



GLOBAL JOURNAL OF HUMAN-SOCIAL SCIENCE: G  
LINGUISTICS & EDUCATION

Volume 14 Issue 8 Version 1.0 Year 2014

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals Inc. (USA)

Online ISSN: 2249-460X & Print ISSN: 0975-587X

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*Keywords:* NEET, MOOC, assessment, aspirations, massive.

*GJHSS-G Classification : FOR Code: 939903*



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# Comparisons of Young People's Educational Aspirations on MOOC

## Comparisons of Young People's Educational Aspirations

Enrique Sánchez Acosta <sup>α</sup> & Juan José Escribano Otero <sup>ο</sup>

**Abstract-** Are different government plans to cut the rate of young people known as NEET, now in the age between 15 and 29 years. These people have a serious problem to do a life plan and emancipation, however, has a much greater technological power than their parents and live in a continuously changing world. With the rise of massive open online courses (MOOC), these people have an opportunity to improve their quality of life in this model of education. However, it is possible that they might have troubles to adapt to this new way of learning. This research takes two courses with more than 6,500 students each, where most of the students are NEET. One of the courses is about something completely technology (video games) and the other is more traditional (law). The experiment will try to answer the question of whether the technological novelty of the subject influences in their interest and if it influences the occupational wishes of NEET.

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### I. INTRODUCTION

One of the central pillars in educational research are massive online courses, many colleges and universities are looking into the possibility of include this type of courses in educational institutions, although much work remains to obtain conclusions.

Through this research is intended to observe if the method of massive online courses affects to how students would like to be evaluated by these courses, that is, how prefer the assessment of massive open online courses two groups of young people completely different.

This two MOOC analyse more than 6,600 students each, one on a traditional subject (Law and social networks) and another of them on a more innovative and technological subject (Video Game Design), both have 6 week and on the same MOOC platform. At finish was sent a survey to the students with more than 3,000 responses. First of all, it is necessary to know what a massive online course is, then, try to

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classify the courses and its assessment to use one or two of this assessment for the study.

### II. WHAT IT'S MOOC?

It's an online open course to a lot of students that integrates social network connectivity, the invaluable help of an expert in the field and lots of open resources and repositories that are on the Internet (McAuley, Stewart, Siemens, & Cormier, 2010). However, the most important of a MOOC is the active participation of hundreds or thousands of students who auto managing their participation according to a common goal of learning. And although, there may be supported by teaching assistants and temporal structure of several weeks duration, usually not generate any obligations except internet access and personal motivation.

### III. ASSESSMENT INSTRUMENTS FOR MOOC

Most MOOCs have a mix of assessment systems, usually a single type of assessment tool, multiple choice tests, and sometimes peer review.

Some of the elements that have current platforms are:

- Multiple choice questions and peer assessment
- Multiple choice questions only
- Peer review only.
- Others.

Most platforms studied by Katy Jordan (Jordan, 2013) are xMOOCs, assessments that take place in them are associated with these type of courses. But cMOOCs also has a number of assessment instruments to consider, such as, among others:

- Peer assessment of the activities carried out.
- The knowledge generated and collaborative learning.

It can be viewed on samples of assessment tools in some MOOC by Phil Hill (Hill, 2013), that in very few cases an assessment tool for open response questions is used, due to the difficulty of correcting this model for current computer systems.

Even if assessment tools for open response questions could be useful for student learning in an online traditional class, these techniques within a massive online course must necessarily be automated. The large number of students who would have MOOC

prevents a teacher from assessing responses of thousands of students in a finite time without the aid of technology (Sánchez Acosta and Escribano, 2013), first of all it must be defined what is the automated assessment.

To demonstrate that these evaluations are equally valid as if they were conducted by a specialist, current MOOC supported platforms are based on the large number of evaluations of an exercise that these students can perform to determine a more accurate rating. Thus, virtually all platforms support these types of assessments, and they all allow increasing the number of times a work is evaluated to a number superior to two.

*Automation based tools:* These tools or assessment instruments are based on automatic programs that analyze the responses with tools that implement a default correction algorithm.

With these tools, reliability of correction is pursued so that the same answer will receive the same evaluation every time it is subjected to automation. There are different types of instruments that can fit into this category, but the key feature is that they do not require human intervention, making them particularly suitable to be used in MOOC. Examples might be: multiple choice tests, automatic evaluation of problem sets, programming tasks, surveys and questionnaires, attitudes rating scales, written exams, troubleshooting, comparison charts, and images. In free writing responses, semantic analyzers can be used with or without dictionaries and thesauruses. MIT (Massachusetts Institute of Technology) is conducting research (for their Edx platform) on various Text Analysis Systems or AEG (Automated Essay Grading) (Markoff, 2013) to allow for essays and written tests to also be automatically evaluated.

However, there are several of these types of systems currently in the market and we should not forget that machines are much more consistent and can evaluate a larger number of items in a shorter period of time (Ezeiza, A, 2013). Currently, these systems combine algorithmic methods of grammatical analysis with semantic analysis, and holistic methods based on word searches. For example, the Summary Street System (Steinhart, 2000) compares summaries with the original text, or the Computer Learner Corpora (Granger, Hung, and Petch - Tyson, 2002) is compiling a database of students' texts to compare and analyze other written work. The e-rater (Attali and Burstein, 2006) combines statistical analysis and natural language processing to contrast the results with its database; it examines grammar issues, discourse markers, and lexical content using about 100 indicators. The results are supposed to have a success rate between 84% and 94% compared to human evaluators. This system is driven by ETS (Educational Testing Service) to develop the Criterion program. ETS uses this system in well-known TOEFL

tests (Test of English as a Foreign Language), matching machine with human evaluator only for some specific tests, which saves a significant amount of money (Knoch, 2009).

*Tools based on authority:* These are the tools which involve a professional or a person skilled in the field. They are very difficult to implement in a MOOC, mainly due to the large number of students enrolled in the course, so this type of evaluation would require an enormous amount of time from a professor or professors. However, sometimes these corrections are delegated to dynamic adjunct instructors who energize and support students. The problem of evaluation criteria disparity appears when a large group of professors is in charge of correcting instead of just one professor, this may cause that the same response could receive very different evaluations depending on the faculty member evaluating and even depending on when the faculty member performs the evaluation. To alleviate this problem, it is possible to apply very sophisticated evaluation rubrics that determine more objective corrections, parameters, and descriptors. But in the end, human beings evaluate largely based on intuition. Some authors argue that the previous experience of the evaluators and their knowledge are more valuable and relevant than any descriptor or rubric. Therefore, rather than spending hours and studies to build reliable and valid rubrics, they believe that it is more profitable to spend that money and effort in preparing people who can evaluate tests, reach a degree of agreement, and handle scales (Ezeiza, A, 2013). Some assessment activities that require evaluation tools based on authority are: seminars, workshops, practice exams, interviews, debates, and co-evaluation of activities in cMOOC.

*Tools based on social interaction:* Undoubtedly the communication potential of social networks is still largely undiscovered and should be studied more in depth (Guerrero, 2010). Currently, this potential is being introduced in the educational system, maximizing the opportunities offered by social networks not only in terms of MOOC, but also as a support tool for traditional classes. Some instruments that fit into this system of social interaction are: anecdotal evidence, portfolios, collaborative Wiki, gamification or motivation based on collaborative games, surveys and questionnaire, chats and forums, projects, workshops, tasks, exercises, activities, and generated knowledge or collaborative learning in cMOOC and xMOOC.

#### IV. HIGHER EDUCATION BUBBLE

To understand the start of this type of e-learning is necessary to know a new concept called "Higher education bubble" (Grau, 2011). According to official data from the Spanish Ministry of Education, in 1975 the total number of universities was 28, in 1985 increased to 35 and from 1985 begins the process of education

decentralization and begin to transfer jurisdiction over such matters to other regions. In 2010 we already had 236 university campus, of which 154 were public and 69 private universities, and continued growing. This situation was not only happening in Spain, but also extends for all the countries.

*a) Educational report*

If this is not enough, in 2009 the Department of Education of the United States published a report (Means, Toyama, Murphy, Bakia, & Jones, 2010) which enhances the online schooling to traditional education and spoiling the possible expectations of American universities in their future as traditional educational communities. At such times it appears in the Stanford University a professor of computer science called Sebastian Thrun with the first MOOC course with over 160,000 students around the world, Udacity just born, two months later come Coursera. (Mangan, 2012).

*b) Job search*

The massive online courses can help young people to find a job, there are different ways to act for it (Acosta, 2013):

- Personal brands: Companies may consult the student grades, their badges or achievements in different universities where massive online courses are implanted, thus can choose the best candidate. For example, Coursera reference to the best students in the
- courses, so that employers can choose from among the students of a particular course for the company. Of course universities in future be charged for this service.
- Student promotion is another strong point that exploit universities. They may charge a service to its students once completed the course to promote their Curriculum Vitae in a number of interested companies.
- Continuing education. The universities could offer courses for continuing education for employees, these would include employees from different companies around the world.

This massive courses for a specific subjects could increase the experience of the employees.

*c) Hypothesis*

Does it affect the technological novelty of the subject in a massive open online course in the dropout rate, interest and aspirations of NEET?

*d) Method*

After analyse two massive online courses very similar but with two completely different topics, one based on technology "Video Game Design" and other based on a more traditional topic "Law and social networks", similar results were obtained after 6-week course.

*e) Law and social network*

The course aims to achieve the following objectives (Tourino, A, 2013):

- Conduct a comprehensive approach to the concept, history and types of social networks in the world.
- Legal approach to the concept of social network and complexities.
- Familiarize the user with the privacy concept and how to manage it in the major social networks.
- Introduce the user with the concept of intellectual property.
- Conduct a systems approach to advertising and adware scheme of social networks.

*f) Course*

After consulting the sample data used in this study of law and social networks course, was also considered interesting to the conclusions of this research review chart completion, many of the massive online courses have a dropout rate similar (see Table 1), but it could be a relevant information for determining the conclusions. (See Figure 3)

*Table 1:* Lessons in course week by week

Lesson	Started	Finished
0	4164	4164
1	4755	3931
2	3721	3374
3	3225	3081
4	2952	2797
5	2692	2592
6	2344	2221

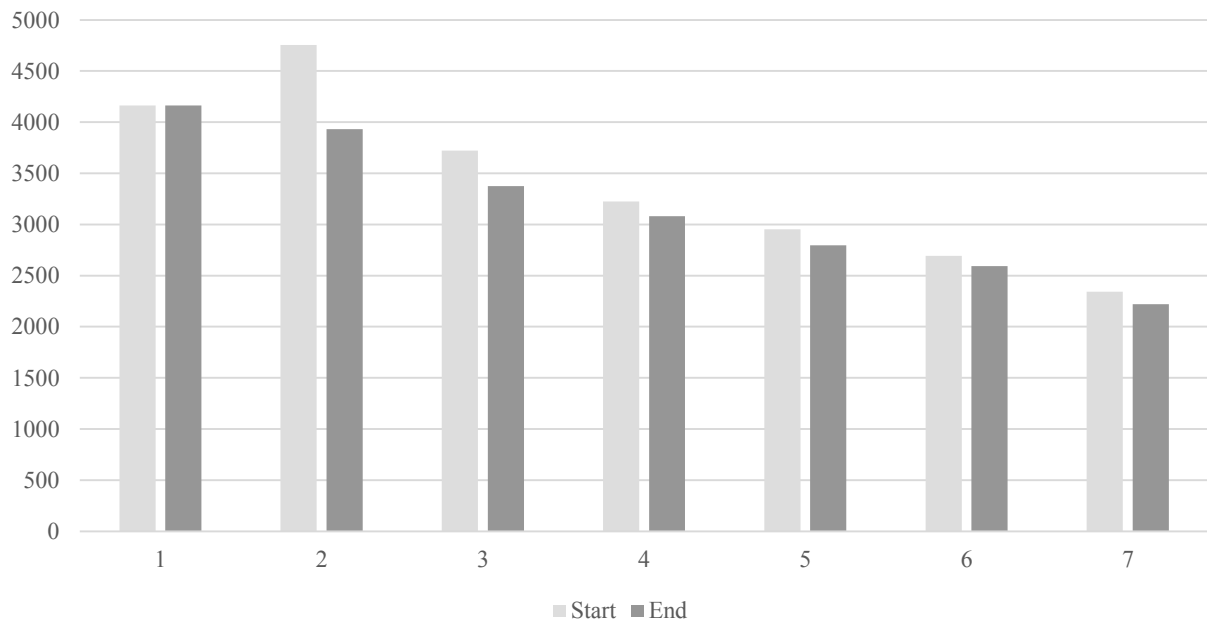


Figure 3 : Lessons per week in the course of law and social networks

## V. DESIGN, ORGANIZATION AND EVALUATION OF VIDEOGAMES AND GAMIFICATION

The Video Game Design course is the first bridge for those wishing to engage in the adventure of game design and development to explain all aspects of the industry, from design to financing through art and evaluation. (Castilla Cebrian, 2014)

The course will not cover any area of programming, pretend to develop a knowledge focused on the preparation of future designers through a map of key concepts and the shared experience of media professionals. Each module will take approximately ten short videos that will end in an interview with an industry professional who will give his opinion about the situation and possible developments of it.

### a) Course

It will also be important to obtain data on course completion of Video Game Design (see Table 2). This course had in the second week a peer review assessment which decreased the statistical data but it recovered normally in the third week. (See Figure 6)

Table 2 : Lessons in Video Game Design course week by week

Lesson	Start	End
0	4826	4825
1	5373	4211
2	4004	1349
3	2782	2365
4	2254	1996
5	1929	1671
6	1521	1249

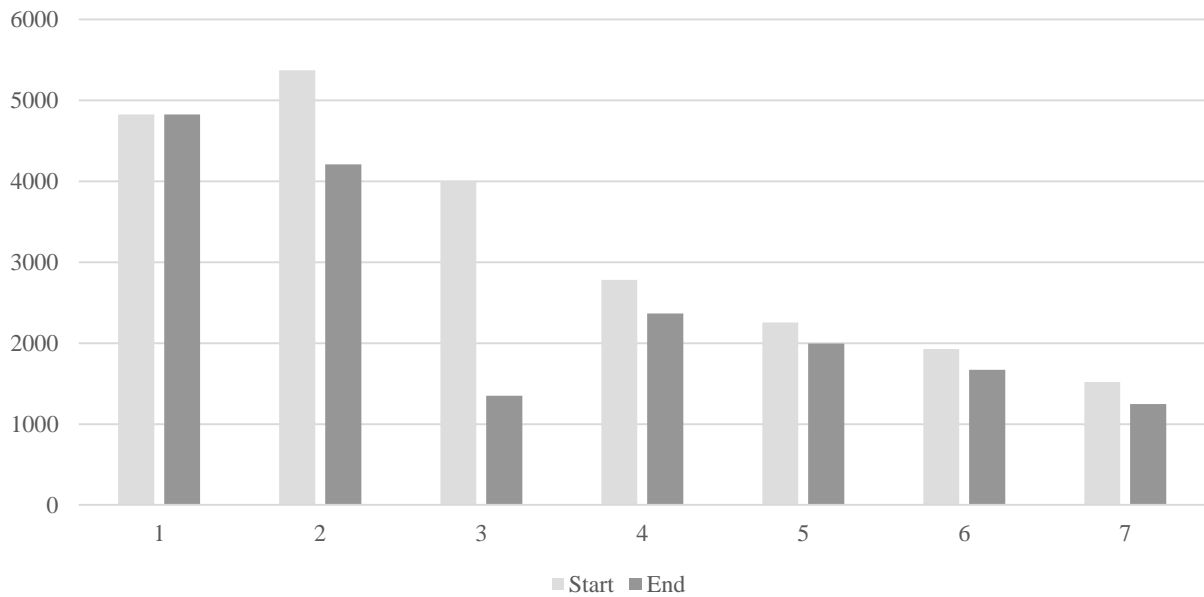


Figure 6 : Lessons per week in the course of Video Games

To conclude the working methodology used for this experiment, two surveys on both courses with wide acceptance were made and will take some interesting conclusions.

- Survey students of law and social networks: Over 1300 responses.
- Survey students of Video Game Design: Over 1200 responses.

b) Age

After studying the course, it was observed that the great majority of students were in the age group between 18 and 34 (See Figure 1)

VI. SAMPLE DESCRIPTION

a) Students of law and social network

Were enrolled in the course a total of 6,629 students, which started during the first week 4,847 people and after 6 weeks it were completed 2,150.

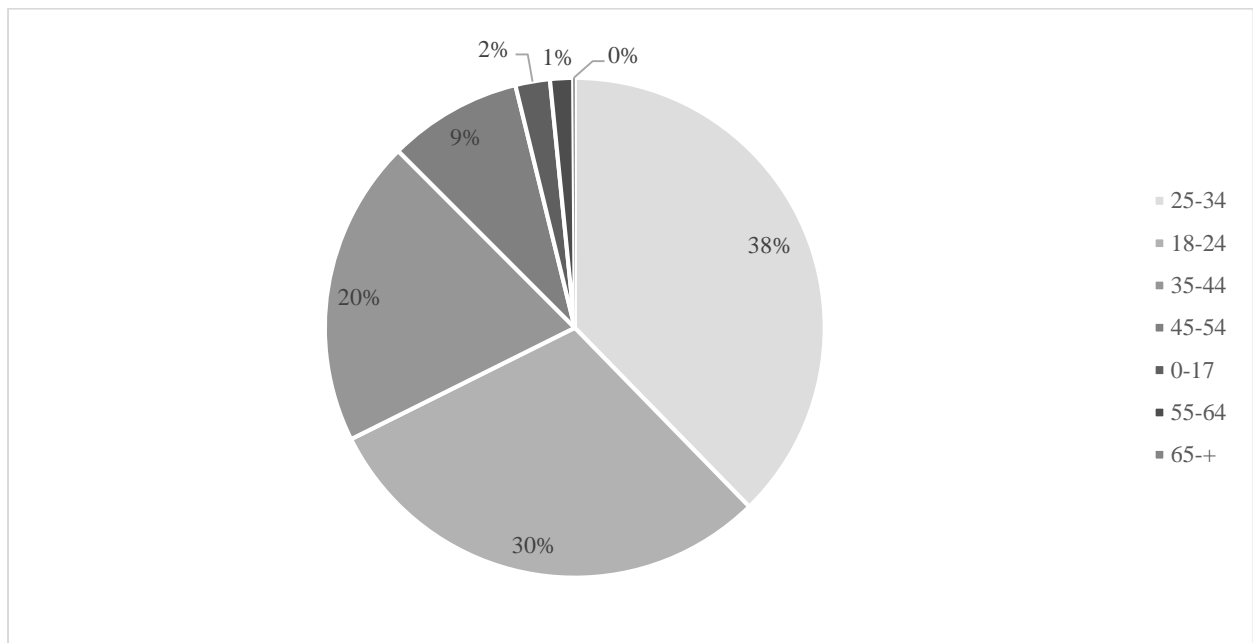


Figure 1 : Age range of students of the course on Law and Social Networking

c) *Genre*

In addition to these data, to make a decision about the aspirations of NEET is also important to consider the genre (See Figure 2)

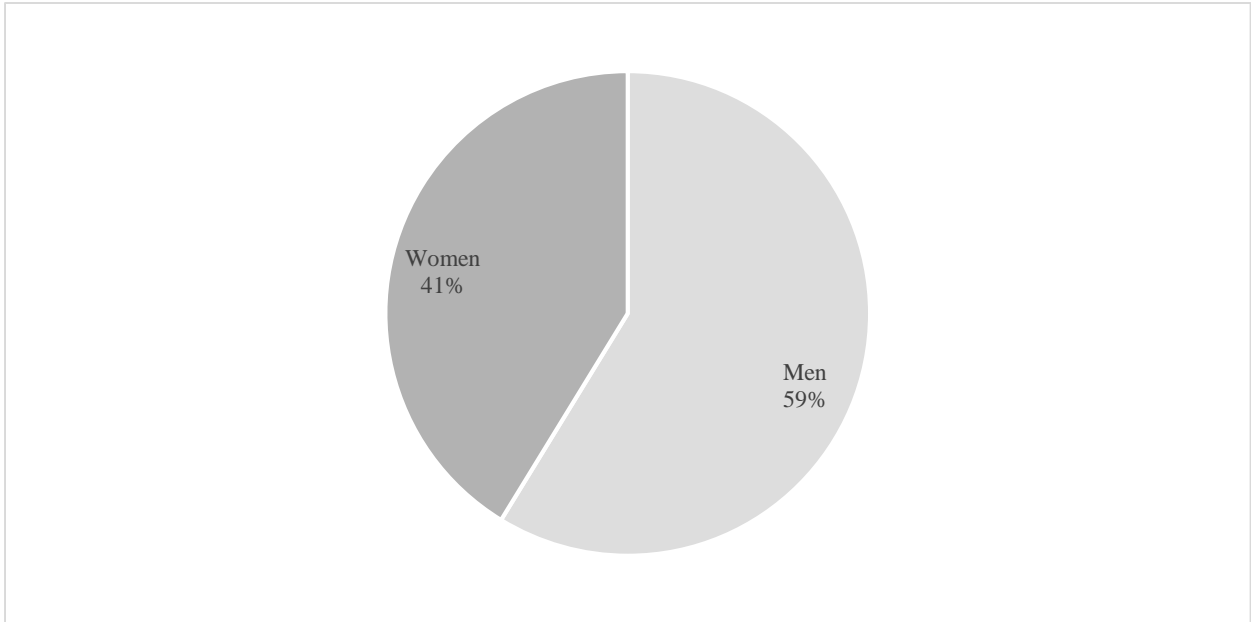


Figure 2 : Genre in the course of Law and Social Networking

VII. STUDENTS OF DESIGN, ORGANIZATION AND EVALUATION OF VIDEOGAMES AND GAMIFICATION

In this course a total of 7,386 students were enrolled, 5,777 students started the course and completed 1,213 students.

a) *Age*

First, should be studied the ages that are included in the largest group of this course, in order to determine that is similar to the other course that is being studied about Law and social networks. (See Figure 4)

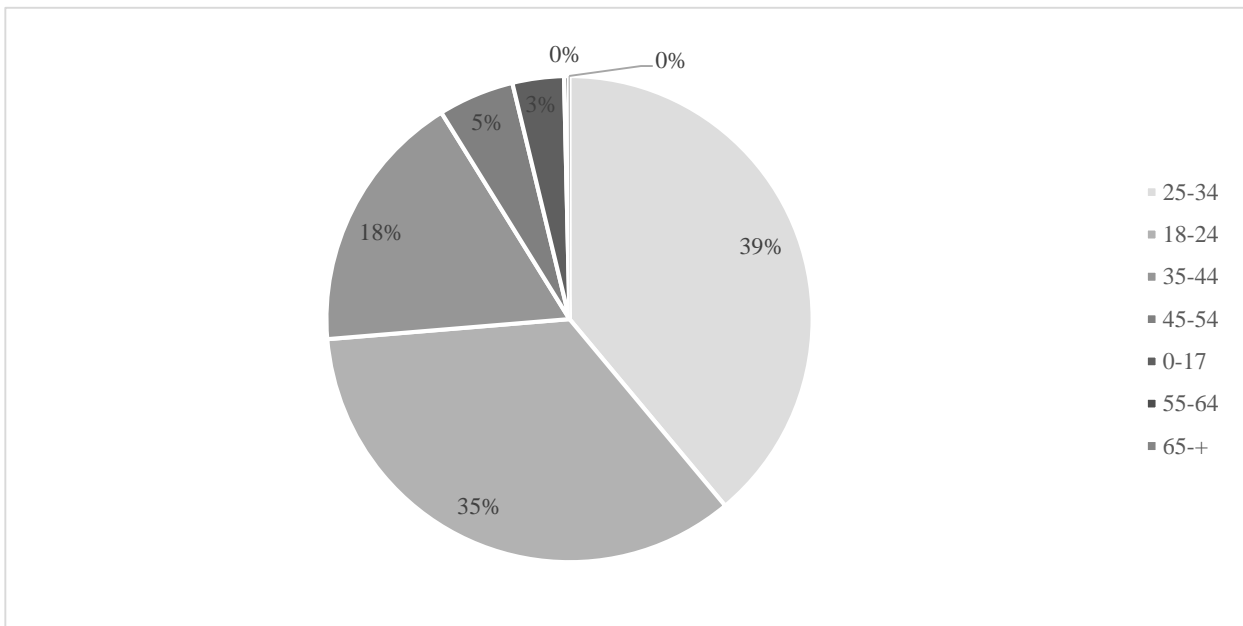


Figure 4 : Age range of students of the course of Videogames



b) *Genre*

In addition, we must also determine the genre of the sample, as it could also be relevant to the study (See Figure 5). Here, it can be clearly see a difference in the number of men who pay attention to this kind of

newest and technological subject, perhaps because women are more practical and do not see advantage to be drawn from this kind of course or simply a matter of taste.

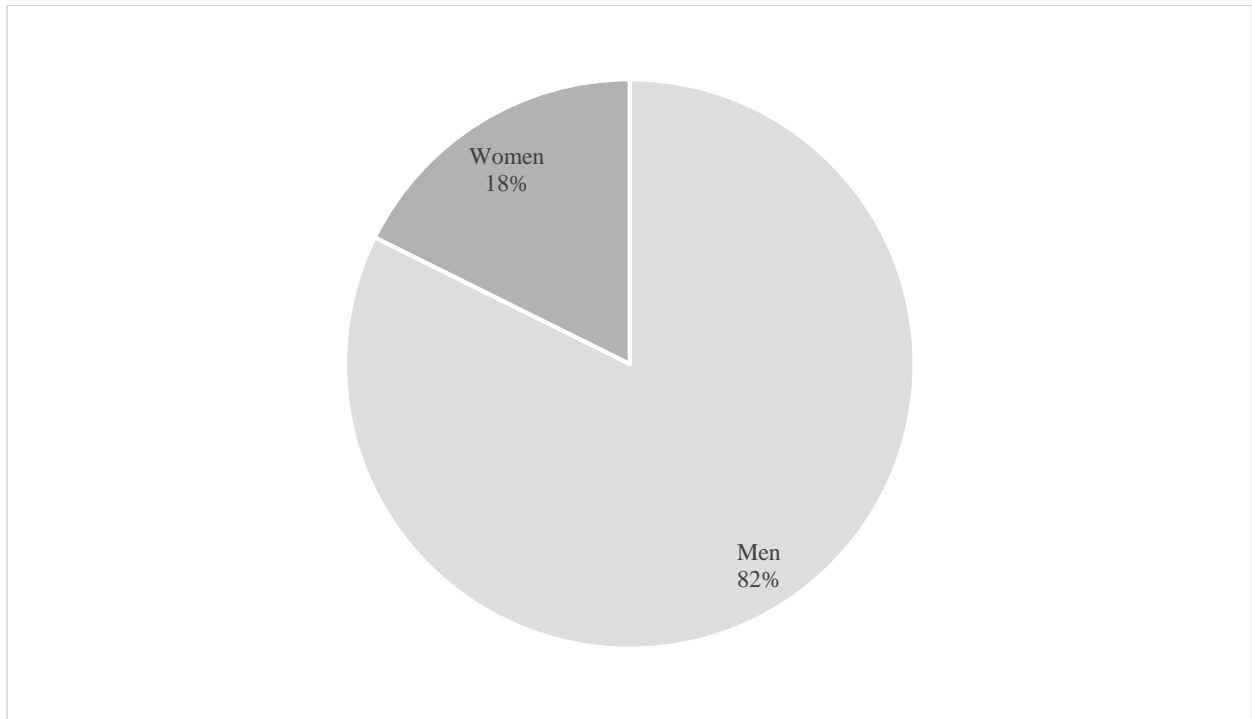


Figure 5 : Genre in the course of Video Games

c) *Results*

The most important questions of the survey conducted were:

- Do you think this certificate will be useful in your future career? (See Figure 7)
  - Yes: Law and social network: 945, video game design: 670
  - Not: Law and social network: 370, video game design: 607

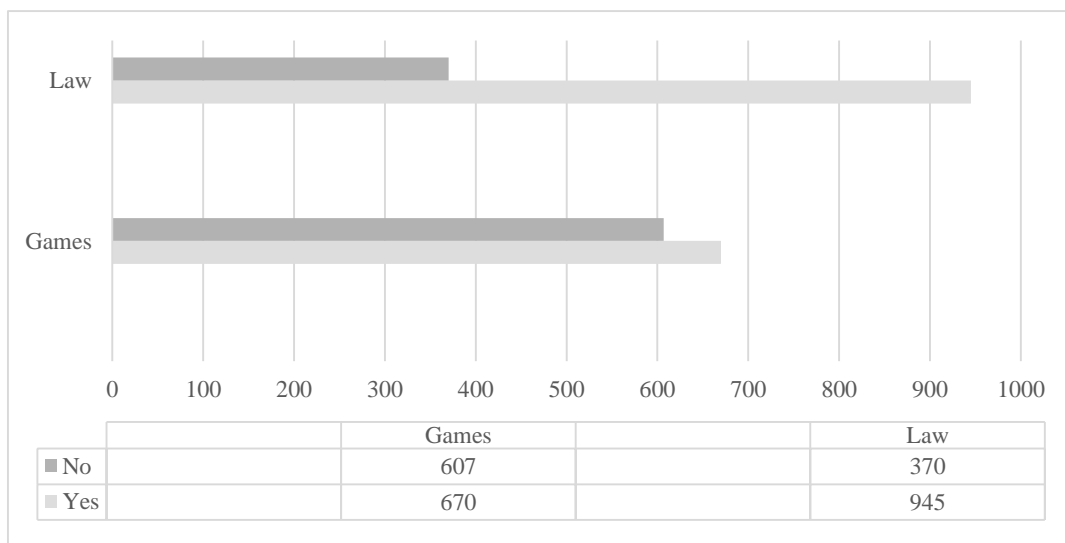


Figure 7 : Survey results to the question Do you think this certificate will serve you in your professional future?

- What was for you the level of the course? (See Figure 8)
  - Too high: : Law and social network: 15, video game design: 11



- o High: Law and social network: 224, video game design: 171
- o Medium: Law and social network: 775, video game design: 720
- o Low: Law and social network: 243, video game design: 308
- o Very low: Law and social network: 54, video game design: 63

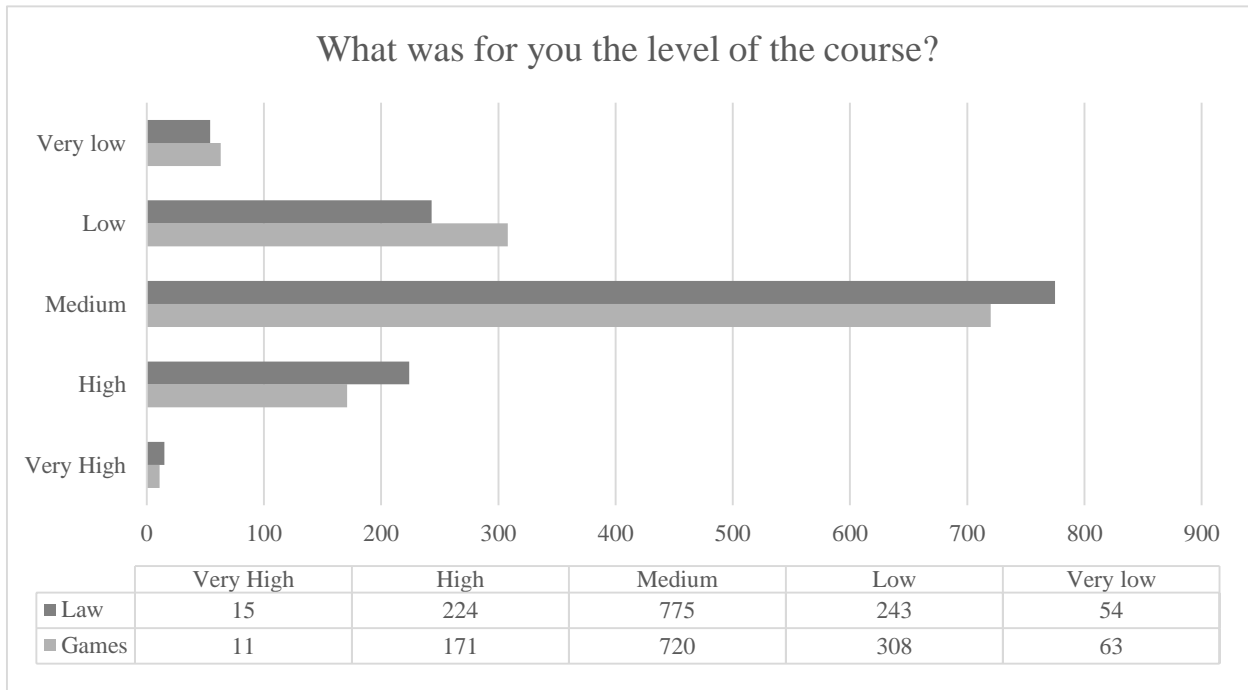


Figure 8 : Survey results to the question: What was for you the level of the course?

- How many questions should have tests for lessons? (See Figure 9)
  - o 1: Law and social network: 3, video game design: 80
  - o 3: Law and social network: 25, video game design: 329
  - o 5: Law and social network: 530, video game design: 486
  - o 10: Law and social network: 668, video game design: 326
  - o 10 or More: Law and social network: 89, video game design: 56

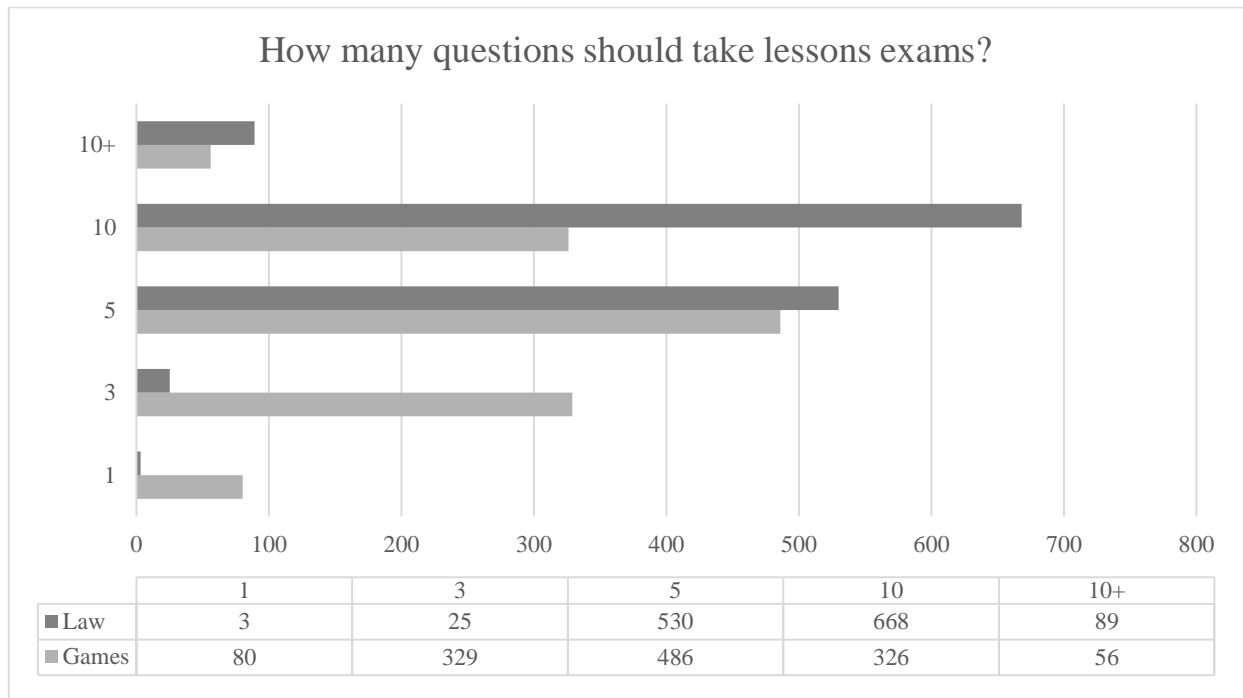


Figure 9 : Survey results to the question how many questions should take lessons exams?

- Do you think that a final review for each module should be included in the course? (See Figure 10)
  - Yes: Law and social network: 971, video game design: 828
  - Not: Law and social network: 344, video game design: 449

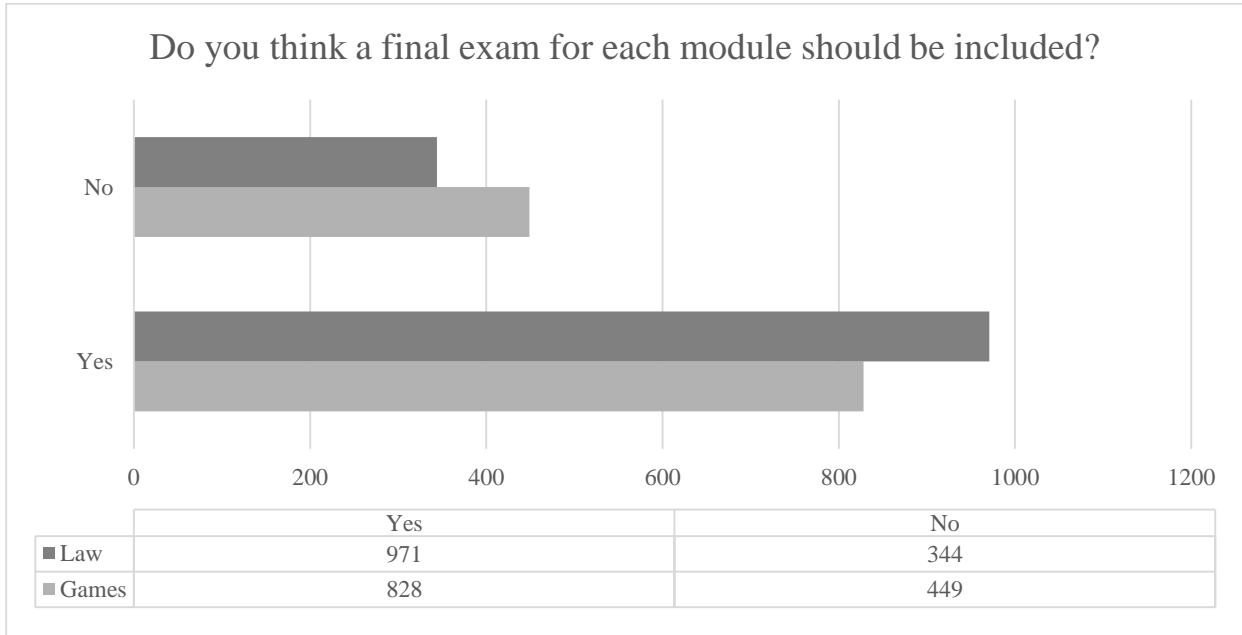


Figure 10 : Survey results to the question Do you think a final exam should be included for each module?

- What kind of test would you prefer in MOOC? (See Figure 11)
  - Abstract or essay: Law and social network: 50, video game design: 76
  - Multiple choice question: Law and social network: 849, video game design: 855
  - Match: Law and social network: 32, video game design: 48
  - Short answer: Law and social network: 143, video game design: 109
  - True or False: Law and social network: 281, video game design: 189

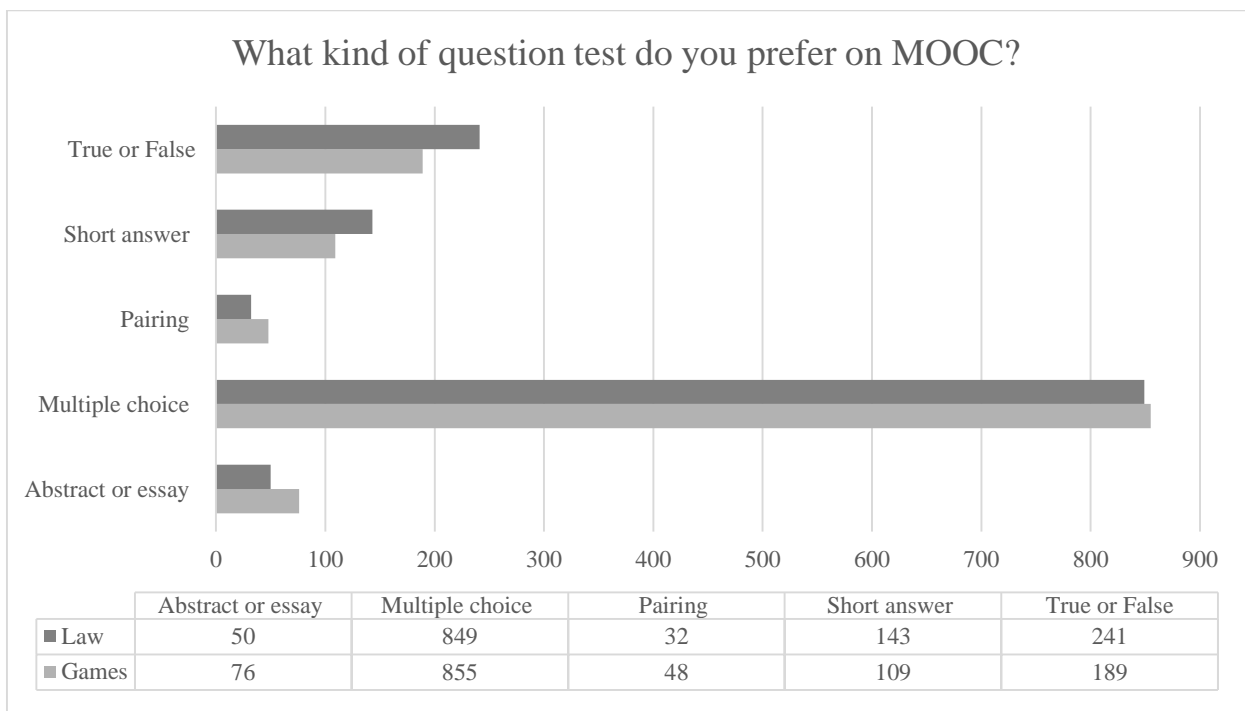


Figure 11 : Survey response to the question: What kind of test would you prefer in MOOC?

## VIII. DISCUSSION

It can be concluded as a result of these previous experiments that students interested with modern or technological subjects also had a lower number of students academically prepared, although the survey indicates that they expect the same results from the course but with less effort on their part. It seems that what is presented in an innovative way, also it wants to dominate faster, this speed in the acquisition of knowledge can be a mistake, and causing many of the students prefer abandon before finishing the course. However, those other subjects which are considered more traditional and the effort required seems more than

other courses, students are ready to make the effort to dominate the subject and the abandonment is lower.

Then, the hypothesis "Does it affect the technological novelty of the subject in a massive open online course in the dropout rate, interest and aspirations of NEET?" seems to be true but negatively, i.e., the interest and aspirations of young people known as NEET depends on the subject of the massive online course, if they are coursing an innovative subject in the MOOC they want to obtain fast results without effort, but if the subject of MOOC is traditional and every people thinks that you need effort to finish it, the student don't have problems to do this effort and the dropout rate decreases (see Figure 12).

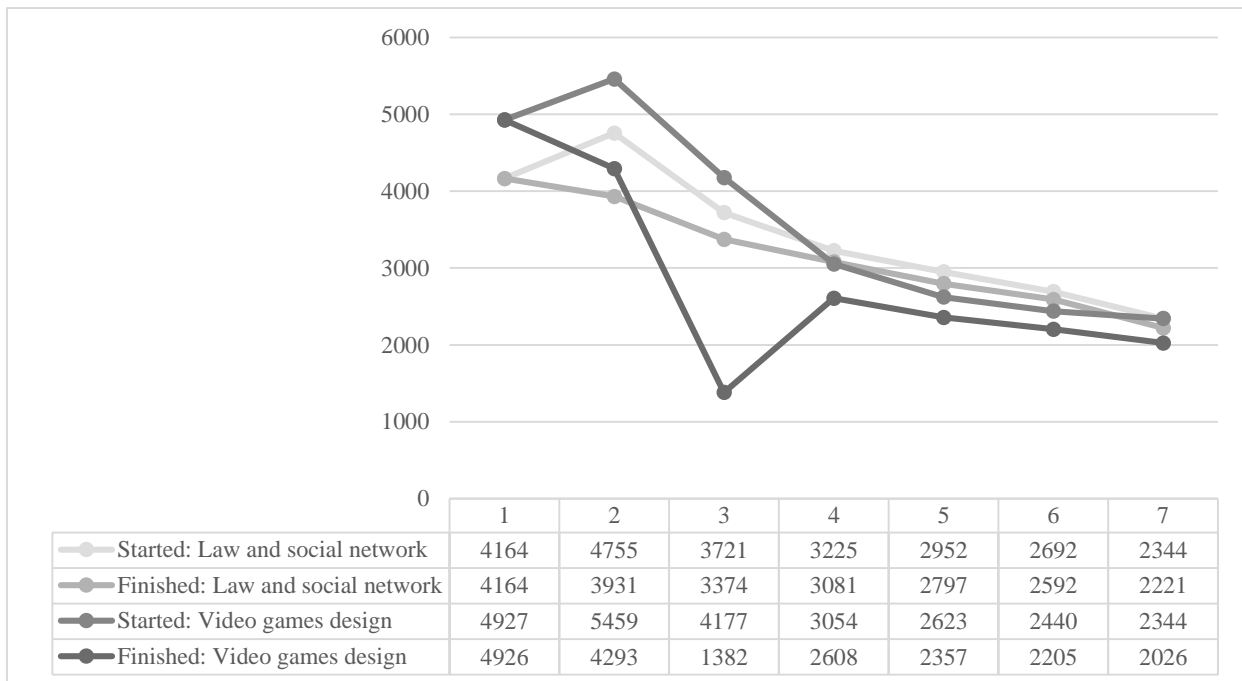


Figure 12: Two weeks on both courses Law and social network and video games design, were it can be seen how decrease one of each and increase another

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