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Form@doct: Designing innovative online tutorials for PhD
students in France

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Abstract

At a time when information literacy is a growing subject in doctoral programs, it appears necessary to assess the benefits of online education in this field and its suitability for PhD students, considering their specific working conditions and learning methods. The purpose of this paper is fourfold: to show how Form@doct project, involving the joint collaboration of Brittany's University libraries and the Rennes URFIST (Regional Department for Scientific and Technical Information Training) to put forward an online tutorial dedicated to PhD training, uses its resources to respond to this need, to describe the challenges faced in e-learning, to explain the final structure that learning content, general architecture and online teaching could take and to assess, by a first analysis, whether the use made of this portal validates our approach.

Keywords: PhD training schemes, tutorials, information literacy, the "Form@doct" project, online training

Introduction

What does e-learning offer for the development of information literacy? This question is particularly appreciable at the PhD level, which, because it is very specific, focuses, illustrates and clarifies issues arising from the meeting of online learning and information literacy.

While the training of PhD students in information literacy has acquired recognition and legitimacy, and is increasingly deeply rooted in university policies, it nevertheless brings together a number of burning issues, all of which are challenges to be faced when taking educational initiatives for doctoral students.

Indeed, within the current landscape of information literacy in higher education, the case of doctoral programs differs in that it generates alternatives and tensions concerning both the learning content and the teaching methods to be used. The question of how to develop information skills or even scientific information literacy in PhD students primarily concerns what learning content should be focused on and to how one should go about transferring this content to the students, in other words, the means of learning and knowledge transmission. It notably leads us to ask whether an online training system would be an asset for PhD students, how an innovative tool could be developed to respond to the specific expectations of such an audience, and under what conditions would such a system be practically possible and relevant. We need to know how far we can go: what educational approach can be used, from online content to distance learning, but also what content can be taught in this way : it is also necessary to ask what scope we could settle, to go beyond information retrieval and reference management coaching and to best assist the students in their research.

These questions are at the very core of Form@doct, an online tutorial developed specifically for PhD students by a group initiative originally started by the academic libraries of Brittany and Rennes URFIST.¹ The idea was launched in late 2006 and its result is a free educational website,² published by the European University of Brittany for its PhD students.³

We will first give a description and history of the tutorial, as this can be instructive for two reasons. Firstly, presenting Form@doct in this way allows us to draw a profile of the tool and to analyse the originality of its responses to the challenges posed (i) by the training of doctoral students and (ii) by working with limited human and logistic resources. This will show how the choices made in terms of content, structure, access, interactivity and pedagogy aimed to meet the needs of the targeted students. At the same time, although the tutorial is still very new, we will attempt to make an analysis of how PhD students have appropriated the tool and its resources, and finally of whether the guidelines initially provided correspond to real practices. In doing so, we can also implicitly show how the initial idea has progressed and changed from its early versions to its final form, attesting the richness of a collective and reflexive, evolving process.

¹ Regional Department for Scientific and Technical Information Training, Brittany and Pays de la Loire

² <http://guides-formadoct.ueb.eu/>

³ The PRES (Higher Education and Research Cluster) UEB (European University of Brittany), established in 2007, brings together higher education and research institutions in Brittany and supports their group projects and sharing strategies; it has about 3000 doctoral students in eight doctoral schools.

The Initial Distance Learning Objective

Opportunities in the Institutional Context

Form@doct was born from the needs of four SCD (Common Documentation Services) of universities in Brittany (Rennes 1, Rennes 2, Brest and Lorient), together with the INSA (Rennes) and ENIB libraries,⁴ to promote a set of joint projects within the four-year development contracts of the universities. These included a tutorial intended to support existing library courses for PhD students by providing an online learning service. The Library of the University of Western Brittany (UBO) in Brest, the project coordinator, called upon the URFIST (Regional Department for Scientific and Technical Information Training) to co-develop this tutorial, based on work drafted by a team of teachers from all the libraries involved.

The project fitted into the overall context of rapid e-learning development occurring in higher education, where many different programs are taking off via digital campuses and virtual universities (Balancier, Georges, Jacobs, Martin, & Poumay, 2006). Moreover, at the regional level, a Higher Education and Research Cluster (PRES) was being set up in Brittany and the doctoral schools reorganized, sometimes giving birth to cross-university entities. Very soon, it became clear that the right scale for this pooling project was the PRES of the European University of Brittany (UEB), which had just been created and whose International Doctoral College decided later to integrate and support the project submitted within this framework.

Goals and Framework

⁴ Rennes National Institute of Applied Science and Brest National Engineering School

In order to foster PhD students' understanding of the emerging issues and practices of scientific research, Form@doct aims to provide three levels of education: (i) to promote an expert use of information, (ii) to develop the knowledge and learning needed to produce, format and disseminate research results, and (iii) to improve scientific information literacy. M. C. Torras i Calvo (2011), following Zurkowski,⁵ referred to the "information literacy necessary to scholars", showing that this question is present in the recommendations for the comprehensive framework of qualifications in European higher education. Furthermore, this issue is at the centre of a series of recent research studies, much of which highlights the specific profile of PhD students and recommends to "integrate information literacy training into the programs and existing research groups, while providing individual training suited to more occasional needs". The concept has been disseminated increasingly in university education and gradually in research (Webber, 2010). In the evolution from information literacy to information culture, training goes "from occasional to regular use, consisting of: access and information processing, rational use of information, and integration into 'general knowledge' and social practices" (Simmonot, 2009).

To achieve its objectives, the Form@doct project sought to rely on e-learning resources. The term "e-learning" is quite difficult to define. Although an exact meaning was given by the European Commission in 2000,⁶ and in French higher education it commonly refers to the use of Internet for educational purposes, in reality it encompasses a very broad range of meanings. Nevertheless, it is possible to differentiate between two key dimensions that this word integrates

⁵ This expression was attributed to Zurkowski in 1989 by the American Library Association

⁶ « Use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services, as well as remote exchanges and collaboration" (Kennel, 2011)

and combines: the first being online/offline learning, with synchronous/asynchronous communication, and the second being independent/collaborative learning. These two dimensions may involve different proportions of mixing between face-to-face classes and distance learning (Fenouillet & Déro, 2006); interaction plays a key role in this process. We will look at how Form@doct initiates learning processes through these dimensions and how it has followed the development principles of web tutorials for information literacy.

The Specificities and Needs of the Target Audience

Developing an online tutorial adapted to the specific needs of PhD students is simultaneously a driving force, an immense challenge and a difficult task. PhD students were specifically chosen for two main reasons. First, it had become clear that new training needs had emerged from the current methods of production and dissemination of scientific information in the context of digital technology and of Internet. Second, although methodology courses were already quite numerous, homogeneous and well-suited to the bachelor degree level, this was not so much the case for Master or PhD levels, where there was a patchy coverage of needs in terms of information training, and a fairly large disparity could be seen. We had already been working for a number of years on joint initiatives with the doctoral schools in order to establish face-to-face training course sessions for PhD students. These ongoing considerations and the existing training seemed to be a good foundation from which to launch the Form@doct project.

When we reflected on the most suitable approach, the idea of an online tutorial, parallel and complementary to the face-to-face courses appeared to be the best because of the specificities of the PhD student audience. The students may come from different towns, regions

and countries, and the doctoral school may combine different universities, all of which make them a very mobile category of students. In addition, their research activities imply travel and a heavy workload, leading to variable availability for training and an obvious need to save time. This group is also fairly heterogeneous, having different levels of skills, acquired knowledge that can be very uneven and, sometimes, very different expectations. However, they all have strong backgrounds in their disciplines and a high level of autonomy in their research. Many of them also express the need for personalized and interactive training that would combine theoretical and practical learning, in-depth exploration of the Scientific and Technical Information field and occasional ad targeted practicals.

In this context, a flexible multi-level scheme seems an appropriate response to the working methods of doctoral students and the requirements of PhD level, as this would promote the autonomous, asynchronous acquisition of knowledge, as well as personalized training. Such a scheme would extend university courses with a distance learning system based on the learning of the concepts, skills and know-how, leading to the scientific information literacy necessary for their research. It would meet the need, according to Torras i Calvo (2011), “to come to PhD students where they are, which is to say online”. Furthermore, it would create a balance between, on one hand, individualization and adaptability to the needs of the audience (using the concepts of sequencing, modularization and granularisation), and, on the other hand, socialization, offering a relational dimension and interaction with tutors and peers (Deschryver, 2009; Vayre, Dupuy, & Croiy-Belz, 2007).

Preliminary exploration of existing tutorials for PhD students showed that there were already tutorials adapted to the PhD level in France, often addressing one or more specific issues. We did not want to compete with such tutorials about Scientific and Technical Information, but instead chose to focus on a specific area of added value, while also referring to external resources.

In 2007-2008, a survey (URFIST de Bretagne et Pays de la Loire & Service Commun de Documentation de l'Université de Bretagne occidentale, 2008) was carried out among PhD students to find out about their research methods and training needs concerning scientific information. Five hundred and nineteen usable questionnaires were counted, representing almost a quarter of the population of interest. The results showed that the research methods of the PhD students generally remained rather traditional and localised, and that their ways of finding information on the web were quite similar to those of other students (predominant use of Google). They also showed that doctoral students were relatively unfamiliar with new tools of research, information processing and dissemination and seemed to know little about new methods of production, circulation and dissemination of scientific research. The questionnaire also asked PhD students about their training needs, especially about what subjects they would like training and the distance learning services to cover.⁷ The survey data helped us to define the training that would be provided on Form@doct.

⁷ The chosen training themes focused on information retrieval, then analysis and exploitation of information, its production and publication, and knowledge of scientific information. The services desired were mainly selections of resources, information files and information gathering activities for personal projects.

From Self-study to E-learning⁸

The initial structure of the Form@doct tutorial relied on the coordination of three schemes that interacted with one other: a free-access self-study tutorial on the web, a regional portal for PhD students in Brittany universities, and a scheme of open and distance learning for these students. The self-study tutorial was envisioned from the beginning to provide free and open access to a body of synthesis files on scientific information themes. It took the form of a series of thematic guides.

The second level of Form@doct was intended to grant access to specific information, a set of specialized disciplinary resources, tools for communication and collaborative work for identified users. The objective was also to make individualized discipline-specific reading possible. These first two levels were finally fused into one.

The third level of the structure was specific to e-learning: it was based on a free open training website, which PhD students taking classroom-based courses could access if they wanted help with certain tasks (gathering information, making a bibliography, etc.).

However, from the beginning, the project faced three major challenges: (i) combining and coordinating different approaches to teaching content within the same scheme, (ii) promoting a system of distance training and e-learning without necessarily having the resources, and (iii) taking into account the necessary link between distance and classroom learning.

Choosing Suitable Content for Distance Education at the Doctoral Level

⁸ An open distance-learning platform

For self-study, Form@doct currently offers a collection of freely available guides⁹ via the LibGuides platform.¹⁰ The survey conducted prior to the project helped to define the shape the learning resource would take, but also raised several issues related to the scope and profile of its content.

Aiming to Provide Comprehensive or Targeted Content

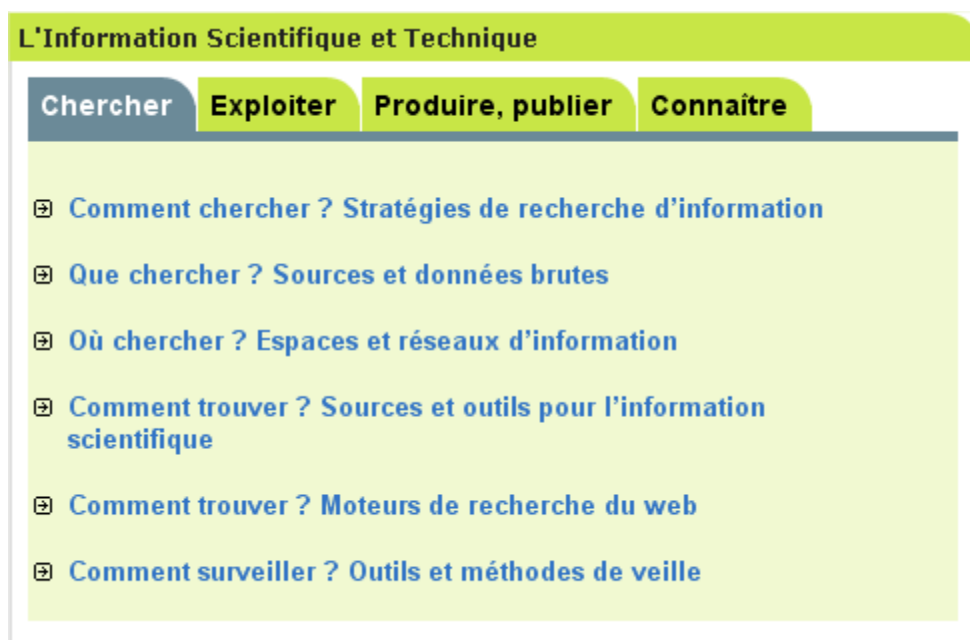
As mentioned above, the initial investigations on existing tutorials revealed educational resources addressing specific methodological aspects, but found at that time very few tutorials covering all the potential learning contents relevant to PhD level. Therefore, development of a comprehensive tutorial could be a particularly important and original challenge for the training of doctoral students.

It was decided to create an overall body of content addressing all the topics that a student is required to master, incorporating the latest developments of the web, and taking into account the recent changes in research practice and dissemination of science. From this perspective, it is not a case of referring to information science or documentation, but of taking the point of view of PhD students in order to deal with selected subjects. We needed to counterbalance the tendency toward an encyclopaedic overview by paying continuous attention to the viewpoint of doctoral research. The content of Form@doct is organized into four broad thematic areas, corresponding to the steps and actions carried out by students throughout their research work: Retrieving, Managing, Producing/Publishing, and Getting to know scientific information. Within this

⁹ <http://guides.formadoct.ueb.eu/>

¹⁰ By the SpringShare Company : see <http://www.springshare.com/libguides/> and <http://libguides.com>

framework, syntheses are proposed on various subjects such as intellectual property, bibliometrics, information monitoring, structuring a thesis, or methods of scientific publication.



Information available in Form@doct

Theoretical Knowledge and Practical Learning

The second alternative in the design of a tutorial is the comparison of theoretical learning content and practical learning items, in other words, content aimed at acquiring general information literacy versus content focused on mastering procedural skills. With Form@doct, this question has already been discussed. The complexities surrounding doctoral education and the characteristics of learners seeking both theoretical knowledge and practical guides make the exercise even more difficult. The concept of information literacy itself may refer to different things: there is no natural consensus among the teachers themselves on what should make up a

distance learning course or an online tutorial on information literacy for PhD students. Should a platform offer an ensemble of cultural knowledge or a toolbox-like resource that comes with an instruction manual? This tension of the potential content was ultimately very productive, as it made Form@doct evolve as a hybrid system, integrating essential knowledge and practical applied learning. Integration was achieved in two ways: some of the available guides are explicitly based on theoretical knowledge; others are clearly practical and targeted. In addition, within a guide, content can be mixed: a guide dealing with social bookmarking provides the opportunity to cover the concepts of taxonomy and folksonomy and also to show how to use bookmarking tools. Consequently, Form@doct offers concepts, skills and know-how about scientific information for PhD students in two dimensions: to be able to fulfil a targeted, tangible request for information, but also a need for deeper understanding over the long-term.

Dominance of Discipline vs. a Transversal Approach

Tension between the disciplinary field and cross-cutting content is a problem well-known to teachers of information literacy. This was expressed by Serres (2009), in the following terms: “What are the strictly information/documentation skills, knowledge and concepts present in any intellectual work from any discipline? To what extent is it possible, for example, to isolate the information skills from a research project in history, biology or economic studies?” In the book based on the ENSSIB / URFIST conference on training PhD students in Scientific and Technical Information, we also raised the issue of the relation between the training content in specialized fields of research and the common content on scientific information (Serres & Malingre, 2011). This question points towards the comparison of two approaches: one making documentary

learning dependant on discipline, and the other emphasizing the autonomy of information knowledge and the concept of information literacy.

The Form@doct project had to face this dividing line because the notion of different disciplines is particularly strong at the doctoral level and the field of research is primarily defined and rooted in a discipline. The question here is whether there can be a common form of information literacy shared by PhD students, regardless of their discipline. Should an online tutorial for PhD students be based on the assumption that they all have the same core of multi-field general knowledge, extended by disciplinary specificities, or should each discipline have its own information base? Given the great diversity and high level of specialization required by different disciplines, Form@doct offers an answer that favours acquisition of an organised ensemble of transversal knowledge, common to all PhD students, as a link between the different disciplines and basis for work in the different disciplinary areas. However, it is quite clear that needs of students in terms of information, resources, tools, and training requirements vary from one discipline to another. The initial intention, which was to give parallel access to the content of Form@doct choosing a disciplinary area and to provide discipline-specific paths through the tutorial, was too complex to put into action. Finally, a compromise was found whereby it was decided to insert additional disciplinary items within the guides and their associated resources, when relevant.

These choices needed to be explained and their importance underlined for the design of the Form@doct teaching tools, because they run throughout its entire structure.

Appropriateness of the General Architecture and Access to Content

How can we organize learning content and implement distance education, incorporating the differing, and sometimes contradictory, requirements of doctoral training for teaching content? The structure and the overall architecture of Form@doct were designed to achieve this, as have the separate and parallel modes of access to its content. With the aim of providing a resource suited to the practices and expectations of PhD students in terms of access and reading, the staging of content is built on the coexistence of three main principles: prioritization, fragmentation and granularity.

Prioritizing Content

Reflection and debate on how to provide better guidance towards the information in the tutorial led to several patterns of structure and access for different needs and practices. The first model consists of the organisation of content in a three-level tree, adhering to the documentary principles of classification. Entry is made via the four axes defined above: Retrieve, Manage, Produce/Publish, Getting to know scientific information. Each axis is broken down into a set of themes, which themselves lead to a series of guides, for example in the axis “Produce/Publish”, under the theme “Write, publish and disseminate your work”, one finds the guide “Publishing an article in a scientific journal”. The guides have a stable and homogeneous structure: an introductory page with a definition and an initial approach to the subject, together with a lexicon, pages for further study, a page with resources and tools, and finally a page with bibliography and webography. The tree, which can be seen on the home page of Form@doct, makes it possible to use the resources based on the major operations performed on information. It corresponds to an exploratory approach, to a need to get to know a subject both in general and in depth and represents one of the main ways of accessing the tutorial.

Content Breakdown

The discussion also focused on the ability to respond directly to a targeted, immediate need, which is often something doctoral students ask for in training resources. The choice of the Content Management System (CMS) LibGuides as a web support for the tutorial proved decisive in this regard, as it is coupled to the LibAnswers FAQ system.¹¹ Indeed, this system enables an alternative mode of access to the content of Form@doct, which is divided up and distributed so as to provide specific answers to a selection of predefined questions. The questions are entered by the teachers into LibAnswers and the answers are extracted from the guides or, where necessary, written separately with reference to the relevant guide for more information. This breaks down the content of Form@doct for reading.

The collection of Form@doct guides is not, in itself, a tool that presents content to be read linearly. Any doctoral student can use it as they wish: find their own course through the tutorial, at their own pace and without necessarily having an order of priority in their learning. The guides echo each other via a system of links and weave a network of connections through the content. What is true for the guides as a whole is also the case at lower levels: within the guides themselves, guide content is distributed between tabs corresponding to all items studied, and, for each tab, it is then distributed between specific boxes on the page. This also reflects the breakdown of content and fragmented structure, which promote targeted learning. The final element making up the learning tool is a lexicon, which is spread between the different guides rather than appearing as a single overall unit. This approach was chosen to put this content in its context in a way that would improve teaching effectiveness and knowledge acquisition.

¹¹ <http://www.springshare.com/libanswers/>

Granularity

The break-down of content gives easier access on very fine and well-identified scales of content.

The FAQ is the clearest illustration of this. It is based on the fact that PhD students often have very specific questions, so they need rapid, focused and direct answers. To meet this demand, the FAQ seemed to be a proper solution. The principle, as mentioned above, is to define a series of questions for each guide and to identify and select the paragraphs of the guides containing the relevant responses, rewording if necessary. The student users who enter a term will see all the questions containing that term displayed by autofill. They can then choose a question and be taken right to the answer and to a link to the relevant guide or parts of this guide. Also, the organization of the guides with the LibGuides system allows detail in the structure and presentation of the information. The smallest unit of content within each page of a guide accessed by the tabs consists of the “box”, which is a block of specific content that favours both a thematic approach to a subject and a break-down of the content to facilitate selective reading. As for the lexicon, it is no longer an independent overall tool in parallel with the rest of the content, its distribution among the different guides provides access to the concepts at a second level of scale, in close interaction with the guide and its theme. Thus, the PhD student can immediately see the concepts related to the topic and define field of ideas precisely.

Multiple Methods of Access for Multiple Uses

There are multiple ways of accessing the content of Form@doct, and the diversity of means of access is the best way of ensuring that the system adequately reflects the diverse

working methods of doctoral students and the different manners in which they learn, without imposing a single dominant method of use.

The following paragraphs emphasize the role and influence of the tool and the technical solution in the profile and evolution of the educational product, considering the shifts of the project that resulted from specific ergonomics of LibGuides and from the presence of features helping the users to get started easily with the tutorial.

On the home page of Form@doct, four main types of access are available: the tree structure, the FAQ, the search engine and the tag cloud.

The screenshot shows the Form@doct website interface. It features a green header with navigation links like 'Parcourir tous les Guides | Rechercher' and 'Tous les guides | Rechercher'. The main content area is divided into several sections:

- Top Left:** 'La matinée d'étude des formations doctorales' with a brief description.
- Top Center:** 'Form@doct : Questions / Réponses' section with a search input field (callout 2) and a 'Questions les + consultées' dropdown menu.
- Top Right:** 'Formations doctorales à l'information scientifique' section with a brief description.
- Middle Left:** 'Accès par thème' section with a list of topics (callout 1), including '1.1 Comment chercher ? Stratégies de recherche d'information'.
- Middle Center:** 'L'Information Scientifique et Technique' section with sub-sections: 'Chercher', 'Exploiter', 'Produire, publier', and 'Connaitre'. It lists topics like 'Mettre en forme et présenter sa thèse'.
- Middle Right:** 'Évaluez Form@doct !' section with a survey invitation.
- Bottom Center:** 'Guides: Les + consultées' section with a list of guides (callout 4), including '1. La thèse : normes et formats'.
- Bottom Right:** 'Parcourir par tag' section with a tag cloud including 'agregateur' and 'archive ouverte'.

Access: (1) the content tree structure, (2) the FAQ, (3) the search engine, (4) the tags

Searching in the Questions and Answers is intuitive and direct and can be accessed in three ways: a word query displays a predefined list of appropriate questions to guide the user towards targeted answers, which are extracted from the guides; access to the FAQ is also done through themes; it is also possible to display the ten most consulted questions. In addition to this type of access, the tutorial offers access by query in the search engine, which, in return, displays a list of guides and relevant guide chapters. Browsing the tree is the third main method of accessing the content, favouring a different approach that has the advantage of giving the user an overall view of exactly what is covered by the selected topics, and delimiting fields and concepts, connected with techniques and tools (e.g., alerts / feeds). The educational aim here is to extend *de facto* the field of knowledge, by locating and linking elements within the given framework. Finally, access by tags is possible either on the home page, which displays the main tags, or after first selecting the complete list of tags.

The interface still allows for various other possible navigation methods within the guides. Moreover, it simplifies both researching in an accurate guide and browsing from a guide to another. The objectives are to multiply the potential paths to the information, to offer easier navigation through the tutorial and to adapt to different user approaches.

Renegotiating Educational Strategy

Putting E-learning into Action

Although Form@doct, following its objectives, has provided a platform for self-training that offers both general and discipline-specific learning content, resources and specialized tools, its top level, namely its tutored part, has raised more difficulties and questions. The initial aim

was to test a targeted system of individualized support, parallel to the “self service” training, available only to doctoral students from the universities of Brittany who participate in methodological training, and intended to support classroom teaching.

Because human resources were insufficient to undertake a regular and systematic accompaniment, even with limited scope, the idea of personal tutoring was given up. Under these conditions, we need to ask how a remote audience can be managed without the appropriate resources; how the goal of distance teaching be achieved despite this constraint and which intermediaries, machines or organizations would be needed to support distance education.

Two answers have already been given to these questions: the first would involve the multiplication and enrichment of training and online information materials; the second considers the alternative development of online interactivity with the users of the tutorial and maintenance of a close link with classroom training.

Diversifying the Range of Educational Methods to Better Help the Student

In Form@doct, both the multiplicity of access methods, described above, and the multiplicity of teaching resources, was conceived as a way to strengthen learning support in the absence of a real tutoring resource. The uploading of rich content, with text, image, video (68 boxes with embedded media, slide shows, videos, podcasts...) and the diversification of teaching scenarios are all used as means to consolidate understanding and assimilation of content. Several approaches were tested, the most obvious being the illustration of texts by different kinds of images, such as diagrams, tables, explanatory figures, screenshots, and internal or external slideshows. Form@doct contains a wide variety of data types: media files, resource lists, RSS feed boxes...

Two other possibilities were tested: videos and radio broadcasts. Video clips are used as a support to textual learning content, to clarify different aspects or expand on a particular part of the theme discussed. The editors of the guides were trained to carry out screencasts, and the capacity to embed external videos under a Creative Commons license is also exploited. Some videos from YouTube can be directly integrated onto Form@doct, depending on their licence conditions. Screencasts in the tutorial are used to present targeted procedures, such the use of Zotero or EndNote, but could also possibly be used for more general presentations. These are a way for teachers to extend the classroom lessons, guiding PhD students by linking oral explanations and demonstrations on screen. Educational uses of video extend to the recording of scientific conferences and other events of interest to doctoral students.

The second media considered was that of radio. The European University of Brittany offers a “wiki radio” on its website.¹² Following a first interview on Form@doct project, the idea was launched to produce a short series of radio programmes on various topics covered in the tutorial. These radio programmes, lasting a maximum of two or three minutes, are podcasted and offer the opportunity of listening later or repeatedly.¹³ They are based on a script that consists of a dialogue in the form of questions and answers between a “novice” and an “expert”. This pedagogic method seemed particularly well adapted to the specific characteristics of a mobile audience, receptive to the immediacy and ease of learning: indeed, it allows for a rapid and dynamic synthesis in a few specific points on a chosen topic, it promotes remote and personalized use, with audio file retrieval by PhD students who integrate this content into their personal tools.

¹² <http://ueb.saooti.com>

¹³ Examples of Radio programmes : « Les revues en libre accès, quelle qualité scientifique? » (*What is the scientific quality of open access journals?*) <http://guides-formadoct.ueb.eu/content.php?pid=97583&sid=731257>

A Form@doct guide

Interactivity, or Management of a Remote Audience without Sufficient Human Resources

Setting up interactive services is an essential means for Form@doct to build a support system for doctoral students and a way to help establish the student-teacher relationship. It facilitates the involvement of PhD students and becomes the medium through which internet-based distance learning can be developed: “Interactivity in online education makes the difference between an information source and a learning experience” (Dewald, Scholz-Crane, Booth, & Levine, 2000).

The choice of the technical approach is often vital and is closely linked to the definition of an online tutorial. In the case of Form@doct, deciding the features to be developed and exploration of potentially suitable applications are processes that have evolved together.

LibGuides ultimately appeared to be the system that provided the closest solution to what was needed for Form@doct. Julien Sicot, at the ENSSIB / URFIST conference, referred to this application as lying between a Content Management System and Learning Management System, enabling many academic libraries to tailor thematic guides to their audiences (Sicot, 2010). It has many benefits for online learning, particularly in relation to the level of autonomy and customization that are specific to the doctoral program; it fully exploits the possibilities of Web 2.0 and has a strong capacity to integrate external tools and resources.

A first set of features relates to various ways of using the content: the students may for example subscribe to the RSS feeds of the page, the guide, the author or the entire site and be directly informed of any content update. They can use the widgets offered by the guides (including search widgets) and also share and disseminate information to many different platforms: social networks, sharing platforms, blogs, etc.

The ability to post comments is the second means of interactivity: the Comments link is displayed on each guide and in each box of content; it gives access to a window where the students can specify a topic and write their comment. The students can hence leave their responses either throughout the guide, or on a specific aspect of a theme being dealt with. The author of the guide receives the comment directly and can respond by email or via the guide page. Survey boxes are also available. The students can go further and interact directly with the content: first, as the LibGuides interface allows a user to submit links and suggest resources; and second, as the LibAnswers FAQ interface allows students to ask their own questions, so that these can be answered on Form@doct.

The third means of interaction is the chat. For each guide, a box with specific content shows the name of the author in charge of the guide and his profile information. It also allows direct contact to be made for assistance on the issues addressed by the guide. The principle is to establish a link between the student and contact teacher according to theme.

Finally, an evaluation questionnaire was developed on Form@doct itself, designed to obtain feedback on content, learning methods and services available. However, other methods of monitoring and interaction still need to be found to strengthen the relationship with PhD students and develop a regular and sustainable use of the tutorial.

The screenshot shows the Form@doct website interface. The main content area is titled "Les revues scientifiques en libre accès". Several elements are highlighted with blue boxes and labels:

- Flux RSS, Share**: A box highlighting the "Print/Mobile Guide", "RSS Updates", and "SHARE" buttons.
- Commentaires**: A box highlighting the "Comments (0)" link under the "Ressources et outils multidisciplinaires" section.
- Suggestion de liens**: A box highlighting the "Soumettre une ressource" section, which includes a "Submit a Link" button.
- Chat sur la page « Introduction »**: A box highlighting the "Besoin d'aide ?" chat window, which features a profile picture of Julien Sicot and a "Chat avec Julien Sicot (Hors connexion)" button.

The chat window also displays the user's name "Julien Sicot" and contact information: "Coordonnées: Cellule de Diffusion Électronique des Travaux de la Recherche".

Interaction with a Form@doct guide

Good Coordination between Face-to-face and Distance Learning

One characteristic of Form@doct is the close link between cross-disciplinary documentary training for PhD students in UEB institutions and distance teaching via the tutorial. This link gives the resource a solid base and overall consistency and stability. Classroom training is extended and echoed by its application content and services available in the distance-learning resource. Reference to Form@doct is always made during the face-to-face teaching sessions. The tutorial also includes the presentation and the description of classroom training¹⁴ and related educational resources. Additionally, ongoing reflection is examining the opportunities to provide webinars in the future, which could boost educational support and assistance. Everything has been designed so that Form@doct can be a reference resource for doctoral training that can establish a continuity between face-to-face teaching and distance learning. Rather than being strictly an e-learning system, Form@doct therefore takes more the form of a multifaceted training system: a platform through which to implement different teaching methods, which are linked to each other and interact to create a working environment that a PhD student can tap into as needed.

First Conclusions on the Uses of Form@doct

Form@doct was published as a test in 2010, and was officially launched in December of the same year, at the beginning of the doctoral year. After nearly one and a half years of existence, it is possible to draw some conclusions about the use of this tutorial, to identify useful points about the use that the PhD students make of it, and to see how well the mechanisms on the site are suited to their ways of working and learning.

¹⁴ <http://guides-formadoct.ueb.eu/content.php?pid=223224&id=1852493>

The shortness of the time period and lack of hindsight make this relatively difficult and the means of a systematic evaluation have not yet been developed. However, the available tools, in particular the LibGuides and Google Analytics statistics, in addition to the on-site tools for interaction with users, can perhaps lead us to an initial conclusion.

What Uses are the Guides being put to?

Besides the guides that provide information about the doctoral classroom training, Form@doct presently includes about forty thematic guides. The statistics given by LibGuides indicate 15 294 consultations of the guides in 2010, 46 898 in 2011 and 27 079 from 1 January to 4 May 2012, giving a total of 89 271 consultations. This represents a substantial figure, with a steady improvement over the period of reference. Interpretations should be made with caution because these figures indicate neither the profile nor the status of the users. It seems that, ever since its launch, Form@doct has attracted interest and curiosity and all of the guides have been consulted (the home page of Form@doct has itself been viewed 37 926 times).

We were interested to know which themes had been used the most since the official launching of the tutorial. An initial assessment indicates that the figures remained remarkably stable between 2011 and 2012 for the four most popular guides. The principal themes were the same in both years: first, “The thesis: norms and forms”; then, in second or third position, “Build a strategy for information searching” and “Software for managing bibliographic references”; and, finally, “The thesis: plan and parts”. In 2012, the recently added guide on Zotero bibliographic software made its appearance on the list. These choices reveal the true immediate needs of doctoral students. However, the list of the twenty most consulted guides shows that all four axes of Form@doct are in fact viewed in quite a homogeneous way. The question of Science 2.0 also

has a high profile (guides about RSS feeds, social networks of researchers, scientist's blogosphere, sharing platforms, etc.), and the theme of open access also appears in the sample group. The legal questions concerning intellectual property tend to attract the student's attention less, except when the title of the guide clearly refers to the rights of the researchers and to the dissemination of the thesis.

In addition, while the pages concerning doctoral classroom training are also frequently viewed, there was marked interest (770 consultations on 4 May 2012) for the guide about a study morning in February 2012 on "e-science, digital humanities...what are the evolutions of the scientific practices of research".¹⁵

Statistics from Google Analytics show similar results for the most frequently consulted pages. They give some further indications, especially for access to the content, predominantly resulting from the consultation of the four thematic axes and from a review of the list of the guides by subject.

Use of the FAQ

At the end of the first quarter of 2012, the Form@doct FAQ contained 195 questions with their answers and links to the corresponding guides, but we asked ourselves whether this resource was being used. Following the initial starting up period, viewing figures seem to indicate a gradual adoption of the question – answer system to reach precise, targeted information items. In seven months (August 2011-March 2012) there were 9361 views of the

¹⁵ http://guides-formadoct.ueb.eu/matinee_etude_2012

FAQ. The FAQ is therefore becoming a means of access to the content of Form@doct like the others.

Managing Interactivity

Form@doct users can directly interact with the interface in two main ways: (i) by suggesting further resources for the guides and (ii) by submitting their own questions to the FAQ system if their searches are unsuccessful. How do PhD students use these opportunities? Concerning the enrichment of the guides, PhD students proposed 32 complementary web resources under the heading “Resources and Tools”, which is available in each guide. Moreover, 301 queries were submitted to the FAQ system between September 2011 and March 2012. While most of these queries already had answers available on Form@doct, a small number of relevant questions were not yet covered on the site. The low values of these figures illustrate the scale of the work that remains to be done to integrate the users more completely and allow them to play a true role in this stage of the educational process. Both the suggestion of resources and submission of questions are interesting ways to support PhD students in their learning approach, especially in the absence of real coaching: the submission of resources, because of the disciplinary expertise of the students and their strengthened involvement in the tutorial; and the submission of questions to the FAQ system, because it allows the learning content to be adjusted, the learning process to be customised and a link to be made between the author of a guide and the PhD student.

Feedback also includes the reactions, remarks and suggestions communicated via comments posted on the guides. Finally, the facilities for chat with the author of a guide are

another means for interaction; however, this use has only been occasionally tested and is still too rare for us to draw conclusions.

Evaluation of the Tutorial

Form@doct offers an online evaluation tool that lets users to leave feedback on the content as well as on access and navigation methods, ergonomics, features and services. However, we will have to wait for a significant number of questionnaires to be returned to gain anything more than a general idea and to precisely analyze the impact of the learning tools offered by the tutorial, although responses are quite positive with regard to the different criteria.¹⁶ The integration and the dissemination of Form@doct in its institutional context, especially through classroom training, make it both possible and necessary to re-evaluate this resource; this should be done in the more formal framework of the next sessions of transversal doctoral training.

Conclusion: a Flexible Process of Evolution

The first step has clearly been accomplished. Form@doct is a recognized tool, supported and valued by its institutional environment. Its use is increasing and goes beyond its initial audience, as statistics from Google Analytics show use not only in several French-speaking countries, but also in the United States and Spain. Moreover a recent proposition of translation

¹⁶ These criteria can contribute to estimating the quality, relevance and adaptation of the content. They can also indicate the capacity of the content to be reused and validate the choice of media, the level and the interest of interactivity and the usability of interface (orientation, access, legibility...).

has been made by the University of Granada. Its dissemination has been strengthened and it can now be consulted by mobile phone. In addition, it is at the centre of a doctoral training harmonization project in Brittany. Finally, the idea of adding webinars to complete the present Form@doct resource is a further potential task for the evolution and the reinforcement of its e-learning methods. The originality of Form@doct is that it is a consistently-changing resource, in perpetual renegotiation: first of all because its objective of comprehensiveness predisposes it to constantly expand its perimeters and to closely follow the evolutions of the field covered; secondly because of the numerous challenges to which it is exposed, there is the requirement to adapt to the needs and special features of its targeted public, the necessity of an increased involvement of the PhD students in the resource, and beyond the process of self-study, the research for satisfactory and feasible solutions for student tutoring, for direct contact with PhD students to improve the monitoring of their learning. Form@doct is a tool that is both technical and organisational, whose own dynamics can be combined with the aims of flexibility, adaptability and multimodality that make it hopefully attractive to young researchers.

References

- Balancier, P., Georges, F., Jacobs, S., Martin, V., & Poumay, M. (2006). *L'e-learning dans l'Enseignement Supérieur. Environnement International Francophone. Rapport de synthèse rédigé pour l'Agence Wallonne des Télécommunications*. Liège: LabSET, Université de Liège.
- Boisvert, D. (2010). *Le développement de l'intelligence informationnelle. Les acteurs, les défis et la quête de sens*. Montréal: les éditions ASTED.
- Deschryver, N. (2009). A quelles conditions les lieux virtuels peuvent-ils être des espaces de formation? *9es Rencontres Formist - 2009: la bibliothèque, lieu de formation?* Lyon-Villeurbanne: école nationale des sciences de l'information et des bibliothèques. Available on line at: <http://www.enssib.fr/bibliotheque-numerique/notice-40649>
- Dewald, N., Scholz-Crane, A., Booth, A., & Levine, C. (2000). Information literacy at a distance: Instructional design issues. *The Journal of Academic Librarianship*, 26(1), 33–44.
- Fenouillet, F., & Déro, M. (2006). Le e-learning est-il efficace? Une analyse de la littérature anglo-saxonne. *Savoirs*, 3(12), 88-101.
- Kennel, S. (2011). Espaces de formation en ligne et culture de l'information: un nouveau paradigme pour l'usage et la médiation? In A. Kiyindou & R. Amador Bautista (Eds.), *Nouveaux espaces de partage des savoirs. Dynamique des réseaux et politiques publiques* (pp. 45-66). Paris: L'Harmattan.
- Reece, G. J. (2007). Critical thinking and cognitive transfer : Implications for the development of online information literacy tutorials. *Research Strategies*, 20(1), 482-493.

Serres, A. (2009). Penser la culture informationnelle: des difficultés de l'exercice... *Les Cahiers du Numérique*, 5(3), 9-23.

Serres, A., & Malingre, M.-L. (2011). Une culture informationnelle commune aux doctorants? Le pari de Form@doct. In C. Denecker & M. Durand-Barthez (Éds.), *La formation des doctorants à l'information scientifique et technique*, Culture de l'information (p. 53-67). Villeurbanne: ENSSIB.

Sicot, J. (2010). Quelle solution technique pour un tutoriel de formation à l'IST? L'exemple de Form@doct. *10e Rencontres FORMIST -3e journée d'étude du réseau des URFIST: les doctorants et l'information scientifique*. Lyon-Villeurbanne: ENSSIB. Available online at: <http://www.enssib.fr/bibliotheque-numerique/document-48562>

Simmonot, B. (2009). Culture informationnelle, culture numérique: au-delà de l'utilitaire. *Les Cahiers du Numérique*, 5(3), 25-37.

Torras y Calvo, A. (2011). Comment soutenir la recherche doctorale: les doctorants, la littérature informationnelle et la formation à l'utilisation des bibliothèques. In C. Denecker & M. Durand-Barthez (Éds.), *La formation des doctorants à l'information scientifique*, Culture de l'information (p. 39-52). Villeurbanne: ENSSIB.

URFIST de Bretagne et Pays de la Loire, & Service Commun de Documentation de l'Université de Bretagne occidentale. (2008). *Enquête sur les besoins de formation des doctorants à la maîtrise de l'information scientifique dans les écoles doctorales de Bretagne: analyse et synthèse des résultats*. Rennes: Université européenne de Bretagne. Available online at: http://www.sites.univ-rennes2.fr/urfist/sites/default/files/Synthese_Enquete_SCD-URFIST.pdf

Vayre, E., Dupuy, R., & Croity-Belz, S. (2007). Spécificité et rôle des rapports à autrui dans les conduites de formation d'étudiants en situation de e-learning: l'exemple des dispositifs universitaires français. *Distances et savoirs*, 5(2), 177-200.

Webber, S. (2010). La culture informationnelle: un domaine d'étude international. In F. Chapron & E. Delamotte (Éd.), *L'éducation à la culture informationnelle: colloque [Lille, octobre 2008]*, Culture de l'information (p. 102-113). Villeurbanne: Presses de l'ENSSIB.

1 Malingre

2 *Serres*