Validation of a questionnaire to measure job expectations and interests in university students

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Abstract

The establishment of the European Higher Education Area has promoted an attempt to design a syllabus that is more related to the world of work. There is evidence to suggest that the transfer of skills that should be acquired by students throughout their university courses is not carried out in an appropriate way that prepares them for working life. In view of this, it is essential to understand university students' perceptions and assessments of relevant aspects of their entry into the labour market. To this end, an instrument was designed to evaluate university students' perception and assessment of future employment. In order to verify the reliability and measurement validity of the questionnaire, a pilot study was carried out with a sample of a total of 220 university students. The analyses carried out have proved the quality of the instrument in terms of adequate reliability and measurement validity.

Keywords: Evaluation questionnaire, labour insertion, labour expectations, reliability, validity.

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1. Introduction

Since the implementation of the European Higher Education Area, one of the key aspects taken into account in university education is the transfer of skills acquired throughout the university period to the workplace. To this end, universities have aimed at designing a syllabus that is more practical and that adapts to the demands of our changing world of work and that sets aside a content-based teaching (Alarcon & Guirao, 2013; Perez Duenas & Antoli, 2016; Santacruz et al., 2015) to make a way for competencies.

The great majority of students who decide to take a university degree do so are motivated by the possibility of having better and easier access to the world of work once they finish their studies, seeking in many cases good working conditions in which stability and a direct relationship between what they have studied and the professional task they perform prevails.

Rodriguez (2013) defines labour market insertion as the 'process of incorporation into economic activity of individuals; a process that does not end with attainment of employment, but that should include a situation of certain stability or permanence in the work position obtained'.

University institutions had been so far focused on the training of professionals without taking an interest in their labour market insertion, or in whether the jobs to which students had access once they finished their studies were related to their qualifications. However, they have had to transform themselves and pay more attention to aspects related to the incorporation of their students into the world of work (Garcia Blanco & Cardenas, 2018).

One of the factors that promoted this transformation in universities is the change in university students' way of thinking. Their attitude towards entry into the labour market has changed; they have become increasingly more aware of the fact that university studies are not a guarantee of finding a job, and are thus beginning to consider other alternatives such as, for example, postgraduate studies to improve their professional profile and have easier access to a job suited to their training (Gonzalez Lorente & Martinez Clares, 2016).

In this regard, some authors have found that many students consider university academic training as a medium and long term investment, which sometimes involves financial indebtedness, although in many cases the fact of having a university degree does not guarantee labour market insertion (Cardenal de la Nuez, 2006).

Studying students' expectations in relation to their future jobs and the job aspects that better address their needs should be a priority in these institutions in the face of this current transformation. It is, therefore, highly important to bear in mind the opinion of students themselves, so that universities can develop and design training programmes adapted to the requirements of the world of work and to the expectations and needs of their students who, in the future, will have to find a place in it.

Thus, it will be possible to guarantee that the investment made by students and educational institutions will be recovered for the benefit of society (Hernandez Campos, Tamez, Leal & Garza, 2013).

Studies such as Pastor, Peraita and Zaera (2013) have analysed the beliefs that university students have regarding their insertion in the labour market and the usefulness of the studies they have undertaken, revealing positive expectations and benefits both in individual, collective and monetary terms.

In view of all of the above, we believe it is necessary to consider university students' perception and assessment of the possibilities of finding employment once they finish their university studies and to find out those matters they regard as significant in relation to their labour market insertion what they regard as an ideal job.

2. Methodology

2.1. Procedure

The first stage of the design and construction of the instrument involved an extensive bibliographic review of studies by different authors (Hernandez Campos et al., 2013; Pastor et al., 2013; Paz, Betanzos & Uribe, 2014; Rodriguez Espinar, Prades, Bernaldez & Sanchez Castineira, 2010; among others). This helped establish the different objectives and define the dimensions of the study.

The elements proposed for the initial questionnaire were designed taking into account the proposed dimensions and variables. This questionnaire was evaluated by eight expert university teachers specialised in research methodology, employability and labour market issues who analysed it to detect possible inconsistencies and ambiguities in the formulation of the questionnaire elements.

The provisional version also included a detailed explanation of what was intended to be evaluated in each of the elements and sections of the instrument, so that the experts would have precise indications for their evaluation.

Once the experts' suggestions were received, the final questionnaire was drawn up and posted on the Internet in order to facilitate data collection as in this way students could answer it at their own convenience.

The questionnaire was applied to a sample taken from the university population. An analysis of the results obtained revealed that the elements of the instrument established potential response patterns.

2.2. Objectives

The general objective was to design and validate an instrument with the appropriate psychometric characteristics that would allow for an assessment of university students' perception in terms of the possibilities of finding employment once they have completed their university education and also to identify which elements are most valued by them in relation to entry into the labour market.

Based on this general objective, the following specific objectives were proposed:

1. To include in the instrument elements to collect university students' perception in terms of their working future.
2. To analyse which elements students value most in a job position and what contributions they consider they can make to a company.
3. To identify the characteristics that an ideal job should have in the view of university students.

2.3. Design

The study was based on a descriptive quantitative research methodology with a survey-type design.

This design allowed us to collect information on the different dimensions proposed.

This instrument was suitable to obtain information on beliefs, perceptions, valuations and opinions which served to arrive at conclusions that could later be inferred from different populations in relation to this study, in all cases with certain reservations.

2.4. Sample

The selection of the persons who participated in the study was carried out by means of non-probabilistic sampling.

The sample selected included 220 students from the 4 years of the University of Malaga Bachelor's degree in Pedagogy.

The psychometric characteristics of the sample were obtained by means of a distribution analysis of socio-demographic variables.

The participants were between 18 and 51 years old, with a mean of 22.86 years (standard deviation: 5.99) and a mode and median of 22.

In terms of gender, the sample consisted of 84.1% women and 15.9% men.

As to the stage of their studies, 84.1% were first year students, 15.9% were second year students, 21% were third year students and 21% were in their final year.

2.5. Structure of the instrument

The questionnaire included a total of 25 elements adapted to an ordinal scale and related to the proposed dimensions.

The elements were set in categories on a 1–5 scale, depending on the degree of agreement of the participants with the different statements proposed (1, 'Not at all', to 5, 'A lot').

2.6. Variables

The questionnaire was structured along classifying variables and three dimensions.

The dimensions and the number of elements for each one are presented in Table 1.

Table 1. Study dimensions

Dimensions	Number of elements
Classifying variables: gender, age, degree and year of study	4
Future employment	5
Job valuation and contribution to the company	15
Ideal job profile	1

The future employment dimension refers to the expectations students have about their future work once they finish their studies.

The job valuation and contribution to the company dimension is related to the characteristics that students value in a job position and what they could contribute to their future job and company.

Finally, the ideal job profile includes the characteristics that the ideal job should have according to the students.

2.7. Reliability and validity

Reliability and validity are established as indicators of the quality of the measurement rather than the instrument; they can be used when collecting quantitative data.

Reliability is related to measurement consistency, predictability and stability.

Cronbach's alpha coefficient was calculated to assess the measurement reliability and internal consistency of this instrument.

Validity was determined taking into account the validity of content and construct.

Content validity can be used to analyse the extent to which the theoretical contents of the study variables are reflected in the instrument. For this purpose, as mentioned above, eight experts analysed the elements of the instrument.

Construct validity by contrast assess the degree to which the instrument actually measures the theoretical construct it is intended to measure. For this purpose, a principal components analysis was carried out.

2.8. Data analysis

As mentioned above, data analysis was carried out through descriptive analysis techniques and principal component analysis.

A distribution analysis was carried out by means of a descriptive study that allowed the calculation of the central tendency and frequency statistics.

A principal components analysis was also carried to obtain information on the validity of the questionnaire and Cronbach's alpha was calculated to assess measurement reliability.

SPSS Statistics version 22 for Windows was used for the analysis.

3. Research methods

The results showed, through Cronbach's alpha reliability statistic, a value of 0.716 for all the different dimensions analysed. This value shows acceptable internal consistency, i.e., we can be certain that the elements measure the same construct and that they are correlated.

Other complementary analyses carried out showed that internal consistency did not increase significantly if any element was removed from the instrument.

Before carrying out the principal component analysis, information was collected on the achievement of the criteria for the application of the abovementioned analysis with the Kaiser–Meyer–Olkin (KMO) sample adequacy measure and Bartlett's sphericity test.

1. The KMO sample adequacy measure confirmed the adequacy of the sampling carried out.
2. Barlett's test for sphericity was used to compare the correlation matrix to the identity matrix.

Table 2. KMO indicators and bartlett's sphericity test

KMO and Bartlett's test values	
KMO sample adequacy measure	0.789
Barlett's sphericity test	
Approx. Chi-square	1,731.046
Degrees of freedom	153
Significance (less than)	0.0005

The results obtained reveal that:

1. The KMO test value, in which the proportion of the correlation coefficients observed in the correlation matrix is compared to the proportion observed in the anti-image matrix, is 0.789. This fact indicates that intercorrelation between the correlation matrices is high and that, therefore, the factor analysis is suitable for this study.
2. Bartlett's sphericity test confirmed that with a critical level higher than 0.05, the null sphericity hypothesis would not be rejected. In the analysis carried out, the significance is adequate since a

value lower than 0.0005 is obtained. Therefore, it is safe to state that the null hypothesis is rejected and that the factor analysis is ideal.

3. The principal component analysis showed five main components or factors. These factors, with eigenvalues $\lambda \leq 1$, explain 66.08% of the total variance.

Table 3. Results of the principal component analysis

Components	Initial eigenvalues			Rotated extraction sums of square loading		
	Total	Variance (%)	Cummulative(%)	Total	Variance (%)	Cummulative (%)
1	5.684	31.576	31.576	3.930	21.832	21.832
2	2.030	11.276	42.852	2.871	15.950	37.783
3	1.694	9.413	52.264	1.879	10.439	48.221
4	1.406	7.810	60.074	1.640	9.109	57.330
5	1.081	6.007	66.081	1.575	8.751	66.081

The principal component analysis through Varimax with Kaiser normalisation rotation had five iterations. Once the absolute values below 0.370 were eliminated, the assignment and definition of the different factors were obtained.

Tables 4–8 show the groupings established after this assignment and identification of factors.

Table 4. Factor 1. General aspects valued by the student in terms of their future job.

Factor load	
Elements	Elements
12- The environment in the company where I work is relevant to me.	0.586
13- I believe that having promotion possibilities in the company where I work is important for me.	0.319
14- I value the work being interesting and rewarding.	0.776
15- I value a job that requires constant improvement and meeting challenges.	0.613
16- I believe that it's necessary to keep learning at work.	0.449
17- I consider my integration in the group within the company to be important.	0.718
18- I value having independence and autonomy in my work.	0.625
20- I believe that it is important that the job brings new situations and experiences.	0.525
21- I need to feel that I contribute to my company and feel useful.	0.437
22- I value innovation and experimentation in my job.	0.699

Table 4 includes the results of the factor loads of the factor that has had the most elements selected and that have been called general aspects valued by the students in relation to their future job position. This factor includes a series of dimensions, which are important and essential for students in relation to their future jobs.

The aspects included are: promotion possibilities, that the work be rewarding and interesting, that it involves challenges and steady growth, that it opens doors to new situations and experiences, that it requires continuous learning and which make it possible to work in an integrated way in a group, in an environment with a certain level of autonomy, and feeling useful.

Table 5. Factor 2. Characteristics that students value in their future work and company

Elements	Factor load
9- I believe that I will get a salary appropriate to my academic level.	−0.325
11- The prestige of the company where I work is important for me.	0.773
13- Having promotion possibilities in the company where I work is important for me.	0.392
19- Achieving professional success is important for me.	0.633

Table 5 includes the results of the factor loads of the characteristics that students value in their work future and in companies. This factor includes dimensions that have to do with the aspects related to the working conditions of their future job, such as salary, and others that have to do with their professional success, prestige and promotion within the company.

Table 6. Factor 3. Aspects related to job expectations or possibilities

.	Factor load
7- Do you think you will have difficulty finding a job that's appropriate for your training?	0.838
8- Do you believe you have good possibilities of working in a position related to your studies?	0.865
9- I believe that I will earn a salary in accordance with my academic level	0.418

Aspects related to the expectations or job possibilities that students predict for themselves are listed with their factor loads in Table 6, which includes dimensions that have to do with the difficulty in finding a job in line with their training and profession and a salary in line with their academic level.

Table 7. Factor 4. Aspects related to success and working conditions

Elements	Factor load
9- I believe that I will get a salary in accordance with my academic level	−0.325
11- The prestige of the firm I work for is important to me	0.773
13- Having possibilities of promotion in the form I work for is important to me	0.392
16- I think that it's important to be always learning at work.	−0.390
19- Achieving professional success is important to me.	0.633

Factor loads of dimensions related to success and working conditions have been included in Table 7. Aspects such as salary in accordance with academic level, promotion possibilities and professional success, as well as other aspects related to the company such as prestige or the need to steady learning in the job as a formula to achieve success are covered.

Table 8. Factor 5. Important aspects of a job

Elements	Factor load
10- I think that job stability is important.	0.843
12- The atmosphere in the firm where I work is important to me.	0.455
13- Having promotion possibilities in the firm where I work is important to me.	0.618

Finally, Table 8 lists the fifth factor, which covers important aspects of a job, and it lists the factor loads of aspects regarded by students as important in a job they might obtain. Dimensions such as job stability, work environment and promotion possibilities are included.

4. Conclusion

It is important to create instruments that help to measure and evaluate university students' perception of the possibilities of finding employment once they have completed their university education, and to identify which aspects are most valued by them regarding their labour market insertion.

With this type of instrument, valuable information can be gathered on the adequacy of university curricula to the professional world for which they were designed, and the perception of preparation that students consider themselves to have to deal with their future work life. It also illuminates students' opinions regarding their future access to the world of work after completing their studies.

Thus, this instrument can shed light on the question it was designed to answer, which is whether university students have a clearer perception of the possibilities of finding a job in accordance with their training and what aspects they value for their entry into the labour market after graduation. All of this can give clear indications to teachers and educational institutions as to whether their work is being carried out in accordance with the objectives they initially set themselves.

The analysis of the data collected reveals that the questionnaire provides a sufficiently reliable and valid measurement.

The questionnaire has a high level of internal consistency (reliability), as well as suitable content validation since it adequately reflects the dimensions intended to be measured, as well as construct validation as the organisation of the questionnaire shows coherence in terms of structure based on a theoretical framework.

After carrying out the factor analysis, it is safe to conclude that the factors are not shown with exactly the same denomination. All the dimensions that had been taken as study variables are present, all of them being relevant to explain university students' perception of the possibilities of finding a job once they have completed their university studies and to identify which are their most valued aspects in order to be able to achieve labour market insertion.

Nevertheless, it is worth noting that the organisation of these initial dimensions overlaps and that some of the dimensions are impossible to dissociate from each other. Thus, the structure of the factor analysis provides a new reorganisation based not on the three initial dimensions, but on five, which have been described in the results section.

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