
Gamificación basada en servicios en la nube para mejorar la motivación en el proceso de aprendizaje

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Resumen

La aplicación de la gamificación en el proceso de enseñanza-aprendizaje se ha demostrado muy conveniente, tanto en enseñanza presencial como no presencial o híbrida, si bien, muchas veces resulta complicado el proceso de elegir las herramientas apropiadas para la correcta aplicación de la gamificación en la metodología docente y en ciertas ocasiones determinados factores (como la elección de plataforma, S.O, necesidad de servidores, licencias, utilización de determinados formatos, etc.) llevan a que la aplicación de la gamificación sea problemática, y desvíe el proceso de su objetivo natural. En esta comunicación se propone la utilización de servicios en la nube para una adecuada y eficiente aplicación de la gamificación independientemente del modelo educativo y contexto subyacente.

Palabras clave: gamificación, servicios en la nube, motivación, proceso aprendizaje.

Gamification based on cloud services to improve the motivation in the learning process

Abstract

The application of gamification in the teaching-learning process has proven to be very convenient, both in face-to-face and non-face-to-face or hybrid teaching. However, the process of choosing the appropriate tools for the correct application of gamification in teaching methodology is often complicated. Even on certain occasions, certain factors (such as the choice of platform, O.S, need for servers, licenses, use of certain formats, etc.) make the application of gamification problematic, and deviate the process from its natural objective. This communication proposes the use of cloud services for an adequate and efficient application of gamification regardless of the educational model and underlying context.

Keywords: gamification, cloud services, motivation, learning process.

Introduction

The introduction of gamification in the teaching-learning process is very beneficial since it has been shown to increase student motivation.

However, the process of choosing the appropriate tools for the correct application of gamification in teaching methodology is often complicated. Even on certain occasions, certain factors (such as the choice of platform, O.S, need for servers, licenses, use of certain formats, etc.) make the application of gamification problematic, and deviate the process from its natural objective.

All these problems can be solved by using cloud services to implement gamification techniques. The cloud is an environment that is changing the hardware infrastructure landscape around the world, defining services very well and influencing not only the way of working, but also the necessary training in the ICT world. How will it influence the model of university education? Will it drag the university education? Is it a real threat to the current training? How will the university respond? In whose hands will the formation of the future lie?

In this line, this work, rather than strictly dealing with cloud computing technology, presents experiences and ideas for the use of available services of cloud computing as a tool both inside and outside the classroom / laboratory, which allows us to take advantage of the motivation that these technologies arouse in the students and the possibilities of them to extend the learning process at any time and place, considering that like any other tool, it can be positive or negative depending on the circumstances, the needs of the students, the learning objectives or the educational activity to be carried out (Gonzalez, 2015).

As advantages of the application of the cloud services we can highlight that they enhance student participation, eliminate time and space barriers to carry out any task, facilitate access to digital content, at any time, and the possibility of sharing them in any place. It is what is known as ubiquitous learning. This is usually defined, as the learning that occurs anywhere and at any time (Alabbadi, 2011).

They also generate a great motivation in the students by the amount of applications available, innovative and that allow to enhance creativity, and of course they facilitate access to infinite quality educational content, as well as interactive activities that allow to offer a follow-up for the evaluation.

To adapt and encourage collaborative learning to new paradigms, it is necessary to study the application of new tools that favour such learning in the ubiquitous environments that currently prevail, and that can offer so many benefits. The cloud services of Google, by virtue of being free and universally known, constitute a pillar that allows for the reinforcement of learning and evaluation in teaching, in any field, academic, private, public, even during the early stages of Education (Escolar, 2016). We focus in most cases on writing, conjecturing and betting on the use of tools that help in the teaching tasks during the not so early learning stages and we put aside their application in children's cycles, where the presence of digital resources tablets and mobile devices in front of the classic blackboard has so much weight. Undoubtedly, the Internet connection and affordable technological means allow to introduce the use of these online tools in an almost transparent way, where it is not necessary to perform any installation and the only associated cost is the training, which is in many cases a determining factor for successfully apply these new learning paradigms that will greatly improve the teaching - learning process.

Methodology and proposed tools

Cloud services used outside the classroom / lab

In order to apply gamification outside the classroom, applications such as Coogle (<https://coggle.it/?lang=en>) that allow developing conceptual maps are also very appropriate, since they favour the student assimilating the contents by asking them to make a conceptual map about a subject treated.

On the other hand, all the multimedia resources, teaching videos, etc. that the teaching staff can develop adhoc or can select from repositories like the institutional repository of the UPV Riunet (<https://riunet.upv.es>) that as you can see in figure 1 are accessible at any time and place from mobile devices, resulting in good support and guidance for the student's work outside the classroom (Capella, 2018).

Finally, indicate that there are applications such as Google Drive that allows you to share all types of files and facilitates work in a remote group, or the shared Google agenda that can allow us to place work delivery dates, exams, follow-up tutorials, control of class attendance, support for methodologies based on gamification (Hakak, 2019), among others.

Cloud services and applications used in the classroom/lab

To apply gamification techniques in the classroom, it is often very useful to quickly know the level of our students on a specific topic, their prior knowledge or their opinion on a topic. For these applications, such as Menterimeter (<https://www.mentimeter.com>), Socrative (<https://www.socrative.com>) or Kahoot (<https://kahoot.com>) are very suitable, allowing to carry out the survey or test the students using their mobile devices as if they were a game and showing the teacher the results immediately, both numerically and through graphics (Capella, 2017).

Applications of augmented reality such as layar (<https://www.layar.com>), facilitate novel experiences in classroom or laboratory practice. In general terms, augmented reality consists of the vision through a device of a physical environment of the real world, whose elements are combined with virtual ones (usually strategically overlapping information) in order to create a hybrid reality in real time.

Results and discussion

The use of cloud services to implement gamification techniques has been shown to be very appropriate. Cloud computing is a reality that is generating a great expectation in education due to the large number of services available (many of them free or low cost), in-

tuitive, and available at any time and from anywhere without the need to invest in computing infrastructure, which with the appropriate methodology can be considered a great resource to improve the learning process increasing the students motivation and participation.

Conclusions

This paper proposes the application of cloud services to introduce the gamification in the learning process that allow us to take advantage of the potential of cloud services both inside and outside the classroom / lab, which are giving good results in higher education environments increasing student motivation significantly.

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