INTEGRATING MOODLE LEARNING PLATFORMS WITH ACADEMIC MANAGEMENT SYSTEMS FOR TEACHERS

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Abstract

Teachers are using e-learning platforms in their day-to-day activities. These e-learning environments such as Moodle[1] and Sakai are not linked to the SiS[2] system, so when the teachers use them they have two different environments where the information is not connected. Actions like grading exams, class lists and so on have to be done at the e-learning platform and then updated to the SiS system.

After the enrolment process, the list of students with a group assigned has to be updated in the e-learning platform. Here, the difficulties appear when a SiS group in the e-learning environment is split into n-smaller groups where all of them stand alone in the e-learning platform but are attached to one single SiS group. The opposite could also happen with two or more SiS groups in a unique e-learning group. These changes can be done during the academic course and all the materials, grades,… have to be keep updated in both environments.

SIGMA has been working to eliminate this barrier providing a number of services in the Moodle virtual platform that enable academic management systems and virtual campuses to work together. The aim of the project is to add the necessary plugins to the e-learning platform automating the relations between groups in both sides and offering a set of SiS typical functionalities such as, class lists, partial grades, links to the academic files ….

SIGMA currently offers to the universities of the consortium two environments in SaaS, efficiently maximizing the information in the academic management system allowing teachers and students to make the most of it.

This integration ensures the automatic creation of Moodle courses from the groups defined in the syllabus and teacher's assignments, so all the courses are available in Moodle after the university enrolment period.

We created a number of utilities in the teacher's Moodle workspace that allow them to interact with the academic management application directly from Moodle without opening a new session in SIGMA SIS. The complete lists of integrations up to date are:

- o Check the class lists
- o Check student records
- o Enter final grades in SIGMA SIS
- o Transfer and calculation of grades
- o Management of alphabetic grades

- o Check grades template
- o Manage records
- o Transfer of records to SIGMA SIS
- o Reviews of exam dates
- o Closing records
- o List of records

In addition, we have developed a component that allows the teacher to pass the final grades recorded in Moodle directly to SIGMA SIS, linking the daily assessment tool with the academic administration tool.

Keywords: Sigma, SaaS, Moodle, life-long learning, SIGMAAIE

SIGMA AIE[3] is a non-profit organization established in 1996 by a group of 8 top level Spanish Public Universities to optimize their management with information technologies (IT), providing the best solutions for academic and research management. SIGMA represents 20% of the university students in Spain. The organization's goal has evolved to the continuous technological modernization of university management through the development of IT solutions. As a result, the clerical processes have been automated and their effectiveness guaranteed.

Technology and innovation are the backbone of the services and solutions provided, based on a highly open source development and deployment platform for J2EE5 certified application servers compliant on a multi-tier and high performance proven open architecture. Internationalization is also one of SIGMA's top priorities. For years, SIGMA has established relationships with other European universities consortiums. Lately, SIGMA has open new strategic areas of interest such as SaaS, BI, eLearning and Mobile.

- SIGMA SIS (Student Information System)
- SIGMA CRIS (Current Research Information System)

1 CLE - COLLABORATIVE LEARNING ENVIRONMENT

1.1 Data Integration

The focus of this first step is to maintain a bi-directional link between SiS system and Moodle platform

1.1.1 From SIGMA to Moodle

We defined an interface between SiS system and Moodle based on the Moodle interface to send information from SiS system. The information exchanged is:

- Initial charge of the entire syllabus definitions in SIGMA, thus creating the necessary courses in the e-learning platform.
- Daily load distributions of teachers in their groups, as well as the creation of new groups of enrolment.
- Enrolment and enrolment of students to courses.

This interface is executed every night to ensure that the changes in the SiS system are updated on Moodle the next day.

1.1.2 From Moodle to SIGMA

It is as important to send the information from SIGMA to the learning platform as from the platform to SIGMA. Teachers currently grade their exams in Moodle to keep the student informed of their progress at the very same moment and they have to take this information and pass it manually to the student information system. One of the latest developments at SIGMA is creating a tool to allow them to pass the students' grades directly to SIGMA, just in one click.

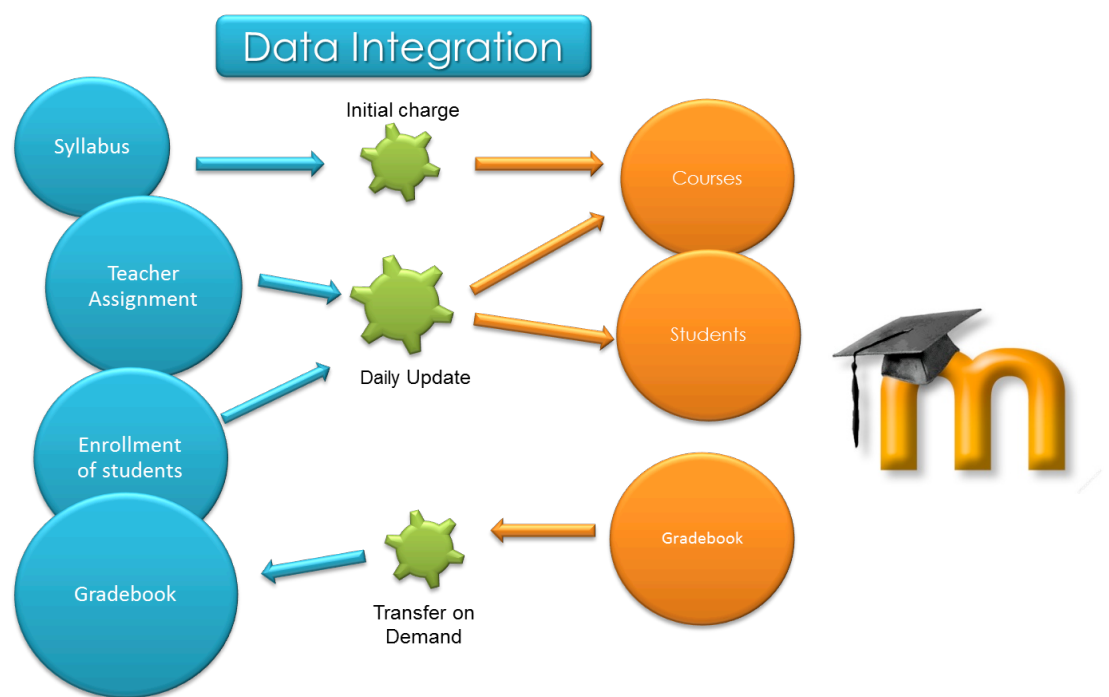After these integrations, we obtain a picture like this:

Fig. 3. CLE Data Integration

1.2 Functional Integration

After the integration of data, it is easy to develop several plugins in Moodle to cover typical SiS needs. Thus, actions such as students' records, class lists,… can be managed from Moodle using plugins.

Solving login credentials with sso processes, we can fully integrate typical SiS activities in the moodle environment as Moodle menu items.
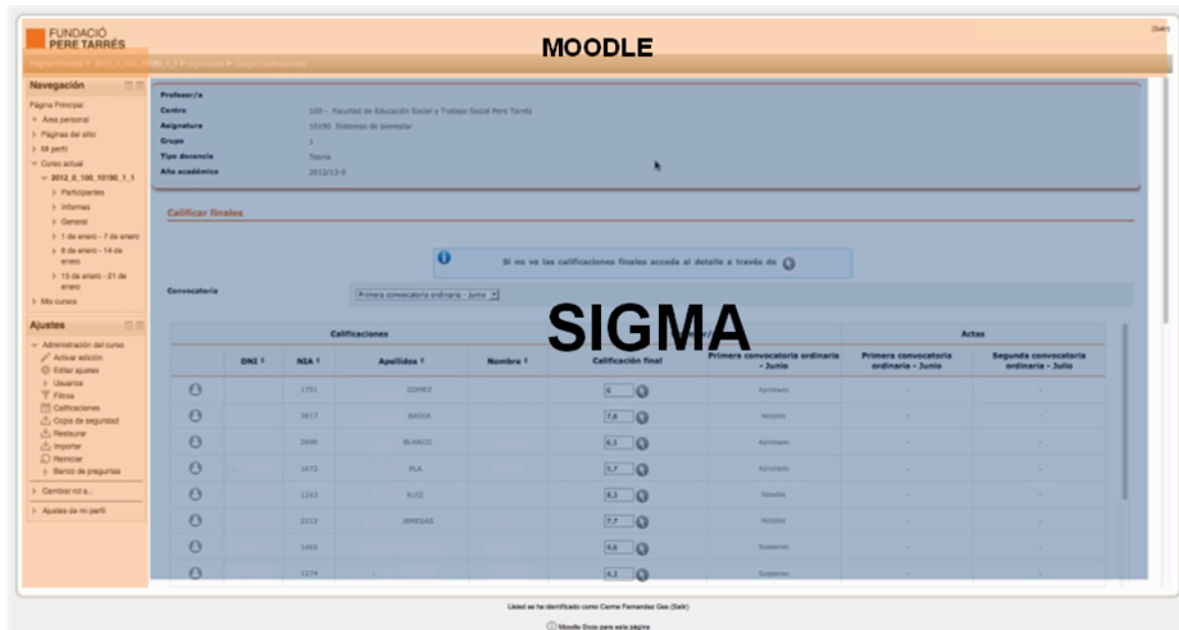
This is an example of integration:

Fig. 4. CLE Functional Integration

2   NEXT STEPS

After solving the data integration and maintaining the group links between both environments, we have covered the teachers' needs with the implementation of Moodle plugins. The catalog of integration can be widen with students needs such as the student's survey or the final grade request or the students profile.

Finally, we use this interface to add Moodle functionalities to the mobile App. Nowadays the app can show the moodle class group where the student is registered, the partial grades and also allows the student download the material from the Moodle platform in his/her mobile.

3   PUTTING THIS INTEGRATION TO WORK

SIGMA's universities are currently using this integration in their day to day activities. And all the functionalities are on production in the follow universities

- o   Check the class lists
- o   Check student records
- o   Enter final grades in SIGMA SIS
- o   Transfer and calculation of grades
- o   Management of alphabetic grades
- o   Check grades template
- o   Manage records

- o Transfer of records to SIGMA SIS
- o Reviews of exam dates
- o Closing records
- o List of records

ELISAVA Escola Superior de Disseny i Enginyeria de Barcelona

UAM UNIVERSIDAD AUTONOMA DE MADRID

euss enginyeria

Escola Superior d'Infermeria del Mar / Parc de Salut MAR Barcelona

b Blanquerna UNIVERSITAT RAMON LLULL

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TecnoCampus

LASALLE centrouniversitario

REFERENCES

[1] Moodle platform: https://moodle.org/

[2] SiS Student information System SIGMA ACADEMIC

[3] SIGMA Technological innovation for universities http://soporte.gestionuniversitariasigma.com/index.php/es/

AUTHORS' BIOGRAPHY

Jordi Cuní

Chief Information Officer

Jordi was born in 1976 in Barcelona Spain. He holds a Computer Science degree at Universitat Oberta de Catalunya (2006 – 2012) and a Computer and Software Engineer at Universitat Autònoma de Barcelona (1997 – 2000).

He works at SIGMA since 2000, being the current Manager of the Architecture and Software quality assurance Areas. He leads team of 7 developers in those areas.

His role mainly focuses on the maintenance and development of the (own) Sigma framework to increase the productivity, define the methodology among the different areas and establish the software development tools for the rest of the company. Last but not

least, his area also takes part on the technical and performance customer support helping our clients with the migration projects of their back-end resources.

Previously, he had been project manager developing SIGMA's educational planning area for 5 years. His main efforts focused on the development of software solutions, resource planning, stock management of static and mobile resources and offline and on-line surveys.