

TWITTER AS A LEARNING TOOL IN HIGHER EDUCATION

Juan M. López-Zafra¹ and Sonia de Paz-Cobo²

¹Colegio Universitario de Estudios Financieros (CUNEF), Madrid, Spain

²Facultad de CCEE, Universidad Rey Juan Carlos, Madrid, Spain

jmlopezzafra@cunef.edu

As far as the second semester of 2010-2011 we started to communicate with the students in the course of Business Statistics in the Business Administration grade in a private school in Madrid, Spain. The goal was to surpass the email service and check if Twitter could be the weapon. At the end of the course a survey was presented and 95% of the enrolled students filled it out. The questions were divided into three different categories, teacher, technological environment and Twitter, and the student academic and personal background. We present the results on the second one, with 15 questions ranging from "It's my first experience in Twitter within a subject" (82% answered "yes") to "Globally considered, the experience has been positive" (63% fully agreed or agreed). As our experience shows, Twitter is very powerful in motivating students in a business statistics course.

INTRODUCTION

Since its start in July, 2006, Twitter has become the world's most popular micro blogging and social networking service. Over 500 million accounts, over 200 million active users, over 400 million daily tweets (from 200 million in 2011)... these are just a few numbers on the increasing importance of Twitter. According to Pew (2012), 16% of Americans use Twitter daily. For those 16-27 years old, the rate increases up to 27%. In Spain (47 millions of people), over 10% of the population (5.7 millions) has a Twitter account (Concepto 05, 2013). Many studies have explored the usage of Twitter in the classroom. Elavsky, Mislán and Elavsky (2011) showed that the use of Twitter in a large-lecture course was generally positive, improving students' motivation and participation. According to DeAndrea et al (2012), social support plays an integral role in determining students' successful adjustment to college. Forkosh-Baruch and Hershkovitz (2012) followed 26 Twitter accounts to examine cases in which Social Networking Sites (SNS) were being utilized for scholarly purposes by higher-education institutes in Israel; their research suggests that SNS promotes knowledge sharing, thereby facilitating informal learning within the community; SNS open academic institutes to the community altogether. Johnson (2011) studied the effect of Twitter posts on students' perceptions of instructor credibility. Participants were assigned to one of three groups: a group that viewed social tweets, one that viewed scholarly tweets, and one that viewed a combination of social and scholarly tweets; the only observed significant difference was that those who viewed only the social tweets rated the instructor significantly higher in perceived credibility than the group that viewed only the scholarly tweets.

So, as we can see, Twitter has been in some of the academic discussions in the last couple of years. What we didn't find was an evaluation of Twitter as a tool for teaching statistics, and this is our main target in the present research. We pretended to use it as an alternative broadcast system to the email and blog that were already in use. And we pretended to use it among students we expected were not used at all to Twitter, as we'll finally saw it was the case. The communication is structured as follows. We will first present the precise targets of the research, followed by the frame research, along with the survey and the questions we asked the volunteer participants. We will then go into the insights, the results we finally reached from the research. We finally present the concluding remarks.

THE TARGET

Business Statistics is a classic introductory course in Business Administration in Spain for more than 50 years. The main problem teachers face is a lack of quantitative skills in the students, linked to the heterogeneous background they provide when entering the course. And the situation is getting worse in the last 12-15 years, as those studying under the new Education Act (LOGSE, in place between 1990 and 2002) enter University. The mathematical skills were deteriorating fast, along with understanding of the topic. The High Education European Space, compulsory since

2011, tried to adapt the grades and the programs to the new situation. With a more practical-oriented methodology, more importance was giving to alternative activities than the more traditional in-class tutorials and lessons.

The main target we followed with the Twitter account was to bring the reality of statistics to the daily life of students. Tweets can be divided into three different categories, apart from those explaining the basics and those encouraging students to go on. Those offering information on the importance of statistics in our lives, those asking for a rapid answer (bonus tweets) and those announcing quizzes and exams. The following figure shows one of the first kind.

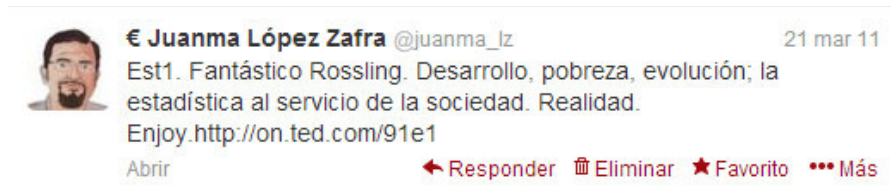


Figure 1: Twitter post “Fantastic Rossling. Development, Poverty, evolution; statistics serving society. Reality. Enjoy”

THE FRAME

Course 2010-2011 was the first one in a new academic system in our center, CUNEF. This is a small privately run school of Business Administration (BA) with more than 40 years of history. CUNEF is one of the most prestigious BA schools in Spain, and has always been associated with small, high quality groups. According to the new High Education European Space, all BA plans should be working never after 2011. So CUNEF decided to start this new academic method during the course 2010-2011.

During the second semester of the First Year, a course in Business Statistics is compulsory for students. The syllabus includes descriptive statistics (central, dispersion and form parameters; regression and correlation), probability theory (basics, probability distribution of random variables, moments of a distribution, 2D probability distributions) and some basic probability distribution models (both discrete and continuous distribution models, and some study of the convergence problem). The background of BA Spanish students is generally modest in terms of mathematical and statistical knowledge, so even after a first semester course in Mathematics for BA, their appetite for statistics is far from big.

So we decided to enter their battlefield and we offered the possibility of improving their final score by answering some questions that were going to be asked just through the teacher’s Twitter account. They were offered with 1 bonus extra point apart from the usual 10 points scale we use for their evaluation. So an ideal student could finally have 11 (10+1) points out of a total of 10 (of course, this possible outcome was quite unlikely).

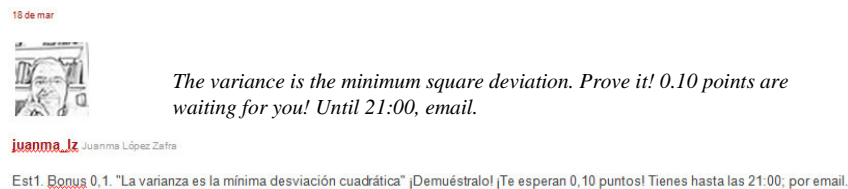


Figure 2: Example of a bonus question asked in Twitter

At the end of the course, and with a 10% of that bonus offered, an automatic survey was passed to the students using Google Docs.

The survey was divided into three blocks. The first one was set to evaluate the academic features of the subject through a total of 20 questions; the second one, with 15 questions, tried to evaluate the importance of Twitter in the students’ expertise; and the third one, with a total of 9 questions, was set to have a deeper knowledge on the respondent.

Ninety five students out of 127 answered the questionnaire in the required time; 57% of the respondents were women, another 18% were granted a scholarship, 63% accessed their social networks more than once a day. 94% were active users of Tuenti (a Spanish Facebook, very popular among teenagers), 80% declared a Facebook account and 87% a Twitter one. 68% owned a laptop with Windows OS, 22% a MacBook with iOS. The smartphones were mostly BlackBerry (72%) and iPhone (17%); just a tiny 1% owned an Android device. They all were 18-19 years old.

THE RESULTS

The second block of questions was devoted to the knowledge and use of Twitter as a social network and, specifically, as a learning tool. Table 1 shows the questions and the possible answers.

Table 1: Questionnaire about Twitter

T00	I have heard about Twitter before this course
T01	I had a Twitter account before starting this statistics course
T02	This is my first experience with Twitter in a subject
T03	I think Twitter is an interesting media for university teaching
T04	I think Twitter should be used by other teachers
T05	Globally evaluated, the Twitter experience has been positive
T06	I access Twitter from ...
T07	What are my technological devices
T08	Use of social networking: which
T09	Using of social networks: when
T10	When do I access Twitter
T11	When I finish the course I think I will continue using Twitter
T12	How many people I follow on Twitter
T13	Who do I follow on Twitter
T14	How many people are following me on Twitter
T15	I love Twitter

According to the answers, 82% of students have heard of Twitter before the course started, but just a tiny 11% of them already had a Twitter account. For the vast majority (96%) of them, it was their first Twitter experience within a subject. So we can consider that, from that point of view, we were “early adopters”. 73% were accessing Twitter from their Smartphones or tablets, and over half of them accessed more than once a day. The following figure summarizes the data.

As it is easy to understand, 68% were following less than 26 people, with friends (69%), stars (41%), sports-linked accounts (29%) and journalists (22%) as the most representative followed accounts; just 16% of them were following music bands or singers. According to the previous figure, just 27% of them declared over 25 followers, with just one respondent declaring over one hundred.

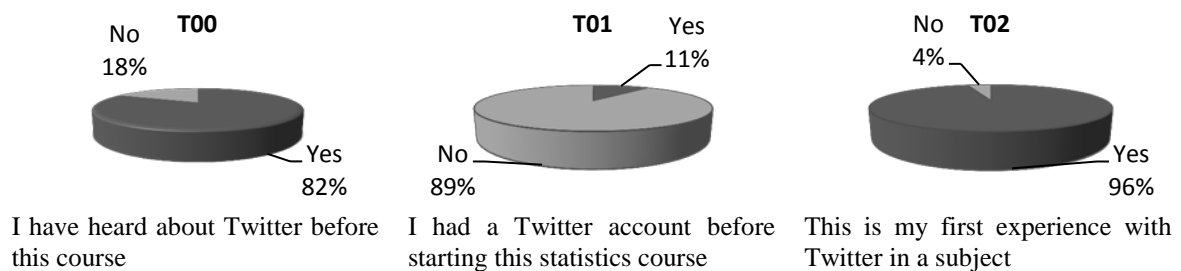


Figure 3: Results of Twitter questionnaire (see Table 1) T00-T02

But the most important results are those related to the use of Twitter as a learning tool. Most of the students (58%) thought that Twitter is an interesting media for university teaching, even if a 23% didn't have a clear opinion. Almost the same ratio (22%) was doubtful about the success of the experience, but again a vast majority (this time even bigger, 63%) at least agreed it was a success. It was strange that the "I love Twitter" item was the most divided all along the survey; it varied between a minimum of 14% for the "absolutely disagree" answer up to a maximum of 24% for the "neither agree nor disagree" one.

We also asked about the interest on the subject; the precise question was "My interest on the subject has increased during the semester" and the answers were scaled again from 1-absolutely disagree to 5-absolutely agree. The results were significant when crossing the three previous items with this one. For a matter of degrees of freedom, we reduced the 5-level scale to a 3-level one, with values 1-Disagree or absolutely disagree, 2-Neither agree nor disagree, and 3-Agree or absolutely agree, just adding the previous cells into the new ones.

The cross tabulation of "My interest for the subject has increased during the semester" with "I think Twitter is an interesting media for academics" was significant (p -value <0.001), as with "As a whole, the Twitter experience has been great" (p -value <0.001); the result of the cross tabulation with the sentence "I love Twitter" was although mixed, with a p -value of 1.5%.

CONCLUSION

In the present paper we show the results of a survey on the usage and importance of Twitter as a learning tool into a first course in a Business Administration grade, in the Business Statistics subject, during the second semester of course 2010-2011. The syllabus, as it was previously stated, included descriptive statistics, an introduction to probability and some basic probability distributions. The survey of 127 students was conducted in one of the most prestigious Spanish private Business School, all in their 18s or 19s; 95 students answered. Even if the majority have previously heard about Twitter, for most of them it was their first experience with Twitter, both as a broadcast system and as private users; most of them opened their account for the occasion. As the cross tabulation analysis showed, it seems there's a significant relationship between the use of Twitter and the increasing interest in the subject during the semester. So we can conclude that Twitter is a powerful tool in both helping the teacher in communicating materials to the students and, the most important, in increasing students interest in the subject. Our experience has been highly positive.

REFERENCES

- Concepto 05 (2013). Estadísticas usuarios redes sociales en España. <http://www.concepto05.com/2013/07/estadisticas-usuarios-redes-sociales-en-espana-2013/> Accessed Sept. 2013.
- DeAndrea, D., Ellison, N., LaRose, R., Steinfield, C., & Fiore, A. (2012). Serious social media: On the use of social media for improving students' adjustment to college. *Internet and Higher Education, 15*, 15–23.
- Elavsky, C. M., Mislán, C., & Elavsky, S. (2011). When talking less is more: Exploring outcomes of Twitter usage in the large-lecture hall. *Learning, Media and Technology, 36*(3), 215-233.
- Forkosh-Baruch, A., & Hershkovitz, A. (2012). A case study of Israeli higher-education institutes sharing scholarly information with the community via social networks. *Internet and Higher Education, 15*, 58–68.
- Johnson, K. (2011). The effect of Twitter posts on students' perceptions of instructor credibility. *Learning, Media and Technology, 36*(1), 21-38.
- Pew (2012). The Demographics of Social Media Users - 2012. <http://pewinternet.org/Reports/2013/Social-media-users.aspx> Accessed Sept. 2013.