

The employability of educational specialties: Design and implementation of a survey model

Spiros Panetsos

School of Pedagogical and Technological Education,

Department of Electronic Engineering Educators

N. Irakleio Attikis, 141 21

e-mail: s.panetsos@aegean.gr

Vassilis Kostoglou

Alexander TEI of Thessaloniki,

Department of Informatics,

P.O. Box 141, 574 00, Thessaloniki.

e-mail: vkostogl@it.teithe.gr

Abstract

Graduates' employability has focused the interest of governments, educational authorities, academics and researchers for many years. Especially nowadays the employment status and the relevant prospects of university graduates reflect the efficiency of the provided higher education, as well as its connection with the labour market. However, educational specialties of higher education have not been so far the object or relevant research.

This work is based on the results and conclusions deduced from the conduct of a large survey addressed to the graduates of the School of Pedagogical and Technological Education, the only establishment of Greek higher education providing this type of education. An unbiased random sample of 357 graduates belonging to 5 different specialties stratified according to gender, specialty and year of graduation was selected through random sampling. The informants replied to the 62 questions of a designed structured questionnaire covering all main quantitative and qualitative educational, social and employment graduates' characteristics. The collection of first-born data was achieved through a specially designed survey using telephonic interviews. The data were analyzed with the statistical package SPSS using appropriate statistical techniques for the investigation of the existing relationships among the main variables.

The valuation of the results of the 309 valid questionnaires led to significant conclusions concerning education and employment parameters such as the mean required time for the completion of studies and for getting the first job, the employment status giving emphasis to the majority who has followed an educational career, the type of employment, the way of getting the present position, the hetero-employment and the professional safety. The few existing significant differentiations depending on gender and specialty were also thoroughly analyzed and commented.

Keywords: employability, educational specialties, higher education, telephonic survey, labour market.

1. INTRODUCTION

Nowadays, the employability of university graduates is one of the most important criteria indicating the efficiency of the education system of a country. This is due to the increase of graduates of higher education and the high competitiveness in the labour market. The investigation of graduates' employment collects the interest of governments and professional bodies who intend to analyze the evolution of unemployment in order to contribute to reduce it (Kostoglou and Paloukis, 2007a).

Many studies and surveys have dealt with the employment status of graduates of higher education, several years after graduation and they have provided evidence for a growing complexity in the relationship between higher education and labour market. According to same surveys, the EU-15 average employment rate, four years after graduation, was 84%. Also, 80% of graduates of the examined EU countries were part of the workforce while the rest focused in advanced studies, some were in training, and others dealt with the care of children and family (Mora et al., 2003, Teichler, 2007).

Another study examining the relationship between higher-education and labour market indicates that there appears to be no connection between the increasing level of knowledge of professionals and the changes in the market (Escotet, 1999). Although the labour market requires basic skills and knowledge, the psychological and emotional characteristics of future employees are increasingly important. In addition, the relations between higher education and graduates' employment have common features in most economically developed countries.

It is known (Eurostat, 2004) that countries with high overall unemployment rate have also high graduates' unemployment. Furthermore, the current trends in the labour market obligate some graduates to seek for a job that is not related to their studies (hetero-employment). A study carried out by National Technical University of Athens found out that its graduates present high employment rates depending on specialty. Also, some of its graduates from certain specialties face low rate of hetero-employment (NTUA, 2001). Another study concerned the graduates of the years 1998 – 2000 of 18 universities, based on a very large sample consisting of 22.3% of the total population; find that 84% of university graduates are employed in a permanent basis five to seven years after their graduation. There is also a percentage of 6.4% of university graduates that is unemployed and 9.3% is inactive (non-active search for employment) (Karamesini, 2008). A third survey conducted by the National Statistics Office points out that only one out of two university graduates finds a job in a short term. This fact warrants that 40% of graduates of Greek institutions of higher education are employed in jobs very different from their educational background (E-Paideia.net, 2006).

The published studies focus on the employment characteristics, ignoring the factors effecting graduates' employment. The present study attempts to cover this gap focusing on the factors that effect the employment. The structure of this paper contains five sections. The research objectives and its contribution are referred in the next section. In the third section are described the survey's design and the adopted methodology. The results of the work are displayed in paper's fourth section and finally in the fifth section the conclusions are summarized.

2. OBJECTIVES AND CONTRIBUTION

The employability of graduates is characterized by a large number of parameters. This work analyzes the main quantitative and qualitative educational, social and employment graduates' characteristics and investigates the factors affecting the employability of the graduates of the School of Pedagogical and Technological Education (SPTE), an establishment of Greek higher education. The aim of this work is to detect the effects of graduates' educational and social characteristics on their employability and to analyze and comment the differentiations depending on gender and specialty.

This research is the first that has taken place in the SPTE. The results concentrate on the determination of the statistically significant effects on graduates' employability. The conclusions of this study will be useful for researchers in the field of labour market, for the decision makers in higher education, and last, but not least, for the graduates of the SPTE for a more efficient professional orientation.

3. DESIGN AND METHODOLOGY

The telephonic interview with the use of a structured questionnaire was chosen as most appropriate survey method. The main reason for this decision was the geographical spreading of the graduates all over the country, and the consecutive prohibitive cost of interviewing or approaching them. The use of mail survey was also rejected due to the expected low response rate according to relevant literature review.

The research carried out by a team that consisted of 6 persons (project leader, survey coordinator, analyst-evaluator, computer technician and two interviewers). The main source for the necessary communication data was the database of graduates that exists in the Careers Office of the SPTE. The name and the contact details extracted from the database in a MS-Excel file. Data transition was carried out in a MS-Access file where appropriate tests were applied regarding obvious faults and data consistency to several characteristics. From this procedure we received a file with 357 graduates from 5 departments having graduated in a period of five consecutive years. The data were stratified according to department, gender and year of graduation.

A questionnaire formed by a previous pilot study has been used as the main survey tool after essential changes and addition of several new questions focusing 'on the educational employment' of graduates due to the special type of the School. The interviewers were trained for the telephonic interviews (giving emphasis to the approach of the selected graduates) and the use of the new SPSS application, which was designed and applied for the data entry.

Regarding the final sample size (number of filled and valid questionnaires) the target set was fully stratified sample, sized more than 40% of total graduates. The whole procedure lasted for three months.

4. ANALYSIS AND RESULTS

The final collected sample consisted of 309 filled and valid questionnaires. The statistical analysis was carried out with the use of SPSS, v. 15.0, the statistical package for the social sciences. Graduates' responses were analyzed through descriptive and analytical statistical techniques. We present the most important results and findings directly related to graduates' employment. These findings focus on postgraduate studies' attendance and relevance, the detailed statuses and types of graduates' employment and its relation with the first degree, the way of finding the present position, the reasons for seeking another one, as well as the degree of satisfaction from employment and earnings.

The following two tables present information regarding the postgraduate studies attendance of SPTE graduates (table 1) and the relevance of these studies with their first degree (table 2).

Table 1: Postgraduate studies attendance

	Frequency	Percentage (%)
Yes (Greece)	27	8.9
Yes (Abroad)	10	3.3
No	267	87.8
Total	304	100.0

Table 1 shows that more than one out of ten graduates (actually 12.2%) have acquired a postgraduate degree. More than 70% of them have acquired this degree from a Greek university.

Table 2: Relevance of postgraduate studies with first degree

	Frequency	Percentage (%)
Irrelevant	5	13.5
Small	1	2.7
Medium	3	8.1
High	10	27.0
Very high	18	48.7
Total	37	100.0

Table 2 shows that according to graduates' responses, the relevance of their postgraduate studies with their basic degree covers the whole spectrum of the scale, from irrelevant to very high relevance. Nevertheless, the concentration of scale's positive values is significantly higher. Three quarters of the graduates who continued for postgraduate studies report with high or very high relevance with their bachelor degree.

The most important findings regarding graduates' professional statuses are presented in the next two tables. Table 3 includes the aggregate percentages of the three distinguished statuses.

Table 3: Graduates' professional statuses

	Frequency	Percentage (%)
Employed	305	98.7
Unemployed	1	0.3
Inactive	3	1.0
Total	309	100.0

From the above table we can see that nearly all graduates (98.7%) are currently employed, only a very small percentage (0.3%) is unemployed (in the process of looking for a job) and 1% of the graduates are inactive (not presently interested in seeking for employment). A similar study of Alexander TEI of Thessaloniki (Kostoglou et. al. 2007b) found out that 84.7% of graduates are employed, 8.4% are unemployed and 6.9% are inactive. The analytical employment statuses of the graduates of all specialties are presented in table 4.

Table 4: Employment statuses for all specialties

Department of graduation	Employed (%)	Unemployed (%)	Inactive (%)	Sample size
Electrical Engineering Educators	100.0	0.0	0.0	59
Electronic Engineering Educators	97.6	0.0	2.4	83
Mechanical Engineering Educators	98.9	0.0	1.1	88
Civil and Structural Engineering Educators	100.0	0.0	0.0	39
Civil and Construction Engineering Educators	97.5	2.5	0.0	40
Total	98.7	0.3	1.0	

More detailed statistical analysis (χ^2 test) does not show a significant dependence between the employment status of the graduates and their specialty (at a significance level of 95%). However, the effect of graduates' financial support from their parents is statistically significant ($\chi^2 = 14,467$, d.f. = 4, $p \leq 0.05$). An analysis of the observed frequencies shows that the graduates with financial support from their parents present lower employment rate than the expected.

Table 5 presents the type of employment of the employed graduates. More than eight out of ten are full time employees, whereas only 7.5% are engaged on part-time basis. About half of the self-employed graduates have personnel in their enterprise (4.6% of the employed graduates); the rest (4.3%) work alone.

Table 5: Type of employment

	Frequency	Percentage (%)
Full time employee	255	83.6
Part time employee	23	7.5
Self-employed with employees	14	4.6
Self-employed without employees	13	4.3
Total	305	100.0

Table 6 presents the employment in education for the graduates of SPTE. According to this table, two thirds (66.8%) of the employed graduates work in the educational sector.

Table 6: Employment in the educational sector

	Frequency	Percentage (%)
Work in education	193	66.8
Work in other jobs	96	33.2
Total	289	100.0

Similar results come from the graduates' replies according to their specialties (table 7)

Table 7: Employment statuses for all specialties

Department of graduation	Work in Education (%)	Work in other jobs (%)	Sample size
Electrical Engineering Educators	53 (65.4)	28 (34.6)	81
Electronic Engineering Educators	35 (63.6)	20 (36.4)	55
Mechanical Engineering Educators	58 (66.7)	29 (33.3)	87
Civil and Structural Engineering Educators	22 (68.8)	10 (31.2)	32
Civil and Construction Engineering Educators	25 (73.5)	9 (33.2)	34
Total	193 (66.8)	96 (33.2)	299

Table 8 presents the type of employment of the working graduates in education. More than eight out of ten are permanent teachers, whereas only 4.7% are supplementary teachers and 11.4% are teaching on hourly base.

Table 8: Type of employment in education

	Frequency	Percentage (%)
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Permanent teacher	162	83.9
Supplementary teacher	9	4.7
Teacher on hourly base	22	11.4
Total	193	100.0

The relation between bachelor studies and present employment is presented in table 9. This relationship is mainly high or very high (79%); on the other hand 9.5% of the graduates consider that their present employment has minimal or small relation with their bachelor studies. These figures confirm that about one out of ten graduates have switched to hetero-employment a recent phenomenon having been observed in Greece as well as in some other EU countries (Kostoglou et al., 2007c).

Table 9: Relation between studies and employment

	Frequency	Percentage (%)
Minimal	15	5.7
Small	10	3.8
Medium	30	11.5
High	53	20.3
Very high	153	58.7
Total	261	100.0

Table 10 outlines the way the graduates found their present position. The figures show that they have used all possible channels for finding a position in the labour market. There is an obvious preference in other procedures (51.6%), which include the finding of the first position as supply teacher and then converts to a permanent teacher, in the formal state examinations (often held at national level for various specializations) where at least 30% of graduates have eventually succeeded, in announcements published in newspapers (9.4%) and in family or personal connections (5.1%), coming mainly from the private sector. Some well known channels of the public sector (the nationwide Manpower Employment Organization, the compulsory six-month practical training, other examinations) seem to be unpopular and ineffective channels for helping graduates in getting a position in the labour market, as they have contributed cumulatively in less than 3.5% of the total number of engagements.

Table 10: Way of finding present position

	Frequency	Percentage (%)

Other procedures	143	51.6
State examination	85	30.7
Announcement in newspapers	26	9.4
Help of friends or family	14	5.1
6-month practical training	3	1.1
Manpower Employment Organization	4	1.4
Other examination	2	0.7
Total	277	100.0

The degree of graduates' satisfaction from their employment is presented in the next three tables. Table 11 refers to employed graduates, table 12 to self-employed graduates and table 13 presents the gratification from their earnings.

Table 11: Satisfaction from present employment

	Frequency	Percentage (%)
Minimal	26	9.4
Small	5	1.8
Medium	43	15.5
High	101	36.3
Very high	99	35.6
No answer	4	1.4
Total	278	100.0

More than seven out of ten employed graduates (71.9%) report that they are highly or very highly satisfied from their present position. Almost 15.5% of the employed graduates declare medium satisfaction and 11.2% state their dissatisfaction.

The findings presented in table 12 prove that the satisfaction of self-employed graduates is much higher. More than nine out of ten self-employed graduates (92.3%) report that they are very or quite satisfied from their decision to have their own business, and only 7.7% report low satisfaction.

**Table 12: Satisfaction from present employment
(self-employees graduates)**

	Frequency	Percentage (%)
Dissatisfied	0	0.0
Not enough satisfied	2	7.7
Quite satisfied	13	50.0
Very satisfied	11	42.3
Total	26	100.0

Regarding the satisfaction from salary (table 13), the relevant distribution is quite symmetric-al. Three quarters of the graduates (75.5%) report medium or high satisfaction, at bottom end 12.2% of them report dissatisfaction and at the top end 11.9% report very satisfied from their wage.

Table 13: Satisfaction from salary

	Frequency	Percentage (%)
Minimal	22	7.9
Small	12	4.3
Medium	131	47.1
High	79	28.4
Very high	33	11.9
No answer	1	0.4
Total	278	100.0

The overall satisfaction from salary is significantly lower than the one from self-employment. These findings are further confirmed by graduates' answers regarding the reasons for seeking another position. 32.7% (119 employees) of the employed graduates declare that they seek for another position. The reasons for this intention are reported in table 14.

The present salary is the principal reason for changing job for nearly 40% of working graduates. The lack of relevance with their bachelor degree and the position's prospects gathering 20.2% and 22.7% of the answers respectively are the other two main reasons for seeking another position. Other not specified reasons concentrate the selection of at 17.6% of the respondents.

Table 14: Reasons for seeking another position

	Frequency	Percentage (%)

The present position is not related to studies	24	20.2
The present position does not satisfy ambitions	27	22.7
The salary is not satisfactory	47	39.5
Other reason	21	17.6
Total	119	100.0

5. CONCLUSIONS

This work is based on the results deducted from the conduct of a large survey addressed to the graduates of the SPTE, the only establishment of Greek higher education providing this type of education.

More than one out of ten (actual 12.2%) of the SPTE graduates turn for a postgraduate degree. More than 70% of them have obtained this degree from a Greek university. Three quarters of postgraduate degrees are highly or very highly relevant to the first degree.

Nearly 99% of the graduates are currently working. The percentages of unemployed or inactive graduates are literally insignificant. The professional status does not depend from graduate's specialty, gender or marital status, but seems depending significantly from the existence of family's financial support. More than eight out of ten of the working graduates are full time employees, whereas only 7.5% are engaged on part-time basis. Half of the self-employed graduates have personnel in their enterprise and the rest of them work alone. From the employed graduates (about 90% of their total number) about seven out of ten works in education. The majority of them (83.9%) are permanent teachers, 4.7% work as supplementary teachers and 11.4% as teachers on hourly base.

One out of ten graduates has switched to hetero-employment, as 9.5% of them consider that their present employment has minimal or small relation with their bachelor studies. Eight out of ten (79%) of the graduates think that their present employment has high or very high relation with their bachelor studies

SPTE graduates have used all possible channels for getting their position in the labour market. The main priority is a common procedure for getting a position in the educational sector, in which someone gets a position as supplementary teacher and then converts this position to a permanent one. The rest priorities are the formal state examinations, the work advertisements in newspapers and the help of family or friends. The well known channel of the public sector (Manpower Employment Organization) seems to be unpopular for getting a position in the labour market.

More than seven out of ten employed graduates are highly or very highly satisfied from their present position and only one out of ten is dissatisfied. The satisfaction of self-employed graduates is much higher. One out of ten is very satisfied from its salary and eight out of ten are medium or highly satisfied. However, this satisfaction is higher for the self-employed gra-

duates. The low salary is the main reason for seeking another job; the other reasons are the lack of relevance with their bachelor degree and the position's prospects.

In our paper we adopted a methodology, which in our opinion should be repeated in frequent time intervals (our suggestion is three years) in order to detect any significant changes in the employability of the graduates of the SPTE and/or other establishments of higher education.

REFERENCES

Escotet Miguel Angel, (1999), "Wanted: A New Deal for the Universities", *International Institute of Educational Development*, Florida International University.

Eurostat (2004), *Graduates' unemployment in all EU countries (ages 25-64)*.

E-paideia.net. (2006), *High hetero-employment in Greece*. Retrieved from the World Wide Web <http://www.e-paideia.net/News/article.asp?lngEntityID=33528>

Karamesini, M. (2008), *The absorption of university graduates in the labour market*, Athens: Dionikos publ.

Kostoglou, V. and Paloukis, S. (2007a), Graduates' employment in European Union. *Proceedings of the 5th International Conference "New Horizons in Industry, Business and Education" (NHIBE 2007)*, pp.103 107. Rhodes, Greece.

Kostoglou, V., Vasilakopoulos, M. and Zafeiropoulos, C. (2007b). *The absorption of Alexander TEI of Thessaloniki in the labour market – Overall study*, Thessaloniki: Career Office publ.

Kostoglou, V. and Paloukis, S. (2007c), Investigating graduates' employability in European Union: Review, analysis and comparison. *Proceedings of International Conference "Global Integration of Graduate Programmes" (GIGP 2007)*, pp.20 - 29. Split, Croatia.

National Technical University of Athens – NTUA. (2001), *The absorption of NTUA engineers in the labour market*, Athens: NMTP publication.

Teichler, U. (2007), Does higher education matter? Lessons from a comparative graduate survey, *European Journal of Education*, 42(1), pp. 11-34.