Coop
PBL in VET

Common Report

Evaluation of Pilot Implementing Experiences

Marta Mañas, ITURBROK S.L.

1. DESCRIPTION OF PILOT EXPERIENCIES

The main results obtained in CooP PBL in VET Project have been evaluated (post evaluation) by trainers and trainees. The objective of the evaluation is to check the suitability of the training product (in terms of contents, training methods, tools).

The Work Package 3 of CooP PBL in VET Project is dedicated to carry out 3 pilot experiences of implementation of the PBL model supported on KPE develop during the Work Package 2.

Previewed methods was carrying out pilot experiments applying the pedagogical models, the Toolkit and the adapted KPE developed in the WP2 with groups of VET students and teachers, as experimental actions on current courses in the field of Mechanical Manufacture, in IEFPS MIGUEL ALTUNA (Spain) and in BORBÉLY LAJOS VOCATIONAL SECONDARY SCHOOL (Hungary). The main idea has been monitoring and evaluating the experimental implementation, of the use and utility for improving the current VET training and for providing the new competencies to the trainees in common projects development and collaborative ICT use. According that, the evaluation activities consisted in:

1.1. MAI

The pilot implementing experience in Spain held by MAI involved 5 VET teachers and 14 students of second level of Mechanical Fabrication VET branch, in the course of Production Machining, module ·"Project" (acronym 2PM3). The experience was developed form 27th February to 16th March 2012.

The issue of the project developed was the manufacturing a pneumatic motor which can be used as a generator motor in automated systems where due safety reasons is not possible to use electric power. The starting point was a developed idea with existing documentation. Students were charged to planning the works, define the tasks, determine de working teams, establish the process and control system, manufacturing the motor and produce all the documentation related to the project.

The pedagogical learning model based on project based learning designed in CooP PBL in VET has been applied to carry out the experiences. E-mail and KPE were used to exchange files and information, to share the documents that have been produced during the project's development, like schemas, list, forms, memories, plans, task description and distribution, report of achievements, bibliography and documents, etc.

Once the project was finished, the students presented the project's experiences and results to other students of the Centres and from other associated centres.

1.2. BLSZK

The pilot implementation experiences were held between the 6th February to 24th April of 2012. A total of 12 students, 12 teachers and 2 stakeholders. The duration has been 72 hours in total, included in the program of Metal Industrial Skills.

dates	total number of students	total number of teachers	Total number of stakeholders	Duration hours	VET specialty
06.02.2012		10	2	4	Metal industrial skills
07.02.2012		10	0	4	Metal industrial skills
13.02.2012		10	0	4	Metal industrial skills
20.02.2012	12	10	0	4	Metal industrial skills
22.02.2012	12	2	0	4	Metal industrial skills
27.02.2012	12	2	0	4	Metal industrial skills
01.03.2012	12	2		4	Metal industrial skills
02.03,2012	12	2		4	Metal industrial skills
12.03.2012	12	2		4	Metal industrial skills
13.03.2012	12	2		4	Metal industrial skills
19.03.2012	12	2		4	Metal industrial skills
20.03.2012	12	2		4	Metal industrial skills
26.03.2012	12	2		4	Metal industrial skills
27.03.2012	12	2		4	Metal industrial skills
02.04.2012	12	2		4	Metal industrial skills
03.04.2012	12	2		4	Metal industrial skills
23.04.2012	12	2		4	Metal industrial skills
24.04.2012	12	2		4	Metal industrial skills

1.3 ITB

Due formal difficulties to experiment the project's products on German VET Centres (because they have a lot of constraints to accomplish with the official VET programs in dual system), ITB invited some of experts on VET education who are working in projects that promote project management (PM) training in vocational schools to have a look at the KPE and to test its functioning. It also invited some vocational school teachers to do the same and in CooP

Following we include the working notes based on discussions with German counterparts (teachers, trainers, researchers) who had familiarised themselves with the KPE software environment and who were invited to give a video interview for the Coop-PBL in VET project. These interviews presented parallel developments in project- and practice-based learning and in using collaborative learning technologies. The interviews have been published in the Virtual Community section of the Coop-PBL in VET website:http://coop-pbl.com/?page_id=16&lang=en PBLinVEt Channel in Vimeo.

These interviews make transparent circumstances in which it was not feasible to use KPE software environment as primary support for project- and practice-based learning in German vocational schools. Instead, the interviews give insights into initiatives and activities in which other platforms or software solutions played a role in promoting project-based learning or interactive communication and social networking. Below, some comments on the potentials of KPE vis-à-vis these other platforms of software solutions are discussed in the light of respective developmental context.

TBZ Mitte: School policy to use moodle as the common platform across the whole school

In the vocational school centre TBZ Mitte the school management had adopted a general policy to use moodle as the common platform for all pilot initiatives to introduce web supported learning. This policy was adopted after feasibility studies and on the basis of pioneering initiatives. The aim was to ensure synergy and knowledge transfer between different small-scale pilot activities of individual teachers or teams of teachers.

In the light of the above there was no room of manoeuvre to introduce a completely different software solution. Therefore, the interviewed TBZ-teacher – when he was asked to comment the usability of the KPE software environment – indicated that he could have possibly used it if it had been introduced as the first potential platform. The fact that project-based learning at TBZ was supported by project management (PM) training (and that Coop-PBL in VET had highlighted the access to PM tools in the use of KPE) gave rise to this comment.

ExpertAzubi project: Interactive platform for apprentices and supporting teachers/trainers

Another video interview brought into picture the parallel national project "expertAzubi" that sought to create a joint communication and networking environment for apprentices and their supporting teachers and trainers. Here, the idea was to shape a platform that responds to the need of finding relevant information and sharing information across a regional learning community and networks of apprentices.

When discussing the differences between the platform development initiative and the adaptation of the KPE software environment it became clear that the Coop-PBL in VET project has highlighted the use of KPE to support planning, management and implementation of learning projects, whilst the expertAzubi has opted for gradual platform development and creation of the foundation for learning culture that promotes knowledge sharing and interactive search for advice for solutions. Here the role of projects and portfolio development come into picture as next steps.

Project management training in vocational schools

The third developmental context that was approached in this context was the initiative group at Bremen University that promotes project management training in vocational schools (as support for project-based learning in vocational curricula). Originally this initiative group has promoted PM training in local vocational schools. Quite recently these activities have been brought to the level of European cooperation via two successive Leonardo da Vinci projects (that focus on specific European regions).

In the discussions on the usability of KPE there was no direct contrast between the KPE environment and an alternative platform or software solution. Instead, the representatives of the initiative group told that they were discussing the prospect of a software development project that draws upon their training experiences. In this respect they considered KPE as a predecessor models with some functionality that they considered valuable. However, in this respect the KPE environment was perceived as a tool to present archived results and resources rather than as a living working environment. Yet, from the perspective of developing new solutions it was interesting to find out whether the software enabled a synchronised work with project documents and the Gantt chart.

2. METHODOLOGY OF EVALUATION THE PILOT EXPERIENCES

Purpose of methodology

The purpose of the developed common evaluation methodology has been just to provide a comprehensive and structured methodology for data collection and analysis in order to unify the approach of project partners during pilot experiences of implementation of the model developed by the partnership. Thanks to unified approach the consistent quality of the experiences undertaken in the partner´s countries will be ensured.

This common methodology allowed make comparisons between users (VET trainees and teachers), as well as from VET experts, from different countries represented in the partnership and to prepare a common evaluation report in order:

- to have an overview of the partnership performance as far as the development of pilot implementing experiences are concerned

- to have a synthetic presentation of the feedback and evaluation given by VET trainees and teachers in different countries

- to make some reflections on the various factors that interfered in the pilot experiences.

- to assess transferability of this innovative PBL&KPE model and the methodological toolbox to different contexts.

The evaluation of the pilot implementation experiences is organised in order to find out the opinion of targets groups, but could be used as well to collect opinions and points of view of other related professionals.

After participating in the pilot experiences, participants have been requested to provide their feedbacks related to their own educational experience by using the PBL&KPE model and toolbox. This feedback served as a valuable source of information provided from the side of final users.

Target group

Participants involved in the pilot experiences partly consisted of VET students and teachers. This target group provided feedback related to their own experiences from the different perspective, as learner and as trainer.

The rest of other target groups that have participated in the evaluation carried out in the case of Germany has been responsible staff of VET Centres, tutors of practices in companies, experts and professional working in the field of VET innovation, educational research, vocational training policies or related, and representative of enterprises that usually provide training practices opportunities to VET students.

Data collection

The collection of data has been organised by countries, based on the same questionnaires provided below, to be answered by VET students and teachers.

In the case of evaluations made with professionals and educational representative in Germany, several interviews has been carried out based on scripts with open questions have been used too, always based in the same criteria and issues, in order to allow comparison and common conclusions.

Data analysis

All data will be collected in national languages and then the results will be translated and filled in special forms for data analysis. These forms will be sent to leader of the work package (BLVSS.) who will elaborate common document for whole partnership.

Conclusions

The evaluation report has been created on basis of data acquired, and analysed during the 5th partner's meeting. Contained conclusions are referring to whole partnership as well as to national particularities. Recommendations and comments provided by target group should be considered the most important part of the report.

3. QUESTIONNAIRES

The evaluation of the pilot implementation has been based on two questionnaires, one for trainers and one for the trainees, as main targets involved in the project. All the people involved in the training filled in a questionnaire and the results were elaborated by each partner. These questionnaires have advantages over some other types of surveys because do not require as much effort from the questioner and often have standardized answers that make it simple to compile data.

Closed and open questions have been included. In the case of closed questions, value between 0 to 5 has been requested.

3.4   For Teachers

Basically, the issues evaluated in the case of VET teachers have been related to:

- Innovation of training methodologies

- Usefulness and suitability of the developed tools

- Usability and technical aspects of the KPE

- Quality of KPE interface in national version.

- Perception of student's reactions

- Weaknesses and strengths of the experience

The questions proposed in the questionnaire, has been:

- Do you think that this training model introduces new and innovative elements respected to other training materials?

- Did you get enough information before about KPE?

- Did you like the look of the website at the end of the pilot experience?

- Do you like the second word document´s schedule?

- Which are the disadvantages in this pilot experience?

- What would you add or delete on it?

- Do you like the third document´s schedule?

- What would you add or delete on it?

- Do you like the forth document´s schedule?

- Did you find easy the way of load/upload documents?

- Have you worked in team?

- Have you understood the five phases in a Project Development?

- What was the reaction of the students during the project?

- What is your general impression about the KPE?

- Was the translation of KPE well arranged?

3.5. For Students

In the case of students, the issues of the questionnaire have been both related to the methodological tools developed for project management based learning and the usability of KPE.

- The questions proposed to students were:

- Did you find easy to enter KPE the first time?

- Did you like the look of the website the first time you came?

- Did you like the look of the website at the end of the pilot experience?

- Do you like the second word document´s schedule?

- Have you used the Gantt Diagram?

- What would you add or delete on it?

- Do you like the third document´s schedule?

- What would you add or delete on it?

- Do you like the forth document´s schedule?

- Did you find easy the way of load/upload documents?

- Have you worked in team?

- Have you understood the five phases in a Project Development?

4. RESULTS OF EVALUATIONS AND MAIN CONCLUSIONS

4.1. VET Students Evaluation

Number of Participants: 12 students MAI, 12 students BLSZSZK

Question 1: Did you find easy to enter KPE the first time?		
Entity	**Points**	**Comments**
MAI	45/60 -	
BLSZSZK	40/60	For Hungarian students KPE was new type of education, because they don't use daily the ICT tools in education, and till this project they did not used in practice.

Question 2. Did you like the look of the website the first time you came?		
Entity	**Points**	**Comments**
MAI	37/60	
BLSZSZK	35/60	Comment: more visible of the website would be more interesting

Question 3. Did you like the look of the website at the end of the pilot experience?		
Entity	**Points**	**Comments**
MAI	42/60	
BLSZSZK	45/60	After of pilot experiences students focused not only for design .but for the content of websites.

Question 4. Do you like the second word document´s schedule?		
Entity	**Points**	**Comments**
MAI	39/60	
BLSZSZK	42/60	The students from HU are working with more word documents as other type, that maybe the reason why they prefer-

Question 5. Have you used the Gantt Diagram?		
Entity	**Points**	**Comments**
MAI	45/60	
BLSZSZK	25/60	In HU school the GANTT diagram was not used before this project.

Question 6. What would you add or delete on it?		
Entity	**Points**	**Comments**
MAI		It's difficult to do the Gantt Diagram
BLSZSZK		Change the evaluation criteria
		Decrease the percentage in the last mark of "how much we continued our planning". If the work it's done by the deadline, it's done.
		the estimation of the time you are going to use in each activity is not easy to guess
		It was difficult for me to understand Gantt diagram
		Project management not interesting for me
		Budget, project management is too long
		.

Question 7. Do you like the third document´s schedule?		
Entity	**Points**	**Comments**
MAI	36/60	
BLSZSZK	41/60	Comments, this part in not too interesting for students.

Question 8. What would you add or delete on it?		
Entity	**Points**	**Comments**
MAI		It is difficult to think of all the activities you are going to do in the project beforehand
BLSZSZK		It's useful but too many things to think to fill the draft in so less time
		More time to upload the draft to the KPE
		As we have to present the draft before doing the project (at the very beginning), it is not worth to have the last 3 tables in the draft pdf. You don't fill them till the end.
		Delete budget /5 students /
		Delete human resources, not necessary for the draft

		Difficult to fill in the gaps
		Nothing 3 students
		Budget, project management is too long
		Project management not interesting for me
		.

Question 9. Do you like the forth document´s schedule?		
Entity	**Points**	**Comments**
MAI	51/60	
BLSZSZK	46/60	It was interesting part for students

Question 10. Did you find easy the way of load/upload documents?		
Entity	**Points**	**Comments**
MAI	41 /60	The uploading is not too difficult for students
BLSZSZK	37/60	The uploading is not too difficult for students

Question11. Have you worked in team?		
Entity	**Points**	**Comments**
MAI	45/60	
BLSZSZK	42/60	In the ordinary school projects the students were working in

	group, but in vocational project it was new for them.

Question 13. Have you understood the five phases in a Project Development ?

Entity	Points	Comments
MAI	43/60	
BLSZSZK	40/60	Project development was too long /by the opinion of students /maybe shorter version would be more interesting for them.

Main conclusions

In pilot experiences the students agreed that KPE is a good way of learning. The students from MAI have more experiences about it. For BLSZSZK, HU partner, it was a new experiences, before that project they did not used at all ICT methods in metal industrial education. Students enjoyed the new experiences, they think about it as a challenge, but necessary more experiences and time for team work, and for project management.

4.2.   *VET Teachers' Evaluation*

Participants: 3 teachers MAI, 3 teachers ITB, 3 teachers BLSZSZK,

Question 1. Do you think that this training model introduces new and innovative elements respected to other training materials?

Entity	Points	Comments
MAI	11/15	
BLSZSZK	11/ 15	
ITB	6/15	It is one model among others with some special features, yet not certain what is the attraction

Question 2. Did you get enough information before about KPE?		
Entity	**Points**	**Comments**
MAI	9/15	
BLSZSZK	10/15	
ITB	9/15	It means: more information necessary for user (for a short introduction session the ppt worked well as good introduction

Question 3: Did you like the look of the website at the end of the pilot experience?		
Entity	**Points**	**Comments**
MAI	12/15	
BLSZSZK	13/15	
ITB	6/15	It was not very transparent and it was lacking the structure, see the later remarks.

Question 4. Do you like the second word document´s schedule?		
Entity	**Points**	**Comments**
MAI	10/15	
BLSZSZK	12/15	
ITB		Not applicable. Only has been done assessment of usability for the project work at schools

Question 5. Which are the disadvantages in this pilot experience?		
Entity	**Points**	**Comments**
MAI		Teachers main problems are :
BLSZSZK		Misunderstanding

		Lack of time
		Problem with using new methods
		The main limit for usability is the lack of structure of main themes and sub themes)
		Being a pilot experience, sometimes we also have doubts about certain issues so we can somehow create misunderstandings in the students
		I never used this type of educational materials
ITB		

Question 6: What would you add or delete on it?		
Entity	**Points**	**Comments**
MAI		Mainly nothing
BLSZSZK		It's fine as it is. All the student's have clear from the beginning of the project the evaluation criteria and the work required.
ITB		Not all items visible at once; items made visible gradually

Question 7: Do you like the third document´s schedule?		
Entity	**Points**	**Comments**
MAI	14 /15	
BLSZSZK	13/15	
ITB	No answers	

Question 8: What would you add or delete on it?		
Entity	**Points**	**Comments**

MAI		I wouldn't change the deadline of the draft (something that students have asked for). That really makes them start thinking on the problem to be solved (on the project)
BLSZSZK		
ITB		
		As draft of the project it's a complete work to do. I would do it till the project development table
		I delete the budget part, it is not important for students

Question 9. Do you like the forth document´s schedule?		
Entity	**Points**	**Comments**
MAI	14/15	
BLSZSZK	13/15	
ITB	No answers	

Question 10. What would you add or delete on it?		
Entity	**Points**	**Comments**
MAI		I wouldn't change the deadline of the draft (something that students have asked for). That really makes them start thinking on the problem to be solved (on the project).
BLSZSZK		
		As draft of the project it's a complete work to do. I would do it till the project development table, more simple would be better.
ITB		

Question 11: Did you find easy the way of load/upload documents?

Entity	Points	Comments
MAI	12/15	
BLSZSZK	10/15	
ITB		As such the pattern was OK, in practice the process is slow and files appear with delays

Question 12. Have you worked in team?		
Entity	**Points**	**Comments**
MAI	12/15	
BLSZSZK	10/15	
ITB		Yes (in the ordinary school projects but not using KPE with teams)

Question 13. Have you understood the five phases in a Project Development ?		
Entity	**Points**	**Comments**
MAI	15/15	
BLSZSZK	12/15	
ITB		Yes (the projects are supported with Project Management training)

Question 14: What was the reaction of the students during the project?		
Entity	**Points**	**Comments**
MAI		• Their reaction has been changing a lot. The beginning fear has developed into a enriching experience and they were all happy with the
BLSZSZK		

		results achieved
		• They faced many problems but in my opinion, this made them work and search different ways of solving them (internet, enterprises, teacher, friends, family…).
		• They were complaining about the amount of tasks
		• At the beginning I was thinking it is too difficult for us, but after using, I think it will be OK.
		• This is new for me and for them, we need more experiences
		• It is possible to anticipate that they would have a quick trial and would promptly react to some of the weaknesses (navigation, slow functioning)

Question 16. What is your general impression about the KPE?		
Entity	**Points**	**Comments**
MAI		It's absolutely helpful. They work as they will do in a project development in the company
BLSZSZK		
ITB		It's a perfect way to learn what years ago it was taught theoretically and then learned at last in the enterprise by working experiences
		I was really optimistic and I haven't changed my mind. I think they learned to do teamwork (something basic nowadays) and by the way they got technical knowledge.
		It is excellent in e-learning methods
		After enough experiences it will be useful for students and teachers

		KPE is a well done platform for individual and team learning
		If it is the first model to be established, it can be successful but if other models are used, no point in leaving them and moving to KPE (don't convince to change, they use project management software).

Question 17: Was the translation of KPE well arranged?		
Entity	**Points**	**Comments**
MAI	14/15	
BLSZSZK	14/15	
ITB	15/15	

Main conclusions

In pilot experiences the teachers are agree, that KPE is an excellent way of learning and teaching. The colleagues from MAI have best experiences about it. German colleagues are using other methods /Moodle/ and maybe they don't want to change for KPE, but they agree, that it is a good method. For BLSZSZK HU partners, it was a new experiences, before that project they did not used at all ICT methods in metal industrial education, they were known a lot, but necessary more experiences and time for team work, and for project management.

Pamplona, July 2012