

The quality of the learning experience: a comparative study between open distance and conventional education

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INTRODUCTION

This research was designed to answer a very important, in terms of study, current question: does the quality of learning experience, in which the students of Open and Distance Education (ODE) are involved, differ from that of the students of conventional education? The answer to the question above included two objectives: (1) to develop a valid, reliable and comprehensive means for the measurement of the variable "quality of the learning experience", and (2) to put to test this means of measurement in two different teaching and learning systems, the conventional and the ODE, collecting and comparing the respective data. The preliminary data on the quality of the learning experience were provided by 60 postgraduate students: 30 students of the conventional and 30 of the ODE, by means of a specially designed questionnaire on a five-point scale. The results of the research were grouped in six comprehensive indicators of the quality of the learning experience under the following headings: interaction of learning material, the course structure, assignments, support provided by the Tutor Counselor, administrative support, and quality of the Tutor Counselor. The average values obtained for these indicators varied between 2,25 and 3,97 in the conventional education, and 3,38 to 4,60 in ODE. With slight deviations, the preliminary results of the research did not show any significant differences in the quality of the learning experience between these two educational systems.

THE INSTITUTIONS

The educational institutions that were selected for the comparative research were the Pedagogic Department of Primary Education of the University of Athens (PDPE/UA), as a conventional institution, and the Hellenic Open University, as an open and distance-learning institution. The PDPE/UA functions just as any other conventional higher educational institution in the country. After entrance examinations, the students attend face to face obligatory daily courses. The postgraduate program lasts two years (four semesters) and in each course the students sit progress examinations at the end of the semester. In certain cases, the teacher opts for a written assignment, instead of an examination. At the end of the four semesters, students are required to write a dissertation on a subject related to the course. The learning material is chosen by the teacher and it usually consists of books that can be found in the market, articles and other texts. In the classroom, the course is carried out in the form of a seminar and often by using creative dialogue. The particular course attended by the students referred to above was part of the postgraduate program 'Computers in Education'.

The Hellenic Open University selects its students by lot, without any examinations. It was founded in 1997 with a view to offering a second chance for graduate and postgraduate studies, life long learning, by using distance teaching, to people who have problems of access to higher education due to geographical distance, age and personal working conditions. Its organisational structure is based to a high degree on the model of the British Open University. During its first three years, the Hellenic Open University created expert distance-learning material, mostly printed, which is currently used by its 17.000 students. The programs of study are based on modules. A graduate program comprises

twelve modules, while a postgraduate one is composed of four modules. Each module lasts ten months. Students who choose two modules per year in a postgraduate program, as is usually the case, are able to complete their studies at the same time as those attending conventional universities. During the tenth-month long academic year, each module requires five four-hour tutorials, four assignments and final written examinations. The particular module titled 'Open and Distance Education' was one out of the four modules of the postgraduate program 'Studies in Education'.

RESEARCH PRACTICES

Until the end of the 1980's the dominant educational model used by teachers in tertiary education was the conventional lesson with students being between 18 - 23 years of age, most of them living in the institute's domicile. At the beginning of the new millennium the student population is undergoing a continuous change in social status and domicile, with a lot of them being married, employed and often living outside the educational institute's domicile.

The interaction necessary in every form and level of education constitutes a fundamental component of Open and Distance Education, irrespective of the model it follows. This axiom, however, brought certain important changes to the conventional educational systems. Many conventional tertiary education institutes adopted the principles underlying the practices and the data of distance learning as the next, in terms of time, system of educational process and application (O'Maley & McCraw, 1999). These principles, with different models and conditions, are promoted by a great part of teachers as the educational system of the future. However, the concern about the institutes of the future and the form they will take is somewhat premature since the educational establishment and the academic background of the educational systems have been settled for many decades (Lionarakis, 1999). Changes and differentiation follow a very slow pace not always keeping up with the social, economic and technological changes, in general. O'Malley and McCraw (1999) strongly maintain that specialists such as Blustain, Goldstein, Lozier (1999) and Ducker (1997) betoken the abolition of education in a predetermined time and place. Through their systematic approach, they conclude that distance learning (DL) and on-line learning (OL) constitute the educational methodological applications of the future.

In their research, carried out at the State University of West Georgia, they focus on the comparison of conventional education to (conventional) distance learning (DL) and on-line learning (OL). The sample of the students that participated in the research pointed out its preference as well as its belief in the effectiveness, admittedly with a slight difference, to the (conventional) distance learning (DL) than to on-line learning (OL) (O'Malley & McCraw, 1999).

According to M.L. Figueroa (1993), who carried out a similar comparative study at the Faculty of Literature of the National Independent University of Mexico, not significant differences are apparent in the perception and comprehension level of the learning material between the groups studying through distance and those studying through the conventional system. Furthermore, her research led her to the result that in this comparative study special difficulties were experienced in the use of quality research techniques during the examination of the students' learning processes. It should be pointed out that our research was not confined within the boundaries of the quality of the learning process, but moved on further and located matters of teacher-student relation, teaching efficiency of the teachers, as well as the administrative support they receive from the educational organization.

Similar facts of educational application which played a catalytic role in our research have also played such a role in similar research applications (Figueroa, 1993). Insofar as the

educational practices of teaching and learning as well as the teaching methodology applied by the teachers are concerned, the politics of both bodies define both distance learning and conventional institutes in their whole, with different emphasis and focus, however. Their mode of application for the Greek educational institutes, which participated in our research, is exactly the same as for the foreign institutes.

Whereas in the conventional institute emphasis is placed on the scientific competence of the teachers as well as on their role as full-time teaching staff, at least on a postgraduate level, in the distance learning institute the scientific competence is accompanied by and taken into account together with certain other functions of multi-dimensional significance. For instance, the cooperation and the common mind in the teaching experience is supported by frequent meetings of the teachers.

At the same time, the emphasis placed on the coordination of the activities of the teachers towards the students and the activation of their role as education advisors supply new quality data as well as special difficulties in accepting and understanding this new role by part of the teachers.

Furthermore, in the distance education organization, these meetings between teachers play a triple role:

- **To organize the teachers' activities during sessions more effectively for the benefit of the students,**
- **To discuss ways in which they will upgrade and improve their role as teachers**
- **To analyze in a uniform manner the criteria of assessment and evaluation of the students' assignments**

In the research carried out by Figueroa (1993) certain important mentions have been made which seem to be determined by the nature of each educational methodology. Many such mentions are also evident in the results of Nunn (1998). As she maintains in her results:

- **The distance education students relate personal learning to personal reliability, independence and autonomy, whereas same are considered separate units by conventional students.**
- **Conventional students place special emphasis on the importance of marks**
- **Distance students tend to study more over and above their institutional obligations as defined by their course of study.**
- **Distance students express a more personal and notionally orientated approach to learning, whereas the conventional ones adopt a more mechanical and technocratic view through subject demarcation.**

Figueroa's research in its whole showed that distance students exhibited greater interest in their personal learning while they placed special value to the teachers' role as well as to the educational system whose part they are, although they were critical towards it. On the contrary, conventional students were less involved in the learning process and had a more negative attitude towards the education as a whole. Furthermore, distance students perceived learning more as a personal experience than an academic obligation. Conventional students treated learning as a utilitarian process orientated in terms of practice, work and application.

Nunn (1998) through a comparative study on the motives of mature students of the British Open University on the one hand, and on those of students in conventional universities on the other, arrived at the result that the form and dynamics of the motives of the students who are determined to study, change as time lapses. Furthermore, she points out that this change is taught and determined through social processes. At the

same time, from her research it became evident that the motives for systematic learning are affected by the students' experiences and the degree to which they wish to satisfy their personal desires. According to Nunn (1998), students of an average age of 37 years, wish to study for their own interest and satisfaction. Younger students of average age 20 years have as their basic motive the obtaining of a degree and the job opportunities offered to them through such a degree.

RESEARCH METHODOLOGY

Sample. The sample for this study was taken from 60 students who studied the Open and Distance Education Course during the academic year 2001-2002. Of them, 30 studied through conventional education following the weekly sessions and one final written examination pattern, while the remaining 30 students followed distance education methodology which entailed following a study schedule, monthly sessions and systematic communication via telephone and e-mail, according to their needs as expressed by them. Also they wrote up four synthetic assignments and were assessed by means of final examination at the end of the year.

An important element of the difference between the two groups is that those students who studied the course through the conventional method had been selected through a process of strict examinations. The students of the second group had been selected randomly through a process adopted and applied by the Hellenic Open University within the scope of free access to studying. The only criterion for these students was that they are holders of a tertiary education institute (University or Technical College) degree.

Another element, differentiating the relation among students and emanating from the peculiarities mentioned above, is the age difference as well as the motives for studying. The students of the conventional education group are among 23 and 25 years of age, while those of the distance education group are above 30 years of age. These two factors affect a series of learning functions of the students (Nunn, 1998).

Questionnaire. The students completed a questionnaire aiming at measuring the perception of the quality of learning experience in the respective educational systems. Overview of bibliographical references on this subject pointed out a considerable shortage of scales measuring this variable fully. In designing the questionnaire the following scales were taken into account: the Johnson, Aragon, Shanik, Palma-Rivas (2000) Course Interaction, Structure and Support (CISS) and the Harisson, Seeman, Behm, Saba, Molise & Williams (1991) Dimensions of Distance Education (DDE), as well as the Jegede, Fraser & Curtin (1995) scales. However, in the questionnaire, as it was finally formulated, the suggestions of the researchers and academics in both the conventional and distance education were included. After a series of improvements, the final questionnaire comprised of 51 suggestions on the quality of the learning experience grouped in 7 greater areas: (1) interaction of the learning material, (2) structure of the course, (3) assignments (4) support by the trainers/advisors, (5) administrative support (6) quality of the Tutor Counselor and (7) attitude towards technology. The five-point Likert scale ranging from 1 "I fully disagree" to 5 "I fully agree" was used for the collection of measurements.

Procedure. Conventional education students completed the questionnaire the last week of the term during their final session with the teacher while distance education students followed the 10month term of the Hellenic Open University and completed it in the middle of their term. Completion of the questionnaire in both cases was done anonymously in the absence of the teacher.

ANALYSIS AND RESULTS

In analyzing the results, average values and typical deviations were taken into account for each and every one criterion of the six quality factors per education system (conventional and open). The average value represents the most typical arithmetic approach for a group of data, while the typical deviation constitutes the variation index for the variable around the average value (Howitt & Cramer, 1999). Control of statistically important differences in the average values of the two education systems was done through independent sample t-test. This test examines the extent to which two independent groups for the measurement of a variable differ insofar as dispersion of values around the average value is concerned (Howitt & Cramer, 1999). These results are exhibited in Tables 1 to 6. Table 8 shows the average values, the typical deviations as well as the t-test results insofar as the attitudes of the students towards modern technology in education are concerned.

For each one of the five quality variables for the learning experience the total of average values and typical deviations were also taken into account and the statistically important differences between the two systems of education were examined. Internal consistency of the five scales was measured by the Cronbach Alpha index and it was found between .745 and .879, values considered absolutely acceptable by international literature. These results are exhibited in Table 7.

The average values of the quality index for the interaction of the learning material varied between 3,35 and 4,29 and applied only to distance education students. These data are most encouraging for the methodology followed by the Hellenic Open University in designing and producing printed learning material. Little encouragement for the use of modern technology is evident with the exception of their use in electronic communication. On the other hand, the elements composing material that guides and interacts with activities of different forms (applications, critical thought, feedback), upgrade the efficiency and functionalism of distance learning material.

Table1. Average values and typical deviations of the interaction quality of the learning material.

<i>Interaction of the learning material</i>	CONVENTIONAL		DISTANCE EDUCATION	
In-depth analysis of subjects	-	-	3,74	,681
Suitable articles	-	-	3,62	,797
Sufficient and flexible learning activities	-	-	3,83	1,09
Evaluation activities with feedback provided	-	-	4,00	,742
Critical thinking activities	-	-	4,10	,661
Application activities	-	-	4,03	,889
Encouraging the use of technology	-	-	3,35	1,17
Instructive to gaining of knowledge	-	-	4,29	,692

The quality of the structure of the course index showed some important differences between the two learning systems. The average values for conventional and distance education ranged from 2,36 to 4,23 and from 3,61 to 4,29, respectively (See Table 2).

Statistically important differences were found for only two of the nine variables: as to how realistic the goals set were, and as to the skills development. The respective values were more positive in the distance education. The ratios refer to the methodology for the development of learning material as to how realistic the goals that were set are, while skills development is connected to a series of activities leading the student to systematic studying and writing up of assignments. Assignments not only reflect on the systematic studying, which is a prerequisite for their preparation by the student, but on the method followed for the preparation of an academic assignment as well.

Table 2. Average values, typical deviations and t-test results for the quality of the structure of the course

Course structure	CONVENTIONAL		DISTANCE EDUCATION		F	Sig.
Clear learning goals	3,60	1,16	4,16	,93	2,29	,135
Realistic learning goals	3,50	1,17	4,29	,93	4,61	,036*
Comprehensive analysis of cognitive fields	3,66	,97	3,80	,83	,878	,354
Includes recent literature	4,23	,83	3,83	,91	,003	,954
Adequately connected to relating fields	3,85	,53	3,74	,72	2,99	,091
Interesting subordinate subjects	3,58	,97	3,70	,78	1,72	,195
Helps skills development	3,41	1,17	4,19	,74	6,51	,014*
Caters for a holistic development of the field	3,38	,86	3,61	,80	,082	,776
Content - goal relation	2,36	1,13	4,03	,94	2,83	,093

Significance levels * $p < .05$, ** $p < .01$, *** $p < .001$.

Measuring of the quality of assignments was limited to distance education and moved to high levels from 4,03 to 4,67 (see Table 3). In the conventional educational system assignments were not compulsory but were necessary only at the end as an examination measure for marking the student's achievement. In the Hellenic Open University model, the students follow a strict schedule for the writing up of usually four assignments followed every time by the teacher's detailed remarks. In this case, very high levels of selection of complex topics were provided mainly where the detailed remarks of the teacher (with a view to improving the method of compilation of the assignment and developing the cognitive subject) were concerned.

Table 3. Average values and typical deviations of the quality of assignments.

Assignments	CONVENTIONAL		DISTANCE EDUCATION	
Topic selection	-	-	4,67	,54
Remarks on the cognitive subject	-	-	4,16	1,00

Remarks on methodology	-	-	4,51	,85
Marking	-	-	4,03	1,13

The measurements relating to the support offered by Tutor in both educational systems brought out some differences in respect of feedback supply, reinforcement of group work and the detection of difficulties during the learning process. In all three indexes measured, the distance education students displayed a comparatively greater satisfaction from the support offered by their Tutors. Both educational systems, however, do not seem to differ in terms of the quality offered in all the rest of the sub-measurements relating to the support of the Tutor (see Table 4).

Table 4. Average values, typical deviations and t-test results on the quality of support given by the teacher

<i>Support of the teacher</i>	CONVENTIONAL		DISTANCE EDUCATION		F	Sig.
He encouraged my participation	4,13	,74	4,54	1,02	,439	,510
Eager to help	4,75	,44	4,83	,37	2,82	,098
He guided me to the comprehension of the learning material	3,81	1,24	4,25	1,09	2,48	,121
He was available to instruct	4,40	,93	4,32	1,24	1,25	,267
He watched my progress	3,29	1,33	3,96	1,27	,322	,573
He offered feedback with a view to improvement	3,42	1,02	4,32	,65	5,29	,026*
He reinforced the group dynamics	3,70	,99	4,41	,56	6,73	,012*
He realized the difficulties and helped me out	3,04	1,20	4,09	,70	5,66	,021*

Significance levels * $p < .05$, ** $p < .01$, *** $p < .001$.

Assessments relating to the variable of administrative support were in total low for both systems. For conventional education the respective average values ranged between 1,66 and 2,70, while for distance education they ranged from 2,62 to 4,58. However, statistically significant differences between the two systems were found in three of the seven sub-indicators: rendering of information, educational premises, and equipment of the educational premises. In all these three indicators the distance education system outmatched the conventional system of education (see Table 5).

Table 5. Average values, typical deviations and t-test results on administrative support.

<i>Administrative Support</i>	CONVENTIONAL		DISTANCE EDUCATION		F	Sig.
Prompt rendering of						

information	2,20,	1,47	4,03	,87	16,13	,000***
Prompt delivery of learning material	-	-	4,58	,56		
Access to library	2,76	1,54	2,75	1,55	,000	,994
Adequacy of library material	2,00	1,04	2,96	1,20	,217	,644
Library organization	2,36	1,21	2,62	1,33	,438	,512
Suitable educational premises	1,80	,938	4,51	,676	4,52	,038*
Technological equipment of the premises	1,66	,812	3,61	1,17	3,74	,058*
Information on the library	2,70	1,51	4,16	1,24	2,64	,110

Significance levels * $p < .05$, ** $p < .01$, *** $p < .001$.

Similar results were obtained relating to the quality of the teacher-advisor indicator. For five of the seven sub-indicators statistically significant differences were found in the average values with values relating to the distance education being higher than the respective values relating to the conventional education (see Table 6).

Table 6. Average values, typical deviations and t-test results on the quality of the teacher/advisor

<i>Teacher/Advisor</i>	CONVENTIONAL		DISTANCE EDUCATION		F .	Sig
Scientific background	4,20	1,19	4,67	,54	8,85	,004**
Consistency	4,46	,792	4,87	1,24	22,61	,000***
System	3,46	1,42	4,77	,617	51,73	,000***
Emphasis on analytical thinking	4,39	,685	4,64	,660	,794	,377
Teaching capability	3,86	1,14	4,45	,675	3,90	,054
Instructional thoroughness of the learning material	3,50	1,28	4,45	,722	11,04	,002**
Ability to communicate knowledge	3,89	1,28	4,61	,919	7,10	,010*

Significance levels * $p < .05$, ** $p < .01$, *** $p < .001$.

Aggregate results. Table 7 shows the aggregate average values for the six indicators relating to the quality of learning experience together with the typical deviations as well as the t-test results. On the basis of these findings, the two systems seem to differ on their whole in only two of the six indicators: structure of the course and quality of the teacher/advisor with the distance education slightly outmatching the conventional one (see Table 7). The administrative support is the indicator concentrating the lowest average value of 2,25 in conventional education while the respective low indicator in distance education is the interaction of the learning material (3,38). It must be pointed out, however, that insofar as the interaction relation is concerned, there are no data available on conventional education since there is no given literature and it has not been designed on the interaction material perspective. The same applies for the assignments

since they are only a component of distance education only and not of the conventional one. The other two elements of interest are the structure of the course and the quality of the teacher. The predetermined structure in distance education leads to a better-structured learning material as compared to the lack of a set manual in conventional education. What is more, the role of the teacher in distance education is determined by a series of factors with the main one being his or her readiness to promptly support in many ways his or her students' work. His or her role is determined in advance since he or she is called upon to function more as an advisor than as a teacher.

Table 7. Aggregate average values, typical deviations and t-test results for all six variables of the quality of learning experience .

<i>Variables</i>	CONVENTIONAL		DISTANCE EDUCATION		F	Sig.	Alpha
Interaction of learning material	-	-	3,38	,514	-	-	.752
Course structure	3,53	,789	3,93	,493	6,14	,016*	.745
Assignments	-	-	4,12	,848			.825
Support provided by the teachers/advisors	3,19	,592	4,34	,567	,000	,989	.831
Administrative support	2,25	,808	3,70	,670	,473	,494	.839
Tutor Counselor quality	3,97	,821	4,60	,450	8,70	,005**	.879

Significance levels * $p < .05$, ** $p < .01$, *** $p < .001$.

Attitudes towards using a computer. Finally the students' attitude towards the role and the use of technology in the learning process showed high variation but no statistically significant differences were produced between the two samples. It must be noted that students of both educational systems do not have a positive attitude towards studying exclusively via the Internet or by means of electronic learning material (average values ranged from 1,90 to 2,32). On the contrary, they generally regard as positive the contribution of the computer in the learning process (see Table 8).

Table 8. Average values, typical deviations and t-test results on the students' attitude towards the use of technology.

	CONVENTIONAL		DISTANCE EDUCATION		F	Sig.
Learning through the Internet	4,36	,889	4,32	,791	,269	,606
Using the Internet more	3,44	,909	3,30	1,34	3,911	,053
Learning through the Internet alone	2,22	1,30	1,90	1,19	,270	,605
Electronic learning material only	2,23	1,43	2,32	1,37	,009	,926
Supplementary learning material in video tapes	3,71	1,08	3,96	1,04	,090	,766

Technology	4,25	,714	4,45	,722	,000	,983
Total contribution of the computer	4,61	,760	4,29	1,13	2,37	,129

Significance levels * $p < .05$, ** $p < .01$, *** $p < .001$.

Significance levels * $p < .05$, ** $p < .01$, *** $p < .001$.

CONCLUSION

From the results drawn through this research two important but different sets of conclusion are evident, the one being that, which points out similarities and differences in the measurement of the quality of the learning experience and the other one being that which provides ground for further study and analysis. We will concentrate shortly on the first one, especially on the aggregate values and attitudes of the students.

The characteristic element of the learning material as well as that of the assignments is its use in Distance Education as a fundamental learning tool in the learning process. This learning tool, unless it is provided with the necessary qualitative characteristics, can create very serious problems in the functional structure of the educational system. It is therefore, necessary to be continuously evaluated on the basis of the quality they give to the students' learning experience as a whole. This, however, is not the case in the conventional education, where the selection of the learning material and the assignments to be submitted lie on the teacher's discretion. The respective result with an average value of 3,38 for the learning material of the Distance Education reveals a relative satisfaction about its quality, which, however, has great space for improvement. At the same time, the average value of 4,12 for the preparation of assignments intensifies their importance in the learning experience. Similar practices do not exist in the conventional education except for the studying of literature and academic notes. The average values insofar as the course structure is concerned, correlate in both systems with values of 3,53 and 3,93, respectively.

The positive and supportive role of the tutor is recognized in both systems with no statistical differentiation. Insofar as Distance Education is concerned, the respective results thereof are illustrated by the average value of 4,34, while the same is equally stressed in conventional education with an average value of 3,19. The same applies to the administrative support given by the institutions as well as to the quality of the tutor, with more emphasis being placed in the Distance Education, however, where the respective average value was 4,60 as opposed to the Conventional Education where the average value was 3,97. No significant differences became evident insofar as the students' attitude towards using modern technology and the Internet in the learning process is concerned. In both educational systems students do not seem to prefer the exclusive replacement of the usual educational practices with electronic ones (2,23 and 2,32) or learning via the Internet (2,22 and 1,90) (see Table 8). In general, the use of alternative educational forms may play an important role in modern educational schemes, it should, however, be given careful attention. The students, in their whole, have a positive attitude towards the contribution of the computer and modern technology as well as to learning via the Internet.

The initial question of the difference in the quality of the learning experience in both systems can be answered safely in a straightforward way. Differences and similarities are evident throughout the whole spectrum of the educational practice. Furthermore, their convergence does not exclude their divergence or the opposite. The simultaneous

dynamics evident through the results of this research constitute the unique point of reference for examination and improvement of the quality in learning in both systems: that of Conventional Education as well as that of Distance Education.

FUTURE STUDIES

Future studies should attempt to answer plenty of issues relating to new methodology and relative teaching and learning techniques. They should focus on the stance and attitude of the students', on the administration and management of flexible educational bodies, on the systems of learning material distribution, and most certainly, on the qualitative production of learning material adopted to suit the needs arising every time through set quality standards and conditions. At the same time, the variety of teaching and advising forms, the effective learning and its connection to a series of practical applications make up a rich research field for analysis and interpretation.

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