STUDENTS' PROFILE IN HIGHER EDUCATION IN ITALY

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The aim of the present paper is to show the results of the analysis of the graduates' evaluation questionnaires about the social profile of the students in higher education in Italy. A factor analysis has been carried on a national basis from 75,000 questionnaires administered to students representing 10 degrees. The factor analysis indicates the close proximity of responses between Statistics and Economy in the learning processes. These preliminary results are useful to improve the intended learning outcomes of the different courses, according with the Dublin Descriptors.

BACKGROUND

The idea of education as an "experience good" (Nelson, 1970) is the basis of the methods and the models of the evaluation of educational processes in the higher cycles in Italy. These methods and models are from the viewpoint of autonomy effectiveness and the quality assurance of teaching processes.

In Italy the subject of the teaching evaluation has become particularly relevant after the important changes concerning the university and the school systems, to guarantee an improvement of performances in the direction of the solution or the attenuation of some typical problems. That is the extremely high drop out rate, the long time needed to graduate and the gap between the students' skills and the needs of the labor market.

The evaluation activity analyses the performance of the educational processes. It can provide, through the feedback from the "users", the input for a continuous revision and improvement of the processes. An interesting paradigm of reference is based on the concept of life cycle of students underlining the main role of it in all the phases that characterize the status: control *in itinere* or *ex post*, during or at the conclusion of the course of studies, in accordance with the experience acquired. This kind of feedback starts collecting the opinions of full-time students, through anonymous questionnaires to test their degree of satisfaction about their experience in lecture rooms, laboratories, libraries, teaching, etc.

In fact, the final result has not been called "output", but "outcome", that is connected with the social profile of the student and is often different to their personal expectations (Gori, 1992). Furthermore, the concept of "learning outcomes" has been recently used as a measure of what students actually have learnt and as a statement of what they expected to learn during their studies. "Dublin descriptors is the most authoritative schedule for classifying learning outcomes" (Aamodt & Hovdhaugen, 2008).

The first researchers on the subject (MIUR, 1998) resumed the work initially carried out at the Harvard University in 1920s and subsequently in all the University colleges in the USA during 1960s and 1970s, according to the idea that "students are not evaluators; they simply provide data to the evaluators" (McKeachie, 1996). In Italy the first approach of the research was to obtain an increased students' involvement into the development of didactic processes. In particular the aim was to tighten the improvement of a mutual communication between students and teachers.

This approach "allows the teachers to acquire a better knowledge of appreciation level on both their courses and methods of teaching. It also supplies to the students a tool to recognize their own issues, that, if satisfied, raises the effectiveness of learning". Afterwards the evaluation survey was enlarged to the senior students at the conclusion of their studies, adopting a second questionnaire on common items (MIUR, 2003). Since 1999 the compulsory and the yearly administration of the survey has yielded national databases (MIUR and Almalaurea), available online.

Nowadays the students' evaluation has been adopted as a quality assurance criterion by the government, for increasing transparency, recognition and comparability of a programme of studies. The latest efforts of some Universities are oriented into two main directions. On one hand, the use of auto-evaluation forms filled by the teacher increases the so-called "reflective teaching" (Dewey, 1933 or Semeraro, 2006). On the other hand, the auto-evaluation forms used by teams of students

and teachers inside the faculties are used for accreditation by professional agencies. In fact, supposing the "asymmetry information" (Akerlof, 1970) between experts (teachers) and customers (students), education is considered as a post-experience good, ("credence good"). In other words "the experts […] do not only provide a valued service, they also tell the customer what service needs of" (The Economist, 2006); so the quality couldn't be checked even by the ones' experience, but just be rated by expert agencies.

ANALYSIS

The aim of the paper is to compare the social profile of senior students that graduated in Statistics with senior students from other faculties. The result is that the social features and the work expectations expressed by the students are similar on both the faculties of Economy and Statistics. According with the today's educational reform, Statistics is a very important part of the scientific development of several degrees, either as a 'fundamental' discipline (in the fields of Agriculture, Architecture, Economy, Engineering, etc) or as 'allied' to the social sciences (Psychology, Political Science, Sociology).

The factor analysis has been carried out on 34 items from 75,000 questionnaires administered to students representing 10 degrees (Agriculture, Architecture, Economy, Engineering, Pharmacy, Psychology, Political Science, Sociology, Statistics and Veterinary). Each degree was weighted by the number of questionnaires filled (from 594 forms from graduates in Statistics to 20,687 from graduates in Engineering).

Table 1. Number of responses to the questionnaire according to the degree

Degree	Number of responses	Degree	Number of responses
Agriculture	2604	Psychology	8008
Architecture	7092	Statistics	594
Economy	21494	Political Science	9631
Engineering	20687	Sociology	777
Pharmacy	3485	Veterinary	785

Source: Almalaurea, 2009, *www.almalaurea.it/universita/profilo/profilo2008/*

Data used for the national analysis have been collected on a national basis and the database is available online on the Almalaurea website (2009). The database gives the percentage frequency of answers to the items listed in the questionnaire and the average in case of age of the students, marks on the final exam of degree or time spent in preparing the degree thesis.

The 34 items take into account the following topics: parents graduated or without any qualifications; previous studies (humanistic, language, scientific, socio-psycho-pedagogic, technical and vocation); mark on the final exam of previous studies, mark on the final exam of degree, time spent for the degree thesis; age of the graduates, full-time participation in lectures; customer's satisfaction (teachers, students, classrooms, laboratories, libraries, homework); achieved skills (English: spoken, as a foreign language and as a programming language); further studies to complete the first cycle; main aspects to look forward as good work (growing into a profession, career, earnings, cultural interests, permanent job, independence, no preferences); preferential sector (public or private area, independent profession).

The factor analysis used is the principal component method with correlation coefficients, in accordance with the nature of data. The rotation used is orthogonal Varimax, to maximize the high correlations and minimize the low ones. The decision regarding the number of components extracted (two factors with the 66.7% of total variance to explain) is also useful to represent the solutions in 2-dimensional space.

The analysis purpose is not based on the classical interpretation of the axis, but on the representation of the results from the different degrees jointly together: the type of graph used is a biplot. Thus the following biplot shows the close proximity between the responses from the different faculties.

On the vertical axis, the proximity between the social profiles of Statistics and Economy faculties is due to the following items particularly: the technical field of the previous studies, the good skill in spoken English as a foreign language, the satisfaction for laboratories, library,

classrooms and teaching. On the same axis, Pharmacy and Veterinary faculties are different: a long time spent for the degree thesis, experience of work concerning the studies and independent work as preferential sector.

On the horizontal axis, the profile of the graduates in Political Science is marked by the following items: vocational high school and modern language studies, working and studying at the same time, satisfaction for homework, public area as preferential sector of occupational context. The profile of Engineering graduates is different. Their parents have a degree, they have previous scientific studies. During the course the students have attended full time and haven't worked. They have a good skill in programming language, look forward to work in profession with perspectives in career development and don't wish to continue further studies.

The profile of the graduates in Sociology is marked by two items on the diagonal line from these graduates to the origin: socio-psycho-pedagogic schools and a long time needed to graduate.
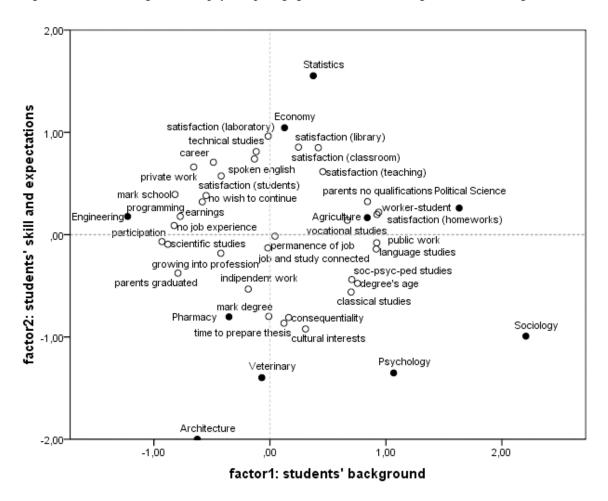

Figure 1. Biplot degrees together with the items (Factor analysis. Varimax)

CONCLUSION

These preliminary results carry out the outlines of the same aspects of learning. The proximity between the social profiles of Statistics and Economy faculties is due to the following items particularly: the technical field of the previous studies, the good skill in spoken English as a foreign language, the satisfaction for laboratories, library, classrooms and teaching.

Further researches could focus on these social and personal aspects of learning, which can be useful during the preliminary stage to plan the teaching method. Before the current government reform, the educational 'curricula' focused on only technical and scientific aspects of teaching. Nowadays the subject of the approach has changed from the teaching to the student skills acquired when they conclude their course of studies. Let us briefly recall the "intended learning outcomes" scheduled by the Dublin Descriptors are the following ones: "Knowledge and Understanding,

Applying Knowledge and Understanding, Making Judgments, Communication Skills and Learning Skills". For example, many Statistics faculties describe the learning outcomes, in accordance with the students' skill and expectation that the factor analysis has carried out. In particular, when faculties plan for teaching method not only with traditional lesson but also with laboratory and professional software, and when the good skill in spoken English, as a foreign language, is taken into account in the Dublin learning skill. Few degrees apply to the results of questionnaires administered to the senior students at the conclusion of their studies, in conference with the stakeholder and the associations of the labor market. The research is in accord with the new pedagogical approach (Ciampolini & Piazzi, 2000), proposed as "Methodological Disciplinary Research" (R.M.D.) and applied particularly to the scientific topic, whose purpose is the "strategy of compensation" rather than the solely best teaching. It also is in accord with the idea of "participatory evaluation" (Scriven, 1993), because the effectiveness of the service has to be measured not by only the high standard achieved (merit), but also to recognize the students' issues and expectations (worth or suitability). The participatory evaluation changes the traditional customer approach: according with the participation of the students remaining within the limits of the production of information (data), while the service is experiencing or showing relief, subsequently, by a professional standard (survey-analysis-plan), without sharing objectives (Palumbo, 2003).

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