PERIODICA POLYTECHNICA SER. SOC. MAN. SCI. VOL. 11, NO. 2, PP. 249–258 (2003)

DIFFERENT ENTRY PATHS OF FIRST YEAR COLLEGE STUDENTS AND ASSESSMENT OF THEIR PREVIOUS KNOWLEDGE IN MATHEMATICS AND ICT- CONCLUSIONS OF A SURVEY

Ágnes S. VÉGH

Department of Methodology
Budapest Business School
Faculty of Commerce, Catering and Tourism
H–1054 Budapest, Alkotmány u. 9–11, Hungary
Phone:+36 1 374 6244
e-mail:avegh@kvif.bgf.hu

Received: September, 2003

Abstract

The primary focus of this study is to examine the different entry paths and the disparities in Mathematics and ICT acquired knowledge of first year students of the Budapest Business School Faculty of Commerce Catering and Tourism. The findings of this research are mostly derived from a survey, with the goal of utilising these in different aspects of the course delivery. Due to the high profile of Mathematics and ICT, the study has also raised opportunities for comparison with other departments and organisations.

The following findings have been established through conducting the survey:

Since it is possible to gain entrance to the college without actually sitting an entrance exam, purely through doubling the points acquired in secondary school, some students, who do sit the centralised exams and get relatively good results do not manage to get a place on the most popular courses;

The ratio of students with a secondary or vocational background is comparatively low; the mathematics grades gained in secondary schools tend to give an unreliable picture in the case of most students;

Their ICT knowledge is at a sufficient level and their computer and internet access is slightly better.

Keywords: vocational training, college survey, entrance examination.

According to our general experience, gained over a number of years, the first year students, entering college, arrive with a great diversity in mathematical and ICT knowledge. Therefore, the provision of a differentiated curriculum would appear to be more effective.

In order to be able to provide this we would need to gain more in depth insight into the previous subject-knowledge of our students in the above mentioned areas.

During the delivery of the Mathematics and ICT core courses, similarly to all other subject areas, great significance is attributed to the different motivations behind the selection of courses and the college entry paths taken.

We have conducted a survey, in the form of a written questionnaire, among the full time first year students at the beginning of the 2002/2003 academic year.

The questionnaire comprised of 11 questions focusing on the following areas:

- The year of baccalaureate and the type of secondary school it was acquired in;
- The mathematics grades reached at the end of the 3^{rd} and 4^{th} years of secondary school and the grade of the baccalaureate;
- The entry path taken to college: whether the students gained their place through sitting the centralised examination or through doubling their secondary school point scores;
- The preferences in choosing courses and other higher education providers
- ICT knowledge and access

While constructing the questionnaire we used the questioning technique that is most accessible to our students. We either asked them to fill in straightforward answers or choose between simple categories. We solely relied on the use of closed-end questions.

The high level of response was assured by the fact that the questionnaire was handed out by the seminar teacher on the first math seminar in the academic year. According to the roll, 598 out of 665 first year students took time to answer the questions. Therefore, we are able to summarise the information, obtained from 90% of the cohort. A few students abstained from filling in the questionnaire, the rest did not participate in the first course.

The questionnaire can be found in the appendix.

There are several forms of training provided by the Faculty, among which I chose the full time training as the object of investigation. Candidates have two ways of gaining admission to study the three different specialist subjects provided. One way is to pass the central written entrance examination, the other is to obtain a sufficient point score, calculated on the basis of results achieved at secondary school. The training period involves seven or eight semesters.

Parallel to the training mentioned above, there is a shortened training route for students who passed their Accredited post-Secondary Training (AIFSZ) successfully. These students are neither required to take the entrance examination, nor do they gain admission through the secondary school points system. The conditions of admission for them is regulated by the Ministry itself. Throughout the course of their college studies, they may skip certain subjects based on their knowledge, acquired during the Assistant Manager Training, thus their training period involves merely 6 semesters. According to the routine, established at the college, I am going to use the abbreviation R when referring to data relevant to this shortened training.

Although no exact survey was conducted based on gender, most girls specialise in Tourism, and most boys specialise in Catering. The same goes for admission point boundaries, meaning that the highest score is required in tourism and the lowest in catering.

This survey forms an integral part of a doctorate research.

1. Year, Type and Place of the Baccalaureate

The difference between normal and shortened training, described in the introduction, clarifies, why only those undertaking the normal training route have the same year entered as the date of their baccalaureate and as the start of their college studies.

On the average, 2/3 of the students admitted onto the normal training route, passed their baccalaureate in 2002: more than 80% of those studying Tourism, and only 58% of those studying Commerce.

45% of those undertaking the shortened training passed their baccalaureate in 2000, which would be an ideal time to start college, taking the two year long Assistant Manager Training into consideration. The rest passed their baccalaureate before 2000.

Regarding the total number of first year students, only 50% passed their baccalaureate in 2002, which indicates that only every second student gained admission upon finishing their secondary school training or graduating from a vocational college.

The above fact leads us to the conclusion, that we cannot expect a homogeneous and fresh knowledge, nor a unified background of the acquired knowledge. Not only do we have to teach first year students our own subjects, but we also need to inform them about study skills and the demanding requirements of college education.

13% of those taking part in normal training, and 18% of those undertaking shortened training have previously followed courses in other higher education institutions for different periods of time (1to 3 semesters). I also had one student who studied at the Technical University for 8 semesters. The reasons behind these transfers were not examined. Following some personal conversations, we arrived at the conclusion, that an easier way of transferring between institutions should be offered. It is possible, that switching to the credit system may make life easier for students faced with this problem.

85% of normal, and 60% of shortened course trainees passed their baccalaureate in a grammar school, the rest in a comprehensive school. The low rate of comprehensive school students is especially worrying in the case of the first group. It would be highly recommendable to make access to higher education easier for students with comprehensive school background. The present situation seems to be supporting the hypothesis, whereas a child's career is pre-determined upon his first enrolment at elementary school at the age of 7. The origin of the comprehensive school qualification was, in most cases, a vocational secondary school offering specialities as wide ranging as Economics, Foreign Trade, Tourism or Catering etc.

In a few cases, schools, offering other means of vocational training such as Information Technology, Postal Logistics or Technology were also registered.

Half of first year students passed their baccalaureate in Budapest, the rest in other parts of the country or abroad. The rate is smaller in the case of normal, and larger in the case of shortened degree course, but the difference between the two ones is minimal.

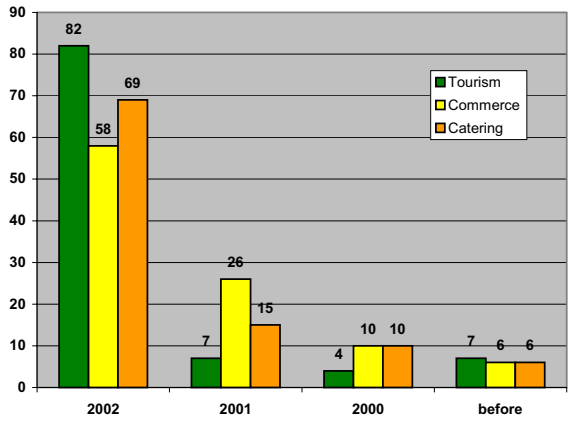

Fig. 1. Rate of first year students according to the year of the baccalaureate (in %) normal training

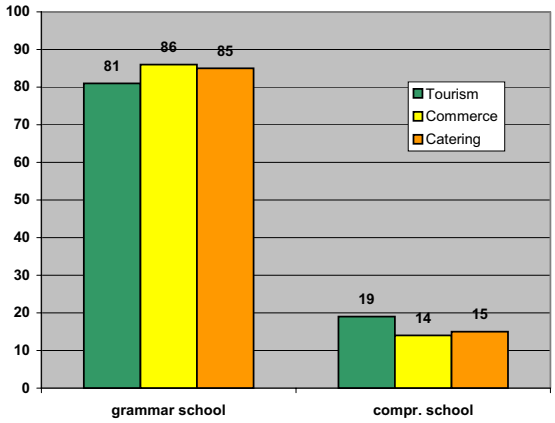

Fig. 2. Rate of first year students according to the type of

2. Information Relating to the Conditions of Admission

78% of trainees taking the normal route passed the entrance examination. The rest gained admission due to their good results in secondary school, with the so-called 'doubling' method (their points were calculated based on their secondary school results and then doubled). The differences between the different specialties are significant, 87% of commercial, 91% of catering and only 38% of tourism students actually took the entrance examination.

The students, who took the entrance examination, were required to sit the

Table 1. Entrance examination, Priority number

	Passed an examination			Admission to priority number				
Speciality	yes	no	total	1.	2.	3.	4 + x	total rate (%)
Tourism	38	62	100	67	18	5	10	100
Commerce	87	13	100	42	27	20	11	100
Catering	91	9	100	45	28	15	12	100
Total:	78	22	100	49	26	15	10	100

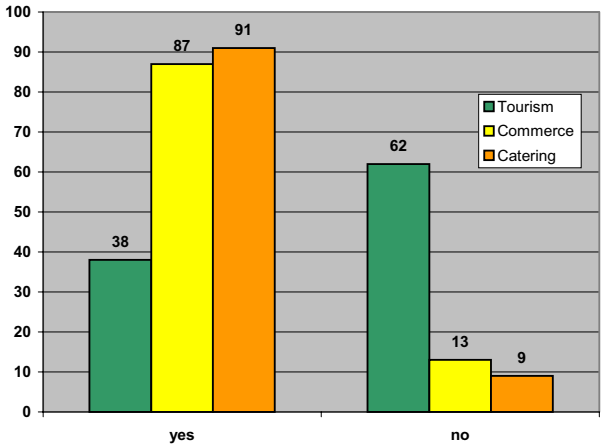

Fig. 3. Wrote the central test in mathematics. Normal training

centralized test in mathematics and another subject of their choice, choosing between History, Economics or a second foreign language. 49% of normal trainees highlighted the specialty they were admitted to study as their first preference. In this case also, the differences are significant: 2/3 of Tourism students and a lower proportion of the students of the other two specialisms marked the specialty they were admitted to as their first choice. This may be due to the fact that, tourism is our most attractive specialty, and those who were not admitted here, gained admission to their second or third choice based on their admission point scores.

Trainees, taking the shortened course, naturally did not take an entrance examination, since they gained entry based on their results achieved at the Assistant Manager Training. More than 90 % of them marked the specialty they were admitted to as their first choice.

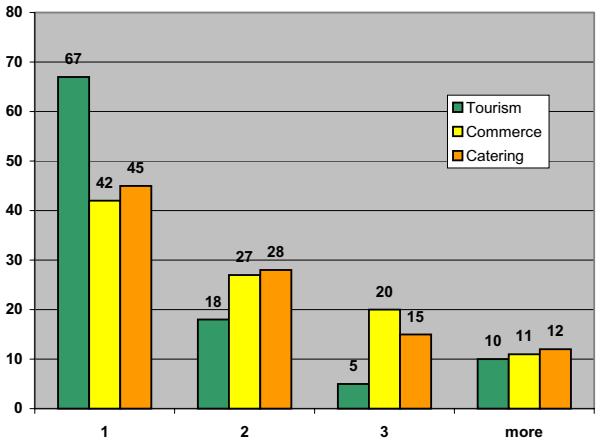

Fig. 4. Admission to priority number. Normal training

3. Grades in Mathematics

We compared the grades achieved in Mathematics in the 3rd year end of year exams with those received in the first semester of the 4th year and the grade received at their baccalaureate. There were more grade A students in Tourism, and less in Catering.

Normal course trainees received significantly higher marks than those taking the shortened route.

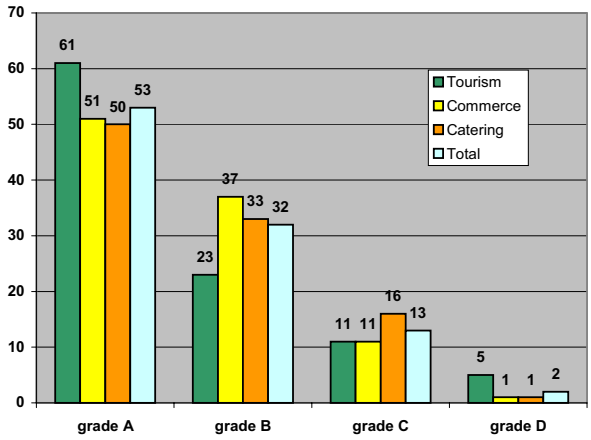

Fig. 5. Rate according to marks received in 3rd year final in mathematics, (in %) normal training

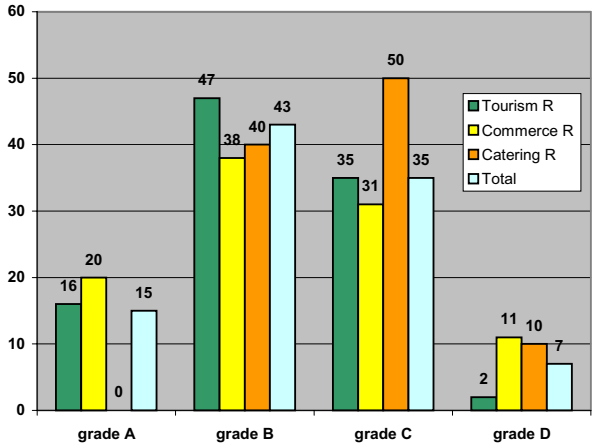

Fig. 6. Rate according to marks received in 3rd year final in mathematics, (in %) shortened training

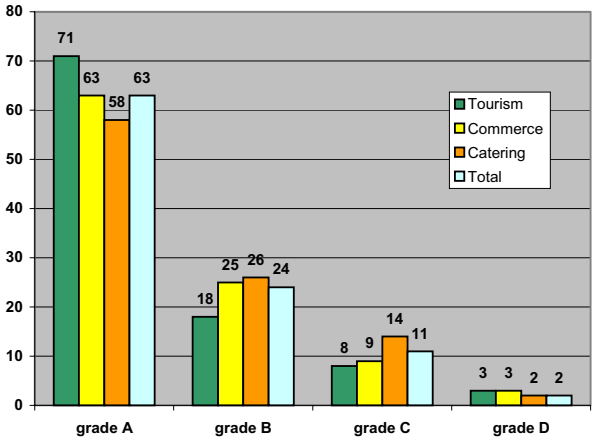

Fig. 7. Rate according to marks received at the BACCALAUREATE in mathematics, (in %) normal training

Both statements reflect the same picture as the previous findings, highlighted above. It is self-evident, and shows the reliability of secondary school education in mathematics, that there is positive correlation between the grades received at the baccalaureate and those received at the end of year exams or at the finals.

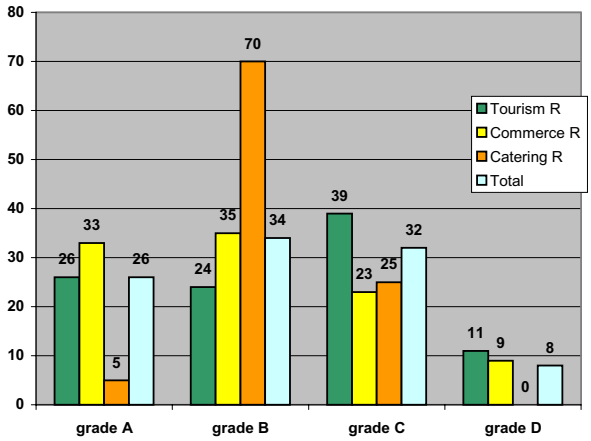

Fig. 8. Rate according to marks received at the BACCALAUREATE in mathematics, (in %) shortened training

4. Entrance Examination in Mathematics

A written exam in Mathematics formed a part of the entrance examination. 75% of the candidates also took the baccalaureate exams in their secondary school, generally because the marks received there tend to be higher, the test is judged to be easier, and this mark would be indicated on their baccalaureate certificate.

To the question whether they judged the 2002 centralized mathematics test to be more difficult than those of previous years, the majority of the students answered yes.

Table 2. Preparation for the entrance examination, Normal training

	Secondary school	Course	Tutor	Total rate (%)
Tourism	42	11	47	100
Commerce	29	29	42	100
Catering	41	19	40	100
Total:	36	23	41	100

In order to prepare for the exam, 40 % hired a tutor, more than 20% took part on some sorts of revision course, the rest considered secondary school education to be sufficient. Again, there is a difference between the specialties, with more students of Commerce having opted for a preparatory course. The need for a private tutor

is characteristic in the case of all three specialties; however, it is the greatest in the case of Tourism, where the point boundaries are traditionally the highest.

5. Computer Literacy

The survey on computer literacy was based on the students' personal judgement. The results achieved therefore might differ from the objective judgement of the relevant professor, however it may provide guidelines for future continuation of training. In our questionnaire, we dealt with WORD and EXCEL literacy, and we examined Internet access, which is compulsory in the course of future studies at the college.

Table 3. Rate of first year students according to WORD and EXCEL literacy

	Word				Excel			
Speciality	basics	interm.	prof.	Total rate (%)	basics	interm.	prof.	Total rate (%)
Tourism	41	54	5	100	71	28	1	100
Commerce	41	51	8	100	61	35	4	100
Catering	39	56	5	100	68	30	2	100
Total:	40	54	6	100	66	32	2	100
Tourism R	17	63	20	100	51	45	4	100
Commerece R	12	65	23	100	52	40	8	100
Catering R	30	65	6	100	60	40	0	100
Total:	17	64	19	100	53	43	4	100
Grand total:	34	56	10	100	62	35	3	100

More than half of first year students are able to handle WORD at an intermediate level. There are more normal trainees, whose knowledge merely extends to the basics, than those on the shortened course. 1/3 of first year students are able to handle EXCEL at an intermediate level. In this case also, shortened course trainees fare slightly better than the rest.

62% of first year students has access to the Internet outside the college. This includes access at home, at parents' work place, at the hostel or at a friend's home. There are slightly fewer students of Commerce (both on the normal and shortened routes) with Internet access than the rest.

6. Reflection

As a continuation of the above study, I plan to examine the achievement of the same students who took part in the above survey throughout two semesters. As there are

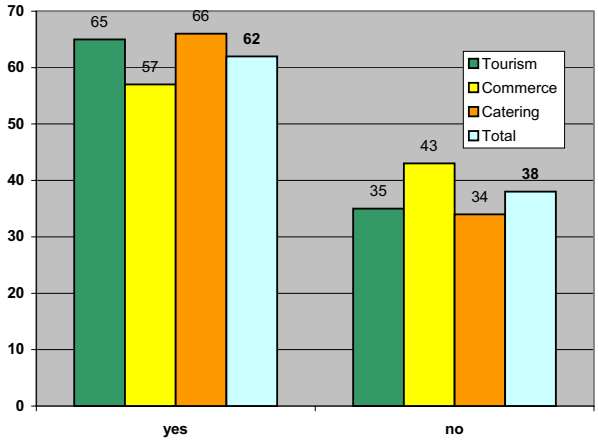

Fig. 9. Access to the Internet, Normal training

no other means at my disposal, I plan to make the comparison based on the grades received at the end of each semester.

Throughout the course of the survey, I was given significant support by my colleagues, who had the questionnaire filled in by their distinctive groups and evaluated the respective results. When compiling the questionnaire, I relied on advice given by Dr. Maria Felber. I owe many thanks to the management, who allowed the publication of the above data and to my consultant who provided support with his suggestions.

According to my hopes, there will be a direct reward of our efforts, when the results of the input survey will be compared with the actual college achievement of the students. At that point, we will not only know the level of acquired knowledge of our students, but we will also be able to measure our own efficiency to some degree. In my view, this may prove to be a valuable guideline and reference for the elaboration of future work plans and strategies for the management and tutors of the college.

References

[1] ANDORKA, R., *Bevezetés a szociológiába*, Budapest, Osiris kiadó, 2002.
[2] CSERNÉ, DR. ADERMANN, G., *Bevezetés a pedagógiai kutatás módszereibe*, egyetemi jegyzet, Pécs, 2001.
[3] FALUS, I. – OLLÉ, J., *Statisztikai módszerek pedagógusok számára*, Budapest, Okker kiadó, 2000.
[4] SCIPIONE, P. A., *A piackutatás gyakorlata* Budapest, Springer-Verlag, 1994.
[5] VARJAS, P., Kérdőívkészítés és megkérdezés, *Marketing & Management*, **2** (2000).
[6] http://www.bgf.kvif.hu