Curriculum development: Re-designing an ESAP course for students of the Department of Agricultural Sciences, Biotechnology and Food Science at the Cyprus University of Technology through more comprehensive needs analysis processes.

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Abstract

Curriculum renewal and change is always necessary after the completion of an educational programme. The review of all the components comprising a curriculum and the effort to make them more efficient undoubtedly leads to more effective learning. After the completion of a six month ESAP (English for Specific Academic Purposes) course for first year students of the Department of Agricultural Sciences, Biotechnology and Food Science of the Cyprus University of Technology, the need for curriculum renewal was sensed. A fundamental role in curriculum development is that of needs analysis especially in the development of ESP / ESAP courses. Thus, it was determined that for better results, and based on a semester course implementation and results, a comprehensive needs analysis procedure should be followed for its improvement for the following year. In the context of this more inclusive analysis, the researchers decided to investigate the views of the students of the course, professors of the Department of Agricultural Sciences, Biotechnology and Food Science of the University, as well as professionals in the three fields (Agriculture, Biotechnology and Food Science). In this way more effective setting of aims and objectives, selection and grading of content, materials development and teaching practices would be achieved.

Keywords

English for Specific Academic Purposes, Second Language Curriculum Development / Review / Improvement, students, instructors, professors, professionals.

Introduction

Recent world events have emphasised the need to increase understanding and to improve communication among all people worldwide. An international exchange of ideas, information and knowledge is essential in all areas, for example in areas dealing with environmental, political, academic and economic issues. To meet these needs, more and more individuals are required to have highly specific language communication skills in order to succeed in academic and professionals settings. Language for Specific Purposes (LSP) courses serve the needs of these types of students in a more successful way.

Currently, there is a great interest in LSP and, in the case of English, English for Specific Purposes (ESP). This is evident from the increase of LSP and ESP publications, conference presentations, websites, e-mail lists, consulting requests, seminars, workshops and invited lectures on the topic, and model programme study tours. As a result of recent world changes, this has also been prompted by local and international policies and priorities as well as specific needs of university courses.

ESP has followed and is part of the development of the history of language teaching and learning (Dudley-Evans, 1998; Johns, 1991 pp. 67-77; Mo, 2005; Richards, 2001 pp. 23-43). It

draws from the theory and practice of second language (L2) teaching and learning, and more particularly from the broad area of teaching English as a Foreign / Second language (EFL / ESL) (Harmer, 2001), and the particular areas of ESP, which include areas such as syllabus and course design (Dubin & Olshtain,1987), curriculum development (Gatehouse, 2001), testing (Alderson, Clapham & Wall, 1995; Bachman, 1990; Hughes, 2002; McNamara & Widdowson, 2000; Weir, 1991), and the use of New Technologies in Language teaching and learning (Butler-Pascoe & Wiburg, 2003).

There is a great need to review Language for General Purposes (LGP) Programmes and explore the possibilities LSP programmes can offer for more effective instructional content. In the case of English, many instructors and researchers started reviewing English for General Purposes (EGP) or English for Academic Purpose (EAP) programmes and exploring ESP curricula. EGP is mainly offered in junior and senior high schools. Students are introduced to the sounds and symbols of English, as well as to the lexical, grammatical and rhetorical elements that compose spoken and written discourse. EGP also covers general situations of language communication: appropriate dialogue with restaurant employees, bank tellers, telephone operators, tourist agents and guides, English teachers, and friends as well as lessons on how to read and write the English usually found in textbooks and other teaching and learning materials, newspaper and magazine articles, advertisements, shopping catalogues, application forms, personal letters, e-mail, and websites. Appropriate cultural elements are also usually dealt with; elements such as appropriate gestures, cultural conventions, and cultural differences are also normally included in an EGP curriculum.

EGP offered in English-speaking countries is normally called ESL, and EGP conducted in non-English-speaking countries is usually called EFL. ESP builds on EGP and is known as a learner-centered approach (Nunan, 1991) to teaching English as a foreign or second language. It meets the needs of mainly adult learners who need to learn a foreign language for use in their specific academic or professional fields, such as science, technology, medicine, leisure, and academic learning. ESP courses are different from LGP courses in the following ways: (a) ESP concentrates more on language in context than on teaching grammar and language structures. The words and sentences learned, the subject matter discussed, all relate to a particular field or discipline, for example, a lawyer writes a brief, or a diplomat prepares a policy paper. Such courses include vocabulary, discussions, case studies, role-plays in ESP situations, video work and authentic material and tasks related to the field such as negotiation skills and effective techniques for oral presentations. There are also opportunities for visits of particular ESP interest. (b) ESP programmes use printed and audio-visual materials that are specially designed to meet the needs of a specific group of learners. Moreover, for more effective delivery of English instruction, the use of New Technologies in Language Learning (NTLL) is rapidly becoming a popular component explored as part of that effort to service language teaching and learning in the best possible way. (c) The aims of an ESP course are determined from a needs analysis and the language skills chosen to be covered derive from that. For, example, an ESP course in politics may concentrate on public speech rather than on writing reports. The main aims of ESP are to enable learners to communicate successfully in specific occupational settings; consequently, it is based on content rather than on general language acquisition. For this reason, it is usually offered to homogenous learner groups and materials developed specifically for this purpose are utilised to develop communicative competence in a specific field, such as business, technology, nursing Agricultural Sciences, Biotechnology or Food Science (Johns & Price-Machada, 2001).

An integral part of Curriculum development is curriculum evaluation (Alderson & Beretta, 2001; Hewings & Dudley-Evans, 1996). One of the reasons a curriculum evaluation is carried out is to establish the effectiveness of the course (Nunan, 1990). Another is to find out the perceptions of participants about the course. Another is to inquire stakeholders about the curriculum in an effort to improve it.

Aim

This evaluation seeks the perceptions of students, field professors and professionals in the areas of Agricultural Sciences, Biotechnology and Food Science. The aims are: to establish their thoughts and feelings about the course; to find the current use of the English language in those areas; to take all that into consideration in order to improve the ESAP curriculum for the Department of Agricultural Sciences, Biotechnology and Food Science (DASBFS), in order to meet its English language needs in the best possible way.

Data Collection

The data for this study was collected six months following the completion of the ESAP course taken during the spring semester of 2007-2008 academic year. The course was particularly designed to meet the needs of university students studying in the field of Agricultural Sciences, Biotechnology and Food Sciences. The course intended to familiarise the students with relevant reading material. This was used to acquaint the students with genre and writing styles relevant to the particular fields of study. Furthermore, learners were expected to develop their listening skills and their speaking fluency by taking an active part in discussions, giving oral presentations, etc. During the course, students were expected to develop sufficient range of language, phonological control and sociolinguistic awareness to be able to express themselves with a degree of clarity, fluency and spontaneity.

Student course evaluation questionnaire

Students taking this class made an assessment of the course, responding to a questionnaire of mainly five-item, but also some open ended and a few ranking questions. The student questionnaire utilised in this study aimed to assess these themes: (1) English language, Academic and ICT skills before and after the course (Section A, questions 1 to 4, (2) Curriculum Design and Content (Section B, questions 1 to 3), (3) Materials and Tools (Section C, questions 1 to 4), (4) Teaching and the Instructor (Section D, questions 1 to 3), (5) Assessment Procedures (Section E, questions 1 to 3), and (6) Overall Evaluation of the Course (Section F, questions 1 to 7).

Teaching Faculty interviews

Data was also collected through interviews of the faculty of the Department of Agricultural Sciences, Biotechnology and Food Science who taught the students their main field of studies. They assessed the contribution of the ESAP course to the students' education. The faculty interviews used in this study aimed to assess these themes: (1) some background information about the course they teach, (2) English linguistic demands of their course, (3) What suggestions the professors could give that would solve/ remediate problems their students face in English, (4) what they thought of the ESAP syllabus and materials used, (5) what skills they suggest students should focus on (language, academic, ICT), (6) what modifications they suggest to be made in material/ content/ teaching methods of the ESAP course and (7) any other comments they wished to make concerning the ESAP programme offered to support Agricultural Sciences, Biotechnology and Food Science.

Professionals' questionnaires
Finally, professionals in the fields of Agricultural Sciences, Biotechnology and Food Science assessed the need of English in their profession, responding to a questionnaire of mainly five-item, but also some open ended and a few ranking questions. The professionals' questionnaire utilised in this study aimed to assess the following themes: (1) Types of Spoken and written speech and topics used in their professional settings (Section A, questions 1 to 4), (2) Skills (Section B, questions 1 and 2), (3) Difficulties in the English Language (Section C, question 1), and (4) Suggestions (Section D, questions 1 to 4).

Participants
The participants in this study were:
a) **Students**: 17 out of 17 students (13 females and 4 males ranging between 18-20 years of age, 15 from Cyprus and 2 from Greece) responded to the student course evaluation questionnaire; they were first year Greek speaking students, 15 from Cyprus and 2 from Greece studying at the Department of Agricultural Sciences, Biotechnology and Food Science of the Cyprus University of Technology. Therefore, they share common cultural characteristics. Most of them plan to be professionals in their field following their graduation.
b) **Teaching Faculty**: 5 out of 6 faculty members (4 male and one female) of the DASBFS who taught this specific group participated in interviews about the ESAP course offered to these students. These professors taught Genetics (1), Chemistry (1), Principles of Animal Production (1), Principles of Crop Production (1), and one professor taught Morphology and Plant Anatomy as well as parts of the courses Plant Systematics, Plant Physiology and Principles of Crop Production.
(c) **Professionals:** 6 out of 6 professionals (5 male and one female, all from Cyprus) working in the field of Agricultural Sciences, Biotechnology and Food Sciences completed a questionnaire about the use of English in their profession. These included: director of the Institute of Agricultural Research, production manager of a private company, Food technician, public servant at the ministry of Agriculture, Natural Resources and Environment, production manager in a soft drink company, and chemist.

Data Analysis
A. Student course evaluation questionnaire

The responses of the participants were analysed through the Microsoft Excel package. Results and their interpretations are presented in chart form, referring to each item included in the questionnaire.

Theme 1: English language, Academic and ICT skills before and after the course
The main objectives of the ESAP course were to develop students' English language, academic and ICT related skills.

In Table 1 below, the participants expressed views regarding their perceptions of their English language skills before and after the ESAP course.

Table 1: Language Skills before and after the ESAP course

Speaking		Excellent	Very Good	Good	Average	Below Average	No response
	Before		17.64%	29.41%	47.05%	5.88%	
	After	6.25%	25%	68.75%			
Listening							
	Before		23.52%	23.52%	47.05%	5.88%	
	After	12.50%	25%	56.25%	6.25%		
Writing							
	Before		11.76%	64.7%	17.64%	5.88%	
	After		68.75%	25%	6.25%		
Reading							
	Before	5.88%	17.64%	52.94%	17.64%	5.88%	
	After	11.76%	47.05%	35.29%			5.88%
Pronunciation							
	Before		11.76%	29.41%	47.05%	11.76%	
	After		25%	68.75%	6.25%		
Vocabulary							
	Before	5.88%	11.76%	29.41%	47.05%	5.88%	
	After	6.25%	62.50%	31.25%			
Grammar							
	Before		23.52%%	41.17%	23.52%	5.88%	5.88%
	After	5.88%	47.05%	41.17%			5.88%

Based on students' perceptions of their language skills before and after the ESAP course, the following conclusions can be drawn: In general, students felt they have improved in all skills. Here are three main patterns emerging:

a) There was a percentage of students in all areas, who believed their English language skills were below average or average, whereas after the course no students believed their English language skills were below average and only 6.25% felt they were still average in listening, writing, and pronunciation.

b) On the whole, data revealed that students' English language skills improved in all areas with the percentages increasing and concentrating more on the descriptions good and very good.

c) In most areas students did not believe their English was excellent before the course with the exception of reading and vocabulary (5.88%), whereas after the course the course there was a percentage of students in almost all areas who felt their skills became excellent (Speaking 6.25%, Listening 12.50%, Reading 11.76%, Vocabulary 6.25% and Grammar 5.88%)

In Table 2 below, the participants expressed views regarding their perceptions of their academic skills before and after the ESAP course.

Table 2: Academic Skills before and after the ESAP course

Referencing		Excellent	Very Good	Good	Average	Below Average	No response
	Before			17.64%	52.94%	29.41%	
	After	25%	31.25%	37.50%	6.25%		
Note-Taking							
	Before		17.64%	58.82%	17.64%	5.88%	
	After	6.25%	56.25%	31.25%	6.25%		
Presenting in front of the class							
	Before		5.88%	41.17%	41.17%	5.88%	
	After	5.88%%	41.17%	47.05%			5.88%
Listening to lectures							
	Before	5.88%	29.41%	52.94%	5.88%	5.88%	
	After	25%	56.25%	12.50%	6.25%		
Writing reports							
	Before		5.88%	47.05%	23.52%	11.76%	
	After	11.76%	47.05%	35.29%			5.88%
Reading academic texts							
	Before		21.42%	64.28%	7.14%	7.14%	
	After	5.88%	35.29%	47.05%	5.88%		5.88%
Using dictionary							
	Before		52.94%	23.52%	5.88%	5.88%	17.64%
	After	29.41%	47.05%	11.76%	5.88%		5.88%
Keeping word journal							
	Before	5.88%	23.52%	41.17%	11.76%	17.64%	
	After	37.50%	43.75%	18.75%			

In general, students identified the fact that their academic skills have improved parallel to their English for specific purposes skills.

a) Before the course, there was a percentage of students who believed their academic skills were below average in all areas or average in some, whereas after the course no students felt their skills were below average and only some students in some areas felt their skills were average.

b) On the whole, data revealed that students' academic skills improved in all areas. After the course, most students felt their academic skills were very good or good in all areas.

c) There was a percentage of students who felt their Academic skills improved and became excellent in contrast with the percentage before the course, when only 5.88% felt that only their Listening to lectures and Keeping a word journal skills were excellent.

The use of New Technologies was considered an integral part of the ESAP course. Participants were asked to express views regarding their perceptions of their ICT skills before and after the ESAP course. Table 3 below presents their responses:

Table 3: ICT Skills before and after the ESAP course

Internet Search		Excellent	Very Good	Good	Average	Below Average
	Before	11.76%	52.94%	29.41%		5.88%
	After	41.17%	52.94%	5.88%		
Email						
	Before	23.52%	35.29%	29.41%	5.88%	5.88%
	After	35.29%	52.94%	5.88%	5.88%	
YouTube						
	Before	29.41%	29.41%	23.52%	11.76%	5.88%
	After	41.17%	41.17%	11.76%	5.88%	
Online Dictionaries						
	Before	11.76%	29.41%	35.29%	17.64%	5.88%
	After	41.17%	47.05%	11.76%		
Word Processor						
	Before	17.64%	41.17%	29.41%	11.76%	
	After	29.41%	52.94%	17.64%		
PPT						
	Before	11.76%	47.05%	35.29%	5.88%	
	After	47.05%	29.41%	23.52%		

Students felt that during their ESAP course, they have also improved their skills in using New Technologies.

a) In this case again, there was a percentage of students who felt their ICT skills were average or below average before the course. However, after the course no students believed their ICT skills were below average and only 5.88% considered their Email and YouTube skills average.

b) Generally, the table illustrates that the percentages of students who regarded their ICT skills as very good increased after the course, with the exception of Power Point Presentation (PPT) skills which were regarded as excellent by the majority of students.

c) It is important to note that after the course much larger percentages of students considered their ICT skills excellent.

When the students were requested to suggest what other language, academic or ICT skills they would like to have practised, some of them responded that they would like to have had more speaking practice and reading scientific articles as well as more practice on creating Power Point Presentations.

Theme 2: Curriculum Design and Content

Curriculum plays a vital role in the learning process. Success depends on its good design and content and on the perceptions students have about it. The second theme of the students' evaluation questionnaire investigated the students' opinion of the Curriculum design and content.

Figure 1 below presents their views regarding the organisation of the course in three parts (Agricultural Sciences, Biotechnology and Food Science).

Course content organisation in 3 parts (Agriculture, Biotechnology and Food Science)

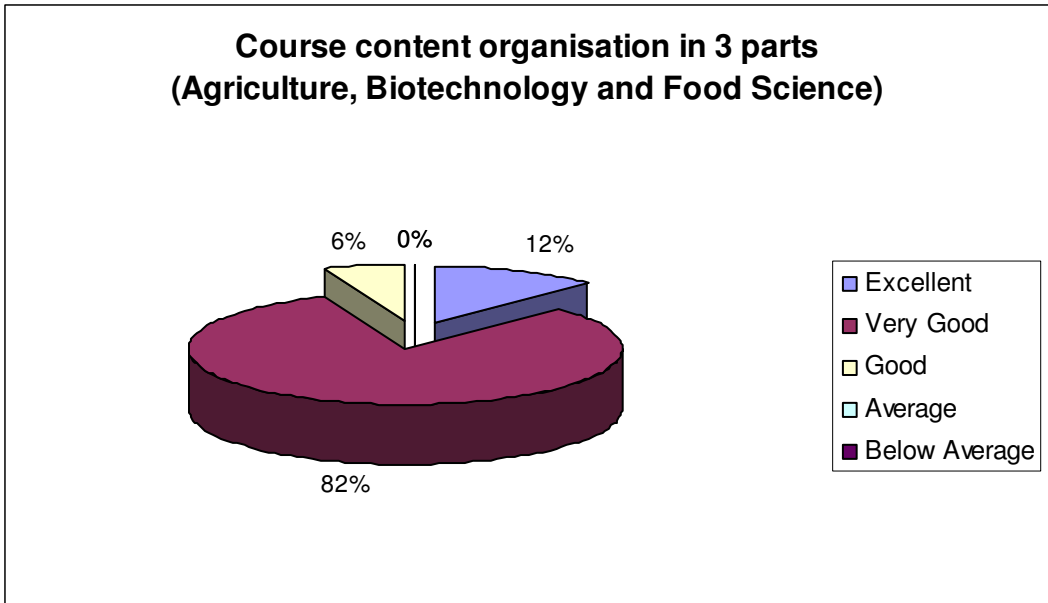- Excellent
- Very Good
- Good
- Average
- Below Average

Figure 1

Having a look at the figure above, we can see that almost 94% of the participants expressed very positive thoughts regarding the organisation of the course content in three parts.

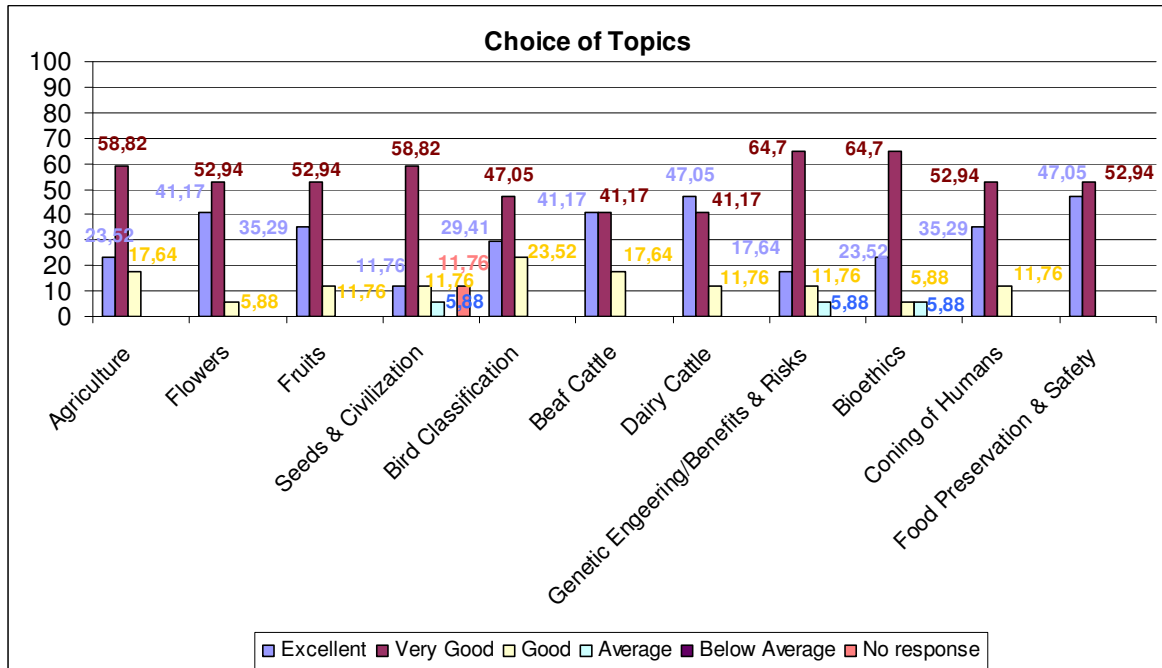Figure 2 presents their views regarding the choice of topics in the ESAP course.

Choice of Topics

Excellent ■ Very Good □ Good □ Average ■ Below Average ■ No response

Figure 2

Figure 2 reveals that most students approve the choice of topics of their ESAP course (agriculture, flowers, fruits, seeds and civilization, bird classification, beef cattle, dairy cattle, Genetic Engineering/Benefits & Risks, Biochemics, cloning of humans, food preservation and chemistry). The following topics were also suggested by students that they could be included in the course: Food engineering, food industry, microbes, plant and animal deceases, botany, food technology. Figure 3 clearly indicates students' approval of the topics covered.
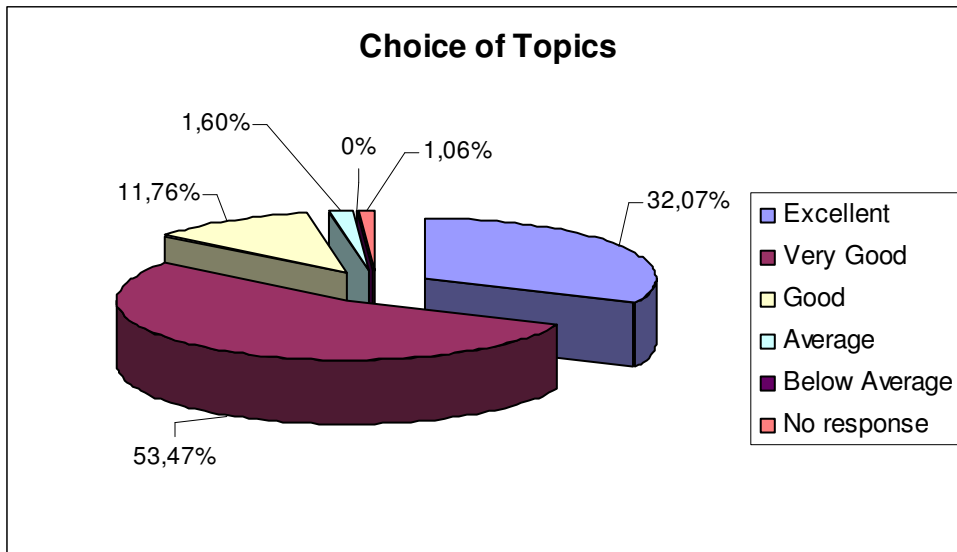
Figure 3

Theme 3: Materials and Tools

The students were also asked to express their views on the materials used in the course. Figure 4 presents their views on the matter.
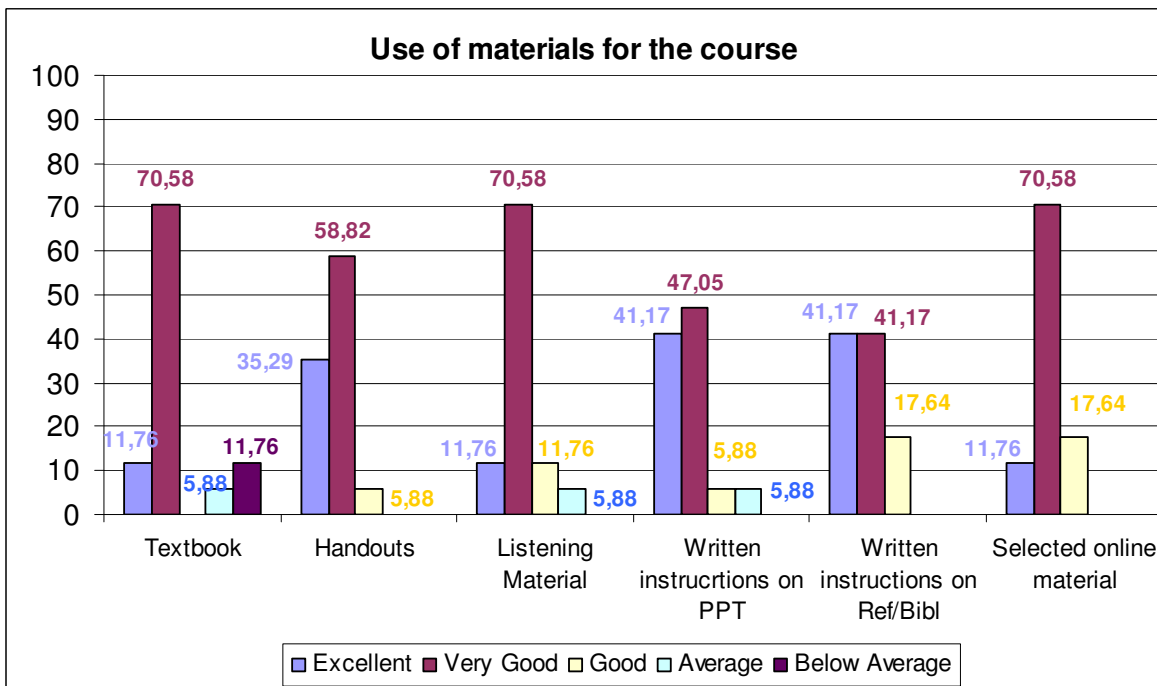
Figure 4

Figure 4 reveals that most students approve the choice of materials used during their ESAP course (textbook, handouts, listening material, written instructions on PPT, written instructions on referencing and bibliography, selected online material). Conversations in the class between students were also suggested. Figure 5 clearly indicates students' perceptions of the materials used.

Use of materials for the course

2,94%   1,96%
9,80%   25,48%

- Excellent
- Very Good
- Good
- Average
- Below Average

59,79%
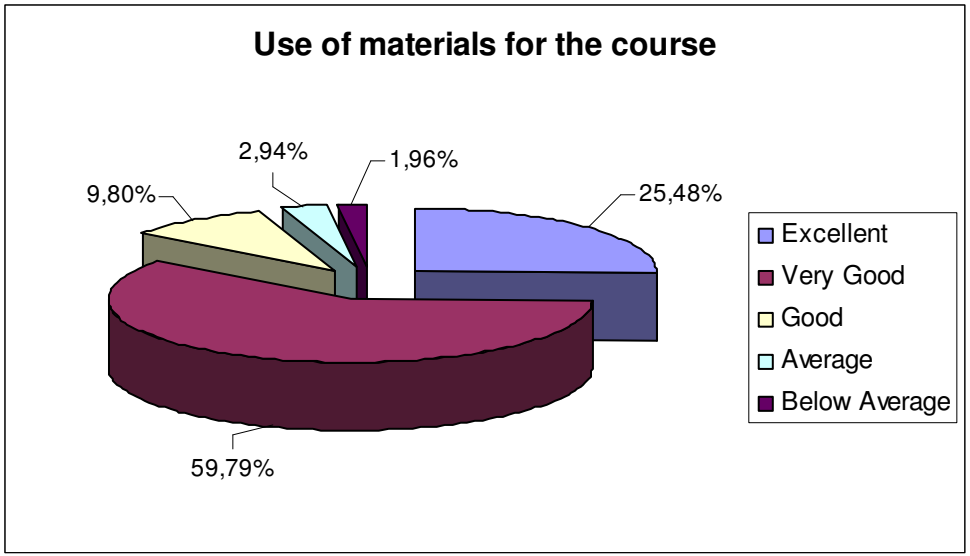
Figure 5

The use of New Technologies in language learning has often been one of the major issues in the study of L2. New Technologies are now widely used in all domains of life, including that of profession. For that reason, students need to be prepared to use them when necessary, when they use the English language. Therefore, we wanted to establish how students have perceived the inclusion of New Technologies in their ESAP course.

Tools and Software use

	Internet	PPT	Projector	Whiteboard	YouTube
Excellent	47,05	41,17	23,52	17,64	11,76
Very Good	41,17	41,17	64,7	52,94	64,7
Good	11,76	17,64	11,76	17,64	11,76
Average				11,76	11,76
Below Average					
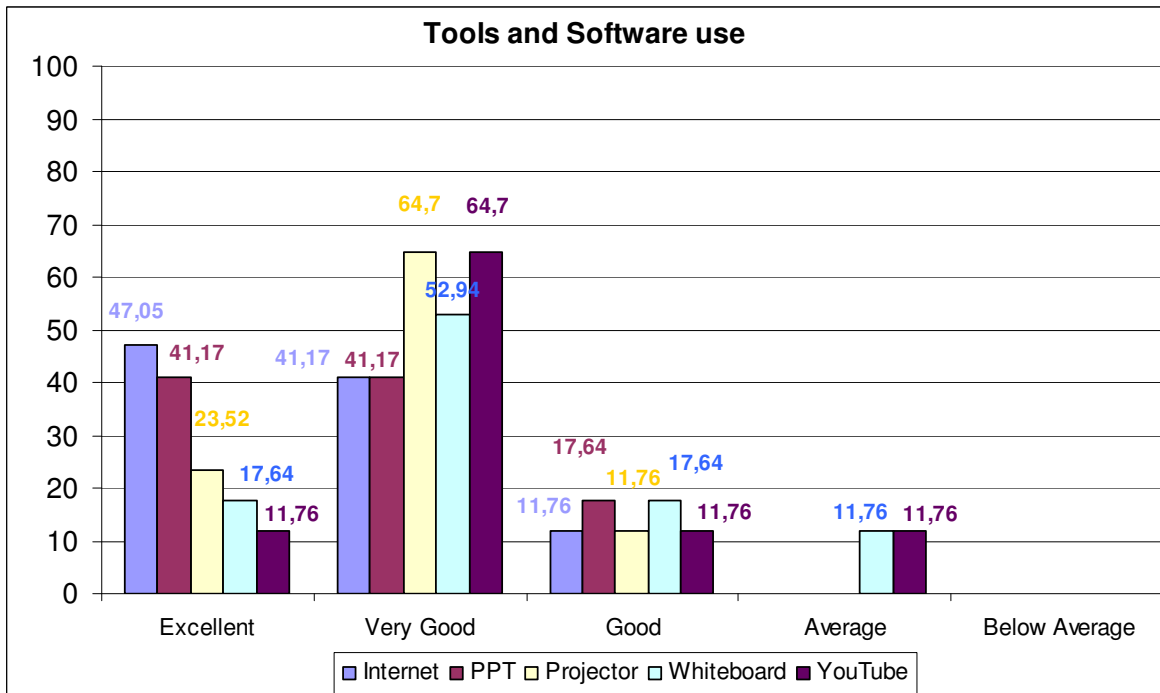
Figure 6

Figure 6 reflects their perceptions of the inclusion and use of New Technologies in their ESAP course. Most of them felt generally very positively about the use of the Internet, the presentation tool, the projector, the whiteboard and video in their course. Figure 7 clearly indicates students' perceptions of the tools and software used.

Tools and Software use

0%

4,70%

14,11%

28,22%

Excellent
Very Good
Good
Average
Below Average

52,93%
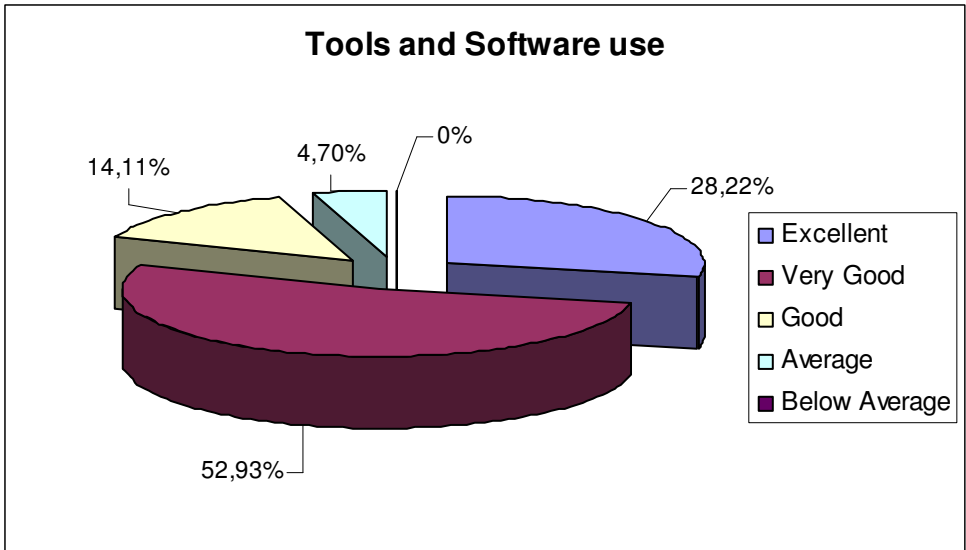
Figure 7

Theme 4: Teaching and the Instructor

Students were asked to rank the classroom processes appearing in Figure 8, (1-11) starting from the one they enjoyed the most.
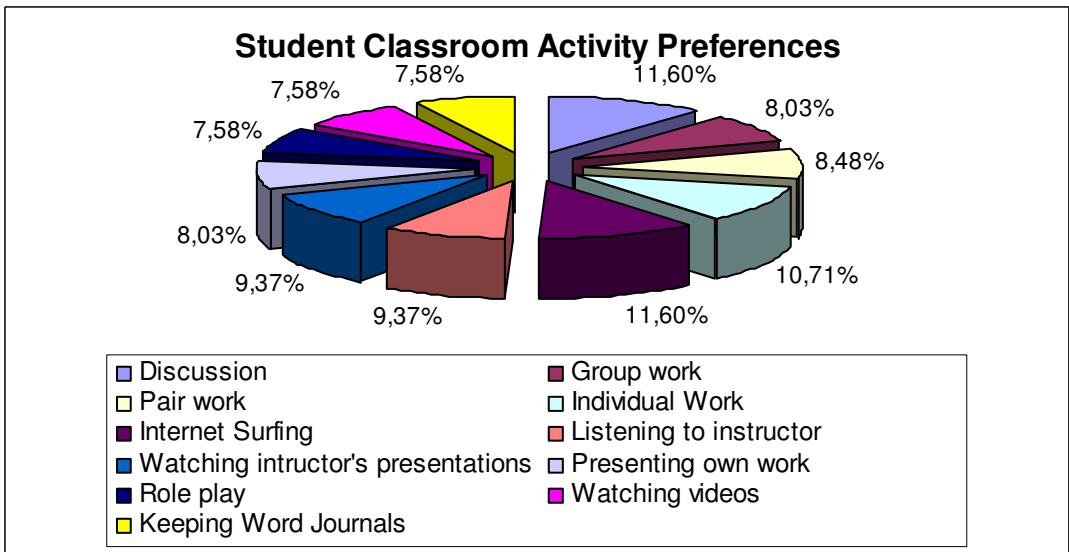
Student Classroom Activity Preferences

7,58%
7,58%
7,58%
11,60%
8,03%
8,48%
8,03%
9,37%
10,71%
9,37%
11,60%

Discussion — Group work
Pair work — Individual Work
Internet Surfing — Listening to instructor
Watching intructor's presentations — Presenting own work
Role play — Watching videos
Keeping Word Journals

Figure 8

11.6% of the students ranked Internet Surfing first along with discussion, 10.71% ranked individual work second, 9.37% ranked watching instructor's presentations and listening to the instructor third, 8.03% to 8.48% ranked group work, pair work and presenting own work fourth, and 7.58% of the students ranked role play, watching videos, and keeping a word journal fifth.

Students were then required to give their opinion about the teaching of this course.
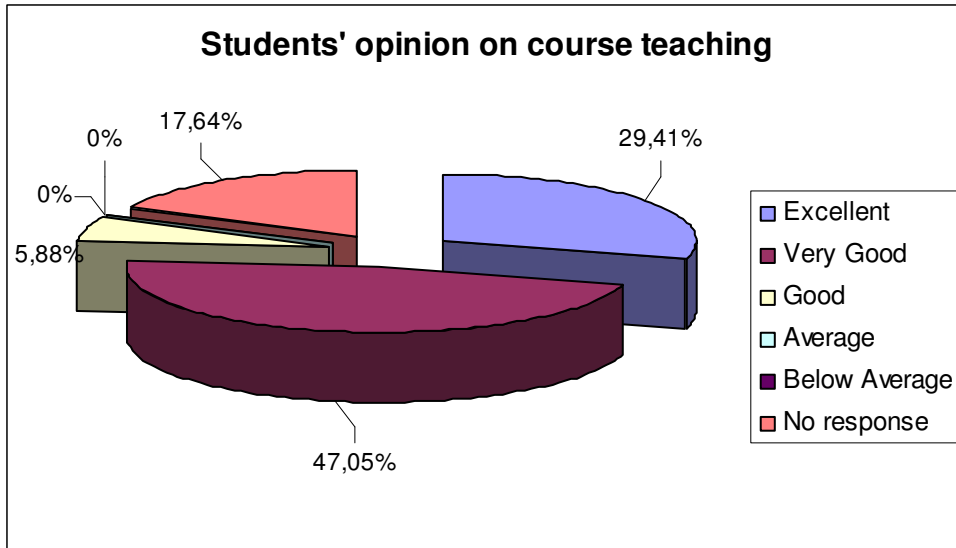
Figure 9

It is interesting to note that the vast majority of students found the teaching of the course from excellent to good. Some students suggested that more use of video, internet and discussion would make teaching better.

Theme 5: Assessment Procedures
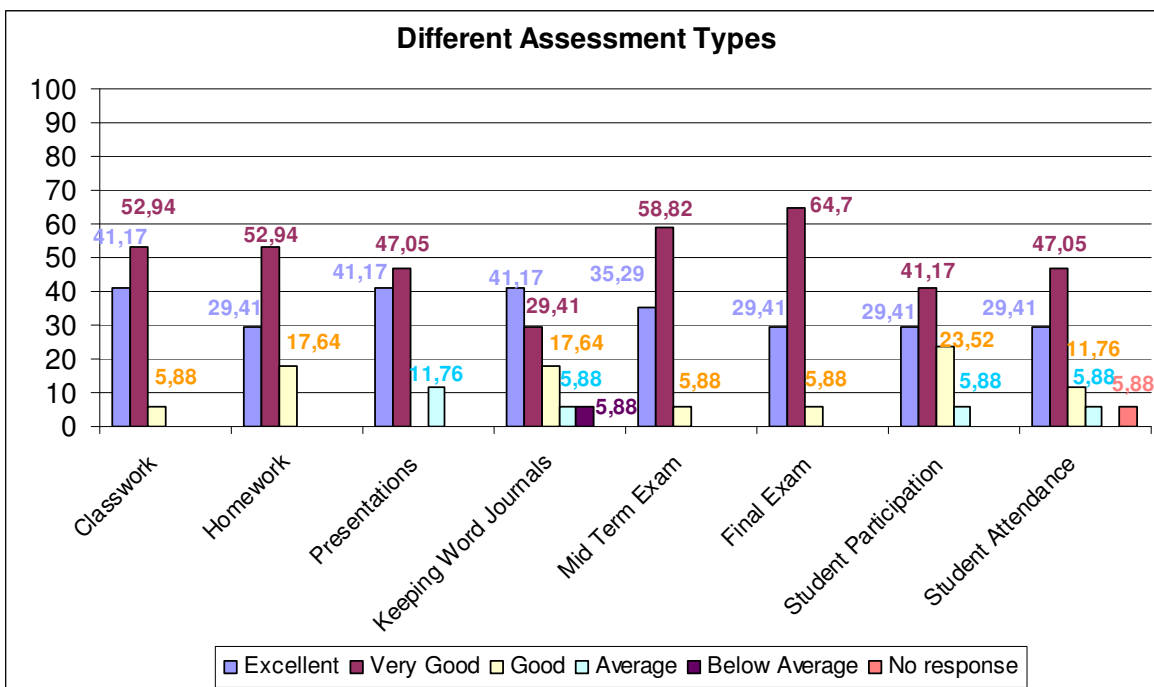Students were then asked to evaluate the different types of assessment used during the course:

Figure 10

Most students evaluated class and home work, presentations, keeping word journals, mid and final examinations, student participation and student attendance mainly as excellent, very good and good. A small percentage ranked presentations, keeping word journals, student participation and attendance as average and a small percentage found keeping word journals as below average.

The mark allocation was the following: Final examination 40%, Midterm examination 30%, Class and homework assignments 20%, and class attendance and participation 10%. The 17 students were asked to recommend the mark allocation they would prefer.
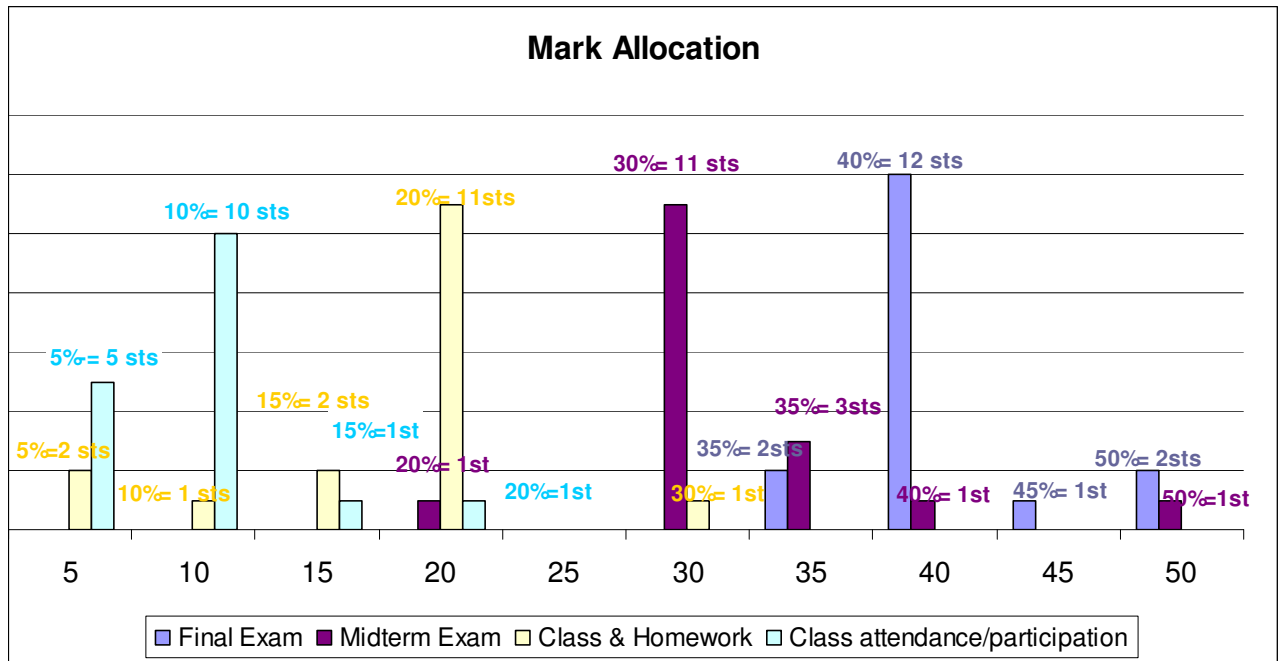
Figure 11

Two thirds of students agreed with the course final exam allocation of 40% (12 students) in contrast to 2 students who suggested 35%, 1 student who suggested 45% and 2 students who suggested 50%. Similarly, almost two thirds of the students agreed with the course midterm examination allocation of 30% (11 students, in contrast with 1 student who suggested 20%, 3 students who suggested 35%, 1 student who suggested 40% and 1 student who suggested 50%. Class and homework assignments were allocated 20%. Almost two thirds of students (11) agreed with that, 2 students suggested 5%, 1 student suggested 10%, 2 students suggested 15% and 1 student suggested 30%. More than half (10 students) agreed with the 10% mark allocation for class attendance and participation. Five students suggested 5%, 1 student suggested 15% and another one suggested 20%. These recommendations by the students support the existing mark allocation of the ESAP course. Figure 12 indicates clearly that students' and instructors' mark allocations agree.
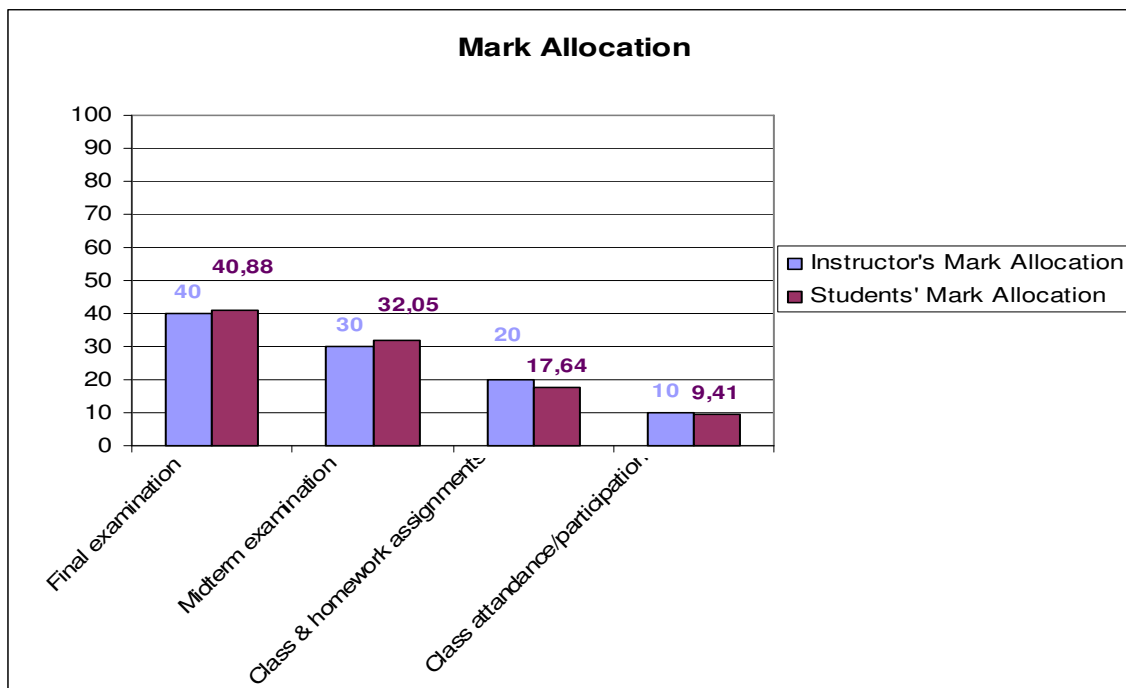
Figure 12

Theme 6: Overall Evaluation of the course

Students were asked about how many things they have learned from the course. Figure 13 illustrates their responses:
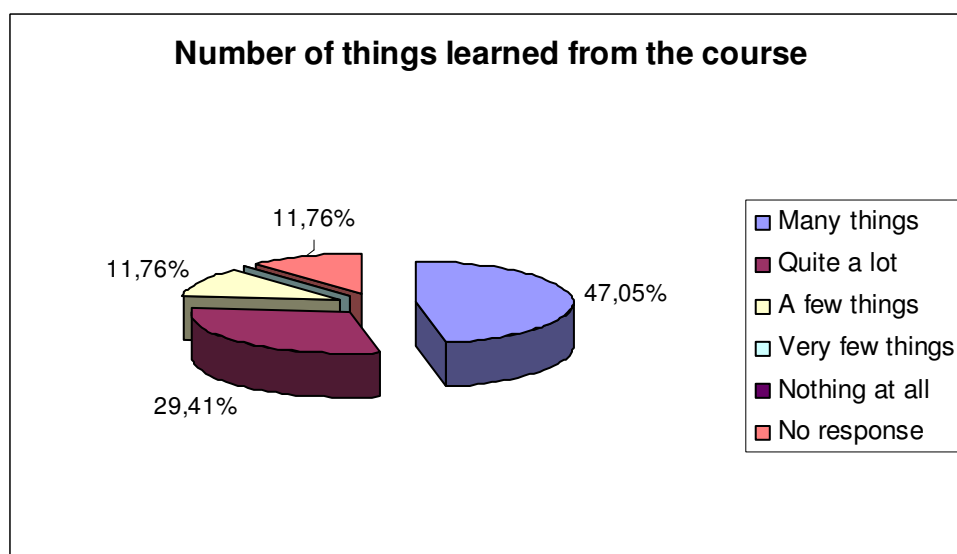

Figure 13

Students' responses indicated that most of them feel they have learned a lot. Some of them were named: academic vocabulary related to our field of study, Grammar, more general knowledge, speaking, oral presentations, referencing, PPT creation, Word Journal, and Reading.

Students were then asked to commend on how useful they though the ESAP course was going to be for their future academic and professional activities.

Course usefulness for future academic and professional activities

5.88 %
23.52 %
70.58 %

- Extremely useful
- Very useful
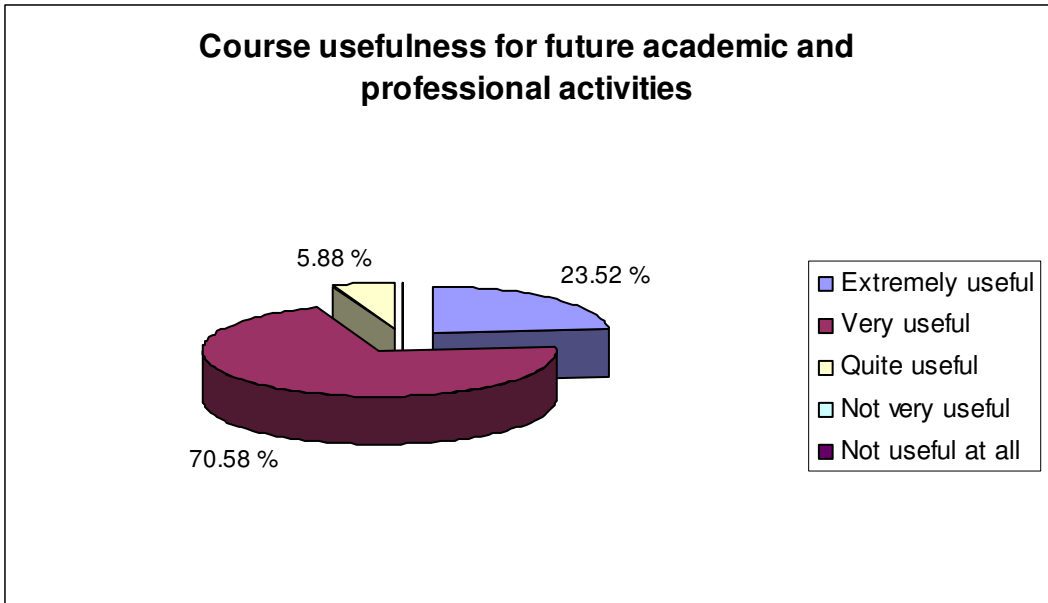- Quite useful
- Not very useful
- Not useful at all

Figure 14

All students felt the ESAP course was going to prove useful to their future and professional activities. 23.52% indicated it was going to be extremely useful, whereas 70.58% believed it was going to be very useful and 5.88% quite useful.

Finally, students were asked to express their opinion about the ESAP course in general.

Students' opinion about the course in general

11,76
11,76
17,64
58,82

- Excellent
- Very Good
- Good
- Average
- Below Average
- No response
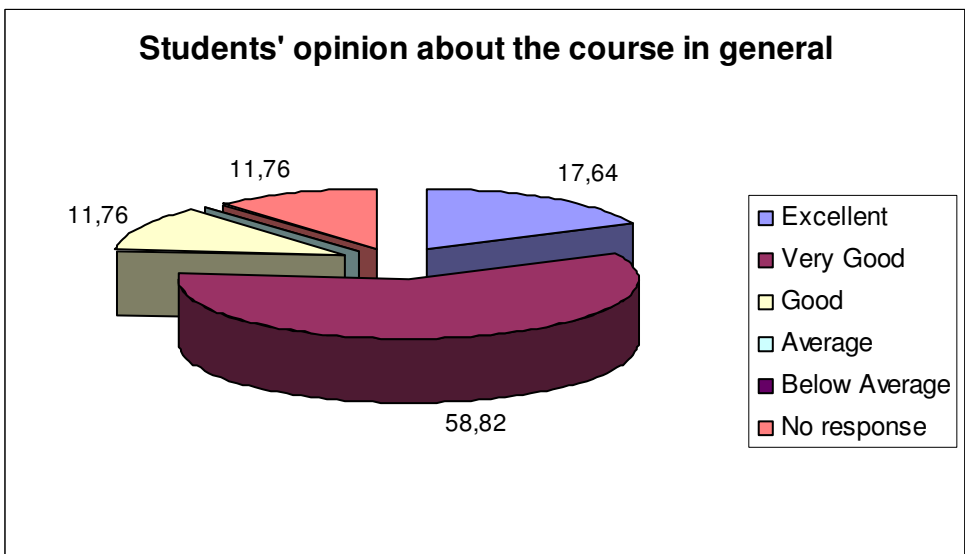
Figure 15

Students' responses reflected their positive opinion of the course. 17.64% felt it was excellent, 58.82% believed it was very good, and 11.76% thought it was good. 11.76% of the students gave no response to the question.

Conclusions from the students' questionnaires regarding the evaluation of the ESAP course for the department of Agricultural Sciences, Biotechnology and Food Science.
Overall, data revealed that students were happy with the improvement of their language, academic and ICT skills. They indicated that they were very satisfied with the curriculum

design and content (content organisation, topic choice, etc.), materials, tools and software used, teaching (classroom processes and teaching techniques), and assessment procedures (types of assessment, mark allocation). The felt they have learned many things, and they had some suggestions for improvement. They felt that the highlights of the course were the vocabulary and terms related to their course and references. Most of them felt that the course will prove useful to their future and professional activities.

B. Teaching Faculty in the field of Agricultural Sciences, Biotechnology and Food Science - **ESAP course evaluation interviews**

During the interviews of the teaching faculty, participants were asked to specify the linguistic demands of their course. All 5 of them mentioned terminology (e.g. medical and biological terms, agricultural terms i.e. agriculture, agricultural production, principles of crop production etc). They gave suggestions how they could remediate problems students face in English and to link their subject matter with English. The following suggestions were made (number of respondents in parenthesis):
  "We could provide students with the English terminology every time." (3)
  "We should assign to students work which involves using English sources." (1)
  "We have to cooperate with the English instructors to provide them with the appropriate terminology." (1)

The interviewees were then asked to commend on the syllabus and the material used for the ESAP course for the Department of Agricultural Sciences, Biotechnology and Food Science. This is what they responded:
  "Appears to be very good work". (3)
  "Looks very demanding". (1)
  "Looks very loaded". (1)
  "The syllabus and the material look very comprehensive". (2)
  "The syllabus is very spherical but we have suggestions to make". (2)
  "I need time to study both the syllabus and the material and then get back to you". (1)
  "The element of cultural awareness is very good". (1)
  "If students did well in all these, then undoubtedly they will improve". (1)

Interviewees were asked to commend on Language, Academic and ICT skills. The following are their comments regarding the language skills:
  "The programme looks very good as it is". (3)
  "We have nothing to add". (2)
  "Addition of more terminology in all four language skills. It is up to the English instructors to decide how much and where exactly it could be added". (1)
  "Addition of scientific writing. They should be taught the structure of an academic article (i.e. abstract, introduction, materials and methods, results, discussion)". (1)

As far as the academic skills incorporated in the ESAP course are concerned, they felt that they were very good. They were impressed to see ICT skills interwoven in the programme, making the point that ICT skill learning in general should be organised by the library to serve all ICT needs of all subjects.

In general, the teaching faculty of the DASBFS who taught the particular group of students found the topics and content of the course very good. They also felt that it was a good idea to separate the course into three Sections (Agricultural Science, Biotechnology and Food

Science). In the context of Genetics, they said that they were planning to assign some work on Genetically Modified Food, so they were happy to see that this topic was already covered in the ESAP course.

The teaching faculty also suggested the following additions to the content and topics of the ESAP course:

- Topics to which the European Union pays much attention e.g. rural development. (2)
- Sustainable Agriculture. (2)
- Environment protection. (2)
- Good Agricultural Practices. (2)
- Genetic resources. Plant and Animal Genetic Resources (their perseverance and development). The FAO (Food and Agriculture Organization of the United Nations) initiative. (2)
- Livestock instead of talking about Classification of Birds (i.e. goats, sheep, cattle). (3)
- Refer to sheep, goats, poultry, pig production (domestication and implications for human evolution) apart from cattle. (2)
- Farm practices and farm technology (Plant Production e.g. the use of glasshouses in Cyprus and Animal Production e.g. the Industrialization of animals i.e. poultry for their meat and eggs and pigs for their meat). (2)
- Water use and management of water resources. (2)
- Intensive and Extensive Agriculture/ High Input and Low Input. (2)
- Crop science. (2)

The following were suggestions for the improvement of the teaching methods of the course:

"The use of the library is a matter of culture, and it is not part of our students' culture to use it. It is a matter of background. We should assign them more work in the library". (5)

"Ask them to learn about the lives of famous scientists (e.g. Watson – DNA) which will interest them". (1)

"Read academic articles and present them to class". (4)

"Use of more videos to practice listening". (1)

"The students could read more newspapers and magazines e.g. *Food Ingredients*". (1)

"My personal experience showed that Language Rooms should be created for the students where students will have the opportunity to go and study on their own there. They are really very useful and effective in learning languages". (1)

"The English instructor should always have the control of students because it is easy to lose it due to the nature of class (use of computers etc.)" .(1)

It was interesting to note that on the subject of teaching methods, one interviewee suggested that the Language Centre (LC) has the expertise to "inform or train" the other Departments on matters of teaching methods and guide them.

In their final comments they expressed the belief that English is very important, that the students will need it everywhere, and as an example they mentioned that all bibliography is written in English (4). In support of this they felt that students should have another course in English as an elective at Advanced level (2). The following are two quotes of some of the final points:

"Congratulations for the very good job you have done, and also because you are trying to improve it now! Good work should be recognised!" (1)

"All this is a very good effort. It is not improvisation. Good planning takes place, which makes me feel good about the effort which is being made. The course is well-planned. Needless to say, we consider languages and especially English to be very important for every scientist who graduates from the University. We do not expect them to be experts in it, but at least to be able to read, understand and write and make a presentation. If we do this, then we will have achieved a great deal in terms of language skills." (1)

C. Professionals in the field of Agricultural Sciences, Biotechnology and Food Science questionnaires

The participants' responses were again analysed using the Microsoft Excel package. The charts that follow illustrate the results referring to each item included in the questionnaire.

Theme 1: Types of oral and written speech and topics
Participants were asked how often they use English for professional purposes. Figure 16 sums up their responses:

Use of English for professional purposes

16,66%   16,66%

33,33%   33,33%

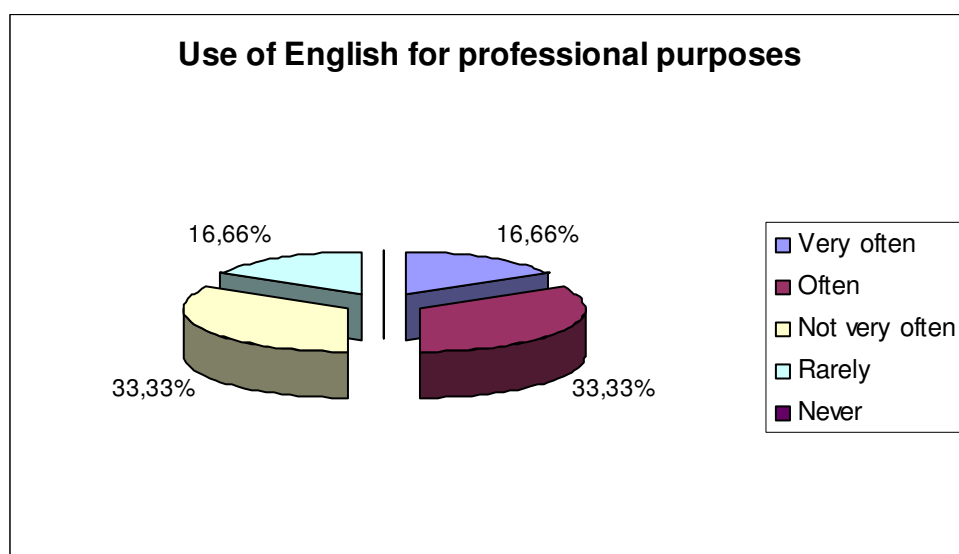- Very often
- Often
- Not very often
- Rarely
- Never

Figure 16

Half of the professionals said they use English from very often to often, and the other half said not very often to rarely. No one said they never use English for professional purposes.

Professionals were then asked to tick the spoken text types one should be able to listen and produce in English in their profession. Figure 17 sums up their responses.
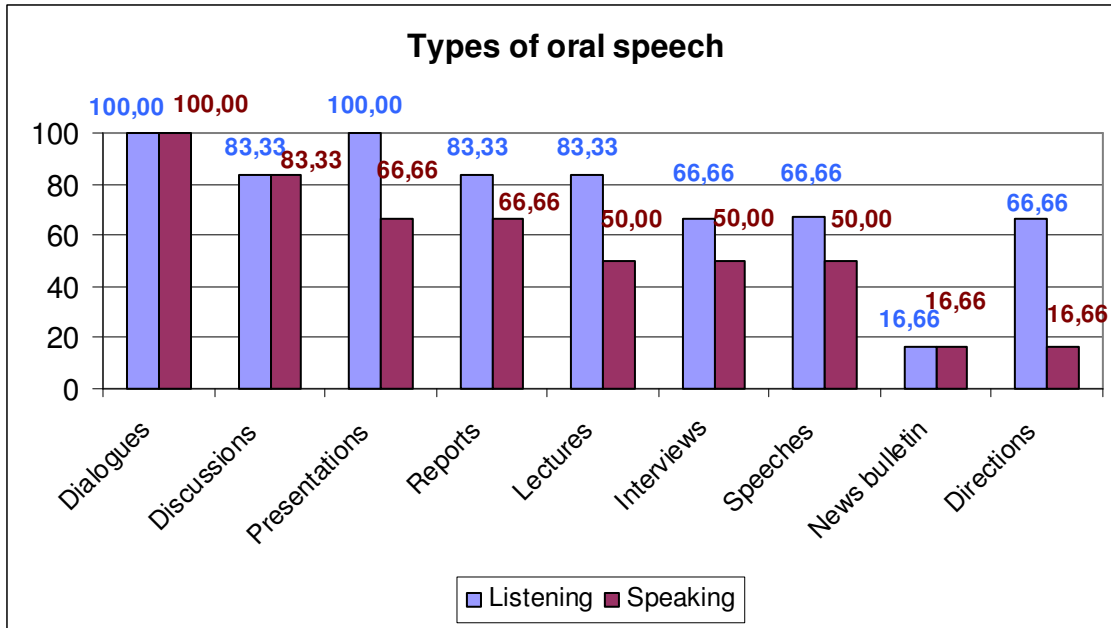
Figure 17

All the professionals agreed that understanding and participating in dialogues as well as understanding presentations are all necessary for their profession. 83% were in favour of understanding and participating in discussions and also understanding reports and lectures. It should be noted that understanding and producing news bulletins was considered necessary by only 16.66% of the participants. It is also interesting to mark that the percentage of professionals who regarded understanding oral speech (listening) as important was larger than the percentage of those who supported producing oral speech (speaking).

Professionals were then asked to tick the written text types one should be able to read and comprehend and write in English in their profession. Figure 18 sums up their responses.
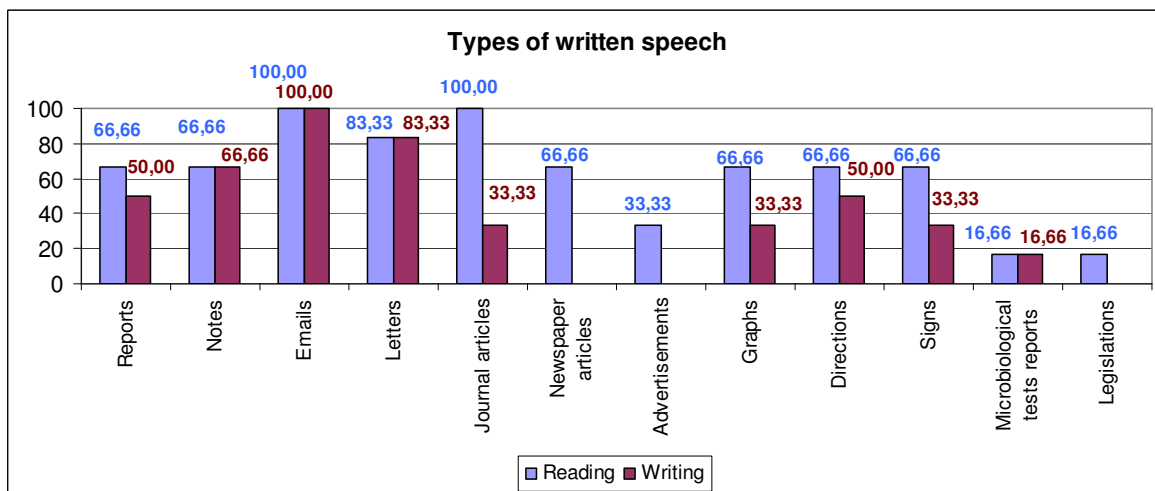

Figure 18

According to the Figure, all the professionals agreed that in their professional environment one must be capable of reading and writing emails as well as reading Journal articles. 83% of the professionals said that reading and writing letters is also important. When they were asked to give their own suggestions, 16.66% of the professionals suggested reading and writing

microbiological test reports and reading legislations. It is interesting to note that again most of the professionals supported understanding different types of written speech more than producing them.

Professionals were then asked to mention the topics they were expected to know and therefore be aware of the relevant vocabulary. Their responses varied. These were:

- Agricultural issues such as agricultural development and agricultural policy (2)
- Chemistry (1)
- Results of microbiological tests (2)
- Results of biochemical, blood and immuno-biological tests (1)
- Food technology (3)
- Mechanical engineering (1)
- Electrical engineering (1)
- Quality control and Quality control systems such as HACCP, ISO 9000 (3)
- Problem report on the production line and product labelling (1)
- Manuals (1)
- Tools accrediting (1)
- Health and safety at work (1)
- Computer literacy (1)
- Fortification of traditional Cypriot products (1)
- Topics concerned with European Union issues (1)
- Specialised topics from articles of the field (1)
- Announcements (1)
- Topics of general interest (1)

These topics were useful for the improvement of the existing ESAP course because they provide the course designers with ideas of more and different topics to add in the course. One of the professionals gave no response to the question.

Theme 2: Skills
Professionals were then asked to describe their English language competence required in their professional, suing the CEFR scale (CEFR, 1989-1996).
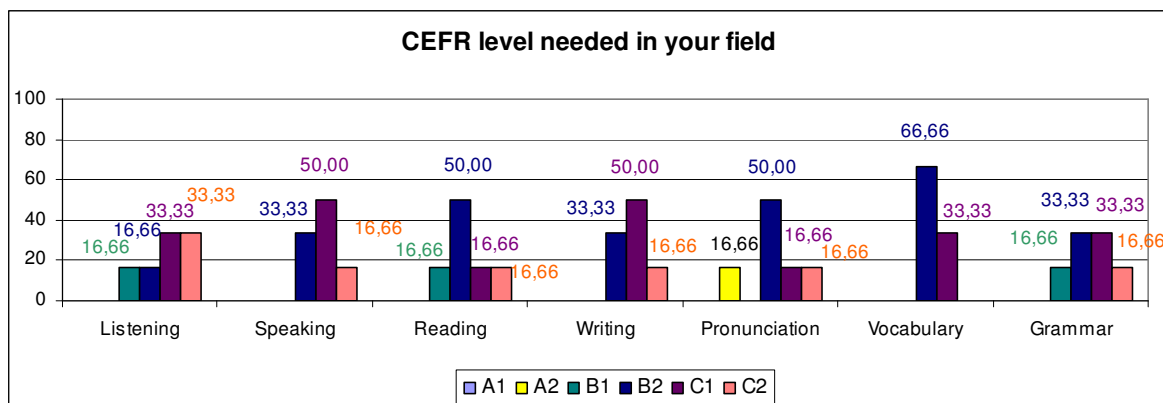

Figure 19

From their responses, it seems that in general they are not required very high level of English language proficiency. In listening, 66% of them responded they needed C1/C2 level; in speaking, more than 83% responded they needed C1 to B2 level; in reading, 50% were

required a B2 level. In writing, more than 83% were required a C1 to B2 level, pronunciation 50% a B2 level, vocabulary 66.66% were required B2, 33.33% a C1 level, and grammar the level required ranged again about 33.33% of both B2 and C1 levels. It is interesting to mention that no professional believed that language skills should be of level below A2; therefore, no A1 response was recorded.
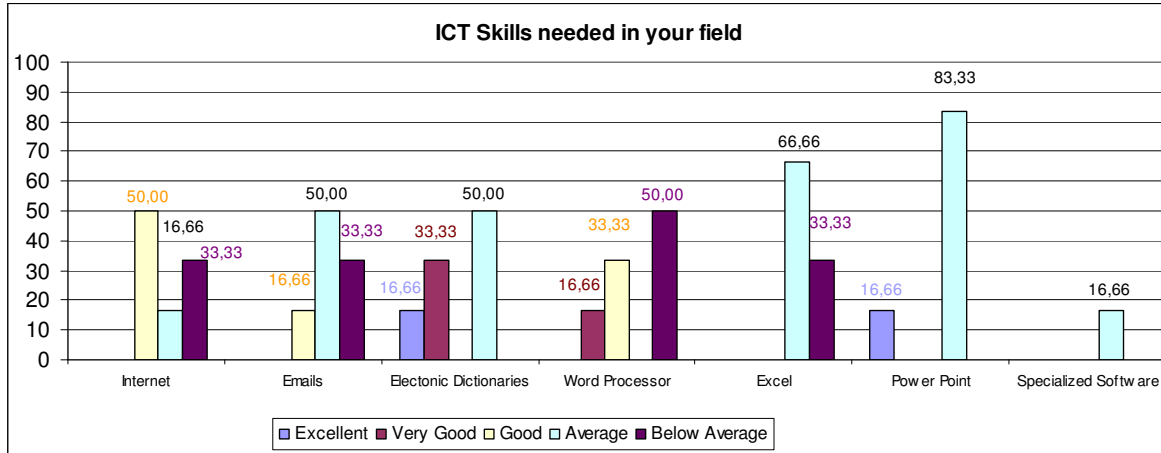

Figure 20

As concerns the ICT skills they need in their profession, professionals in the specified areas are requested to include in their literacy the use of a variety of ICT skills. A large percentage of professionals believe that one needs to have average Email, Electronic Dictionaries, Excel and Power Point Skills. Half of the professionals support that one must have good Internet skills and very good Word Processor skills. 16.66% suggested average specialised software skills.

Theme 3: Difficulties in English in professional field
When professionals were asked to mention what difficulties they face in English in the skills listed below, they mentioned the following:

Difficulties professionals face concerning English
 a. Listening
- Difficulties when people talk fast and have accent (2)
- No difficulty at all (2)
- When listening to topics outside my professional field (1)
- Not serious difficulties (1)
 b. Speaking
- Restricted vocabulary (3)
- No difficulty at all (3)
- Grammatical difficulties (2)
- Difficulties in using idioms (1)
 c. Reading
- No difficulty at all (3)
- Restricted vocabulary (2)
- Difficulties in pronouncing words (1)
 d. Writing
- No difficulty at all (3)
- Difficulties in using idioms (1)
- Difficulties in syntax (1)

- Restricted vocabulary (1)
- Grammatical difficulties (1)

e. Vocabulary
- Restricted everyday vocabulary (3)
- No difficulty at all (2)
- Technical terms (1)

f. Grammar
- No difficulty at all (3)
- Use of Conditional Clauses (1)
- Use of syntax (1)
- Use of tenses (1)

While most professionals stressed that they don't have major difficulty in any of the skills, some comments were made for specific areas:

As far as listening comprehension is concerned, some professionals mentioned that they have some difficulties when people talk fast and have an accent. In mainly speaking and reading, some feel they need more vocabulary. Grammar support was felt needed by some in speaking.

Theme 4: Suggestions
The professionals were asked to say how important they considered English for their profession. Their responses are illustrated in Figure 21.
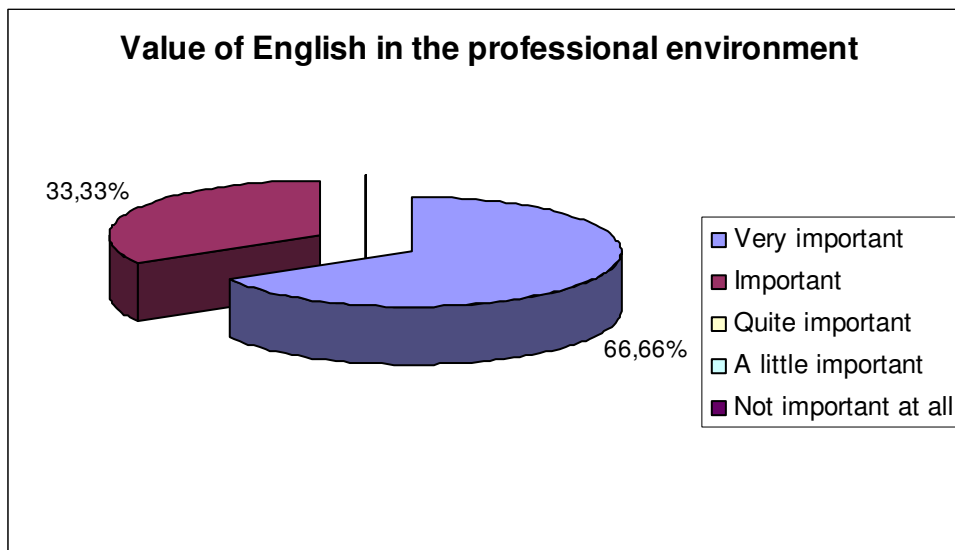

Figure 21

All of the professionals felt English was very important (66.66%) or important (33.33%).

When they were requested to make suggestions for the improvement of the ESAP course, the professionals suggested that students should be involved in the following:
Writing essays (2)
Reading articles (3)
Reading texts by the European Union regarding Food and Agriculture (1)
Developing vocabulary related to their field concerning Cyprus (1)
Reading English reference books (1)
Getting involved in discussions with foreigners (1)

Writing letters in English (1)
Reading research (1)
Studying harder (1)
One professional gave no response to the question. Their suggestions will be considered when the ESAP course will be redesigned.

Finally, in the last question professionals were asked to rank in order of importance which other languages they regarded as important in their field. Their answers are shown in Figure 22.
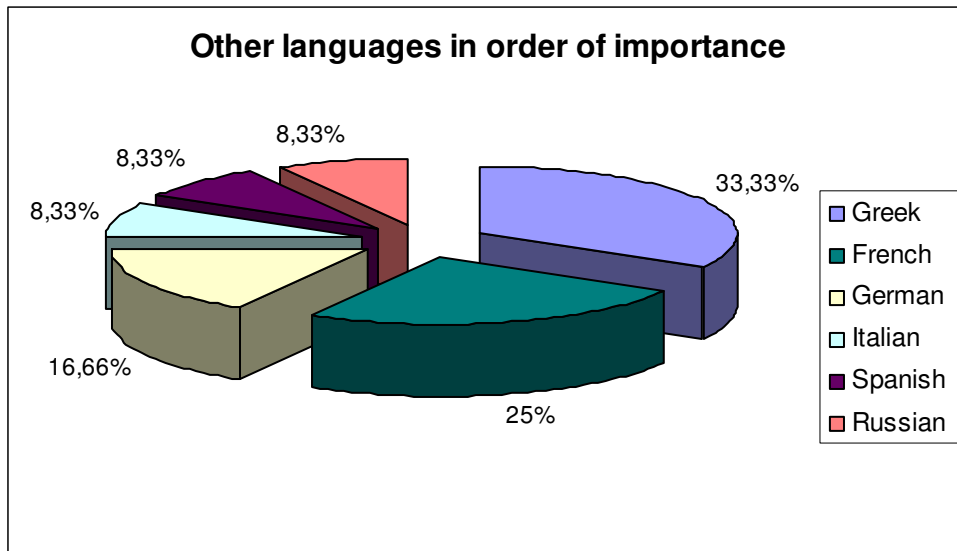
Other languages in order of importance

Figure 22

33.33% of the professionals characterised Greek as the most important language apart from English. French was ranked second with 25%, German third with 16.66%, and Italian, Spanish and Russian were ranked fourth with 8.33% each.

Conclusions

This research led to many interesting conclusions and implications, on which the redesigning of the ESAP curriculum for students of Agricultural Sciences, Biotechnology and Food Science will be based.

First of all, the students' evaluation of the existing ESAP course illustrated that generally the students' language, academic, and ICT skills were improved enormously. Regarding students' perceptions on the curriculum design and content, all course organisation, topics, materials, tools and software were considered by the majority of students as very good to excellent. Students had the same opinion about course teaching and assessment procedures. Generally, the success of the course was clearly illustrated when the majority of students said that they had learned many things form the course, when they said that the course was very useful to extremely useful, and when finally, their opinion about the course in general was mainly very good to excellent. In summary, the conclusion that can be drawn out of all these is that the existing ESAP curriculum was regarded as successful by the students. Some suggestions that some students made, for example more use of Power Point, scientific articles, videos, and the Internet as well as more speaking practice will be taken into account when the new course will be designed.

As far as the teaching faculty is concerned, even though they characterised the existing course as very "organised", "comprehensive", and "spherical", they made very useful and interesting suggestions especially concerning the topics that could be included in the new course. They also stressed the importance of terminology as well as exposition of students to authentic pieces of academic writing for example articles. Lastly, they all admitted that English is extremely important for the students' academic and professional career.

Finally, the findings from the questionnaires distributed to the professionals were also valuable for the development of the existing course. Professionals admit that they use English often in their professional settings. The data analysis showed that they use a variety of types of oral and written speech in their profession, and topics they were expected to know the vocabulary of were also revealed. As concerns their level of competence, professionals said that the level needed is between B2-C1 according to the CEFR. They also made useful suggestions regarding the ICT skills needed, and they spotted difficulties they usually face in all language skills. Finally, like the teaching faculty, professionals see English as important to very important in the professional environment, and they made recommendations for the improvement of the course.

On the whole, the three groups who took part in the research expressed themselves positively towards the existing course. Nevertheless, they all mentioned things that could be included in the course which would make it more successful and efficient.

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