PREPRINT
14th of September 2011

Exploration of exploitation approaches of European projects on ICT and foreign language learning: the CEFcult project case

Ellen Rusman[1], Kamakshi Rajagopal[1], Slavi Stoyanov[1], Jan Van Maele[2]
[1)] Open University of the Netherlands
Heerlen, The Netherlands
[2)] GroepT- Leuven Engineering College (Association K.U.Leuven)
Leuven, Belgium
ellen.rusman@ou.nl; kamakshi.rajagopal@ou.nl; slavi.stoyanov@ou.nl; jan.van.maele@groept.be

Abstract

As employees increasingly work in international, multi-cultural settings, success in intercultural professional communication requires not only language skills, but also the ability to understand and deal with cultural differences. The European project CEFcult (www.cefcult.eu) develops an online platform which aims to support the joint achievement of these competences by offering authentic scenarios, validated assessment frameworks and a community of people (both novices and experts) with similar interests. The European Commission strongly emphasizes the importance of implementing projects' outcomes in different contexts and settings after the projects' life. This is not so easy, as it requires involvement and dedication of different types of organizations, from business as well as from the academic side.

In this paper we focus on the approach to exploitation taken within the CEFcult project. We first describe the general characteristics of the project, in order to enable the audience to assess the transferability of the described exploitation approach to their (European) projects. Then we describe how we engaged with various types of stakeholders, in order to derive a suitable exploitation approach. We describe the method and instruments used to collect information and acquire insights from these stakeholders. This approach led us to several business models, which can feasibly be adopted by the CEFcult project, but also provide inspiration and function as examples for similar European projects. To be viable, even after the project, these business models need practical implementation. We describe how we developed criteria and evaluated potential business models, in order to come to a practical, commonly adopted and grounded exploitation strategy.

1. Introduction

The European project CEFcult [1] targets the integrated training of intercultural and oral language skills, thereby addressing increased needs for this type of training in business and educational institutions in Europe. The principal outcome of the project is an online environment to train and assess professional intercultural communication in a self-directed, socially embedded way. The environment is designed to support informal learning initiatives, initiated by learners themselves, but can also be used in formal learning settings (e.g. in classes/cohorts in schools or universities). Learners are challenged to record their responses elicited by authentic intercultural scenarios. These scenarios are derived from situations and 'critical events' in real-life professional intercultural interaction and collaboration. Once recorded by means of a webcam, learners' performances can be self-and/or peer assessed with the help of the provided assessment frameworks (INCA [2] and CEFR [3]) in terms of pre-defined descriptors as well as through explanatory annotations. Learners can invite their contacts within their social network or contact recognized experts to assess performances. The assessments can be either used as feedback, whilst learning, or for final certification of their skills, depending on their aim and the context in which they learn. Teachers and experts in intercultural communication and collaboration can contribute to the CEFcult environment with new tailor-made scenarios and further elaborations of the assessment frameworks.

We shall now first define the general exploitation approach of the CEFcult project. Then we will describe in which direction we changed the aim of one of the planned hands-on pilots so that it would provide input to the exploitation work package, and the reasons for and benefits of this decision.

In the rest of the paper we will focus on the approach and instruments used in this specific pilot to collect ideas and issues around exploitation from various stakeholders perspectives' and the analysis method used to make sense of the data. We also describe how the result of this analysis method, which results in a shared cognitive model of exploitation, can inform the overall CEFcult exploitation approach.

1.1. CEFcult exploitation approach

In accordance with the guidelines of the European Commission [4], the CEFcult project team defined an exploitation plan to ensure that project results will endure beyond the lifetime of the project. To achieve sustainability, project results have to reach the right stakeholders in a format and at a time that enables them to benefit from them. To increase the likelihood that potential end users would adopt the project results, it is further essential that they consider these outcomes to be relevant to their own situation.

In the case of CEFcult, the most prominent project result is the online assessment environment for intercultural communicative competence. The following groups were shortlisted as potential stakeholders of this environment: (a) individual learners, including working professionals, both in and outside formal settings; (b) language teachers in public and private schools; (c) in-company trainers, consultants and HR professionals; (d) job counselling, employment, outplacement and temp agents; (e) textbook publishers and testing providers. Given that the business community was underrepresented in the CEFcult partner consortium, it became clear from the outset that a strong focus had to be set on engaging representatives from these stakeholder groups throughout the project cycle.

To this end, a number of exploitation activities were set up at different stages and as part of various work packages of the project. Firstly, representatives of the business community were solicited to join an external advisory board and were consulted before taking strategic project decisions. Secondly, in the piloting stage the project partners were encouraged to approach the pilots as an opportunity for testing the appeal of the online environment with stakeholders in business. A third activity concerns the organization of three international seminars with respectively a strategic, an academic and an entrepreneurial focus. The first of these seminars, held at The Open University in Milton Keynes (U.K.) in April 2011, had the specific aim to yield insight in various models of university/business collaboration in technology-supported assessment [5].

1.2. CEFcult pilots

The CEFcult pilots aim to test the online environment with language learners, teachers / trainers and assessors from all partner countries. They constitute an exercise in formative evaluation, meant to detect flaws and to improve the design of the online environment. However, it became clear that these evaluations did not explicitly focus on acquiring information about the adoption of the environment from different stakeholders' perspectives. The Milton Keynes exploitation seminar revealed that this much-needed information was still insufficiently available and that, consequently, involvement from a wider range of stakeholders was needed to gain insight in what business models would be acceptable for specific stakeholder groups. To address this issue, one of the pilots was redirected towards exploitation by aiming at collecting information from language teachers (stakeholder group b) and company representatives (stakeholder group c) in different settings on the appropriateness of the CEFcult environment for their core business. We also questioned them about the possibilities of adopting the environment in their organization. The main question in this pilot was:

> *What are the facilitators and barriers for adopting the CEFcult environment in different business and educational organizations?*

To address this question, several sub-questions were formulated:

1. What makes the CEFcult environment attractive for your organization?
2. What makes the CEFcult environment problematic for adoption and implementation in your organization?
3. What steps/measures/facilities are needed for adopting the CEFcult environment in the core activities of your organization?
4. What business model(s) would be most suitable for exploiting the CEFcult environment?
5. What would be your 'elevator pitch' for the CEFcult environment?

2. Method

To answer the questions we posed, three types of activities were undertaken within the exploitation-oriented pilot:1) a hands-on workshop with a sticky-note brainstorm session, 2) stakeholder interviews, and 3) card-sorting. The workshop and interviews were used to collect potential end-user statements on exploitation and card-sorting was used to come to a shared cognitive model on exploitation derived from these statements by means of multidimensional scaling and hierarchical cluster analysis.

2.1. Materials and instruments

Sticky notes
Coloured sticky notes were used to collect exploitation related ideas, triggered by sub-questions 1 to 3.

Interview schema and template
An interview schema was used to structure the interview for the interviewer as well as the interviewee, containing all 5 sub-questions, next to general questions about the organization and background of the interviewee. A template was used for the interview reporting, to ensure uniform interview summary reports.

Card-sorting environment
We created a web environment where participants could do the card-sorting task online and independently from each other.

2.2. Participants

Workshop: sticky-notes brainstorm session
6 out of 9 workshop participants had more than 10 years professional experience in education. 8 were female and 1 male.

Interviews
At the time of this paper 6 stakeholders (4 female, 2 male) had been interviewed: 1 business representative, 2 from a university, 1 teacher and 2 from a government funded not-for-profit organization.

Card-sorting
The statements were sorted by 5 researchers (3 female, 2 male).

2.3. Procedure

Workshop
The workshop started with a presentation about the CEFcult project and an introduction to the environment. In the second part of the workshop, participants were asked to spend 30 minutes to brainstorm and write up their ideas around the 3 sub-questions on sticky notes, using one colour for each question, and taking a new sticky note for each idea or statement.

Interviews
All interviewees received a one-page project summary and a one-page outline of the interview (containing aims, set-up and questions) before the interview. After a 20 minutes' presentation of the CEFcult project and the CEFcult environment, the interviewee answered the questions. After the interview, a summary was made based on a template and sent to the interviewee for comments and approval.

Card-sorting
The sticky-notes brainstorm yielded 64 ideas and an additional 82 statements were extracted from the interviews. After removing 53 statements that corresponded in meaning, the final list contained 93 statements. We instructed the five participating researchers to first group the statements according to how similar in meaning they were to one another and second, to give each cluster of statements a name that described its contents. Using this card-sorting method ensured that a consensus could emerge from the data provided by each participant individually. As a result, we obtained the basis for a shared, collective overview of the key exploitation issues.

2.4. Data analysis

To sort the data, we used *multidimensional scaling* (MDS) and *hierarchical cluster analysis* (HCA). The output of the MDS analysis is a point map on which statements are ordered in accordance with the total square similarity matrix produced by summing individual similarity matrices across the participants. To increase the reliability of thematic area grouping on the point map, we applied HCA, which proposes different solutions for the clustering of data. To find the optimal number of clusters, we used the practical heuristics '20-to-5', which is based on the fact that most comparable card-sorting projects have identified between 5 and 20 clusters.

3. Results

The first output from multidimensional scaling analysis is the point map (see Figure 1).

INSERT FIGURE 1 ABOUT HERE

The point map depicts the collective judgment of the five sorters on the similarity in meaning of the 93 statements. The closer the statements are to each other in distance, the more the sorters clustered them together, and so the closer they are in meaning. We conducted several iterations, applying hierarchical cluster analysis, to find the optimal number of clusters. The process of defining the optimal number of clusters based on the purpose of the study, checking different solutions of HCA and bridging values, led to the conclusion that the 6-cluster solution is the best representation of the data.
The next step was defining the clusters. This was done in three ways. The first way was by simply looking at the contingent statements that could constitute a meaningful cluster. The second way was by checking the bridging values for the statements in a cluster. The statements with low bridging values better represent the content of the cluster. The third way was by exploring the suggestions given by the software for the best fitting labels of the clusters as provided by the participants. The following six clusters were identified as a result: 1) Context of use, 2) Stakeholders involvement, 3) Business Models, 4) Pedagogical utility, 5) Facilitating conditions and 6) Enabling functionality (see Figure 2).

INSERT FIGURE 2 ABOUT HERE

1. The cluster *Context of use* is about contexts, settings and places where the CEFcult environment could be used. It is appropriate for both academic and business training settings. Some representative statements are: "Can be used independently by students as an intake service to assess their skills level (by making exercises), which could help them to select the right/most suitable course(s)"; "The environment can be used in training to enable participants to independently practice situations, without having a separate person (e.g. trainer or actor) to simulate a scenario".
2. The cluster *Stakeholders involvement* suggests that successful implementation of the CEFcult environment depends very much on gaining commitments from all stakeholders involved: managers, directors, teachers, students, and parents. Some of the statements included in this cluster are: "Try to convince the management to introduce the environment in the school"; "Train teachers in using this tool"; and "It requires a lot of lobbying to convince business that they need a environment like this".
3. The cluster *Business Models* includes practical suggestions for conditions of selling and licenses of using the environment from different organizations (e.g. "Find organizations/networks that can use this environment very well in their daily practice and then share exploitation costs"; and "Business model with a paid access and different registration levels (with different functionality), depending on payments").
4. The cluster *Pedagogical utility* reflects the potential of the CEFcult environment to improve learning and teaching. Examples of statements are: "Employees need to practice intercultural skills"; "Peer teaching and collaborative learning, which don't receive a lot of attention in regular education yet, but have a lot of potential"; and "The environment provides support for self-studying".
5. The cluster *Facilitating conditions* is concerned with technical requirements for implementing the system, usability issues, and knowledge and skills required for using the system (e.g. "Technical requirements to use the systems (computer facilities, webcams and internet connection) would be a problem"; "The tool uses a customizable web environment"; and "ICT skills of teachers (adoption of technology) would be a problem.

6. The cluster *Enabling functionality* is about the potential of the current features of the environment to support the acquisition of foreign language skills and intercultural competence. Some statements included in this cluster are as follows: “Working with scenarios gives a lot of stimulating information which is important for learning intercultural skills”; “The environment only assesses oral skills by means of scenarios, which makes the environment a little bit one-sided”; and “The environment should be more dynamic and interactive”.

4. Discussion and conclusion

This paper describes how a pilot and study can be set up in order to inform a commonly adopted and grounded exploitation strategy for European project outcomes.

The study identified a number of issues with regard to CEFcult exploitation that need to be addressed to increase the chances on successful implementation of the environment. The likelihood of adoption of the environment is a function of the extent to which it can be used in different contexts and settings, its potential for improving learning and teaching, functionalities that affords high quality learning and teaching of foreign language and intercultural communication, the commitment of all stakeholders, the technical requirements of the environment, the available knowledge and skills, and the presence of business models that are mutually beneficial. All of these issues are necessary but none of them is a sufficient condition for successful implementation of the CEFcult environment. For example, the environment might score high on relevance for different contexts, usability and pedagogical potential, but if an organization has problems with installing the tool, or there is resistance of teachers to use it, then implementation of the environment would be problematic. To address these exploitation issues, each cluster and contingent statements will function as input for a reflective discussion between CEFcult project partners, to decide which actions will and can be taken up to increase chances of successful exploitation.

The results of the study show that the CEFcult approach to assessment of intercultural communicative competence has potential to be implemented in business as well as educational settings. However, much depends also on the extent to which continuous technical support can be provided, and the extent to which learners can be up-skilled to become independent and self-directed in their learning, empowered by learning technologies.

Acknowledgments

The CEFcult project is supported by the Lifelong Learning Programme of the Education, Audiovisual & Culture Executive Agency (key activity 2: Languages) of the European Commission. The authors would like to thank all CEFcult project partners as well as Alan Fletcher and Bert De Coutere, our keynote speakers at Milton Keynes, for sharing their insights on university/business partnerships.

References

[1] CEFcult project website. [Available online: www.cefcult.eu]
[2] Intercultural Competence Asessment (INCA)- Framework of Intercultural Competence. [Available online: http://www.incaproject.org/framework.htm]
[3] Common European Framework of Reference for Languages (CEFR). Learning, Teaching, Assessment. [Available online: http://www.coe.int/t/dg4/Linguistic/CADRE_EN.asp#TopOfPage], European language levels - Self Assessment Grid [Available online: http://europass.cedefop.europa.eu/LanguageSelfAssessmentGrid/en].
[4] Lifelong Learning Programme. Guide 2009. Part I: General Provisions. [Available online: http://ec.europa.eu/llp]
[5] The keynotes and the webinar of that day are accessible through the CEFCult project website.

Figures

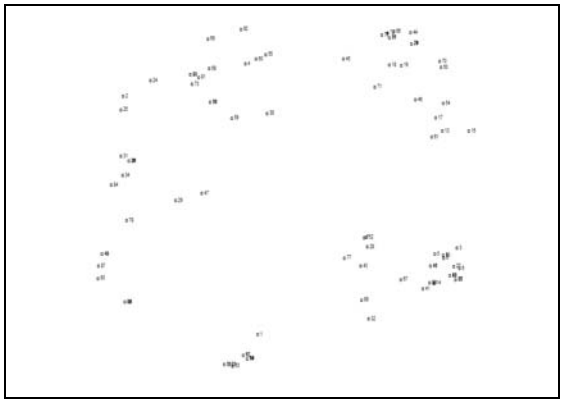

Figure 1. CEFcult exploitation point map

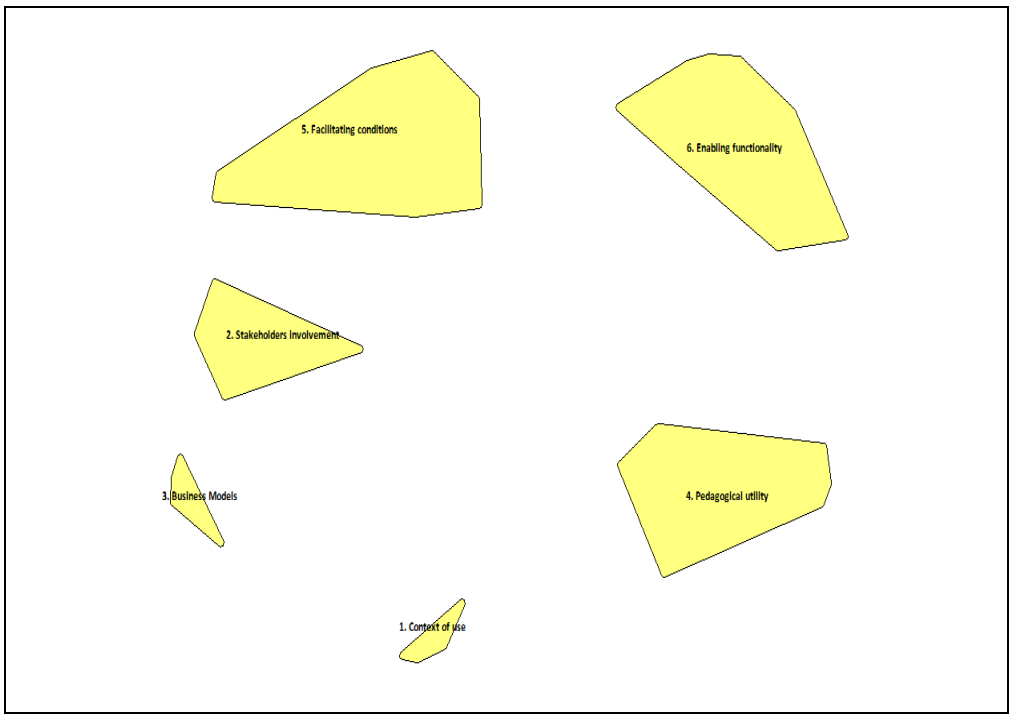

Figure 2. CEFcult exploitation clusters