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IMPROVING THE QUALITY OF THE PRACTICUM

The use of Moodle and Google Docs in monitoring the Practicum process after the EHEA

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1. ABSTRACT IN ENGLISH:

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This paper presents a project intended to ensure the quality of the Practicum in the implementation of the EHEA.

How can we efficiently manage the control of all the students' assignments, performance and results achieved during the Practicum? By making use of ICT we propose a monitoring protocol based on the competences to be developed during the practices. This enables the smooth interaction between all parties involved. The focus is to make the student keep a detailed report of their activities by integrating Google Docs into Moodle.

We conclude that extending the Practicum to a large number of students is compatible with keeping the quality standards, thanks to the usage of ICT.

2. KEYWORDS:

Practicum, quality assurance, Moodle – Google

3. FIELD OF KNOWLEDGE:

More than one area: Arts and Humanities, Health Sciences, Social and Legal Sciences, Engineering and Architecture.

4. SUBJECT AREA:

- Evaluation and Institutional Quality
- Innovation In Higher Education
- Autonomous Student Learning

5. PRESENTATION CATEGORY: Oral Presentation

6. DEVELOPMENT:

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a) Objectives

The work presented in this paper is part of a wider project developed at Universitat Pompeu Fabra (UPF) aimed at adapting the Practicum to the European Higher Education Area (EHEA). In most studies at our university, the Practicum will cease to be an option for a small fraction of the roll and will become a widespread activity, or even mandatory in some degrees. This expansion of the Practicum to the masses should not be detrimental to its quality. In particular, one of the aspects to be given special consideration is monitoring and evaluation of the student's activities during the Practicum (Cid *et al.*, 2011), which proves to be crucial for the right assessment of the grading.

The definition of Practicum in the context of this work is a course intended to give students a practical application of their theoretical education, to be developed typically as an internship in the professional environment of a welcoming institution, such as a company, a public administration, or any other kind of organization (Zabalza, 2011). The benefits of the Practicum in the learning process have been described in different models (Jaques *et al.*, 1993), and in particular in Kolb's (1984) "experiential learning".

At UPF the Practicum system is independent for each of the 12 degrees conducted in its faculties. This represents a challenge for the coordination of the transition to the new EHEA scenario. A deep analysis and thorough study on the Practicum courses at UPF can be found in the research conducted by Alemany, Perramon and Panadès (2012).

The project for adapting the Practicum to the EHEA comprises both a study of the status before the EHEA and a forecast of the changes that will be necessary to adapt the Practicum to

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the new requirements, mainly student-centred learning and employability, i.e. training that meets labour market demands. This study is also involving the main coordinators of the Practicum for all the degrees, who are currently reporting how each of the studies is reacting to this process of transformation that the EHEA implies.

The greatest impact of the new Practicum system will be a significant increase in the number of students that will take this type of course. An appropriate use of ICT tools should make the task of academic supervisors easier, so that the monitoring of tens or even hundreds of students' professional practices a year by each supervisor should not have a negative impact in the quality of these practices.

The main goal is to facilitate the tutors' task while guaranteeing, and even improving, the quality of the process. That is, designing the project in a way that allows to easily compile updated information and to monitor a large number of students.

From here, we extract other secondary objectives, namely:

- ⤴ There should be little or no difference between the assessment of the Practicum and of other courses. Academic tutors, who are expected to be familiar with assessment platforms such as Moodle, should have no extra difficulty in monitoring the Practicum.
- ⤴ The tutors' work in reviewing the students' achievements should be as easy and straightforward as possible. For example, if a summary of responses to a survey can be visualised in a spreadsheet-like format, this will be preferred to a system where each student's responses have to be viewed separately, then closed, then two or three mouse clicks are required to go back and open the next student's responses, and this sequence has to be repeated for each of the several dozen students assigned to a tutor.

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- ^ The interaction within the three participants, i.e. student, academic tutor and external tutor, should be as smooth and frequent as possible, so as to detect possible deviations to the expected goals in order to correct them on time.

b) Description of the work

Our project consisted in developing a tool specifically designed for monitoring the Practicum in the new context of the EHEA.

Given that the Practicum will be a common subject, and since Moodle (Moodle, 2011a) is currently the generic platform used at our university for course administration, we started by designing and implementing a Moodle module for the Practicum. As we see it, this is not just a requirement, but a strength, as many higher education institutions use this e-learning platform. In that sense, our work, our efforts and our conclusions can prove to be useful and applicable to a wide range of organisations.

The use of Moodle is particularly interesting for the purpose of Practicum monitoring. Not just for our research, but for the university community over the world, given the large number of education institutions currently using Moodle because of its advantages. For instance, it is open-access software, it is easily adaptable to the needs of each institution, and it unifies the interface among education institutions. This latter feature lowers the learning costs for its users and smoothenes the transfer of students and lecturers between institutions.

On the other hand, using Moodle facilitates the fulfilment of one of our initial objectives, specifically that the procedures for monitoring the Practicum should be as similar as possible to

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those of any other course. This is easily achieved in those faculties where Moodle is already well established as the common e-learning system.

In the next subsections we describe the solution we developed based on Moodle and some problems we had to face in its deployment, and then an alternative solution based on Google Docs.

b.1) The Solution Based on Moodle

Our Practicum monitoring tool is implemented as a Moodle module that offers different functionalities to the users depending on their role within the Moodle environment.

- ⤴ *Student.* Users with this profile elaborate their periodic reports on their activities in the Practicum, receive reminders or notifications, interact with the tutors, and prepare the final report based on the contents of the periodic reports.
- ⤴ *Tutor in the external institution or organisation.* This profile grants access to the student's periodic and final reports and also to the reports prepared by the academic tutor. These users can also add comments to the existing reports and generate their own reports.
- ⤴ *Academic tutor.* Having the same functions as the external tutor, the academic tutor can also validate the reports and is responsible for the final assessment of the student. The academic tutor can confirm or amend the evaluation made by the external tutor.

As with any Moodle course, apart from these profiles there is a fourth one, the course administrator, who sets the general parameters for the Practicum like the periodicity of the partial reports, e.g. weekly or biweekly, etc.



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Depending on the configuration decided by the administrator, in each of the periods there will be at least two types of Moodle activities: the student report for that period, and a survey with a number of short questions that the tutors can use to evaluate how the student's activities are fulfilling the Practicum objectives.

In addition to these periodic activities, the Practicum course also includes the following elements:

- ⤴ A forum that allows students to exchange experiences.
- ⤴ A diary that students can use for recording their personal experiences, e.g. prior to preparing their formal reports, and which is not subject to assessment.
- ⤴ A glossary where students can add definitions of terms used in the specific activities they are performing at the Practicum.
- ⤴ A final survey for students to evaluate their overall experience during the Practicum.
- ⤴ The final report of the Practicum that all students must fill out. This will be the basis for the assessment of the Practicum by the tutors.

One section of the final report, which we call the *summary report*, is generated automatically from the periodic reports, and consists of the accumulated list of activities carried out by the student during each period. Thus it will be possible to know e.g. how many hours the student has spent in each type of activity.

The communication between the student and tutors is done through the usual mechanisms provided by the Moodle platform.

Once the implementation of our module was ready and tested, the next step was integration into a test environment that is identical to the institutional Moodle system used at our university.

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At this point, however, we found an obstacle due to the way the Moodle platform is deployed at our university. Some institutions, ours amongst them, make use of a heavily modified version of Moodle tailored to the singularities of their schooling system, built upon a certain base Moodle release. When a new version of the mainstream Moodle is published, resynchronisation of the customised installation with the public updated version may represent a non-trivial task, especially if the local system is not kept up to date with the incremental changes periodically made to the official platform.

In these cases, updating the local installation to a new Moodle version is usually deferred until the local changes have been adapted or it has been checked that they do not break the new version of the system. By the time this task is completed, it is possible that a newer major version of Moodle has come out, so that the local system will be constantly lagging behind the mainstream version.

When integrating our module for Practicum monitoring into the campus-wide Moodle system installed in our university, which is based on a 1.9 version of the platform, we found some shortcomings that could not be solved with the specific settings of that installation. Among other problems, we could not collect the results of a set of surveys into a single spreadsheet for easier review, it was not possible to automatically generate a final report from selected parts of the periodic reports, we could not have the comments from the academic tutor and the external tutor in separate sections of the report, the user associated with the external tutor could not be enrolled in the course with the access rights that we required, and the roles could not be defined more accurately to better suit our needs.

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Therefore, we ended up with two versions of our Practicum monitoring module: one that met our requirements but was installed in a separate platform and another that could be integrated into the corporate Moodle system but lacked some of the functionality it was designed for. The inability to integrate our module into the general platform used in the university defeated our initial goal of working with the Practicum in the same way as with any other course.

b.2) The Google Docs Alternative

Given the difficulties we experienced with our target Moodle system, we sought an alternative design based on an emerging technology, generally termed “the Cloud” (National Institute of Standards and Technology, 2011), which is more and more extended in these days, and we focused on a specific implementation such as Google Docs.

The key point that enables the use of this technology is that we can reformulate the Practicum monitoring process as a collaborative document editing process. This may hold true for any course monitoring, but in the case of the Practicum there is a peculiarity due to the involvement of the three participants: the student, the work placement tutor at the external institution, and the academic tutor at the university.

Indeed, the monitoring can be regarded as the preparation of a series of reports, both in an asynchronous and a synchronous fashion. Asynchronously, part of the documentation is elaborated by the student, another part is written by the tutors separately, and another part consists of comments added by the tutors to the previously prepared reports. When working synchronously, in the equivalent of a face to face monitoring interview, the participants can interact in real time, whether the student with any of the tutors, or one tutor with the other.

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Using a tool like Google Docs, we can benefit from the advantages of cloud computing technologies and, most important, we can solve the problems we faced when integrating our module into the old-versioned Moodle system of our university. Some of the benefits of using Google Docs are (Google, 2011):

- ⤴ Documents can be prepared using one of a number of predefined templates, or can be created from scratch or imported from most usual document formats (RTF, Microsoft Word, OpenDocument, etc.). They can also be exported to all of these formats. The user interface is familiar to users of typical document processing systems.
- ⤴ The owner of a document can control who and how can access the document, and with whom it can be shared.
- ⤴ Editing and publishing documents is done in real time. Different users can edit concurrently the same document.
- ⤴ The documents can be accessed, for reading or writing, from anywhere and with almost any computing system, including mobile devices. Only a web browser with common functionalities is needed.
- ⤴ The service is highly reliable, and frees users from worrying about backup copies, storage device failures, loss of USB sticks and other similar incidents.
- ⤴ A revision history system is provided which makes it possible to know who edited what and when, and to undo selected changes and retrieve a previous version of the document.
- ⤴ Google Docs can work not only with text documents, but it also allows for the editing and processing of spreadsheets. Online forms can be defined for entering data into these spreadsheets. This adds to a flexible scripting language, Google Apps Script, which provides a powerful tool for carrying out complex processes on the documents and the data.

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By using the features of Google Docs, we can overcome the problems we found when integrating our monitoring tool into an outdated version of Moodle, described in subsection b.1. For example, surveys can be redefined as spreadsheets and they can be exported to a single file to facilitate the tutors' review tasks (see Figure 3 below for an example), a final report can now be generated automatically from the parts of the periodic reports marked to this end, the comments contributed by each tutor to the reports can be clearly distinguished (as in the example in Figure 2), and the problems with role assignments within Moodle are solved with the access rights and the document sharing functionalities of Google Docs.

In our case, sign up of users into Google Docs is not an issue since all students are already registered to Google Apps. This is so because students are provided by the university with an institutional e-mail system based on Gmail, and therefore they all have at least one Google account. In some cases it may be necessary just to create an account for the external tutor.

Starting with version 2.1 of Moodle, a plug-in called Moodle-Google is available for integrating Google Docs, and in general various applications from the Google Apps suite, into a Moodle course (Moodle, 2011b). This plug-in has been back-ported so that it can be used with Moodle 2.0 as well. The plug-in allows access to a Google Apps account from Moodle, and the use of the Google applications available to that account.

However, the main problem we had when working with the university institutional Moodle is that it is a pre-2.0 version of the platform, in which a straightforward installation of the Moodle-Google plug-in is not possible. Thus, we have implemented two versions of our Google Docs-based monitoring tool. One makes straight use of the Moodle-Google plug-in, and in the other

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version, instead of using that plug-in we simply work with web links directly pointing to the Google Docs documents created for editing the assessment reports.

Although this latter solution is not as seamlessly integrated into Moodle as it would be with the Moodle-Google plug-in, this technique fulfils the initial requirements defined for the Practicum monitoring process and works reasonably well with any version of Moodle.

Figure 1 illustrates the use of this solution. The figure shows the main page of a Practicum course in the Moodle system for a specific student, as seen by the tutors, with some of the elements described in subsection b.1, including a glossary, the final report, and a final survey summary.



Figure 1: Example of the main page of a Practicum course in Moodle

In this example figure, the resource labelled “Final summary report” is an external link to a Google Docs document, shown in Figure 2. This external document can be accessed, for reading

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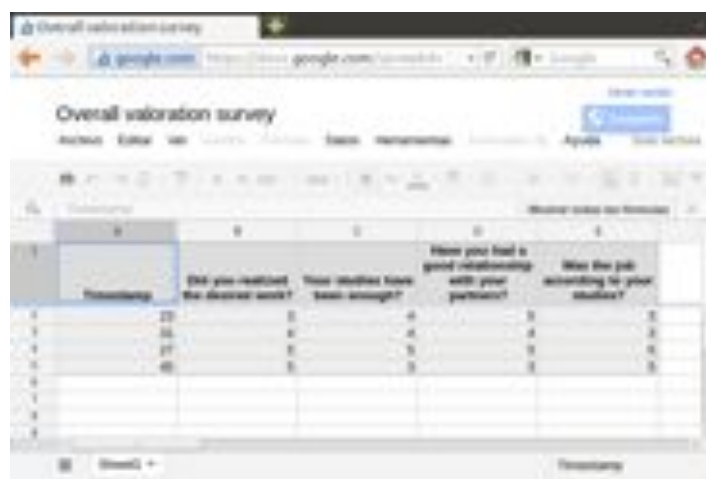
and writing, by users logged into a Google account, but also by users with no account at all. It is available to anyone who has the correct link, and this link supposed to be available only to the participants in the Moodle course, i.e. the student and both tutors. If the document is accessed through a Google account, it is possible to mark automatically who wrote each part. In the example of Figure 2, the distinction is made by setting different text colours for the different authors. On the other hand, if the document is accessed without a Google account the distinction has to be done manually by each author.



Figure 2: Example of a final summary report edited as a Google Docs document

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In the Moodle page of Figure 1 there is another resource, labelled “Overall valuation survey”, which corresponds to the questionnaire for evaluating the student's experience during the practicum. As with the final report, it is also a link that can be accessed with or without a Google account. In this case the link is pointing to a Google Docs spreadsheet, which is automatically generated from the responses to each evaluation questionnaire. This has the advantage of allowing the tutors to have a quick overview of all responses, rather than having to browse through each of them separately. An example of such a spreadsheet is shown in Figure 3.



	1	2	3	4	5	6
1	25	5	4	5	5	5
2	35	4	4	4	4	4
3	27	5	5	5	4	4
4	45	5	5	5	5	5

Figure 3: Example of a spreadsheet containing the summary of responses to the student's evaluation survey

In summary, the above figures show our Practicum monitoring tool in its most interoperable form, i.e. the implementation variant that can be integrated into any version of Moodle because it is simply based on links to the corresponding Google Docs resources, either documents or



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spreadsheets. The most advanced implementation of our tool is fully integrated into Moodle by means of the Moodle-Google plug-in, but can only be used with Moodle releases newer than version 2.0. And these two variants of our monitoring tool have been developed because the initial implementation described in subsection b.1, based solely on Moodle without Google Docs, could not fulfil our initial requirements when integrated into a pre-2.0 version of Moodle.

c) Results and/or conclusions

In this paper we have presented an implementation of a Practicum monitoring system based on well-known technological solutions such as Moodle and Google Docs, with a view to accommodating the large number of students that will likely be enrolled in the Practicum in the next few years due to the deployment of the EHEA.

We have described the particularities of the Practicum at Universitat Pompeu Fabra that make it require a specific tool, but it can be generalisable to other tutored practice systems. One of our goals is that the Practicum can be managed like any other course, in particular when using Moodle as the base e-learning platform.

Some difficulties arose when our monitoring tool was to be integrated into the campus-wide Moodle system used in our university. The problems came from the rigidity of this Moodle platform that provides for the management of nearly all courses in all majors at the university, and for this reason incorporates many adaptations to the local teaching system. The platform is therefore not easy to update when new versions of Moodle are released. We found that the Moodle version currently used at our university is too old for the Practicum monitoring module we implemented.

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We have developed an alternative solution based on Google Docs. We have shown how the problems derived from the use of an old version of Moodle can be overcome with the Google Docs service, which is based on the cloud computing technology. And although the access to the Google Docs documents is not as fully integrated into old versions of Moodle as it can be with newer versions, our initial experiments show that this solution meets satisfactorily the goals we had established for the assessment of the Practicum of a large number of students, without degrading the quality of the monitoring.

After all necessary tests have been run the next stage in our project will be to install the Practicum monitoring tool along with the institutional Moodle system used at UPF. Care has been taken in the design of the tool to make its integration as smooth as possible, so that it does not break any of the other features that have been incorporated into the local Moodle platform. The version of the monitoring tool that will be installed is the one that makes use of links to Google Docs documents, since it works with any version of Moodle, including version 1.9, the one used at UPF.

The final stage of the project will be an assessment of the students' and tutors' experience with the new Practicum module. After at least one full term has elapsed, the data collected from this assessment will be studied in order to decide what changes should be introduced into the monitoring tool, if any.

Future lines of work derived from this project include the exploration of new collaborative work platforms to be used for the Practicum monitoring, such as Yammer, Asana, etc., and the extension of the quality assurance to the whole Practicum process and not just monitoring, e.g. to the external institution selection and assignment, or to a long term quality assessment.

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