TRAINING ACTIONS N° 2: GENERAL REPORT

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About the Report

Training Actions N° 2 from VISIR+ Project "*Educational Modules for Electric and Electronic Circuits Theory and Practice following an Enquiry-based Teaching and Learning Methodology supported by VISIR*" took place in the Latin American Higher-Education Partners from August 22nd to September 16th, 2016.

The present Report refers to the salient aspects recorded by WP3 members who attended the training sessions in each institution venue. The rich outcomes of every experience exceed the present overview which can be enlarged if required by members of VISIR+ teamwork.

This Report aims mainly at tracking the Project development and checking quality indicators. The remarks are made from a twofold perspective (*emic* and *etic*, according to research methodology bibliography) which intends to be part of the experience and to be objective at the same time, considering human perspective limitations. During the TA2, the challenge of our role as observers of Project development was both acknowledging the TA2 hosts' warm welcome and their effort to carry out the sessions successfully, and keeping aloof from each local experience to observe the actual outcomes of sessions (for detailed information about each TA2 see Appendix and TA2 Individual Reports).

Session arrangements

The schedule for each session was agreed through emailing and Skype sessions by every HE partner, Latin American hosts and European guests in charge of TA2. All guest lecturers carried out exploratory enquiries about the TA2 participants (number of attendees, their work, interests, etc.), time load distribution for the sessions and connectivity.

Each host HE institution chose a different process for the agenda scheduling. The UNSE-UNED partners started the discussion about their agenda a month in advance exchanging a vast number of emails about the TA2 programme. On the other hand, IFSC and UFSC (Santa Catarina) relied on IPP proposals for the organization. In their coordinating role,

IPP shared their complete support documents (Powerpoint presentations) well in advance so that HE host could count on them. However, none of the training staff members made use of the documents. CUAS TA2 proposal was sent to PUC-Rio who accepted it well and with no suggestions for modifications.

Even though UNR-UDeusto started the organization at a later time and with discussions about the content of the programme, the final schedule was soon settled down facilitated by the work experiences both UNR and UDesuto have shared on remote labs. Some of the delays on information exchange and decisions occurred due to the period of the year when the TA2 had to be scheduled, i.e. summer recess in Northern hemisphere. Communication pre-TA2 had checks by both Latin American and European members. PUC Rio-CUAS organization was uneven while UNSE-UNED was more fluid similar to UNR-UDeuto towards target dates. Although there were variations in the TA organization, all participants had the event programmes at least a week in advance when enrollment was open.

TA2 Participants

The TA2 audience differed both qualitatively and quantitatively in every place. Sessions in PUC Rio and IFSC had fewer than ten attendees who were mostly members of the Project team. The fact that most participants of PUC Rio TA2 had attended TA1 in Sweden showed lecturers' perception about how initial training could be enriched.

In this vein, the objectives set for TA2 recommended that at least one person from the associated partners (two per project partner) should also have attended TA2. Unfortunately, both PUC-Rio and IFSC could not engage the associated partners, thus affecting the goals of TA2. In fact, while TA1 provided a first approach to VISIR, TA2 was supposed to train those teachers already willing to use VISIR in their classes, with a specific course in mind. In the case of PUC-Rio, the group was almost restricted to those who have attended TA1, i.e. no additional teachers were involved. In any case, Ana Pavani -the host coordinator- is considering applying strategies to contact secondary schools which have institutional links with PUC Rio although she expressed her concern as to the Project requirements to invite new participants. In Florianopolis, on the other hand, it was possible to meet the teacher staff who works with the IFSC coordinator.

Rosario and Santiago del Estero meetings had a higher number of participants (about 30) who represented Partners and Associated Partners, both higher-education institutions and secondary schools. Some HE participants came from different towns (even some far away from Santiago del Estero such as Campana, Paraná, Corrientes, Tucumán or from Rosario, San Nicolás, Mar del Plata, San Luis y Patagonia). They joined the TA2 as members of CONFEDI Project designed to foster dissemination of VISIR in Argentina.

The highest number of participants was at UFSC, which proved outstanding considering Araranguá is a small town. However, as *hands-on* lab sessions were organized for those who would implement VISIR, the number of attendees was reduced during these modules.

It is worth taking into account that not all attendees of populated meetings (Araranguá, Santiago del Estero y Rosario) are supposed to adopt VISIR in their classes. It should be also pointed out that not all participants in these groups who had been enrolled could attend every module of TA2. This information could be further checked if necessary from the Lists of Attendance available for each session.

In four out of five host HE institutions, participants were given a certificate of attendance to TA2. A word of caveat here: some participants might have attended the TA only for the sake of having a certification instead of becoming part of the Project. In the case of Santiago del Estero and Rosario, certifications were issued by the local institutions as responsible for the TA2 organization, while in Santa Catarina certificates were given by European partners. Participants from Rio argued certificates were not necessary.

Lecturers

Professors and technicians from European HE institutions were in charge of lectures in every TA2 session. In Rio, Rosario and Santiago del Estero, there were two lecturers while in Santa Catarina (UFSC and IFSC) there were four. In all institutions (except for Rio), lecturers and audience spoke the same language of the audience, though some dialectal differences (for example, Spanish and Rioplantense, Portuguese and Portuguese from Rio and Santa Catarina) which did not interfere with communication. This fact stands as a great difference comparing communication during TA1, not just as regards listening comprehension but still most important as to the possibility of asking questions or sharing queries. In the case of PUC-Rio whose HE institution partner is from

Austria, communication was facilitated by the fact that Danilo Zutin, who is Brazilian but has been living in Europe for 10 years, delivered the lecture in English and was ready to interpret questions from audience in Portuguese. Also, Ana Pavani agreed on having lectures in English considering it as an asset for local professionals.

In every TA2 session, lecturers were senior professionals (IPP), junior professionals (CUAS) or both (UNED and UDeusto). Beyond differences, all lecturers evidenced sound professional background and presentation skills.

The quality analysis of lecturers implies some aspects connected with oral presentations. While several male trainers are characterized by a low tone of speech (such as those from CUAS and IPP), some of them increased it sufficiently when lecturing (as Danilo Zutin and Ricardo Costa). As noted, this characteristic is not necessarily related to performance, since an experienced professional like Carlos Felguera tended to keep a rather low tone during his presentations. Language and voice quality become important aspects in communication, and even when pairs of HE institutions share the language (except PUC-Rio), there are notorious difference in dialects. For this reason, this quality of trainers' competences is included in the quality assessment. Other factors that may have influenced the mutual understanding are the accent (as in the case of Christian Kreiter, speaking English with a German accent) and to a lesser extent, the high speed of speech (as in the case of Manuel Castro), easy to solve when speaking in the mother tongue of attendees.

Apart from language aspects and presentation skills, all lecturers managed to create an empathetic atmosphere during TA2 which contributed to sustain the audience's interest. European professors' visits were not unnoticed. They were welcome by HE authorities and were given presents or special certificates. Also interviews and articles were published on institutional websites.

Training sessions

The time load of agendas varied in every session. They ran from two full morning shifts (IFSC y UFSC), plus a post lunch slot in PUC Rio, to morning and afternoon shifts of five modules (UNR) and eight modules (UNSE).

During the sessions, lecturers presented VISIR+ Project and developed technical, practical and didactic aspects of VISIR remote lab. Training methodology was mainly

expository, with varied interaction with the audience about typical problems in the academic and technical fields. The questions and queries which the audience posed facilitated the observation of attendees' attention and interest. The practice activities, such as accessing lab, designing circuits, measuring and analyzing results, got attendees involved in the lab use straightaway, and questions and queries which were posed to lecturers were readily answered.

In some HE institution, interaction between lecturers an audience was postponed to the end while in some others, questions and comments were made from the start. Examples of these two approaches were IPP-UFSC y CUAS-PUC Rio respectively. In the first case, the audience remained listening and only reacted to some jokes lecturers made. Questions, mainly by Project members, were asked at the end of sessions. On the other hand, Danilo Zutin from CUAS anticipated that he wanted to have an informal presentation and he succeeded in this natural communication flow, mainly due to the low number of attendees. The higher time load and the larger number of attendees at UNSE facilitated a fluid interaction between lecturers and audience. Due to the previous relation between UNR and UDeusto, there were comments on common experiences about lab use, personal anecdotes, dilemmas, and "what if" questions. In the case of UNR, the approach used for the presentation was also from their own experience with remote labs at UDeusto. This made the presentation interactive and meaningful. Federico Lerro presented the experience which UNR has been carrying out at their university. This account of a local experience with remote labs invited attendees to get familiar with the instrument from a local perspective while joining in the international project. PUC-Rio could have also taken advantage of the extracurricular activities which they had organized with VISIR Lab, but the person in charge, Delberis Araujo Lima, had to leave the training action due to an unexpected trip to attend a serious family health problem. Anyway, the local coordinator Ana Pavani could mention the experience when necessary.

In all cases, the presentation methodology was coherent with the *enquiry-based* principles which underpin VISIR+ Project, i.e. "lecturers practiced what they preached". In fact, during lab practice activities lecturers encouraged *trial and error* approach and a heuristic process in the way questions were posed; attendees were asked about their own experiences with labs and they were invited to compare and contrast education and technical pros and cons in the use of labs (hands-on, remote and simulators); lecturers

emphasized throughout the sessions the fact that teachers can learn from students as much as students learn from teachers.

All presentations were supported by Powerpoint, a device which proved efficient: slides had signposts to guide the talk; slides also showed diagrams or charts summing up main concepts or key questions and activities. Images (photos, pictures, etc) were also used efficiently to illustrate equipment or ideas. When slides presented certain shortcomings as the type and size of font (such was the case at UFSC) or some logos were missing (as at PUC Rio), WP3 member pointed that out and changes were introduced along the sessions. Félix García Loro (UNED) handed out worksheets with activities to be worked out during the sessions.

As to the session organization, all TA2 shared a similar structure. They started with a general presentation about the Project VISIR+, HE partner institutions, objectives and the local institution role. Some lecturers showed the geographical regions and institutions they came from, which proved an effective decision to create a familiar environment and contextualize the project. CUAS showed pictures of the city and university. UDeusto also referred to Bilbao and gave some information about the university such the origins and careers. Even more notorious was UNED case who gave an extended presentation about their own institution. However, as the sessions had much time allotted, this presentation did not interfere with the target training. The IEEE (*Institute of Electrical and Electronics Engineers*) was also presented, taking advantage of Manuel Castro's direct experience with that institution. All presentations included a reference to their own remote labs, especially VISIR, at their European HE institution. In regard to reference to own institutions, María Isabel Pozzo presented at UNSE a description of CONICET so as to let the audience know the possibilities of financial support for scientific meetings or postgraduate scholarship applications for advanced students on VISIR+ Project. Although most participants were from Argentina, information proved new to most of them.

Resuming session content description, all lectures described the characteristics of VISIR, pointing out the difference between remote and virtual labs. VISIR was presented as a complementary (not exclusive) instrument, emphasizing the essential role of the teacher, a premise which underlies the Project objectives. Theoretical and technical aspects about VISIR performance were explained along with plenty of illustrations. All sessions included practice although time allot was different. Time load at UNSE was notorious although some parts were interrupted by problems with Internet connection. But this is a

characteristic of remote labs: they rely on Internet connectivity. It is also worth mentioning that only PUC Rio was using the VISIR installed on site. In the case of UNR-UDeusto, all participants carried their own computer along all the sessions where connectivity was successful and lecturers could resort to theory and practice in a simultaneous way. Internet connection was not a problem in Brazilian computer rooms.

Institutional Visits

Training Actions 2 also included visits to HE institution premises. Araranguá, included a tour not only around the University but also to the Catarinense Federal Institute from Sombrio amd SATC, including full guides by the staff of each sector. These visits were organized beforehand and included souvenirs and snacks for guests. IFSC also opened their premises as well as UNR. PUC-Rio did not offer a tour although Ana Pavani showed VISIR Lab in her office and UNSE decided to guide guest around their labs at the guests' request. Unfortunately, although the trip to the campus was soon organized, request took the hosts unprepared and the staff in charge of opening the rooms was not available. As a balance, the facilities from Brasil show more activity that most of Argentinean sectors.

Social dimension

Apart from strictly academic aspects, social relationships between Latin American and European members can be analyzed. In every situation, bonds were strengthened due to time available for free conversation. In almost all cases, training sessions included social meeting organized by the host institutions. While in PUC-Rio those moments were two lunch meetings at university, in Santiago del Estero, hosts organized a dinner at a restaurant and a dinner at a university member's weekend-house, being both social meetings afforded by the host institution. In Araranguá, lecturers and hosts shared the full two days: two lunches in a restaurant and a dinner at Juarez Bento da Silva's house on the first day where a guitar performance was given by João Bosco Alves. In Florianópolis, hosts shared two lunches and two dinners and tours around the beach guided by different members from university. In Rosario, guests were welcome in a traditional restaurant where *asado* and national wine were served. Also, UDeusto lecturers were invited for an evening meal with tango dance show.

All social meetings were in a cordial atmosphere at typical gastronomic and cultural sites in the host cities. All events showed a careful and dedicated attention to visitors. Although these dimensions could appear detached from academic aspects, they turned out to be necessary to overcome temporal and space distance and suitable to support the agreement signed with the Project.

Post - TA2 strategies

Taking into account that VISIR equipment has been installed in one out of five Latin American institutions (PUC Rio), it is important to consider how the pair institutions have agreed on the post-TA2 working plans. In the case of UNR-UDeusto, Spanish professors have provided a user list with the TA2 participants' names and have given them passwords to access VISIR from UDeusto; they could then try experiments and eventually use the lab with students. Although stated once TA2 was finished, the same procedure was offered by UNED to participants at Santiago del Estero. Manuel Castro asked the hosts at UNSE to provide local participants' emails to express his gratitude and write about the experience shared. This decision is a valuable sign to be taken into account for TA3.

All lecturers left their own support material about theory and experiments available (VISIR user manual, samples of circuits, videos, etc.) and invited participants to exchange their own experiments about circuits. Ana Pavani told helpfully she would translate the manuals into Portuguese and create video tutorials which could be shared from the institutional local project website which under continuous updating. All Powerpoint presentations were uploaded into VISIR+ Project Dropbox Elective, although the hectic time of TA2 sessions implied that that task had to be carried out by WP3 on certain occasions. It is worth pointing out that Dropbox tool for storage was not taken into account until TA2 had started. This can be due to the fact that lecturers were preparing their presentations and making last improvements. However, once TA2 had finished, they all resorted to Dropbox to share presentations and find news about the sessions.

As regards audiovisual record, UNED-UNSE TA2 was totally videotaped, and an edition of it will be available from the University website devoted to VISIR (http://erasmus-visir.unse.edu.ar/).

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Future challenges

Even when TA2 Satisfaction Questionnaires have not been analyzed at the moment of this writing, some preliminary conclusions can be drawn as to the satisfaction level reached by participants' answers. Most attendees express interest and understanding about VISIR lab. However, planning and application remain as a road ahead. In this regard, local coordinators (specially those of the most numerous audiences) need to set up channels for fluid communication and follow up of target courses where VISIR will be implemented. As to this, Rosario local coordinator Susana Marchisio, asked the attendees to devise a plan for the use of VISIR Lab in a class of their own as a mandatory evaluation for the Training action. In fact, it is advisable to profit from the engagement which TA2 sessions prompted and to boost planning for active participation on VISIR implementation. Although number of participants at TA2 may imply a successful first step, the challenge now is to support a large group which is geographically scattered, as the case of participants from the sub-project CONDEFI. Each HE institution coordinator needs to keep fluid communication and personalized follow up.

Finally, difficulties with VISIR equipment purchase and delays with the actual work with VISIR Lab should remain confidential beyond Project members. Disappointment may be translated into professors' reluctance to planning and the year 2017 may take them unprepared.

ANNEX: TRAINING ACTIONS Nº 2: Synthesis

Participant Institutions	IPP & UFSC	IPP & IFSC	CUAS & PUC-Rio	UNED & UNSE	UDeusto& UNR
Local coordinator	Juarez Bento da Silva	Luis Schlichting	Ana Pavani	Rubén Fernández	Susana Marchisio
Members from EU HEI	Arcelina Marques, Natercia Lima, Ricardo Costa & Carlos Felgueiras	Arcelina Marques, Natercia Lima, Ricardo Costa & Carlos Felgueiras	Danilo Garbi Zutin & Christian Kreiter	Manuel Castro & Félix García Loro	Javier García Zubia & Unai Hernández Jayo
Members from LA Institution/s	JuarezBento da Silva, Simone Sommer Bilessimo, Joao Bosco Alves, José Pedro Simao	Luis Schlichting, Daniel Dezan de Bona	Ana Pavani, Delberis Araujo Lima, Guilherme Penelo Temporao, Vanessa Palomo	Rubén Fernández, Héctor Paz, Mario Gómez, Fernando Sorio	Susana Marchisio, Sonia Concari, Federico Lerro, Gastón Saez de Arregui, Miguel Angel Plano & Claudio Merendino
City	Araranguá	Florianópolis	Rio de Janeiro	Santiago del Estero	Rosario
Dates (2016)	August 22nd and 23rd	August 24th and 25th	September5th and 6th	September12th, 13th, 14th, 15th and 16th	September 13th, 14th and 15th
Total number of turns[1]	2	2	4	8	4
Number of de	50	8	7	31	28

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[1] Ir refers to periods pre- and post lunch (morning and afternoon).It does not take into account coffee breaks within each turn.

attendants				
Attendees' institutions	UFSC Araranguá, UFSC Florianópolis, Instituto Federal Catarinense & SATC	IFSC	PUC Río	UNSE, UCSE, UNSa, UNAS, UNT, UTN FRBA, UTN FRDelta, UTNFRParaná, ENET Nº 8	UNR, UNED, UTN FRRosario,UTN, FRSan Nicolás, UNSL, UNMdelP, IPS
IRICE member in person	María Isabel Pozzo	María Isabel Pozzo	María Isabel Pozzo	María Isabel Pozzo	Elsa Dobboletta
News on the web	- UFSC Araranguá: https://www.flickr.com/photos/142258874@N04/sets/72157669741705803/ - Instituto Federal Catarinense (Sombrio): http://noticias.sombrio.ifc.edu.br/visita-internacional/		http://www.maxwell.vrac.puc-rio.br/VISIR/scrapbook7.html	Link Faculty in UNSE: http://www.unse.edu.ar/index.php/editar/2963-se-dictara-taller-internacional Link home UNSE: Taller de capacitación	http://web.fceia.unr.edu.ar/es/88-novedades/noticias-de-la-fceia/887-capacitaci%C3%B3n-en-el-marco-del-proyecto-erasmus-visir.html
Own VISIR?	No	No	Yes (Since Sept.2nd 2016)	No	No
Technical Training Action	No	No	Yes (Aug.30th, 31st, Sept., 1st and 2nd)	No	No