

DEMONSTRATOR : TUNING-BASED COMPETENCES FOR THE DOCTORAL STUDIES IN EIE

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1 INTRODUCTION

New European rules try to encourage the lifelong learning whatever the level of the Higher Education. The new national rules have encouraged since the beginning of 2007 the validation of the professional experience leading to a diploma at the bachelor and master levels as well as at the doctoral one. Lifelong learning at the doctoral level may cover several aspects. The first consists to consider LLL a student preparing a thesis in a company with an academic supervisor. In practice, this work is mainly performed in an industrial environment and is applied usually just after the graduation or master diploma. A second more interesting case is the situation where the student has already a professional experience of several years mainly in a research and development environment and applies to get a doctoral diploma, thanks to an APEL (Accreditation Of Prior And Experiential Learning). Specific approach and evaluation must be set-in. This demonstrator deals with Lifelong Learning in the case of a person wishing to get a doctoral diploma in Electrical and Information Engineering, from his professional experience Several aspects must be analyzed at this level. The first main point is the administrative consideration. The second is related to the practical organization of the defence. The demonstrator gives the experience got at the University of Rennes 1 (France) for a candidate that applied to a doctorate in the field of electrical and information engineering.

2 DIPLOMA ATTRIBUTION IN LLL APPROACH

The procedure must be set-in at the level of the institution. The main goal is to ensure the scientific quality of the diploma and an international recognition. In order to better explain the different aspects, we give the experience of the University of Rennes 1 (France) for a candidate that applied to a doctorate in the field of electrical and information engineering.

2.1 Administrative and legal steps

Figure 5 shows the several administrative and legal steps that were followed to set-up the LLL. The first step consists to understand the European and national regulations related to the project. The project is thus first analysed by the continuing education office that builds a procedure in agreement with the doctoral school management. This procedure should include an evaluation of the candidate and the way to organize the defence and the delivery of the diploma.

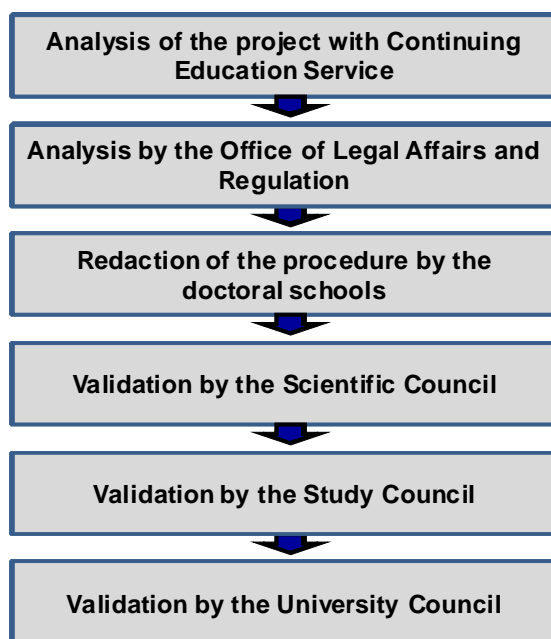


Figure 5. Administrative procedure for validating the LLL at the doctoral level in a French institution.

This project is then submitted for analysis by the office of legal affairs being in charge to check the European and National regulations in order to respect laws, decrees and ministerial orders.

From the definition of the general frame, the doctoral school management may define in detail a procedure that is in agreement with the scientific field and thus adapted to the discipline of the doctorate; let us notice that big difference remains between human/social sciences and “scientific” ones concerning the duration of the doctorate, contents and length of the doctoral dissertation, scientific production (number of published papers in journals, conference presentation, etc.).

In addition, we may notice that the continuing education office pays attention to the registration fees to the diploma. The student must be enrolled at the institution that delivers the diploma and the proposed tuitions take into account the work needed for the global procedure. These fees can be paid by the student, but also in the frame of an agreement with the company, by the company. The amount is thus higher than in the case of usual students who are enrolled at least three years.

The last steps are more administrative than academic and scientific because the diploma must be validated by the institution and these validations are mandatory.

2.2 Procedure of registration, validation and defence.

Figure 6 shows the final procedure established for a LLL doctorate in the field of electronics and telecommunication at University of Rennes 1.

An ad-hoc commission is built and has three members:

- the representative of the continuing education office,
- the head of the doctoral school,
- one expert, at least, of the institution involved in the same scientific specialty.

Let us note that this academic expert can be chosen among the expected supervisor.

The ad-hoc commission first validates and thus accredits the prior and experiential learning in the previous professional experience.

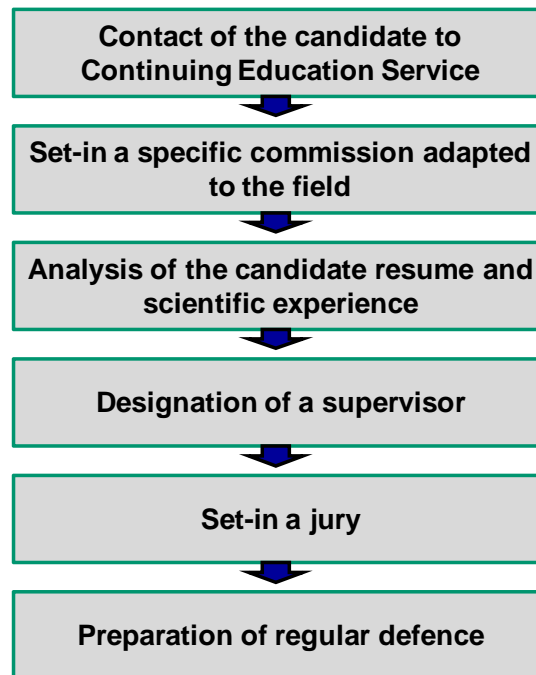


Figure 6. Path for a student applying to a doctorate via LLL. The global procedure may have duration close to one year including the redaction of the manuscript and the evaluation by the reviewers before the defence.

After this fundamental step, a supervisor is nominated; he will follow the last part of the doctoral work, more especially the writing of the doctoral dissertation, the required lectures, the preparation of the defence, and the defence. The defence is organized differently according to the national regulations, as reported in the outputs of the EIE-Surveyor thematic network [3]. Nevertheless, everywhere in Europe, at least two external reviewers are selected and nominated by the President, Rector, or Head of the academic institution. These reviewers, after having agreed to do this task, must give the green light for the defence. They are somewhere a warranty of the scientific quality of the work. The attribution of the diploma is in the majority of the cases based on the written reports and finally proposed by the jury to the President or Director of the academic institution.

3 CONCLUSION

This demonstrator, as far as we know, is the first original example of doctor diploma attribution in LLL in the field of electrical and information engineering involving APEL. It is consistent with the French regulations. However, accreditation rules and LLL definitions vary from one European country to another, as presented in deliverable-D7. This is the reason why in certain countries like Germany or Poland, for instance, the attribution of a doctor diploma can be in any case considered as included in a LLL procedure. Due to the peculiarities of doctoral studies, as developed in deliverable-D7, the European institutions if possible with the support of the European Commission should continue to organize at least annually, some seminars of reflection on the policy about doctoral preparation in order to adapt the procedure with the very fast evolution of the environment, with the aim of a global harmonization. ELLEIEC network has enough experience in the frame of the EAEEIE association to confirm this general interest.

4 RELATED PUBLICATIONS

- [1] O. Bonnaud, J.M. Thiriet, A. Friesel, H. Frémont, Set-in LifeLong Learning for PhD students in Electrical and Information Engineering, Oral communication; EAEEIE'11; Maribor (Slovenia) 14-15 June 2011, session pages, Proc. ISBN 978-961-248-281-7, Pp. 5-9
- [2] O. Bonnaud, H. Frémont, J-M. Thiriet, H. Yahoui, Obtenir un doctorat en EEA par la voie de la formation continue en Europe : les pistes, CETSIS 2011, Trois-Rivières (Canada), Oct. 2011
- [3] O. Bonnaud, H. Frémont, J.M. Thiriet On the way of harmonization of PhD in Europe in Electrical and Information Engineering: status and recommendations submitted to communication; EAEEIE'12