XXIII(2), 86-92.
8. Schreurs, B., Verjans, S., & van Petegem, W. (2006). *Towards Sustainable Virtual Mobility in Higher Education Institutions*. EADTU Annual Conference 2006.
9. Silvio, J. (2003). Global Learning and Virtual Mobility. In T. Varis, T. Utsumi, & W. R. Klemm (Eds.), *Global Peace Through the Global University System*. Hameenlinna, Finland: University of Tampere.
10. Tereseviiien M., Volungeviiien A., & Dauksien E. (Eds.) (2011). *Virtual Mobility for Teachers and Students in Higher Education - Comparative research study on virtual mobility*, Kaunas. Retrieved from http://www.teacamp.eu/sites/default/files/Teacamp_book_final_final20110606.pdf
11. Verhaest, D., Sellami, S., & van der Velden, R. (2017). Differences in horizontal and vertical mismatches across countries and fields of study. *International Labour Review*, 156(1), 1-23.

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