

## **Investigating student engagement with an electronically delivered simulation of professional practice**

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**Abstract:** Electronically delivered simulations of professional practice enable educators to place students in vocationally relevant situations or to experience events that would be impossible, or extremely difficult or costly to replicate without recent advances in technology. The Simulations in Higher Education (SHE) initiative (E-learning development unit) at the University of the West of England (UWE) is a focus for information and communication technology (ICT) supported simulations that are being developed across the university. The research presented here will focus on SIMulations in Transactional Activities (SIMITA), an online transactional learning environment (TLE) developed at UWE as part of the SHE initiative.

It is widely acknowledged that an engaged student stands to attain more academically than their disengaged counterparts as student engagement has been positively related to academic outcomes in many studies. In addition to the academic benefits, an engaged student is more likely to enjoy a better quality learning experience overall. In order that students can benefit fully from the enhanced learning experience that an electronically delivered simulation can provide, they must engage with that simulation.

A pilot evaluation of SIMITA revealed that students readily engaged with the simulation. The pilot considered system statistics of usage, student feedback and the willingness of students to participate in non-credit bearing activities. Following on from these preliminary findings, this poster will present the results of an investigation that utilised self-report questionnaires, a focus group and observations of participation in an attempt to explore student engagement with SIMITA. Further, the investigation considered other factors that might influence the students' engagement with the simulation.

The findings presented will inform future iterations of this investigation with SIMITA and also other simulations that form part of the SHE initiative. This research will be of interest to educators who are considering or interested in blending online simulations into the curriculum or to educators who are interested in student engagement with electronic methods of teaching.

Keywords or phrases: simulation, student engagement, electronically delivered simulation

### **1. Introduction**

Electronically delivered simulations enable students to put classroom theory into practise and gain invaluable experience of dealing with relevant, work place situations before coming face-to-face with them in a real life work place. When using an electronically delivered simulation, students can make decisions and mistakes in a 'safe' environment and can explore the consequences of their actions with no real world repercussions. Simulations can assist students in bridging the gap between classroom theories and real world practice before they enter the work place.

SIMITA, the simulation that has formed the basis for this initial study, currently supports 23 final year undergraduate students studying the legal process module as part of their law degree. Students work in firms of 4 students on a civil case scenario. Each firm handles a claimant or defendant action to the point of negotiation and settlement with their opposing firm. Students are also able to interview clients or seek support from their advisors (lecturers). SIMITA provides these students with the opportunity to practise case handling skills utilising technology that feels and behaves like that of a modern professional office. Students can store, generate, edit and update case documents and resources, email clients and opposing firms and organise their case work between members of the firm by assigning tasks and using the discussion area. SIMITA enables students to take an active role in learning about legal processes.

In addition to the benefits that it offers the students, SIMITA enables the module tutors to easily see the student's progress in real time. This means that they can offer guidance at appropriate points in the process and identify and alert students to mistakes as they happen. This provides the students

with a richer learning experience as they can explore and understand their mistakes at the time of making them rather than several months later at the end of the module.

The definition of student engagement is complex and broad (Deneen, L 2010) and what constitutes student engagement may vary between studies and research groups depending on their agenda and objectives. Despite this variance, Trowler and Trowler have concluded that 'the value of student engagement is no longer questioned' (Trowler and Trowler 2010). This is because it has been demonstrated in many studies that student engagement is positively related to academic outcomes including; high quality learning outcomes ((Krause and Coates 2008 cited by Bryson and Hardy 2010); gains in critical thinking (Pike and Kuh 2005 cited by Bryson and Hardy 2010) and deeper approaches to learning (Zimitat and Horstmanshof 2007 cited by Bryson and Hardy 2010).

To shape this initial investigation I have used the Hu and Kuh definition of engagement as: 'the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes' (Hu and Kuh (2001, p. 3) cited in Krause and Coates 2008).

Advancements in information and communication technologies present new opportunities to think about student engagement and how it can be fostered in online settings (Krause 2005). Electronically delivered educational simulations like SIMITA are an example of just such an opportunity.

This work in progress will present findings from an initial investigation into student engagement with SIMITA.

## **2. Methods**

Participants were 23 final year undergraduate students studying the legal process module as part of their law degree. Eighteen students completed a self-report questionnaire and four students were invited to participate in a focus group.

Patterns of student participation were measured by recording the number of times that SIMITA was accessed by a unique user during the period 1<sup>st</sup> January 2011 until 16<sup>th</sup> February 2011. The students had already been using SIMITA for a few months when observations began.

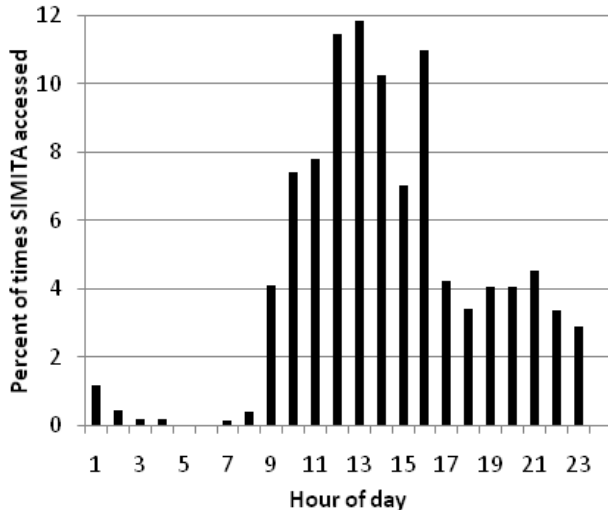
Students were asked to complete a self-report questionnaire containing scale or open-ended items that explored factors that might act to influence the students' engagement with SIMITA. These included their initial reaction to the simulation, student perceptions of the value and usefulness of the simulation and also the motivational orientation of the students.

The data will be analysed using Microsoft excel and SPSS statistics 19.

## **3. Findings**

Preliminary investigation during SIMITAs pilot phase in 2009 revealed that students readily participated with the simulation and student feedback was highly favourable (Falconer, Frutos-Perez 2009). Students accessed the TLE 7 days per week and throughout a 24 hour period except between 3am and 5am. Students also eagerly engaged in non-credit bearing activities such as designing their firms' website.

System statistics were collected as part of this investigation and showed that this student cohort exhibited very similar patterns of participation to that reported with the pilot student cohort. The students have accessed SIMITA 7 days per week and at all hours of the day except between 05.00 and 06.59 (Gra. 1). Usage peaks on a Monday and during the day between 10.00 and 16.00 (Tab. 1). In total, SIMITA was accessed 3133 times over the 6 week period that was observed. That equates to 136 times per student on average.



Day of week	Hits	Percent
SUN	282	9%
MON	926	36%
TUE	493	16%
WED	463	15%
THU	412	13%
FRI	366	12%
SAT	191	6%

**Table 1:** Day of the week access to SIMITA

**Graph 1:** Hour of the day access to SIMITA

Graph 1 shows the percent of times that SIMITA was accessed by a unique user each hour of the day during the period observed from 1st January 2011 until 16<sup>th</sup> February 2011. Table 1 shows the number of times (hits) and the percent of times that SIMITA was accessed by a unique user each day of the week during the period observed from 1st January 2011 until 16<sup>th</sup> February 2011.

Analysis of the questionnaire and focus group data will provide a greater understanding of what these observations of participation mean in terms of student engagement.

#### 4. Conclusions

The patterns of participation exhibited by both this and the pilot cohort of students suggest that in terms of participation at least, the students are engaging with SIMITA. As these participation patterns have been presented by two independent student cohorts we can suppose that they are a function of using SIMITA and not peculiar to the pilot student cohort.

Given that successfully engaging students clearly impacts on their learning outcomes and the impressive levels of participation exhibited by students during both the pilot and this initial study, this work in progress will present findings thus far, that explore or investigate the 'student engagement' construct in relation to this simulation. This will include consideration of the following factors that may influence engagement with SIMITA:

- Initial reaction to the simulation
- Motivational orientation of users
- Student perceptions of the value or usefulness of the simulation
- Student perceptions of whether the simulation has helped them to learn
- Student perceptions of their own self-efficacy

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