Abstract

In current higher education, working towards an education-learning model that places students in the centre, we need to facilitate their autonomous and collaborative learning, as well as their skills to develop research projects. However, higher education students find it difficult to integrate Information and Communication Technology (ICT) tools for the management of bibliographic information in their research projects when they work autonomously. In this regard, our project aims to facilitate their autonomous and collaborative learning through the construction, use and dissemination of an on-line Zotero library on feminist research methodologies. This project is interuniversity and interdisciplinary. It is being carried out with postgraduate students on gender and women studies, as well as students of sociology, both graduates and postgraduates. For this communication, on one hand, we briefly introduce the project and its specifics. On the other hand, we analyse the implementation of its first two phases - firstly, the design of the project and its materials, and secondly the construction of the on-line library through selecting, managing and evaluating bibliography items. Our main results show that students experience several difficulties and a great diversity of starting points to effectively use ICT tools such as Zotero. However, they understood the usefulness of ICT tools like Zotero and showed great satisfaction in learning to select, organize and evaluate bibliographic references autonomously and in collaboration. In addition, they have developed their ability to think critically about the content of feminist research methodologies. In this regard, we conclude that, with the creation of specific tasks and guidelines to balance class levels, integrating ICT tools like Zotero in education can work to facilitate autonomous and collaborative learning and improve student's skills in developing research projects.

Keywords: Feminist research, Innovation, technology, autonomous learning, collaborative learning, Zotero.

1 INTRODUCTION

The work carried out in our universities is still mainly based on the memorization of the content transmitted by lecturers and put into practice only in the classroom. Although students usually develop tasks outside the classroom, this does not always facilitate their autonomous learning sufficiently, nor their capacity for the rigorous and creative elaboration of research projects. Feminist research is commonly carried out in processes within outside the academia and with a transformative will that makes it necessary for information resources to be shared and to be accessible to society. With the development of the information society, free digital platforms have been developed that allow the management and dissemination of on-line academic information such as Zotero. Therefore, the main objective of the FAAMEF project is to enable students to develop the capacity to work autonomously when carrying out feminist research and to create, use and disseminate new online resources directed to the Academia and feminist communities through the use of technology platforms.

In a first phase, the project strategies were designed and established by the interuniversity, interdisciplinary and intergroup coordinating kernel. A second phase was developed within the subjects of feminist research methodologies, on-line and face-to-face, of the Master's of Women, Gender and Citizenship of the IIEDEG (Interuniversity Women and Gender Studies Institute of Catalonia) in collaboration with SIMReF (Interdisciplinary Seminar of Feminist Research Methodologies) and CEFOCID-COPOLIS (Centre for continuous training and teaching innovation of the Copolis group). In a third phase, we seek the use of the on-line repository in several subjects related to gender issues in the studies of Sociology of the University of Barcelona (UB). In the final phase, we expect the dissemination of the on-line tool among the academic and feminist community.
In this article, after pointing out the importance of facilitating the autonomous learning with ICTs of feminist research methodologies and describing the main features of the FAAMEF project, we intend to present the preliminary results of the first and second phases of the project. This derives from the construction of a Zotero group and library on feminist research methodologies. In doing so, the students learned to select, organize, evaluate and systematize information related to feminist research methodologies in an autonomous, collaborative and on-line manner. At the same time, they became familiar with an on-line platform such as Zotero that allows the organization and sharing of educational resources. In addition, they became aware of the importance of organizing information so that it can later be useful for their research, as well as serve to the academic and social community. Finally, they put into practice their capacity for critical thinking and evaluation, especially regarding feminism.

2 AUTONOMOUS LEARNING AND ICT TOOLS

Much of the lecturing activity of our universities continues to be developed in the classroom and within the framework of a hierarchical, vertical, fixed and closed knowledge transmission model. However, more and more, universities and lecturers are taking a chance on other, more open, horizontal, dynamic and less hierarchical models where the students are responsible for their own learning [1].

This invites us to explore mechanisms to facilitate the autonomous learning of students, a type of learning that is often the most ignored by lecturers and teaching innovation. Autonomous learning implies the ability to learn by one’s self. This involves searching for information, endowing it with meaning and appropriating knowledge, learning beyond the university and from one’s own mistakes, as well as critically positioning oneself regarding the contents [2].

Autonomous learning skills, moreover, are essential for the development of research projects and, in this case, feminist research projects. Among other specificities, feminist research tends to work hand-in-hand with the feminist movement and from and towards feminist ethics and agenda [3] [4]. Therefore, feminist research is developed in processes that are located in a within-outside position regarding the academy that should leave the channels of communication open between academia and society. In this sense, it is necessary that the contents and information resources that are generated are accessible outside the academy, in addition to being shared with the rest of the feminist community, as well as the society with a transformative goal [5] [6] [7].

In this regard, it is precisely the use of new information and communication technologies (ICT) that seem to favour autonomous learning, as well as the dissemination of content and the sharing of knowledge generated. In addition, women also find advantages in training through and / or using ICT, since, among other things, it entails their access to many resources, saves them time, resources and travel, as well as facilitates their work-life balance [8]. Even beyond this, a cyberfeminist pedagogical approach seeks to develop a teaching / learning process committed to promoting the exchange of knowledge horizontally and independently of geographic barriers. This also entails considering self-reflection and previous experience, as well as the questioning of existing power dynamics. Finally, this means working together with the feminist community and politics that fosters the diffraction of knowledge, experiences and learning [9].

In this regard, Zotero, as a tool to collect, organize, cite and share bibliographic references, presents a series of advantages that make it ideal to facilitate the autonomous and collaborative work on feminist research methodologies. As pointed out by other authors [10], tools 2.0 such as Zotero allow autonomous and collaborative work in the network and generate new possibilities for blended and virtual education, as well as facilitates team work projects and active participation and collaboration between lecturers, students and among students. In addition, Zotero is an easy-to-use, low-cost tool developed by the free software community. Zotero then, becomes a useful ally in a research process of lecturers and students. Zotero is integrated in the internet browser and also works as a specific application. Among its main advantages are the ease and speed in the detection, collection and management of online references; the possibilities for team work and sharing, as well as adding new references from our own / other collections; It encourages self-reflection and incorporates the possibility to add tags and notes; Finally, it creates citations (choosing between different styles), thus minimizing the difficulties and errors related to cites and quotations that commonly occur in classrooms.
3 PROCESS AND METHODOLOGICAL STRATEGIES

Taking into account all the above, in this section we focus on explaining the experience of building an on-line repository with Zotero on feminist research methodologies, developed within the framework of the FAAMEF project. In this sense, we will briefly outline the processes followed for the first two phases. On the one hand, the process of designing the activities, guidelines and evaluation proposals by the kernel of the project. On the other, and more extensively, we describe the activities developed in the subjects of feminist methodologies, face-to-face and on-line, of the master's degree in women, gender and citizenship.

Regarding the coordination and design of the activities, a series of presentations were made at SIMReF and CEFOCID-COPOLIS meetings. This was to discuss on the progress of the FAAMEF project and the contents of the guides and resources to be used in phase 2. In those meetings several tools were discussed. However, Zotero was chosen due to the various advantages already pointed out by Avello et al. [10], as well as being a free software tool, which involves a greater coherence with a feminist project [11][6]. A guide for the use of Zotero for students was also defined and designed, as well as fact sheets for the evaluation of materials and articles of feminist research methodology. The various possibilities of tagging references were discussed, establishing different Families and associated keywords to facilitate the work of the students in phase 2. This led us to a work in progress that was left open to the interventions of the students that eventually constructed and improved the tool and the final contents of the online Zotero repository.

During the academic year 2015-2016, on the one hand, a first evaluation of feminist research materials was carried out within the face to face subject of feminist research methodologies. In order to do this, following the professors' explanations and through a guidebook that was previously prepared, the students ought to collect, select, organize and evaluate a series of bibliographical materials in a table format. Later those were included as notes in Zotero for each reference. On the other hand, within the on-line subject of feminist research methodologies, and with the support of a sociology student, the final Zotero on-line repository was created. Students had to select, organize and evaluate materials, as well as to include feminist methodology references in the Zotero library. In doing so, we all constructed the Zotero group, as well as the library on feminist methodologies (https://www.zotero.org/groups/metodologiasfeministas/items). We aimed at students’ learning by using collaborative ICT tools for managing references, since tools such as Zotero are very appropriate for carrying out research projects. In addition, this repository was complemented by the recommended bibliography of the course and the SIMReF audiovisual repository. All this has resulted in an on-line repository on feminist research methodologies of more than 100 entries.

In addition, within the framework of feminist research methodologies subjects and to promote the exchange of experiences and collective learning, a Forum was created. There the students could share and evaluate their experiences in relation to the usefulness of Zotero for the management of information, its advantages and disadvantages, as well as the degree of satisfaction and learning perceived with the experience.

4 THE EXPERIENCE OF CONSTRUCTING A ZOTERO LIBRARY ON FEMINIST METHODOLOGIES

The process of selection, management and evaluation of bibliographical references, as well as the construction of the Zotero group and library and its use, evidenced a series of learning results, as well as allowing us to evaluate the experience of teaching innovation.

In the first place, it should be noted that although this experience was carried out with postgraduate students, too many of them were not sufficiently familiar with bibliographic management tools such as Zotero. Even some students had never been aware of such tools nor encountered the opportunity to use them. Therefore, this is a sign of the need to continue to promote the use of ICT tools for the selection, management and use of bibliographic materials in our universities and so is reflected in the following quotation:

"I have to start by saying that I had no previous experience with such tools. I have heard other peers speak freely of Zotero and Mendeley but for me it is a real novelty, I knew they existed but I had never worked with them. "(C.M.D)

In this sense, we need to develop guides to help our students to become familiar and use tools like Zotero. In fact, many of our students considered those guides very useful, both the general information
found at the Zotero website and the guides precisely developed for this project. However, some difficulties still persist with some applications and even with the language of the majority of online how to’s related to Zotero.

"While it is true that we have had a very detailed and useful Guide to install and introduce materials in Zotero, in my case I have to say that, even so, I found it very difficult to deal with the program. And, I believe that such difficulties and inconveniences may be related to the language (English). Even so, once I got access to the Zotero group of the subject, I consider that the steps we have to follow to introduce the bibliography (following the icons and instructions) were unclear. In fact, I have not been able to understand how to introduce a pdf or from a web page (even following the instructions in the guide and the solutions that the same page offers). And, just as my colleague comments, it has been impossible for me to upload any of the documents I had in my library (I had to upload and manage them within the group created by the subject). "(C.P.M)

Although some of the students were familiar with bibliographic management tools, they did not know tools like Zotero. Because of being free tools they add advantages in terms of access, thus, the possibilities to share the knowledge generated and, above all, to facilitate autonomous as well as collaborative learning. This was also visualized, internalized and targeted by students, as shown by the following quotation:

"Personally I'm more used to work with another bibliographic management platform, Mendeley, and years ago I also used Refworks. I believe that all these tools are, today, essential for academic research and useful in collaborative work environments as demonstrated in this experience. In the case of Zotero, I have not encountered difficulties in introducing the references; On the contrary, compared to Mendeley, which also offers the possibility of sharing documents and references in work groups, this has been easier and more intuitive for me. "(M.G.G)

Thirdly, our students became more aware of the importance of using ICT tools for the management and use of bibliographic references for learning, especially in the face of research projects.

"I value the exercise of sharing some bibliographical references that may be of interest to the class on the Zotero platform as a very positive practice towards collaborative academic learning. Throughout an investigation, and especially in the bibliographical analysis, it is consulted and it works with a great number of documents that require, like everything, order and systematization. Reference management tools such as Zotero are almost indispensable in research, and the possibility of it being shared in a collaborative platform such as the groups, essential for feminist research. "(M.G.G)

It is worth to highlight that throughout the construction of this Zotero Repository, their learning on the contents of the subject becomes visible. This is true in terms of knowledge as well as the learning of other skills such as critical thinking and commitment to feminist ethics, so important in subjects such as feminist research methodologies.

"Excellent the term to diffract and all that it entails. To the extent that feminist research / action is still marginal in today's capitalist society, it is necessary to create spaces for meeting, mutual care, enrichment and collective learning, as well as the visibility of the work of all the partners. Not only to enter a space of debate outside the expressly feminist, but also so that we can continue to grow and encourage ourselves to investigate / act despite going on a mud path, without fear of making mistakes. "(S.M.P)

Finally, we would like to add that for the great majority of our students the experience with Zotero was satisfactory. In occasions some difficulties were pointed out but they did not involve a general dissatisfaction with the learning experience. In any case, those difficulties appeared related to a more sophisticated use of the tool or with the English language (only) of many Zotero how to’s, as we already mentioned previously. For all the students involved in this experience, the guides and the tool used were considered useful for their learning and for conducting future feminist research work.

"I think the results are satisfactory, but I think when you really realize of the importance of Zotero is when you are working on an article or a thesis ... or an individual or collective investigation. Well, working in a group I think that the advantages are even more obvious, when working online (the network). It is, in short, a tool to make easier the work of selecting and collecting information on a topic (in this case, feminist research). I think we have to continue working on this basis". (I.N.A)
5 CONCLUSIONS

For universities and lecturers committed to improving and innovating in teaching, it is essential to move towards a model that places students at the centre of learning. Although under considered in teacher innovation, autonomous and collaborative learning should be facilitated, especially if we seek to improve students’ ability to carry out research projects, and specifically feminist ones. Precisely, as we have seen, with the FAAMEF project, we aimed to advance in this direction, through the selection, management and evaluation of bibliographical information and the construction of an online repository of feminist research methodologies.

It should be noted, first of all, that the coordination and preparation of initial guidance materials by the project coordination kernel was fundamental to make the students’ activities more satisfactory and, above all, to facilitate the autonomous learning of the students. Second, working with tools such as Zotero helped students to understand the usefulness of a good selection and management of bibliographic references and to carry out rigorous research, as well as assess the possibilities of collaborative work. Finally, in evaluating and tagging the selected materials, students developed critical thinking and ethical commitment skills essential for the task of research and even more for feminist research.

Some barriers for learning are still present, such as differences in the students’ departing points, the knowledge of English or difficulties in deepening the possibilities of ICT tools to build an on-line library with Zotero. In spite of that, our students acquired both knowledge and skills around feminist research methodologies and, in doing so, improved their abilities for autonomous, collaborative and critical work. In addition, given the scarcity of open on-line feminist resources and thus their potential for use in academia and society, the development of the following phases of the project will undoubtedly contribute to an advance in this regard.

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