AduLeT Project and its Community of Practice: An Insight into Technology Advanced Use within Higher Education

Vítor Gonçalves[1], Isabel Chumbo[2], Elisabete Mendes Silva[3], Maria Raquel Patrício[4]

Research Centre in Basic Education, Polytechnic Institute of Bragança, Portugal[1]
Polytechnic Institute of Bragança, Portugal[2]
Polytechnic Institute of Bragança, Portugal & University of Lisbon Centre for English Studies (ULICES), Portugal[3]
Research Centre in Basic Education, Polytechnic Institute of Bragança, Portugal[4]

Abstract

For the last two decades one cannot overlook the fact that there have been major improvements in the area of educational technology. Schools and universities also try to accompany the evolutional pace of this new technological stance introduced in the teaching-learning process. The spread of tablets, smartphones and social networks has accounted for an immersion into the technological world by both students and lecturers. Hence, it has been most impossible to underestimate the value of these tools regarding teaching methods. On the one hand, students, as digital natives, adhere enthusiastically to these new teaching approaches. On the other, lecturers are sometimes bereft of ideas when it comes to motivating the students and introduce innovative methodologies to their own teaching. Therefore, technology enhanced learning tools can boost lecturers' skills in regard to the use of technologies in an advanced way. The aim of this paper is to present the platform Community of Practice (CoP), the ultimate visible result of the Advanced use of Learning Technologies in higher education (AduLeT) project, a collaborative 3-year (2016-2019) research project funded by the European Commission, involving seven partner countries. CoP meets the standards that teaching nowadays requires aiming at providing higher education lecturers with a substantial matrix of tools and methods combined. We shall demonstrate the use and effectiveness of the CoP by showing some practical examples and by highlighting several insightful user experiences within the Portuguese higher education context. To establish a connection with the main target audience, we organised two workshops and a multiplier event to lecturers from several higher education institutions, disseminating the results and involving more lecturers in this community. Thus, we intend to materialize in this paper a summary of the project, essentially in the Portuguese perspective. During the multiplier event, we had very positive reactions from the lecturers regarding the CoP. After this event, the participants were also asked to fill in a satisfaction survey on the use of the CoP. In the paper, we shall then put forth and analyse the survey answers so that we shed some light on the efficacy and applicability of the CoP.

Keywords: *AduLeT, Community of Practice, educational tools, user experiences.*

1. Introduction

AduLeT project was conceived and designed with the aim to enhance higher education lecturers' skills regarding the use of technologies in an advanced way and hence to improve the teaching quality in the higher education context. The driving target of the project was the creation, development and implementation of a Community of Practice (CoP). This was sustained by a thorough research work as far as learning methods and Technology Enhanced Learning (TEL) tools were concerned either by analysing case studies and literature on this area [1], [2] or through the organisation or dissemination activities and the analysis of different surveys aimed at higher education lecturers. The creation, and continuous improvement, of a combined matrix of tools and methods validates the work carried out throughout the last three years.
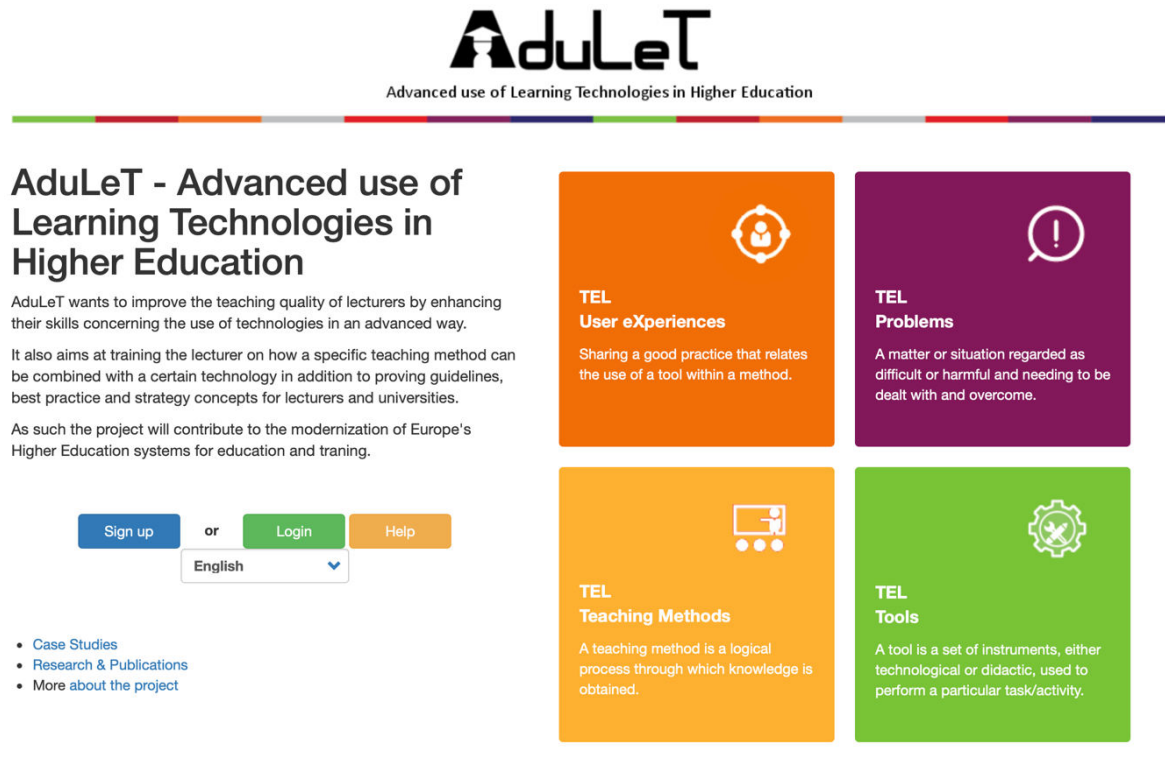
In this paper, we shall present and explain how the CoP works and how the end-users can share their own user experiences about the effectiveness of a method combined with a TEL tool. Furthermore, we shall also focus on the Portuguese higher education context, by highlighting some user experiences and reactions towards this new platform.

2. AduLeT Community of Practice

The CoP does not aim to prescribe magic formulae that will solve all the teaching problems. Instead, it intends to provide teaching guidelines, best practice and strategy concepts for lecturers and

universities. It must be continually challenged and upgraded so that the community of lecturers adhering to the CoP can experiment new tools and methods and reflect on their use and benefits or constraints.

The main information about the project is available at [3] and the CoP platform, available at dev.adulet.eu, is divided in four different parts, as presented in Figure 1.

Fig. 1. AduLeT CoP platform

Members of the CoP have in fact a few functionalities available. There are several pages where information on methods and tools is displayed. Participants can add, or read about, their own, or others, TEL problems. For example, if one selects the following problem: "How to teach pitching online?", we are immediately directed to a more detailed view on the problem, by clicking on the button "method and tool combined" being also given information on the teaching method selected and tools that can be combined with the method. Regarding this particular situation, the teaching method introduced is "online discussion" with the main aim to learn about sales pitching online. Learners should be able to create a feasible online task and environment to successfully learn pitching. Then, if we click on the teaching method "online discussion" we get more detailed information about the method itself, namely a brief description of the method (summary), subject(s) where you can apply this method, the setting, sequence of activities, references and duration of the activities suggested. Participants can also grade the contribution of the method as regards the use of the method with TEL tools.

About the tools, these are also arranged into certain categories. For instance, the following tools: FreeMind, XMind, Popplet, Mind42 online, Mindmeister fall within the category of Mind maps. You can also read more about each tool, e.g. Popplet. You are given data on: description about Popplet; TEL methods where this tool fits (e.g brainstorming, task-based approach, learning by doing, online mapping); required technical skill level, setting, mode of teaching application (synchronous or asynchronous); task mode; required equipment/devices/paltform; and, if relevant, additional information and useful links (e.g. tutorials).

We also get a broader view on the combination of this method with a wide variety of tools, as well as the different user experiences. Online discussion can combine with Colibri Zoom. One user experience highlights the usability of this tool as this is a distance collaboration platform and allows student-workers to attend classes even if they are not in the classroom.

2.1 User Experiences: some examples

The crux of the whole process is that participants share their own user experiences driven by the belief that his or her experience really worked well and therefore consider it good practice. Figure 2 displays a matrix with methods combined with tools.

TEL User eXperiences

Notes
- Each ✓ symbol corresponds to a user experience for the pair *teaching method* and *tool*. Click the symbol to see the User eXperience.
- The matrix comprises all approved Tools.
- Only the Teaching Methods associated with at least a Tool are listed.
- **Recall that the first creation of an entity is for English language. You can translate it later in the `translate` option.**

⟩ Click to expand filters

☑ Show only entities with User eXperiences

Categories	Tools	Collection of student's expectations	Group Discussion	Online discussion	Online mindmapping	Self assessment	Simulation-Based Learning	Task-based Learning	Think-Pair-Share
Audio content	Podomatic	+	+	+	+	+	+	✓ +	+
Cloud File Sharing and Storage	Dropbox	+	+	+	+	+	+	+	✓ +
Computer simulators	PhysioEx	+	+	+	+	+	✓ +	+	+
Concept Maps	CmapTools	+	+	+	✓ +	+	+	+	+
Decision-making	Tricider	+	+	✓ +	+	+	+	+	+
Discussion	Poll Everywhere	+	+	✓ +	+	+	+	+	+
Gamification	Kahoot!	+	+	+	+	✓ +	+	+	+
Groups in Social Networks	Whatsapp groups	+	+	+	+	+	+	✓ +	+
Interactive and dynamic websites	Padlet	✓ +	+	+	+	+	+	+	✓ +
Mind map	Popplet	+	+	+	✓ +	+	+	+	+

Fig. 2. TEL user eXperiences

On this page we get a wider and clearer perception on the several tool possibilities for each method. We describe here only two examples which seem to us rather insightful regarding the benefits of this specific component. Take, for example, Online mapping in combination with CmapTools. This tool can be used collaboratively and individually for brainstorming, organising and representing information. Cmap tool allows students to construct, navigate, share and criticize knowledge represented as concept maps. The user experiences validate this combination. The lecturer who used this method with this tool highlighted the usefulness of the experience in the sense that it allows students to systematise ideas/concepts into very intuitive interconnected relations. In this specific example, kahoot was used to outline a research model.

We indicate another example: Self-assessment in combination with Kahoot. This is a game-based learning platform, free for teachers, simple and easy to create. Kahoot makes learning fun, inclusive and engaging in all contexts. On the CoP, we can read the following user experience, focusing on the context, procedures and reactions [4]:

> We have been teaching a course about evaluation and types of tests. Students are requested at the end of the course to do a self-assessment of the knowledge they have acquired. The teacher has prepared beforehand the questions and uploaded them on Kahoot. The students receive a password and they use their mobile phones/ laptops/other devices to connect and answer the questions. The teacher can choose the type of questions (multiple choices, open-ended questions, true/false questions). Students answer the questions and the results/the answers appear anonimously and instantly on the teacher's screen/white board etc. The teacher receives this feedback and can decide whether he/she has to continue explaining the available types of tests or if students don't need further explanations. Kahoot offers a quick self-assessment possibility of checking knowledge development.

2.2 Multiplier event in Portugal: results

The CoP has been built with the participation of the higher education community in Europe. One of the events which originated contributions to the platform was the Portuguese Multiplier Event (ME) which took place at the Polytechnic Institute of Bragança (IPB) on February, 7, and was attended by 52 participants. Most of them had registered for it online and came from other institutions than the IPB, including higher education lecturers, technology-based companies and researchers in the field.

The aim of the event was to provide an overview of the project and of the Community of Practice platform so far, as well as to promote debate among the attendants regarding user experiences as lecturers, to propose and share methods and tools within the framework of Technology Enhanced Learning. The participants gathered previous information on the project through the website, social media and mailing.

AduLeT Portuguese team presented the project, its aims and main results so far, providing examples through the CoP platform. Then the participants joined in round tables where all AduLeT Portugal members and experts reflected on user experiences, the need to use methods and specific tools in combination and how this could be set out. During this part, the different groups suggested two methods, six tools, six user experiences and two problems. One of the most persistent comment was that this kind of learning involves students more than traditional methods and that they are good to enhance motivation.

The impact of the event can be seen through the contribution to the CoP platform during and after the ME and participants from other higher education institutions referred to the platform as "very useful" and "relevant" in the current Portuguese context, where sharing higher education teaching experiences is not usual.

Nonetheless, to get more pondered and impartial opinions on the ME, we asked the participants to complete a qualitative online eight-question survey in order to get more systematised data and to assess the participants level of satisfaction regarding the ME and the CoP. Even though the number of respondents was only 14, their answers are nonetheless meaningful. The feedback obtained is undoubtedly valuable to the improvement of the CoP.

Regarding their satisfaction level about the User Experience of the CoP, 64,3% stated that it was easy to find user experiences in the CoP. About the search of methods, tools and problems, 64% of the respondents claimed to be pleased or highly satisfied. When adding new user experiences, 7 (57,2%) respondents were satisfied and highly satisfied, whereas for 2 (14,3%) the level of satisfaction was rather low.

When we asked about the method or tool that triggered more interest, the answers were divided as each participant selected different methods and tools. They justified their answer based on arguments such as: cost, level of difficulty or based on their own teaching experience.

Finally, 78,6% of the respondents strongly agreed with the statement that this CoP will help teachers to improve teaching quality and to foster cooperation networks in addition to enhancing their TEL use skills.

3. Conclusion

The results collected in the survey convey the idea that the CoP is reliable, meaningful and useful for lecturers. Moreover, their reactions and answers confirm our belief of the project being an innovative and high-profile facilitator of technology advanced use within the higher education context.

Summing up, AduLeT CoP aims at creating a repository of teaching methods, of TEL tools, of Problems and of user eXperiences. From all these functionalities, the CoP can make a difference to lecturers' practices by providing opportunities for technology enhanced learning. It will help lecturers to improve their teaching quality, exchange training experiences and collaborate in efficient ways by enhancing their skills regarding the use of technologies in an advanced way, within innovative learning scenarios in their teaching.

We can also highlight that, regardless of the number of higher education teachers involved in other countries, the results clearly point to the usefulness of this platform as a clear contribution to the improvement of the learning process.

References

[1]   Atherton, P. *50 ways to use Technology Enhanced Learning in the classroom: practical strategies for teaching*. London & Thousand Oaks: Sage, 2018.

[2] Flavin, F. Technology-enhanced learning and higher education. *Oxford Review of Economic Policy*, Volume 32, Issue 4, 1 January 2016, Pages 632–645, URI: https://doi.org/10.1093/oxrep/grw028

[3] AduLeT project website, 2019, URI: http://www.adulet.eu

[4] AduLeT CoP. User comment, 2019, URI: https://dev.adulet.eu/ux/method-and-tool-details/10/282/en