

THE ACQUISITION OF TRANSFERABLE SKILLS BY UNIVERSITY STUDENTS. A GENDER APPROACH

De Juan-Vigaray, M. D.¹; González-Gascón, E.³; López-García, J.J.¹; Vallés-Amores, M. L.²; Martínez-Mora, C.¹; Carmona-Martínez, J.¹; Peris-Ferrando, J. E.¹; Subiza-Martínez, B.¹; Hernández-Ricarte, V.⁵; Cuevas-Casaña, J.⁴

¹ *Facultad de Ciencias Económicas y Empresariales, Universidad de Alicante (SPAIN)*

² *Facultad de Derecho, Universidad de Alicante (SPAIN)*

³ *Facultad de Ciencias Sociales y Jurídicas, Universidad Miguel Hernández de Elche (SPAIN)*

⁴ *Universidad de Valencia (SPAIN)*

⁵ *Departamento de Formación y Orientación Laboral, IES La Torreta de Elche (SPAIN)*
mayo@ua.es, elena.gonzalez@umh.es, jj.lopez@ua.es, cmmora@ua.es, ml.valles@ua.es, carmona@ua.es, subiza@ua.es, peris@ua.es, victoriahr@yahoo.es, joaquim.cuevas@uv.es

Abstract

The development of certain skills such as independent learning, oral and written communication, or teamwork, as a result of taking certain modules, is a relevant aspect when it comes to the integration of the students into the labour market, as it is acknowledged in the Bologna Declaration. The present study examines if the sex of the student implies significant differences with respect to the development of those skills, and additionally, if there are differences in the effort, measured in terms of hours of independent learning devoted to each module. Results are based on a survey carried out among students of 13 modules included in several social sciences study programmes offered by the University of Alicante, the University of Valencia, and the University Miguel Hernández of Elche. Regarding the development of skills, there are no differences between males and females in all the modules, as the homogeneity test performed suggests. However, effort is significantly higher among female students.

Keywords: transferable skills, gender, learning, independent study, hours of learning, students' effort.

1 INTRODUCTION

The creation of the European Higher Education Area (EHEA) has brought about changes in the teaching methods used in university education. They have evolved from lecturing, in which students play a limited role and instructors set themselves up as the key element of the learning process, to other alternative ways of organising instruction that seek to encourage students to participate more in their learning process. Such changes reflect the new approach regarding the role of instructors, that is, they are seen as trainers that do more than just passing on knowledge.

The prospects for the future in the professional world require this new type of education. Nowadays, companies demand multi-skilled and flexible professionals, capable of working in a team and retaining at the same time a certain level of autonomy at work that enables them to make decisions on their own. All of this is part of the so-called *transferable skills*, which are considered to be indispensable for the curricula of both higher education, and secondary-level and tertiary-level vocational education.

The present study examines, on the one hand, whether the sex of the student plays a part in there being significant differences when it comes to acquiring and developing the above-mentioned transferable skills. This is a controversial subject, and unfortunately preconceived ideas abound that assume the existence of real differences as a function of the sex of the student, perhaps regarding certain subjects. On the other hand, our study also examines if there are differences between male and female students in terms of the effort devoted to learning each module, measured as hours of independent learning. Therefore, it is worth examining whether or not the available empirical evidence supports the existence of such differences to know our students better. We have used a questionnaire survey administered to students of several social sciences programmes (Business Administration and Management, Economics, Business Studies, Marketing, Nursing Sciences, Sport and Physical Activity Science, Advertising and Public Relations) from three Spanish universities. Results suggest that in regard to the development of the above-mentioned transferable skills, there is little difference between

male and female students in all the modules. Finally, the empirical evidence shows a significant difference when it comes to effort, which is more important in the case of female students. However, we should be careful about this since we do not have disaggregated data that may enable us to establish a relationship between results and effort regarding the marks obtained by the students.

Consequently, in light of these objectives, we put forward the following research questions: *Are there differences as a function of sex in the development of transferable skills of students taking different modules? Do male students develop certain transferable skills better than female students? Finally, are there differences between males and females regarding the number of hours spent on independent learning?*

1.1 Literature review

Students' participation in the teaching-learning process is essential within the new higher education context because this new educational project not only tries to pass on content and specific knowledge but also a set of skills and abilities, known as transferable skills, that can be used in different types of jobs and to solve specific problems in the professional world. In this sense, transferable skills are "generic" competencies, since they are used in different types of activities. However, they are also "practical" competencies, that is, skills that attempt to solve particular problems in the world of work [1].

Regarding the development of the students' skills, we should consider whether such development is influenced by certain factors that may have an impact on learning without being a product of it. We believe that several factors have certainly influenced and will influence the development of the students' skills (use of advanced technologies accessible to a limited number of students, improvement of their knowledge of foreign languages, combining work with study).

The studies about the problems that transferable skills and learning process may bring about do not deal particularly with skills or difficulties in regard to **the sex of the student**. However, among the several factors pointed out by the specialists, such as a certain socio-cultural environment, and the social, cognitive, emotional, or cultural interactions of the students [2], this may have an impact on the teaching-learning process. Research on co-educational schooling for children and teenagers ([3] and [4], among others) point out that all individuals (boys, girls, and teenagers of both sexes) should be taught knowledge, values and attitudes that boost the necessary skills so that each of them, regardless of their sex, can integrate them into their personality. In this sense, attention is called to male and female stereotypes, as well as to the characteristics of well-rounded individuals.

Sánchez Guzman [5], quoting Le Boterf, believes that a competency does not lie in the resources that are activated but in the mobilisation of those resources itself. Therefore, that mobilisation, according to this author, means that making use of the competencies depends on the individuals, their environment, their **effort**, and the resources available for it within the frame of expectations generated by a particular socio-cultural environment. Other researchers talk about the mobilisation of resources, too.

Furthermore, transferable skills in that they are generic are considered to be a set of competencies that originate in the intersection of **different disciplines**. The fact that these skills are not directly connected with a specific discipline, but can be used in a range of fields and situations, has led to some authors considering that the term "transferable" should be applied to the complementary and independent aspects of each discipline or course that can be used in other fields [1]. Lessard [6] points out that there are links between discipline skills and transferable skills that are activated within the disciplines and deployed across different learning contexts, as well as life experiences. In this sense, Perrenoud [2] had already argued that both sets of skills -discipline and transferable- are closely linked, since transferable skills are in the intersection of disciplines, where thought processes are activated that can be transferred from one area to another, and including social, cognitive, emotional, cultural, and psychomotor interactions of the students and the reality around them.

The **objective** of this study is to find out if there are differences in relation to sex regarding the acquisition of skills in different social science modules (mathematics, statistics, commercial distribution and health economics). We have examined the variables "transferable skills" and "students' effort" (number of hours of independent learning).

2 METHODS

2.1 Description of context and participants

The present study has been carried out by the members of “Red Idoi”, Spanish for “Research + Teaching + Innovation Network”, (<http://web.ua.es/en/idoi>), during the academic year 2011/2012, and it is part of a more ambitious project about higher education teaching on which Red Idoi has been working since 2006. The network members belong to three different state universities (University of Alicante, University Miguel Hernández of Elche, and University of Valencia), as well as the state secondary school “IES Gabriel Miró” of Orihuela. The students took part voluntarily in our study; they were informed about the general objectives of the project, and the complete confidentiality regarding all individual details they provided. The modules included in our research are part of 3-year and 4/5-year undergraduate programmes (not adapted to the requirements of the Bologna Declaration), as well as undergraduate and postgraduate programmes (adapted to Bologna’s requirements). The latter ones offered by two of the three universities. Data were collected during the academic year 2010/2011 from modules taught in the first semester, second semester, or in both.

2.2 Study participants

A total of 364 students took part in the study: 38.7% were men and 61.3% were women. Their average age was 22.17 years, being the minimum age 18 and the maximum age 46 years. Table 1 shows the main descriptive data of the sample.

Table 1. Study participants.

| Sex | Frequency | Percentage | Minimum Age | Maximum Age | Average age |
|-------|-----------|------------|-------------|-------------|-------------|
| Man | 141 | 38.7 | 18 | 46 | 22.94 |
| Woman | 223 | 61.3 | 18 | 45 | 21.69 |

2.3 Modules included in the study

Table 2 shows the most relevant information about the modules included in the study.

Table 2. Modules included in the study.

| Module | University | Type /Year | Semester | ECTS* (credits**) | Programme | Students registered 2010/2011 |
|-------------------------------|------------|--------------------|-------------------------------------|-------------------|--|-------------------------------|
| Foreign Trade: European Union | UA | O/3 rd | 1 st | 6 (4.5) | 3-year degree in Business Studies (curriculum from 2000) | 67 |
| Company Law | UA | O/3 rd | 2 nd | 6 (4.5) | 3-year degree in Business Studies (curriculum from 2000) | 71 |
| Commercial Distribution | UA | O/3 rd | 1 st | 6 (4.5) | 3-year degree in Business Studies (curriculum from 2000) | 205 |
| Commercial Management | UMH | CC/1 st | 1 st and 2 nd | 12 | 2-year degree in Marketing | 26 |

| | | | | | | |
|--|-----|--------------------|-----------------|---------|--|-----|
| Marketing II | UMH | CC/1 st | 1 st | 8 (6) | 2-year degree in Marketing | 23 |
| Commercial Distribution | UA | O/4 th | 1 st | 8 (6) | 4-year degree in Business Administration and Management | 33 |
| Health Economics and Management of Social and Health Services | UA | C/1 st | 1 st | 5 | Master of Nursing Science Research | 42 |
| Statistics II | UA | CC/1 st | 1 st | 6 (4.5) | 3-year degree in Business Studies (curriculum from 2000) | 363 |
| Management of Sporting Bodies and Sport Businesses | UMH | O/2 nd | 1 st | 6 | 5-year degree in Sport and Physical Activity Science | 18 |
| Economic and Business History | UV | C/1 st | 2 nd | 6 | BA Business Administration and Management | 60 |
| Mathematics I | UA | C/1 st | 1 st | 6 | BA Business Administration and Management | 139 |
| Introduction to Statistics | UA | C/1 st | 2 nd | 6 | BA Business Administration and Management | 89 |
| Introduction to Marketing | UA | CC/2 nd | 2 nd | 8 (6) | BA Advertising and Public Relations | 203 |
| C= Core; CC= Compulsory; O=Optional; UA = University of Alicante; UV= University of Valencia; UMH= Universidad Miguel Hernández of Elche | | | | | | |

*European Credit Transfer and Accumulation System; **Credits not adapted to ECTS

2.4 Research instruments

The students answered a self-administered questionnaire that included two main groups of information: (1) one regarding the development of eight transferable skills (has the module improved the ability in question?), and (2) another regarding the effort that students had devoted to the examined module, measured in number of hours of independent learning per week. The questionnaire also included questions about the socio-demographic characteristics of the students. The improvement of abilities was measured with a 7-point Likert scale, where 1 meant “strongly disagree” and 7 “strongly agree” with the statement. Table 3 shows the variables examined in the present study. To perform the homogeneity tests, scale values have been recoded as follows: values from 1 to 3 (which imply different levels of disagreement with the sentence “the module has improved my ability...”) have been recoded as 1 (value equivalent to “no”); values from 5 to 7 (which imply different levels of agreement with the sentence “the module has improved my ability to...”) have been recoded

as 2 (equivalent to “yes”). Finally, the middle of the scale, 4, is a neutral value, and has been recoded as “missing value”.

Table 3. Variables examined in group 1: “students’ development of abilities”.

| | |
|----------|--|
| Variable | The module has improved my ability... |
| (V12) | ...for teamwork |
| (V13) | ...to learn independently |
| (V14) | ...to make decisions by applying theory to practice |
| (V15) | ...to analyse problems through critical reasoning, without prejudices, accurately and rigorously |
| (V16) | ...for oral communication |
| (V17) | ...for written communication |
| (V18) | The module has encouraged active participation in the classroom |
| (V19) | The module has improved my ability to use IT tools |

With respect to the effort devoted to the module (group 2), the students had to indicate the number of hours per week, apart from contact hours, spent on studying for the module in question within a range from 1 to 5 hours or over (see table 4). As with the above-mentioned variables, the values of the variable have been recoded as follows: values 1 and 2 (considered low values, that is, “few hours of independent study”) have been recoded as value 1 (equivalent to “few”); whereas values from 3 to over 5 (considered high values, that is, “many hours of independent study”) have been recoded as value 2 (equivalent to “many”).

Table 4. Variable examined in the group “students’ effort”.

| | | | | | |
|-------|--|---------|---------|---------|--------------|
| (V27) | To follow the module satisfactorily, as well as the contact hours, I have required a weekly average of (please circle the suitable option) | | | | |
| | 1 hour | 2 hours | 3 hours | 4 hours | Over 5 hours |

3 RESULTS

Table 5 shows the results of the data recoding for each of the abilities examined here. As can be seen from the table, after recoding the variables corresponding to the abilities, we have not taken into consideration the counts with value 4 (neutral), whose frequency ranges from 50 counts at the lowest end (active participation in the classroom) to 84 counts at the highest end (ability for written communication), being 364 the total number of counts for each variable. The table also shows that for all the abilities analysed, the vast majority of students believe that taking the module has improved their abilities. With 89%, the ability to learn independently is the most mentioned skill, that is, most students feel that the module has improved this ability, while 11% of them think that the module has not improved it at all. On the other hand, the ability for oral communication, with 64.5%, has contributed the least to improving the transferable skills of the students.

Table 5. Results of the data recoding in group 1 about students’ abilities.

| The module has improved my ability for teamwork | | | | |
|--|--------------------|----------------|-----------------|------------------|
| V12 (n = 364) | | | C12 (n = 292) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |
| 79 // 21.7 % | 213 // 58.5 % | 72 // 19.8 % | 79 // 27.1 % | 213 // 72.9 % |
| The module has improved my ability to learn independently | | | | |
| V13 (n = 364) | | | C13 (n = 229) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |

| | | | | |
|---|--------------------|----------------|-----------------|------------------|
| 33 // 9.1 % | 266 // 73.1 % | 65 // 17.9 % | 33 // 11.0 % | 266 // 89.0 % |
| The module has improved my ability to make decisions by applying theory to practice | | | | |
| V14(n = 364) | | | C14 (n = 304) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |
| 43 // 11.8 % | 261 // 71.7 % | 60 // 16.5 % | 43 // 14.1 % | 261 // 85.9 % |
| The module has improved my ability to analyse problems through critical reasoning, without prejudices, accurately and rigorously | | | | |
| V15 (n = 364) | | | C15 (n = 302) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |
| 47 // 12.9 % | 255 // 70.1 % | 62 // 17.0 % | 47 // 15.6 % | 255 // 84.4 % |
| The module has improved my ability for oral communication | | | | |
| V16 (n = 364) | | | C16 (n = 290) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |
| 103 // 28.3 % | 187 // 51.4 % | 74 // 20.3 % | 103 // 35.5 | 187 // 64.5 % |
| The module has improved my ability for written communication | | | | |
| V17 (n = 364) | | | C17 (n = 280) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |
| 78 // 21.4 % | 202 // 55.5 % | 84 // 23.1 % | 78 // 27.9% | 202 // 72.1 % |
| The module has encouraged active participation in the classroom | | | | |
| V18 (n = 364) | | | C18 (n = 314) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |
| 70 // 19.2 % | 244 // 67.0 % | 50 // 13.7 % | 70 // 22.3 % | 244 // 77.7 % |
| The module has improved my ability to use IT tools | | | | |
| V19 (n = 364) | | | C19 (n = 289) | |
| Freq. // % (1,2,3) | Freq. // % (5,6,7) | Freq. // % (4) | Freq. // % (no) | Freq. // % (yes) |
| 93 // 25.5 % | 196 // 53.8 % | 75 // 20.6 % | 93 // 32.2 % | 196 // 67.8 % |

Table 6 shows the results of the data recoding for the second objective of the present study: the effort that students devote to each module, measured in number of hours of independent learning per week. After discussing the number of hours necessary to follow successfully each of the modules examined here, the network members decided that 1 or 2 hours a week are few and 3 or more are enough (many). In this case, we did not have to recode any count as missing. Thus, the analysis of the results shows that the number of students stating that they spend “few” hours on studying per week is similar to that of students stating that they spend “many” hours on it.

Table 6. Results of the data recoding for hours of independent study per week.

| Hours of independent learning devoted to the module per week | | | | | | |
|---|------------------------|------------------------|------------------------|-------------------------|--------------------|---------------------|
| V27 (n = 364) | | | | | C27 (n = 364) | |
| Freq. % value (1) | Freq. % value (2) | Freq. % value (3) | Freq. % value (4) | Freq. % value (5+) | Freq. % (few) | Freq. % (many) |
| 46 12.6% | 119 32.7% | 120 33% | 49 13.5% | 30 8.2% | 165 45.3% | 199 54.7% |

Table 7 shows the results of the homogeneity tests performed for each transferable skill. As can be seen from the table below, data are in all cases consistent with the independence hypothesis (chi-square value greater than 0.05), and therefore, we can say that the sex of the student is not

associated with the improvement, perceived by the students, of any of the transferable skills examined here.

Table 7. Homogeneity test of students' abilities (Pearson's chi-square).

| The module has improved my ability for teamwork | | | |
|---|-------|----|-----------------------------|
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 292 | 0.165 | 1 | 0.685 |
| The module has improved my ability to learn independently | | | |
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 299 | 0.623 | 1 | 0.430 |
| The module has improved my ability to make decisions by applying theory to practice | | | |
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 304 | 0.057 | 1 | 0.811 |
| The module has improved my ability to analyse problems through critical reasoning, without prejudices, accurately and rigorously | | | |
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 302 | 0.753 | 1 | 0.385 |
| The module has improved my ability for oral communication | | | |
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 209 | 0.930 | 1 | 0.335 |
| The module has improved my ability for written communication | | | |
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 280 | 0.000 | 1 | 0.992 |
| The module has encouraged active participation in the classroom | | | |
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 314 | 1.147 | 1 | 0.284 |
| The module has improved my ability to use IT tools | | | |
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 289 | 0.061 | 1 | 0.804 |

Finally, table 8 shows the results of the homogeneity test of the effort devoted to the module analysed, measured in number of hours of independent learning per week. As can be seen from the table below, data are not consistent with the independence hypothesis (chi-square value smaller than 0.05). Thus, we can conclude that the variables examined in the present study (sex and hours of independent learning per week) are related. The contingency table (table 9) must be included in this case. It shows the absolute values and the percentages of men and women stating that they spend "few" or "many" hours (per week) on learning for the module. As can be seen from the table, the number of women stating that they devote "many" hours is greater than the number of men doing so: 140 women (62.8%), compared with 59 men (41.8%).

Table 8. Homogeneity test of students' effort (Pearson's chi-square).

| The module has improved my ability for teamwork | | | |
|--|--------|----|-----------------------------|
| Counts | Value | df | Asymptotic sig. (two-sided) |
| 364 | 15.279 | 1 | 0.000 |

Table 9. Contingency table for the variables sex and effort.

| | | | "Few" | "Many" | Total |
|-------|-------|----------|-------|--------|--------|
| Sex | Men | Count | 82 | 59 | 141 |
| | | % of sex | 58.2% | 41.8% | 100.0% |
| | Women | Count | 83 | 140 | 223 |
| | | % of sex | 37.2% | 62.8% | 100.0% |
| Total | | Count | 165 | 199 | 364 |
| | | % of sex | 45.3% | 54.7% | 100.0% |

4 CONCLUSIONS

The statistical tests that we have performed enable us to show with certain clarity that the modules included in the present study make it possible for the students taking them to acquire important transferable skills that will help them in the future to carry out their jobs competently and professionally. All the modules included in our research show similar results, regardless of their being old programmes that soon will no longer be offered or new undergraduate and postgraduate programmes adapted to the requirements of the Bologna Declaration. It should be pointed out that module guides developed by Red Idoi following Bologna's requirements have been implemented in all the modules examined here.

Thus, after recoding the variables to be able to perform the appropriate statistical tests, results show percentage values close to or above 80% of students stating that the modules have made it possible for them to improve their analytical, independent learning and decision-making skills, as well as their active participation in the classroom. To a lesser extent, but with percentage values close to or above 70%, the students report that the modules have enabled them to develop their ability for teamwork and their ability to use IT tools, and their oral and written communication skills, too. However, and despite these significant results, we have not been able to find supporting evidence for our hypothesis that the development of such skills is dependent on the sex of the student, which we consider to be a positive finding anyway.

With respect to the number of hours of independent learning per week, we have found that just under half of the study participants admit to spending few hours (1 or 2 hours a week) on it, whereas just over half of the participants report devoting enough hours per week to studying (over 3 hours) to pass the different modules. In this sense, the homogeneity test shows that sex does have an influence on endeavour and dedication to the modules. Thus, we have found that most female students spend over 3 hours on learning for the module (62.8%, to be precise), compared with the male minority (41.8%). This fact is even more relevant if we take into account that 61% of the respondents were women, which allows us to demonstrate statistically something that we have observed in the course of our more or less long experience as instructors, namely, that female students show higher levels of organisation, which becomes apparent in the hours spent on independent learning.

REFERENCES

- [1] Rey, B. (1996). Les compétences transversales en question. ESF Éditeur. Paris.
- [2] Perrenoud, P. (1997). Construire les compétences dès l'école. ESF Éditeur. Paris.
- [3] Belthein, B. (1980). Psicoanálisis de los cuentos de hadas. Crítica. Barcelona.
- [4] Browne, N. and France, P (Eds.). (1988). Hacia una educación infantil no sexista. MEC/Morata. Madrid.
- [5] Sánchez Guzmán, A. (2008). Competencias transversales: una mirada actual. Universidad de los Lagos. Chile.
- [6] Lessard, C. (2001). Reflexions sur la réforme curriculaire au Québec. Université de Montréal. Québec.