LSP TEACHER EDUCATION ONLINE COURSE FOR PROFESSIONAL DEVELOPMENT – LSP-TEOC. Pro

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INTELLECTUAL OUTPUT 6:

Trialling developed LSP Teacher Education online course

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Content

Introduction

In intellectual output 6, a large-scale trialing of the multilingual online LSP teacher-training course has been carried out. In this report, we present the results of the I06 in three main sections. First, we present the objectives of I06 with reference to the project proposal, and spaced learning method. Then, we describe the procedure involved in collecting data from the Moodle and analyzing data. In the next section of the report, we describe the methodology of analyzing qualitative and quantitative data according to each research question (RQ). The conclusion section provides a brief summary of the I06 report.

Objectives of I06

As proposed in the Project Proposal, in intellectual output 6, a large-scale trialing of the multilingual online LSP teacher-training course is carried out. A large number of external individuals and stakeholder organizations have been approached to use the online course and give feedback on their experience. This intellectual output is a decisive step in the dissemination of the project whilst at the same time gathering valuable empirical information of user needs, usage patterns and languages used. All user data has been gathered in accordance with the European General Data Protection Regulation 2016/679 (GDPR). The user experience has been collected and analyzed. The empirical approach is highly innovative as it also used actual user data to provide e.g. pathways through the online course contents instead of relying only on more subjective means of data collection, e.g. through surveys. The trialing phase of this project led to a deeper knowledge and understanding on practitioner needs in LSP teacher training, the use of pedagogical and didactic elements such as spaced learning, quizzes, etc. and may lead the transferability of the adopted approach into other areas of digitalized, online learning activities, be they formal or non-formal. At the end of this intellectual output, 183 LSP stakeholders have used the online LSP teacher-training course, and all user data have been prepared in a way as to be used in the following intellectual output on learning analytics.

The Spaced Learning Method in E-learning

The Spaced Learning (SL) provides online learners with an opportunity to engage and assimilate the knowledge before moving on to the next session of the E-learning course. Online LSP-TEOC.Pro consists of 8 modules ranging from Module 0 to Module 7; therefore, it benefits from the SL method in E-learning.

SL offers a number of advantages:

- It decreases cognitive overload.
- Learners feel they are in much better control.
- Learners' stress level decreases.
- E-learning experience is enjoyable and far more effective.

Procedure for the I06 Compilation and Analysis of the Moodle Data

We have followed the following steps in the process of extracting and analyzing data from the Moodle.

STEP 1: The I06 trialing phase

IO6 large-scale trialing/testing started on the 24th of January 2023 and ended on the 14th of March 2023 on Moodle.

STEP 2: Collecting and compiling the Moodle data

The Project Coordinator extracted data from the Moodle, and made it available to leading organization for IO6 Cukurova University and for IO7. Using the extracted data from the Moodle, first, we compiled the diaries completed by 25 pilotees in order to analyze the data. While taking the LSP course, participants were asked to keep a diary to document their experience as they were making progress in the LSP course. In addition, we downloaded all the comments made by the pilotees to the questions requiring open-ended answers in the post-participation section of the survey, which asked pilotees to express their opinions about the modules they have completed. Both data sources, namely diaries kept by the pilotees, and comments given to the open-ended questions gave us valuable information about the LSP-TEOC.Pro online course in terms of aspects of the modules that needed improvement by the module producer partners in the project.

STEP 3: Analyzing the Moodle data

The IO6 team analyzed the data between March 15—March 31, 2023.

Data from the diaries containing the pilotees' comments was compiled, and qualitative analysis was applied. Comments from all the diaries were read several times by the I06 team, they were cross-checked and then organized according to themes (Creswell, 2013). A similar content analysis was applied to the pilotees' comments from the survey.

Content analysis of the data from the two sources (diaries and pilotees' comments) helped the I06 team create the following themes:

- Some positive points
- Tasks/activities
- Quizzes
- Power point slides and videos
- Language
- Technical points

Each theme was illustrated with representative excerpts from diaries and comments made by the pilotees. Both themes and corresponding sample excerpts were presented in a table.

STEP 4: Preparing "Revision Recommendations" for I06

We prepared two sets of files based on the data analysis described above. The first file was named "General Comments from Diaries and Post-Participation Test", which included information for the whole course. The second set of files titled "Revision Recommendations" included comments specific to each module (Module 0 to Module 7). These files were shared with the module authors to help them implement the necessary changes. All the documents have been made available through the Google Drive.

STEP 5: Preparing "Guidelines for I06"

We completed preparing "Guidelines for I06" on **MARCH 10, 2023**. While preparing the guidelines, we sought the opinions of all the partners. The final version of the guidelines was uploaded onto the Google Drive to help the partners proceed with the necessary tasks.

Description of the Survey Instrument

Work in IO6 took place simultaneously with IO7. During large-scale piloting, as the leading organization of IO6, we worked closely with the rest of the consortium on developing the IO6 survey instrument. The same instrument, used in IO5 has been used in IO6 but we have made the necessary additions to collect more data from our pilotees in IO6.

Four surveys were filled by the pilotees in IO6, namely:

a. Data on trialee and privacy policy notice (which is a compulsory test filled in by pilotees once they log in to the Moodle). This helped us collect basic information on each pilotee, which was then used in IO6 and IO7 data analytics.

Data analysis from Section 1 of the Survey asks pilotees'/test takers' personal Information through 11 items. These include 1) How they found out about the programme; 2) Gender; 3) Age; 4) Where they live/work/study; 5) Pedagogical background; 6) Work experience; 7) If they are a student, which language(s) they study; 8) If they are a TEACHER, what language they teach as FL for specific purposes; 9) In which discipline they teach; 10) Motivation for taking this course; 11) What foreign/second languages they speak at an advanced level.

To analyze this section of the survey, descriptive analytics is used. The findings are presented in Tables, and reported in the following sections in the report.

b. Pre-participation test (that collects data from pilotees before each module). c. Post-participation test (which collects data from pilotees after each module).

In this section of the survey, our main objective is to examine if there is a difference between the **participants' self-reported competence level** before and after successfully completing each module. Questions preceding and following each module consisted of a five-point Likert scale items, which range from: very low (1) to very high (5), and the test takers are asked to "Choose a number on the scale below that best represents your level of knowledge and understanding". This is repeated for each module in the LSP-TEOC.Pro course.

To analyze this section, **Paired samples t-test** was used for each piloted module and information is presented in Tables.

c. Post-participation Test Overall Evaluation (an overall post-participation test in which we asked IO6 pilotees to fill in as soon as they have finished piloting the online course or the four modules of their choice.

In this section, our aim was to examine User Satisfaction through a number of questions. One of our objectives was to examine Usage pattern, that is, the most preferred module by the test takers. This information is important for us to decide which module(s) have been most favored by the pilotees. In addition, usage pattern has already been highlighted in the project proposal for IO6. Descriptive analytics has been conducted to address this question and findings are presented in Tables. Frequency analysis of the preferred modules show us the number of pilotees studying each module and the most preferred modules. To analyze the reason for the preferred modules, a qualitative content analysis has been applied from the responses given to the open-ended questions.

In order to be awarded the certificate for participation, IO6 pilotees were required to complete at least any 4 modules of their own choices. The reason for asking the pilotees to complete at least 4 modules was due to time limitation. Jade and each partner maintained close contact with IO6 pilotees on Moodle mainly via email to encourage them to finish as many modules as possible. As the leading organization, we maintained contact with Turkish pilotees via telephone calls and zoom meetings to give them an incentive to finish piloting the online course on time. Some Turkish pilotees could not participate in IO6 due to the disastrous earthquake that took place in Türkiye in early February 2023, which coincides with large-scale testing in IO6. Due to time limitations in the project, we conducted IO6 work simultaneously with IO7, working closely with the rest of the consortium to finish work on time.

d. Post-Participation Test Overall Evaluation (An overall post-participation test, which we ask IO6 pilotees to fill in as soon as they have finished piloting the online course or the four modules of their choice)

In the post-participation test, there were some open-ended questions evaluating test takers' satisfaction with our LSP-TEOC.Pro course.

Sample Questions from the survey include:

a) Would you recommend this course to other LSP teachers (or students)?

b) In the future, do you plan to return to selected modules and/or to those, which you have not chosen this time?

c) Have you acquired knowledge that you intend to put into practice after the course? Can you give one example?

The I06 team has compiled all responses for each of the open-ended questions, and used qualitative content analysis to evaluate user experience in the course.

Diaries

The pilotees were also asked to keep diaries while taking our course. Our objective for asking the pilotees to keep diaries was to examine user experience more deeply (Lakshmy & Lee, 2002). Data from the diaries about the user experience was compiled and qualitative content analysis was applied.

Forum/Chat Options

Some pilotees also wrote their comments in the Forum/Chat options to express their takeaways from taking the LSP course.

Quizzes

Quizzes are an important component of I06. To help us examine the type of questions used in the LSP online course, each project partner was requested to prepare a list of question types used in their modules and explain the rationale for asking that particular type of question. We present the findings in the report (RQ 9).

Interviews

An additional instrument used were interviews. An Interview Protocol were prepared by the I08 partner, the leading partner, to be used with the volunteering test takers after they have completed taking the LSP-TEOC.Pro course, at a later stage.

Methodology in Collecting and Analyzing Data

In line with the project proposal, I06 aims to answer 10 research questions. Table 1 illustrates the research questions, data collection tools and data analysis methods. To analyze quantitative data we used descriptive analytics. As for the qualitative data, which we obtained from diaries and the open-ended part of the survey qualitative content analysis was carried out. To examine if there is a difference between the participants' self-reported competence level before and after successfully completing each module (RQ 2), we used Paired samples t-test for each piloted module.

Table 1. Research questions, data collection tools and data analysis method

Research questions	Data collection tool	Data analysis method
RQ1. What is the background information of the I06 pilotees?	Survey	Descriptive analytics
RQ2. What is the I06 pilotees' self-assessment of knowledge and skills before and after taking each module?	Pre-and Post-participation test Open-ended questions	Pair-sample t-test Qualitative content analysis
RQ3. What is the number of pilotees who successfully completed each module on the Spaced Learning method on Moodle?	Survey (post-participation test)	Descriptive analytics
RQ4. What is the total number of modules completed by the pilotees?	Survey (Post-Participation Test)	Descriptive analytics
RQ5. What is the usage pattern of the I06 pilotees? /What is the most preferred module and why?*	Survey (post-participation test) Open-ended questions	Descriptive analytics Qualitative content analysis
RQ6.Have the pilotees acquired knowledge that they intend to put into practice after the course?	Survey (post-participation test) Forum/chat	Descriptive analytics Qualitative content analysis
RQ7: In the future, do the pilotees plan to return to selected modules and/or to those, which they have not chosen this time?	Survey (post-participation test)	Descriptive analytics
RQ8: Would the pilotees recommend LSP-TEOC.Pro course to other LSP teachers (or students)?	Survey (post-participation test)	Descriptive analytics

RQ9. What type of questions are included in the quizzes, and what is the rationale behind each question type?	Moodle/Quizzes	Descriptive analytics
RQ10. Overall, with which three words would the pilotees describe LSP-TEOC-Pro?	Moodle	Keyword frequency analysis

*This question has also been investigated as part of IO7.

Presentation of Findings

The following section presents an analysis of each research question.

RQ1: What is the background information of the 106 pilotees?

Statistical analytics was conducted to find out the background information of the I06 pilotees in terms of

1) How the pilotees found out about the programme

2) Gender

3) Age

4) Where they live/work/study

5) Their pedagogical background

6) How much work experience they have in the LSP field

7) If a STUDENT (BA, MA or PhD), which language(s) they study

8) If a TEACHER, what language they teach as FL (Foreign Language) for specific purposes

9) In which discipline they teach

10) Their motivation is for taking this course

11) Foreign/second languages they speak at an advanced level.

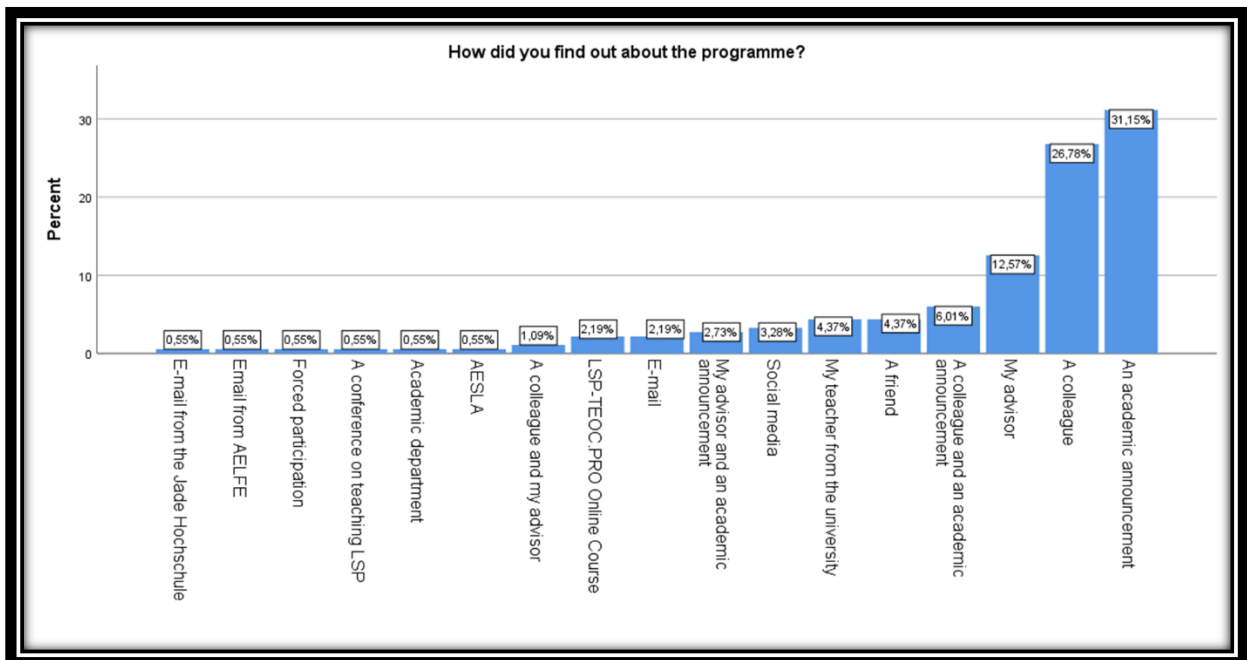*Figure 1. How did the pilotees find out about the programme?*

Figure 1 shows the pilotees' background information in terms of how they found out about the programme. 31,15% of the participants found out about the LSP-TEOC.Pro course only from an academic announcement, which is the most common way of enrolling in the piloting

programme. Similarly, 26,78% of the participants found out about the LSP-TEOC.Pro course from their colleagues.
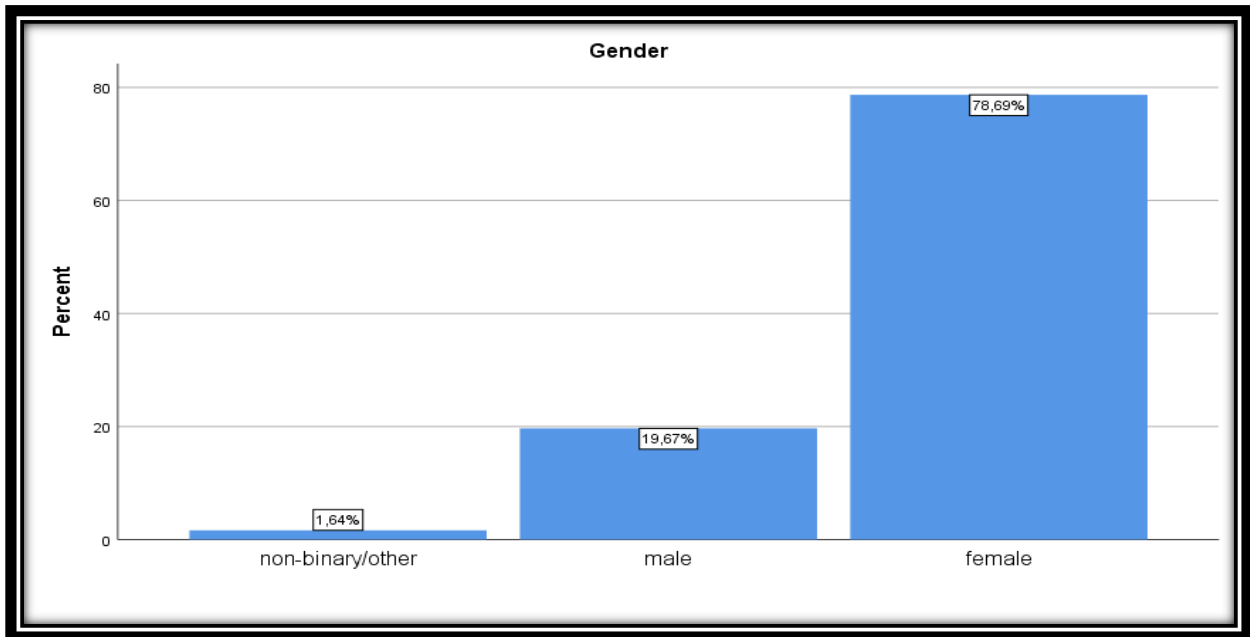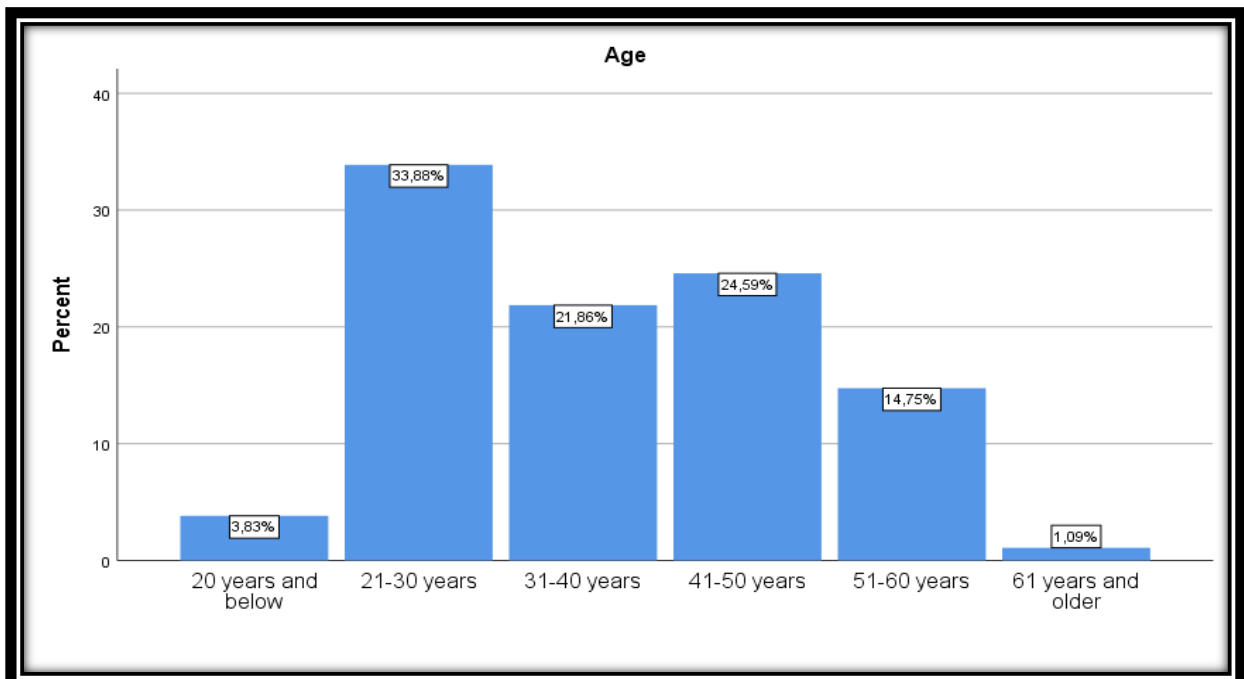
Figure 2. Gender

Figure 2 shows that most of the participants (n=144, 78,69%) are female whereas 36 participants (19,7%) are male, and 3 participants (1,6%) identify themselves as "non-binary/other."

Figure 3. Age

According to **Figure 3,** most of the participants (n=62, 33,88%) aged between 21-30 years whereas only 2 participants were 61 years or older (1,09%). On the other hand, those between 21-30 years (n=62, 33,88%) made up the second biggest group in the piloting programme.

Finally, 45 participants (24,59%) aged between 41-50 years; 40 participants (21,86%) aged between 31-40 years, and 27 participants (14,75%) aged between 51-60 years.

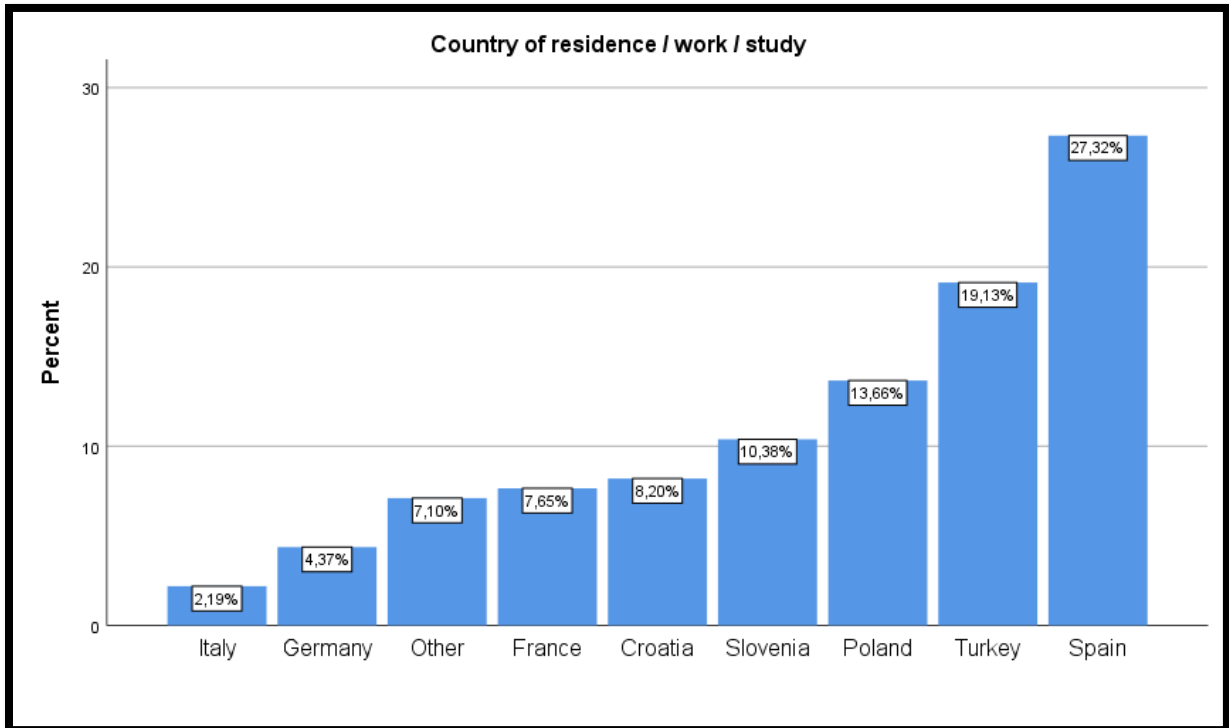*Figure 4. Country of residence/work/study*

Figure 4. Country of residence/work/study

Figure 4 shows the participants' country of residence, work, and study. The analysis showed that most of the participants (*n*=50, 27, 32%) were from Spain. This group was followed by 35 Turkish (19,13%) pilotees, 25 Polish (13,66%) pilotees, 19 Slovenian (10,38%) pilotees, 15 Croatian (8,20%) pilotees, 14 French (7,65%) pilotees, 13 pilotees from other nationalities (7,13%), 8 German (4,37%) pilotees, 4 Italian (2,19%) pilotees, respectively.

Figure 5. Participants who work/live/study in other countries
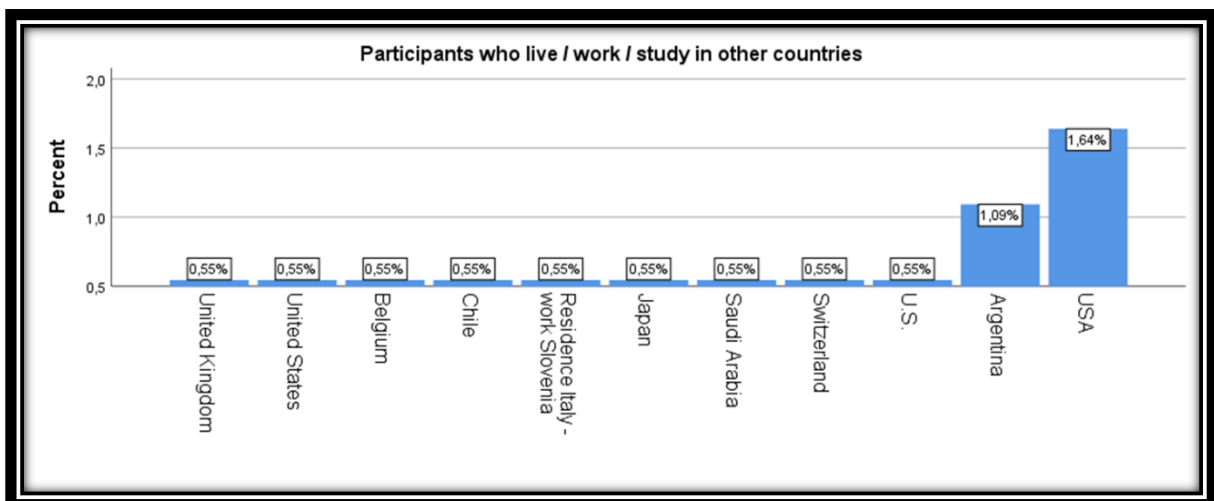

Figure 5. Participants who work/live/study in other countries

Figure 5 shows the participants' other country of residence, work, and study. The analysis showed that most of the participants (*n*=3, 1,64%) were from the USA.

Table 2. Participants' pedagogical background

What is your pedagogical background?		
	Frequency	Percent
LSP Teacher	70	38,3
FL Teacher	53	29
FL Student	49	26,8
Other	11	6
Total	**183**	**100**

Figure 6. Participants' experience in LSP
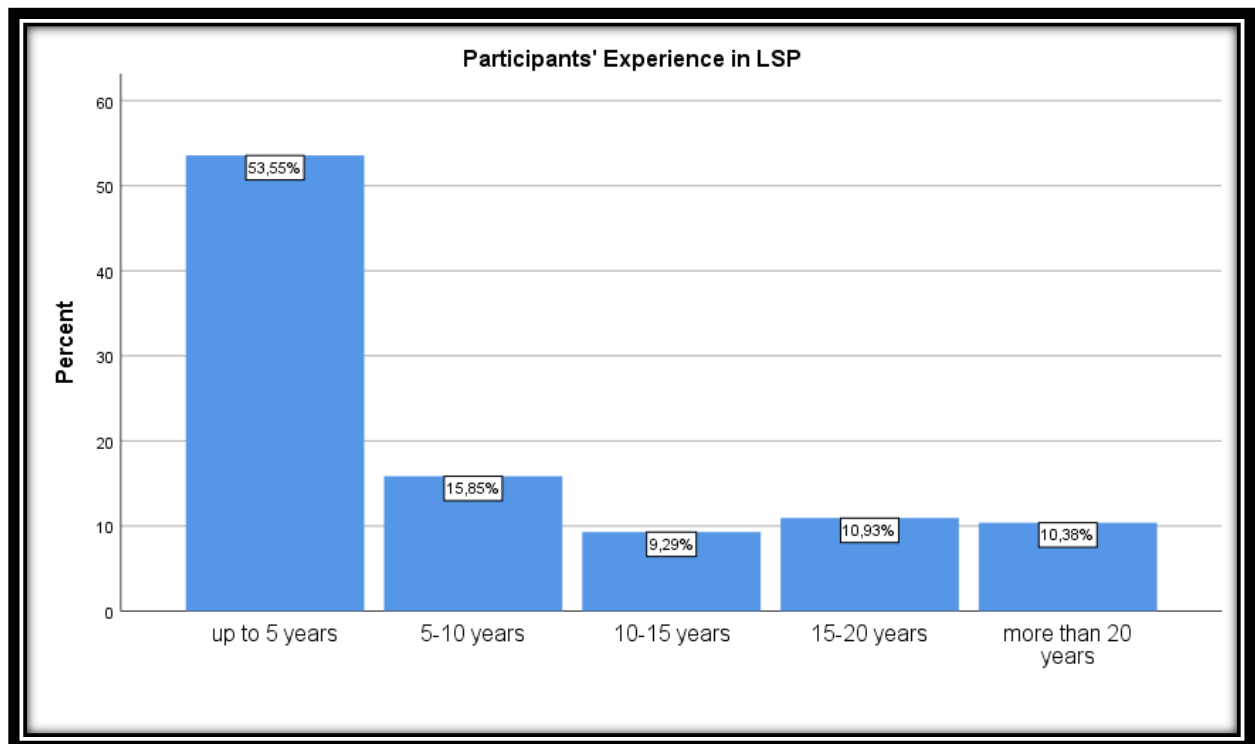
With regard to the participants' experience in LSP, **Figure 6** shows that most of the participants (*n*=98, 53,55%) had up to five years of experience in LSP. In addition, 29 pilotees (15,85%) had 5-10 years of experience in LSP, 17 pilotees (9,29%) had 10-15 years of experience in LSP, 20 pilotees (10,93%) had 15-20 years of experience in LSP, and 19 pilotees (10,38%) had more than 20 years of experience in LSP, respectively.

Table 3. Languages STUDENT (BA/MA/PhD) participants study

If you are a STUDENT (BA, MA or PhD), which language(s) do you study?		
	Frequency	Percent
English	44	63,8
German	7	10,1
Turkish	4	5,8
Spanish	3	4,3
Croatian	1	1,4
French	1	1,4
French and Arabic	1	1,4
French and German	1	1,4
French and Spanish	1	1,4
French and Turkish	1	1,4
French, German, and Spanish	1	1,4
German and Italian	1	1,4
Italian	1	1,4
Romanian	1	1,4
Spanish and Arabic	1	1,4
Total	**69**	**100,0**

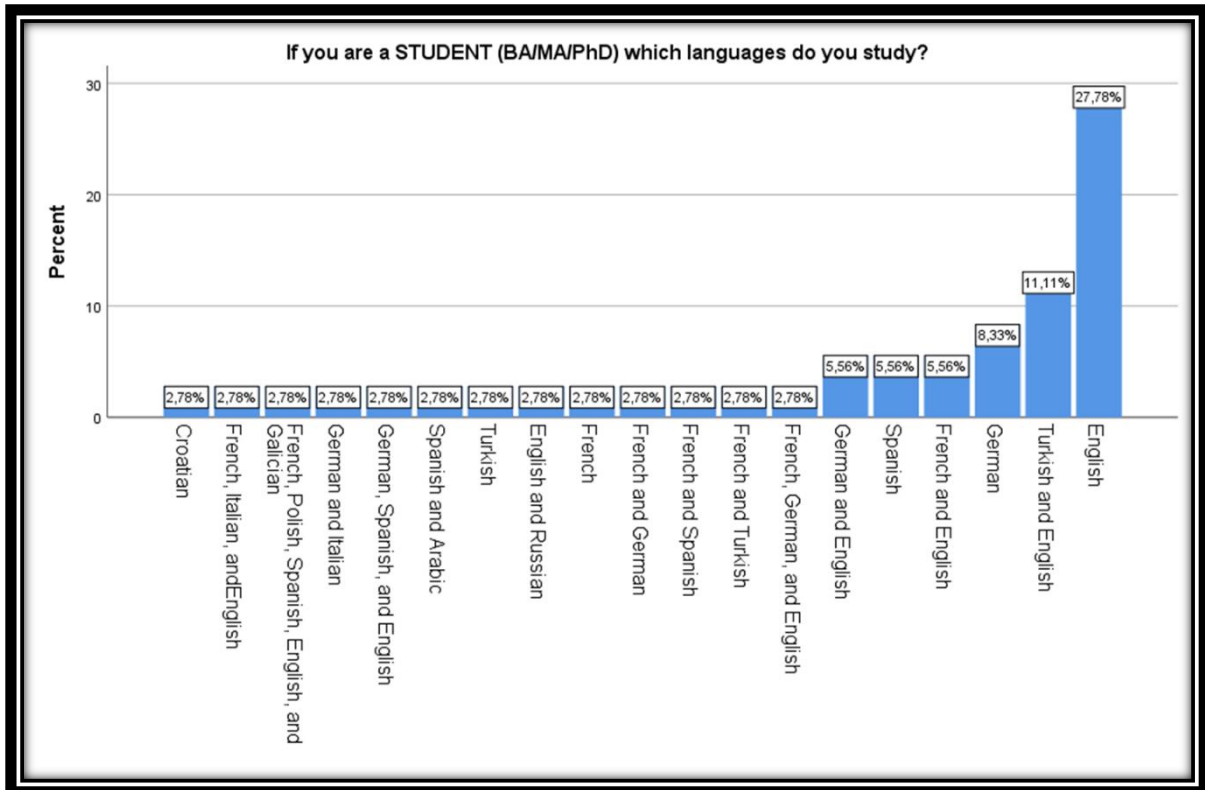*Figure 7. Languages STUDENT (BA/MA/PhD) participants study*

Figure 7 shows that the pilotees mostly study only English (n:10; 27.8%); next the language pair Turkish and English (n:4, 11.1%).

Table 4. Languages TEACHER participants teach as FL for specific purposes*

If you are a TEACHER, what language do you teach as FL (Foreign Language) for specific purposes?		
	Frequency	Percent
English	98	74,8
Spanish	11	8,4
German	9	6,9
French, German, and Spanish	2	1,5
Turkish	2	1,5
French	1	0,8
French and Spanish	1	0,8
German and Spanish	1	0,8
German, Italian, and Slovenian	1	0,8
Italian	1	0,8
Italian and Polish	1	0,8
Polish and Slovenian	1	0,8
Romanian	1	0,8
Russian	1	0,8
Total	**131**	**100,0**

*Those who are not TEACHER participants did not respond to this question.

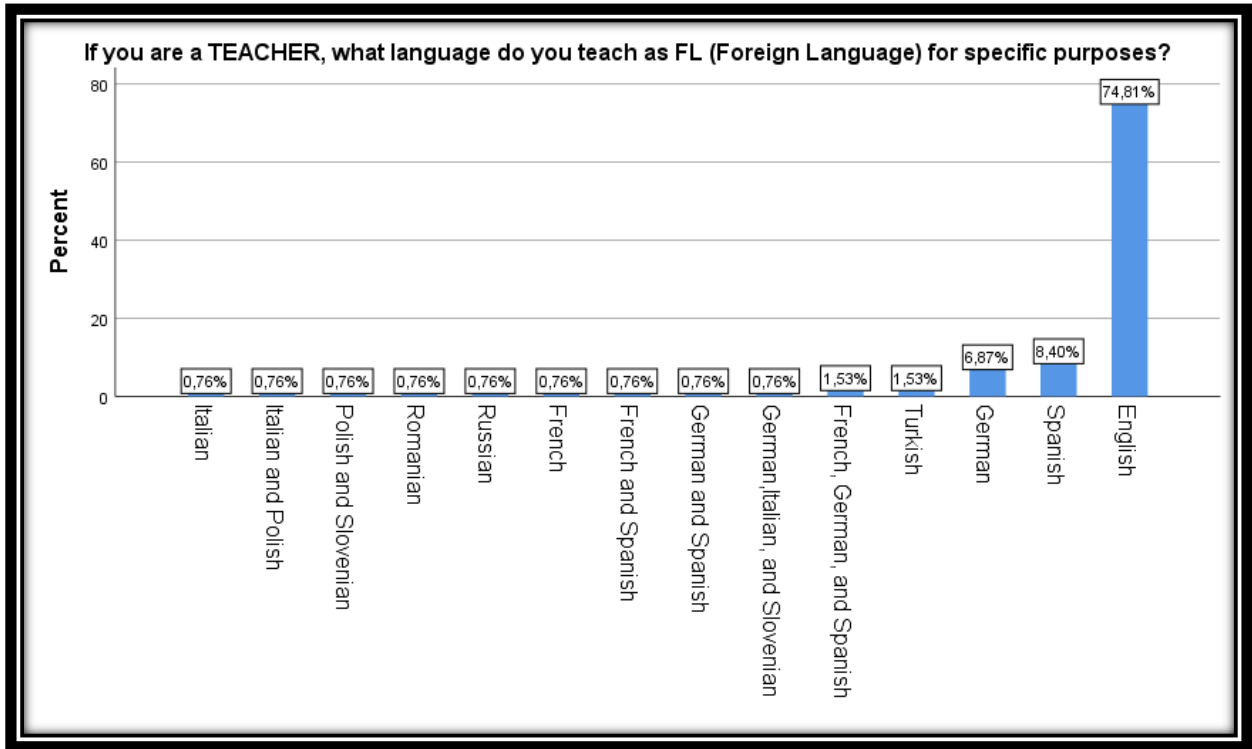*Figure 8. Languages taught by TEACHER participants as FL*

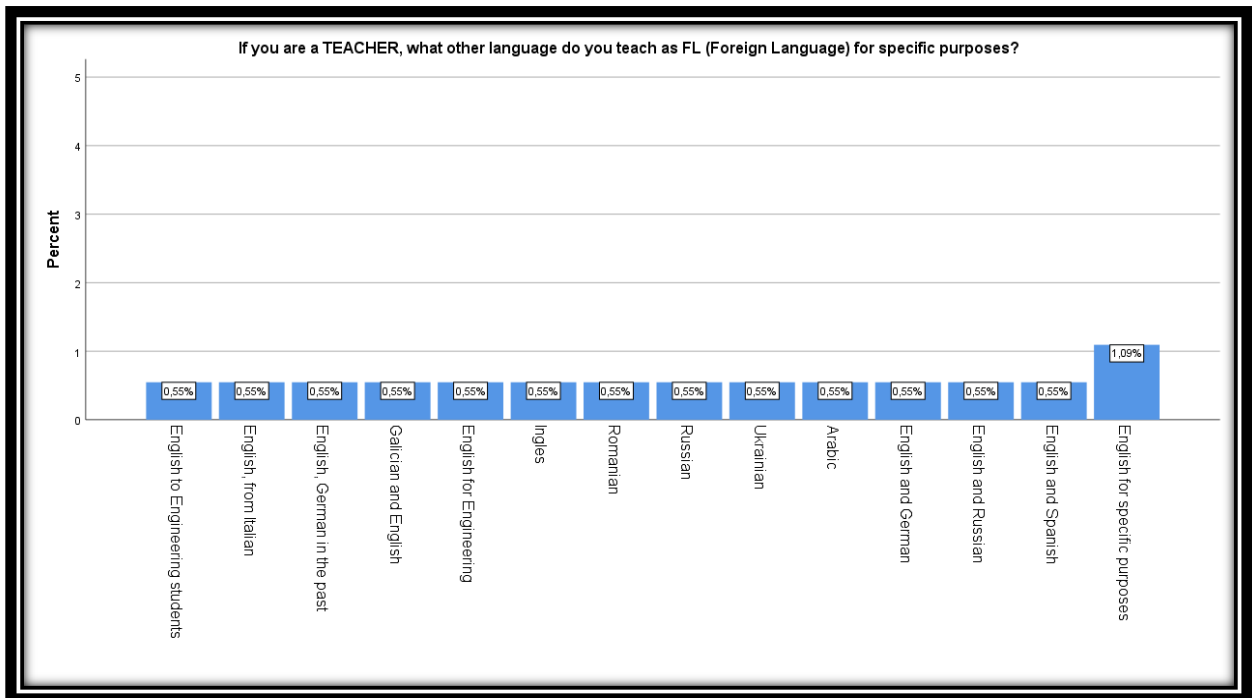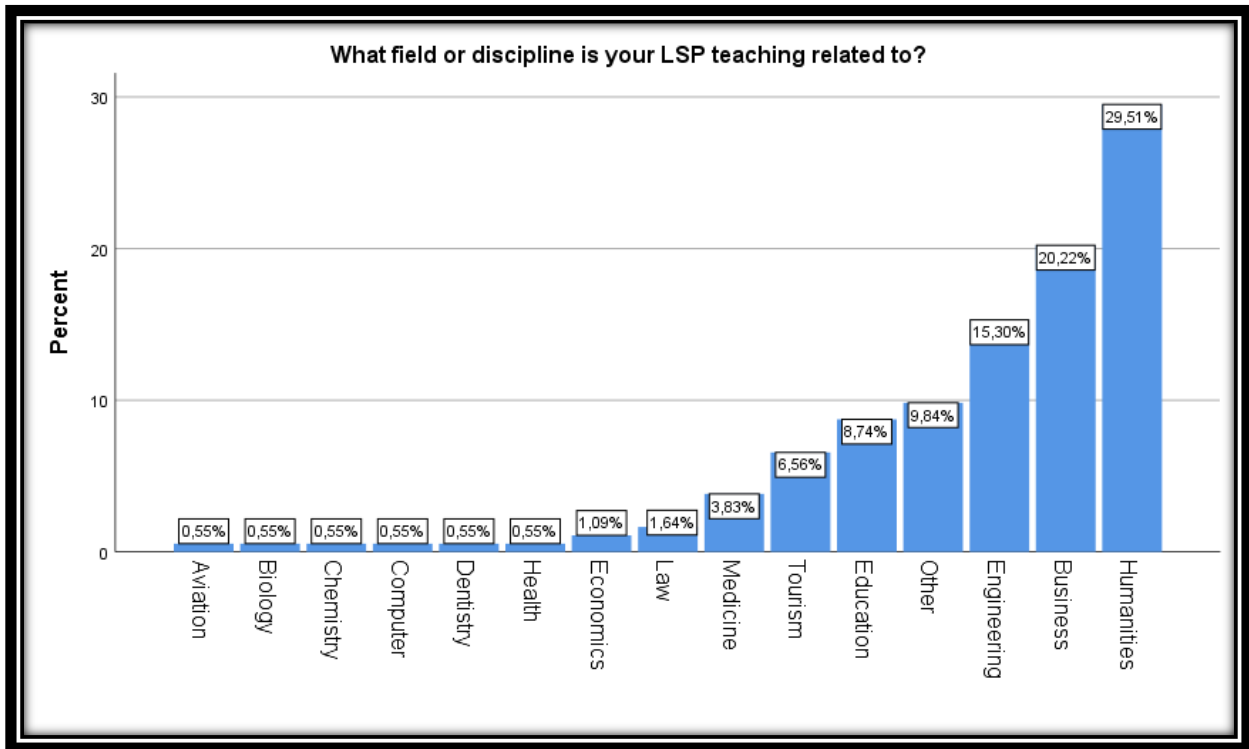*Figure 9. Languages (other than English) taught by TEACHER participants*

Figure 10. The discipline to which the course participant is related

As illustrated in **Figure 10,** participants reported having experience in other fields of LSP teaching (such as aviation, chemistry, business, biology, engineering, economics, health, etc.), 29,51% of participants' LSP teaching was related to humanities, 20,22% of participants' LSP teaching was related to business, 15,30% of participants' LSP teaching was related to engineering, 3,83% of participants' LSP teaching was related to medicine, and 1,64% of participants' LSP teaching was related to law. On the other hand, only 0,55% of participants' LSP teaching was related to biology, and the number of participants whose LSP teaching is related to chemistry was equal to 1 (0,55%).

Table 5. Participants' motivation for taking the course

Source of motivation (Top 10)		
	Frequency	**Percent**
I would like to improve my current LSP teaching skills.	50	27,3
I would like to improve my current LSP teaching skills, receive a certificate in LSP teaching, and satisfy my curiosity about LSP teaching.	18	9,8
I would like to improve my current LSP teaching skills and receive a certificate in LSP teaching.	17	9,3
I would like to satisfy my curiosity about LSP teaching.	17	9,3

I would like to improve my current LSP teaching skills and satisfy my curiosity about LSP teaching.	12	6,6
I would like to start teaching LSP, receive a certificate in LSP teaching, and satisfy my curiosity about LSP teaching.	10	5,5
I would like to receive a certificate in LSP teaching and satisfy my curiosity about LSP teaching.	9	4,9
I would like to start teaching LSP.	8	4,4
Other	8	4,4
I would like to receive a certificate in LSP teaching.	6	3,3
Total	**183**	**100,0**

As seen in **Table 5**, most pilotees (n:50, 27.3%) stated that they would like to take the course to improve their current LSP teaching. The next most frequently mentioned reason was to receive a certificate in LSP teaching and to satisfy their curiosity (n:9.8, 18%).

Table 6. Other sources of participants' motivation for taking the LSP-TEOC.Pro course

Other Sources Motivation		
	Frequency	Percent
I would like to expand my knowledge of the LSP area	2	1,0
I would like to help improving the course.	4	2,0
I would like to learn about the various approaches and novelties within teaching ESP	1	0,7
Just to check the progress of the TRAILS project.	1	0,7
Total	**8**	**4,4**

Table 6 shows other sources of motivation that the pilotees had for taking the LSP-TEOC.Pro course. These sources of motivation ranged from creating an LSP programme, expanding their knowledge of the LSP area to checking the progress of the TRIAL project.

Table 7. Foreign/Second languages spoken by the participants at an advanced level

Foreign/Second Languages Spoken by the Participants at an Advanced Level (Top 10)		
	Frequency	Percent
English	75	41,0
English and German	15	8,2
English and Italian	11	6,0
English and Turkish	10	5,5
English and Other Languages	8	4,4
English and French	6	3,3
English and Spanish	5	2,7
German	4	2,2
French	4	2,2
English, French, and Spanish	3	1,6
Total	**183**	**100,0**

According to **Table 7,** most participants speak only English as a Foreign/Second language at an advanced level (n:75, 41.0%). Next, the participants speak the language pair English and Italian (n:11, 6.0%) and English Turkish (n:10, 5.5%) as a Foreign/Second language at an advanced level.

Table 8. Other Foreign/Second languages spoken by the participants at an advanced level

Other foreign/second languages spoken by the participants at an advanced level	Frequency	Percent
Arabic	2	8,7
Basque	1	4,3
Catalan	4	17,4
Dutch	1	4,3
Japanese	1	4,3
Mandarin	1	4,3
Persian	3	13,0
Portuguese	1	4,3
Romanian	1	4,3
Romanian, Catalan	1	4,3
Russian	6	26,1
Russian, Ukrainian	1	4,3
Total	**23**	**12,5**

According to **Table 8**, the participants speak a variety of other foreign/second languages at an advanced level. Russian is the first mostly spoken foreign/second foreign language (n:6, 26.%), followed by Catalan (n:17.4, 17.4%), Persian (n:3, 13.0%) and Arabic (n:2, 8.7%).

Q2: What is the I06 pilotees' self-assessment of knowledge and skills before and after taking each module?

Table 9. Paired samples t-test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the				
				Lower	Upper			
PreM0-R1 - PostM0-R1	-0,913	1,106	0,098	-1,108	-0,719	-9,309	126	0,000
PreM1-R1 - PostM1-R1	-1,057	1,351	0,144	-1,343	-0,771	-7,340	87	0,000
PreM1-R2 - PostM1-R2	-1,091	1,378	0,147	-1,383	-0,799	-7,425	87	0,000
PreM2-R1 - PostM2-R1	-0,944	1,291	0,137	-1,216	-0,672	-6,896	88	0,000
PreM2-R2 - PostM2-R2	-0,899	1,407	0,149	-1,195	-0,603	-6,029	88	0,000
PreM3-R1 - PostM3-R1	-1,212	0,977	0,135	-1,484	-0,940	-8,943	51	0,000
PreM3-R2 - PostM3-R2	-1,308	1,229	0,170	-1,650	-0,965	-7,671	51	0,000
PreM4-R1 - PostM4-R1	-0,933	1,095	0,126	-1,185	-0,681	-7,384	74	0,000
PreM4-R2 - PostM4-R2	-0,920	1,194	0,138	-1,195	-0,645	-6,672	74	0,000
PreM5-R1 - PostM5-R1	-1,158	1,099	0,146	-1,449	-0,866	-7,958	56	0,000
PreM5-R2 - PostM5-R2	-0,965	1,133	0,150	-1,266	-0,664	-6,428	56	0,000
PreM6-R1 - PostM6-R1	-1,079	1,024	0,166	-1,415	-0,743	-6,498	37	0,000
PreM6-R2 - PostM6-R2	-1,026	1,305	0,212	-1,455	-0,598	-4,849	37	0,000
PreM7-R1 - PostM7-R1	-0,860	1,265	0,193	-1,250	-0,471	-4,462	42	0,000
PreM7-R2 - PostM7-R2	-0,907	1,360	0,207	-1,325	-0,489	-4,375	42	0,000

R1 stands for "Response 1" in the respective pre/post-test.

R2 stands for "Response 2" in the respective pre/post-test.

As seen in the analyses of paired samples t-test presented in **Table 9**, the pilotees were able to improve their knowledge and skills related to the content of each module after completing each respective module.

Descriptions of the t-Test findings

The results from the pre-test (M = 2,99 SD = 0,947) and post-test (M = 3,91 SD = 0,660) showed that the study of Module 0 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of general theoretical concepts of LSP. There was

a statistically significant increase in the perceived level of knowledge and understanding of general theoretical concepts of LSP after Module 0 was completed (t(126) = 9,3 p< .005).

The results from the pre-test (M = 2,88 SD = 1,026) and post-test (M = 3,93 SD = 0,755) showed that the study of Module 1 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of needs analysis concepts and methods in an LSP context. There was a statistically significant increase in the perceived level of knowledge and understanding of needs analysis concepts and methods in an LSP context after Module 1 was completed (t(87) = 7,3 p< .005).

The results from the pre-test (M = 2,74 SD = 1,00) and post-test (M = 3,83 SD = 0,791) showed that the study of Module 1 resulted in the improvement in participants' perceived beliefs in their ability to carry out a needs analysis to design an appropriate needs-based LSP course in practice. There was a statistically significant increase in the perceived level of knowledge and understanding of needs analysis concepts and methods in an LSP context after Module 1 was completed (t(87) = 7,4 p< .005).

The results from the pre-test (M = 2,96, SD = 0,952) and post-test (M = 3,90 SD = 0,724) showed that the study of Module 2 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of relevant concepts and methods in the design and development of an LSP course or syllabus. There was a statistically significant increase in the perceived level of knowledge and understanding of relevant concepts and methods in the design and development of an LSP course or syllabus after Module 2 was completed (t(88) = 6,8 p< .005).

The results from the pre-test (M = 2,98 SD = 1,076) and post-test (M = 3,88 SD = 0,736) showed that the study of Module 2 resulted in the improvement in participants' perceived beliefs in their ability to design, develop, implement and evaluate an LSP course or syllabus in practice. There was a statistically significant increase in the perceived ability to design, develop, implement and evaluate an LSP course or syllabus in practice after Module 2 was completed (t(88) = 6,0 p< .005).

The results from the pre-test (M = 2,71 SD = 0,915) and post-test (M = 3,92 SD = 0,682) showed that the study of Module 3 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of the different forms of co-operation and collaboration that could apply in LSP communities and of the different disciplinary genres that make up LSP communities. There was a statistically significant increase in this ability after Module 3 was completed (t(51) = 8,9 p < .005).

The results from the pre-test (M = 2,56 SD = 0,958) and post-test (M = 3,87 SD = 0,817) showed that the study of Module 3 resulted in the improvement in participants' perceived beliefs in their ability to apply their knowledge and understanding of LSP disciplinary genres to develop and use disciplinary genre-based concepts and tools in teaching practice. There was a statistically significant increase in this ability after Module 3 was completed (t(51) = 7,6 p< .005).

The results from the pre-test (M = 3,27 SD = 0,844) and post-test (M = 4,20 SD = 0,615) showed that the study of Module 4 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of the concepts, principles, and theories used in LSP teaching and learning. There was a statistically significant increase in the level of

knowledge and understanding of the concepts, principles, and theories used in LSP teaching and learning after Module 4 was completed (t(74) = 7,3 p< .005).

The results from the pre-test (M = 3,23 SD = 0,924) and post-test (M = 4,15 SD = 0,730) showed that the study of Module 4 resulted in the improvement in participants' perceived beliefs in their LSP teaching and learning skills in practice. There was a statistically significant increase in the level of their LSP teaching and learning skills in practice after Module 4 was completed (t(74) = 6,6 p< .005).

The results from the pre-test (M = 3,11 SD = 0,920) and post-test (M = 4,26 SD = 0,613) showed that the study of Module 5 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of the advantages and disadvantages of designing and using different types of material in LSP teaching. There was a statistically significant increase in the level of knowledge and understanding of the advantages and disadvantages of designing and using different types of material in LSP teaching after Module 5 was completed (t(56) = 7,9 p< .005).

The results from the pre-test (M = 3,18 SD = 0,909) and post-test (M = 4,14 SD = 0,639) showed that the study of Module 5 resulted in the improvement in participants' perceived beliefs in their ability to evaluate and design LSP materials in practice. There was a statistically significant increase in this skill after Module 5 was completed (t(56) = 6,4 p< .005).

The results from the pre-test (M = 2,79 SD = 0,991) and post-test (M = 3,87 SD = 0,665) showed that the study of Module 6 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of the theories, concepts, method and tools used in task, project and problem based LSP teaching/learning. There was a statistically significant increase in the level of knowledge and understanding of the theories, concepts, method, and tools used in task, project and problem based LSP teaching/learning after Module 6 was completed (t(37) = 6,4 p< .005).

The results from the pre-test (M = 2,76 SD = 0,943) and post-test (M = 3,79 SD = 0,777) showed that the study of Module 6 resulted in the improvement in participants' perceived beliefs in their ability to apply the theories, concepts, method, and tools used in task, project and problem based LSP teaching/learning in your practice. There was a statistically significant increase in this skill after Module 6 was completed (t(37) = 4,8 p< .005).

The results from the pre-test (M = 3,02 SD = 0,831) and post-test (M = 3,88 SD = 0,793) showed that the study of Module 7 resulted in the improvement in participants' perceived beliefs in their level of knowledge and understanding of LSP assessment. There was a statistically significant increase in the level of knowledge and understanding of LSP assessment after Module 7 was completed (t(42) = 4,4 p< .005).

The results from the pre-test (M = 2,93 SD = 0,936) and post-test (M = 3,84 SD = 0,785) showed that the study of Module 7 resulted in the improvement in participants' perceived beliefs in their ability to design and implement appropriate assessment methods and tools in LSP teaching and learning practice. There was a statistically significant increase in this ability after Module 7 was completed (t(42) = 4,3 p< .005).

RQ3. What is the number of pilotees who successfully completed each module from pre-test to post-test on the Spaced Learning method on Moodle?

Table 10. Participation in the pre-and Pots-Participation test

Pre- vs. Post-test Participation		
	Pre-test	Post-test
M0	155	127
M1	115	86
M2	106	85
M3	75	51
M4	83	74
M5	68	55
M6	44	36
M7	47	42
Total	693	556

Table 10 compares the participation in the pre- and post-tests of each module. While 155 participants completed the pre-test of Module 0, 127participants completed the post-test of Module 0. This meant that 28 pilotees did not complete Module 0.

Similarly, 115 participants completed the pre-test of Module 1 whereas the number of participants who completed the post-test of Module 1 was 86. This signalled that 29 pilotees did not complete Module 1.

With regard to Module 2, it can be seen that 106 pilotees completed the pre-test of Module 2 whereas 85 pilotees managed to complete the post-test of Module 2, which showed that 21 pilotees failed to complete Module 2.

The number of pilotees who completed the pre-test of Module 3 was 75. On the other hand, 51 pilotees completed the post-test of Module 3. This showed that 24 pilotees did not complete Module 3.

83 pilotees were found to have completed the pre-test of Module 4 whereas 74 pilotees did not complete the post-test of Module 4. This meant that 9 pilotees failed to complete Module 4 while taking the LSP-TEOC.Pro course.

68 pilotees participated in the pre-test of Module 5 whereas pilotees did not participate in the post-test of Module 5. This showed that 13 pilotees did not complete Module 5.

44 pilotees were found to participate in the pre-test of Module 6 whereas the number of pilotees who participated in the post-test of Module 6 was 36, which showed that 8 pilotees did not complete Module 6.

Finally, 47 pilotees participated in the pre-test of Module 7 whereas 42 pilotees participated in the post-test of Module 7. This meant that 5 pilotees failed to complete Module 7.

RQ4. What is the total number of modules completed by the pilotees?

Figure 11. The number of modules completed by participants
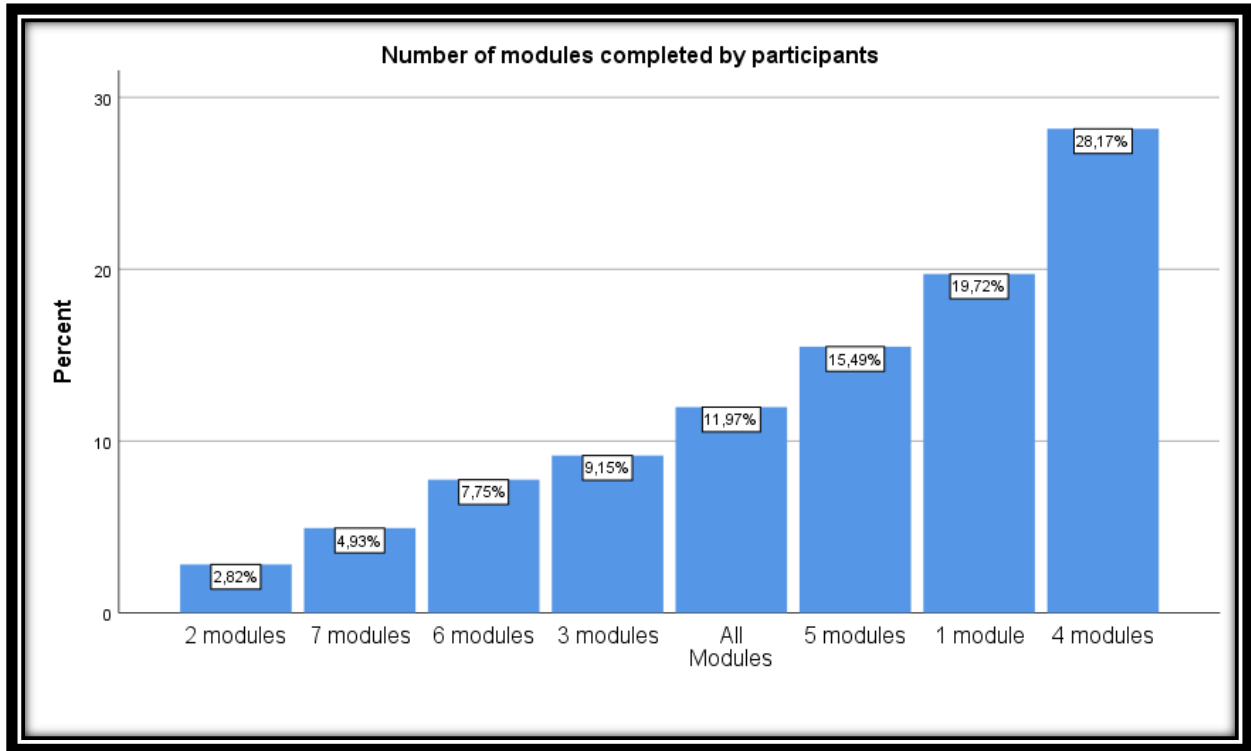
The number of modules completed by the participants is described in **Figure 11**. Overall, 556 successful attempts to the module were recorded.

35 users participated in at least one pre-participation test (or more) but finished no module. According to Figure 11, 28 (19,7%) participants completed just one module; 4 (2,8%) participants completed two modules; 13 (9,2%) participants completed three modules; 40 (28,2%) participants completed four modules; 22 (15,5%) participants completed five modules; 11 (7,7%) participants completed six modules; 7 (4,9%) participants completed seven modules. Finally, 17 (12,0%) participants completed all modules in the LSP-TEOC Pro course.

Table 11. Reasons for the participants' preference of a module

Themes	Excerpts
Sequential order	I wanted to follow the modules in sequential order.
	They were the first four.
	My first choice was mostly based on the progression of contents.

	I wanted to start at the beginning, and I did not have time to finish the whole course.
	Module 0: I like to start at the beginning,
	I assumed there would be a rationale behind these sequences, and I wanted to follow it as intended.
Professional relevance	They are related to my work area.
	They are the most relevant for my work.
	I feel that they are most relevant to my teaching. Also, I wanted to refresh my knowledge and skills in these areas, which I luckily did.
	They were relevant for my own training and my lessons since I have a course on LSP, and I need to include evaluation and assessment criteria.
	Knowing what LSP is important, designing a course and syllabus after understanding LSP is necessary and without evaluating the materials and the learning/teaching process, the learning process cannot be efficient.
Interest value and curiosity	I am interested in teaching skills development and the evaluation methods.
	I am interested in conducting needs analysis, designing a syllabus, and assessing, that is why...
	I'm interested in everything that deals with corpora and many applications.
	Because I'm curious about them.
	I was interested in finding additional tools in developing courses for specific target language/concepts.
	I especially wondered about the course and syllabus design because I think this is the root for LSP.
	As an ESP teacher, I have been interested in these topics and I believe I can always learn something new or revise what I already know.
	They seemed the most interesting to me.
To fill in knowledge gap	I felt I had knowledge gaps.
	I felt I needed updated knowledge and a source of inspiration.
	I chose these modules because I wanted to know how to base my ESP course.
	To improve my knowledge on how to evaluate & design materials for LSP purposes and to learn how to use corpora in LSP contexts.
	I am new on LSP. I wanted to learn some theory and teaching methods.
	Because I felt I needed more information on these specific topics.
Catching one's attention	They caught my attention more than the other modules.
	They were the modules that caught my attentions the most.
	They are better formulated, and the tests are more adapted to the themes.

Time constraint	I tried to do all the modules; due to lack of time I did the last ones only.
	I actually wanted to complete all of the modules, but the uploading tasks were a bit time consuming.
	Because I didn't have enough time to complete all modules. I had to work more hours than I used to have at university, so I miss time to finish all modules.
	I completed the theoretical input for all 8 modules; however, I didn't have enough time to complete the practical assessments for the last 3 modules.

Results of the qualitative content analysis reveal the reasons underling the pilotees' selection of modules, as presented in the above table. As seen in **Table 11**, the most important reason for the pilotees' choice of a particular module is "sequential order", that is the order in which the modules are presented in the Moodle. This is followed with "professional relevance" of the modules to their LSP teaching, "interest value and curiosity, and "to fill in knowledge gap" that is, they wanted to learn new information that they lacked. The next important reason for the pilotees' choice of a module is because it "caught their attention". "Time constraint" is identified as another emerging theme. The pilotees, as seen in the given excerpts, reported that they attempted to complete all the modules; however, due to time constraint they were unable to do so. Each theme is illustrated with some representative excerpts from the qualitative data.

RQ 6. Have the pilotees acquired knowledge that they intend to put into practice after the course?

Table 12. Acquired knowledge that participants intend to put into practice after the course

Have you acquired knowledge that you intend to put into practice after the course?		
	Frequency	Percent
No	10	10,9
Yes	82	89,1
Total	**92**	**100,0**

As seen in **Table 12,** the findings from the descriptive analytics show that a vast majority of the pilotees agreed (n:82, 89.1%) that they acquired knowledge that they could put into practice after taking the LSP-TEOC.Pro course. The qualitative content analysis of the participants' comments in the Post-participation section of the Survey supports the statistical findings, as we report in the following section. In addition, we provide excerpts from the

pilotees' comments to illustrate their opinions in relation to each of the modules in the LSP-TEOC.Pro course.

Module 0: Introduction to LSP

In relation to Module 0, the pilotees made the following comments, clearly suggesting that they have gained knowledge that they intend to use in their future LSP teaching:

- Now I know main things related to LSP and LGP.
- I learned a lot.
- I learned so many things about LSP and in the future, I am planning to teach those things to my students as well.

Module 1: Needs analysis

The following excerpts represent the pilotees' intention to make use of knowledge they gained from completing Module 1, Needs analysis, in their professional life:

- Needs analysis is the tool which we can make use of during the course design.

- I am more aware of needs analysis, and I can match it to my students.

- How to carry out needs analysis and how important it is.

- I understand the needs analysis, which is extremely important for an LSP course.

- I also plan to do a more elaborate needs analysis in the future.

- I am writing my thesis on ESL now and information about data collection tools and data analysis will be so helpful for me.

- I didn't know the importance of needs analysis, but after this course I will try to use this knowledge.

- The content of Module 1 is very useful to be able to conduct the needs analysis in a systematic and structured way, I have learned a lot for example in

- I have learned about needs analysis, which I didn't know of before and I think it is a very useful thing to do before starting a course because you know what the needs of the students are.

Module 2: LSP Course and syllabus design

The following excerpts represent the pilotees' intention to make use of knowledge they gained from Moodle 2: LSP Course and syllabus design in their professional life:

- I will design syllabus and curriculum for each course I'm going to teach.

- Create an outline of a course based on needs analysis findings.

- I will refine the syllabus and improve my teaching materials.

- I am more knowledgeable about syllabus design and material evaluation.

- Distinguishing between the goals of creating or designing a course

- I plan my courses in a different way.

- Doing the research of needs at first and writing syllabus.

- I plan to let my students evaluate my whole course and accordingly introduce some new topics that are more relevant for my students.

Module 3.1: LSP Communities

Below are some excerpts representing the pilotees' intention to make use of knowledge they gained from **Moodle 3.1: LSP communities,** in their professional life:

- Since I am not a teacher, I think I am not going to put into practice acquired knowledge, but I think this knowledge is interesting and useful to understand learning from the point of view of learner.
- I want to teach students in the specific field in the future using this knowledge

Module 3.2: Disciplinary genres

Below are some excerpts representing the pilotees' intention to make use of knowledge they gained from **Moodle 3.2: disciplinary genres,** in their professional life:

- I definitely intend to use genre analysis in my courses.
- I would like to review my classes and materials in light of what I've learned and analyze them from the genre pedagogy point of view.

Module 3.3: LSP Corpora

The following excerpts represent the pilotees' intention to make use of knowledge they gained from **Moodle 3.3: LSP corpora,** in their professional life:

- I'd like to have further practice with corpora in ESP.

- I've been using SKELL to teach collocations.

- Methods of searching for language corpora; developing writing and speaking skills of the students

- I intend to widen my testing instruments to make them more varied and also to explore the use of corpora for my materials and classes.

Module 4: LSP teaching skills

As seen in the following excerpts, the pilotees have the intention to make use of knowledge they gained from Moodle 4: LSP teaching skills, in their professional life:

- One particular example comes to mind - in the teaching skills module, I learned about the importance of differentiating instruction for students with varying levels of language proficiency.

- Integrating productive and receptive skills instead of dividing them into 4 separate parts of the lesson.

- The key concepts, principles and how to apply ESP by integrating four skills.

Module 5: LSP materials evaluation and design

The following excerpts represent the pilotees' intention to make use of knowledge they gained from Module 5: LSP materials evaluation and design, in their professional life:

- I am planning to prepare more of my own materials.

- I think I am better prepared to select and adapt teaching materials to be used within my LSP courses.

- I think I will go into class with a much more informed, sharp view of the setting/students' need. Some of the exercises I have completed are also inspiration for class teaching.

- When dealing with receptive skills, like reading, I will make use of the pre-reading, while reading and post-reading activities

Module 6: Task-/Project-/Problem-based learning in LSP

Participants stated that they have benefited from Module 6, as illustrated in this excerpt: "I will try to prepare a PBL for my next course by including all the information I was provided with in the course".

The pilotees also wrote their comments in the Forum/Chat options to express their takeaways from taking the LSP-TEOC.Pro course, as presented below:

- I have learned the difference between task, problem and project based approaches. I have also learned what a driving question is. The most useful thing in this module was thinking if all the things and objectives can be achieved in the time I have for a lesson.
- This module has helped me to widen my knowledge on TBL, PBL and PBL, which will clearly allow me to improve my teaching. As was the case with previous modules, it was really interesting to be asked to adopt the perspective of an LSP learner and reflect on the difficulties they may face.
- Through these examples I have really understood the importance of practicing the LSP learner vision.

Module 7: LSP assessment

The following excerpts illustrate the pilotees' intention to make use of knowledge they gained from taking Module 7: LSP assessment in their professional life:

- I did not know much about external and internal evaluation criteria and adaptation techniques. Now it will be easier for me to explain why and how specifically a power engineering topic should be elaborated in detail.

- Assessment above all, and also information extracted from modules 4, 5 and 6.

- I would advise my students to get more involved in the self-assessment of their progress as I find it can motivate them to learn.

- The assessment section. After the course I teach ends, I will get feedback from my students asking if the course met their goals and expectations and redesign the course for the next semester/.

- Assessment tasks and evaluation procedure when ending the course to enhance future courses.

- In terms of assessment, I am planning to increase the number of formative assessment tools in the ESP courses I offer.

- This section reminded me that I need to focus more on formative assessment. Forum /Chat Options)
- Goodbye to the antique exam-role, craming for success an exam, anxiety due to learning all by heart for an hour of exam. Forum/Chat Options)
- New forms of assessment make teachers aware of the start level, how to adapt their action program and what are the strengths and weaknesses of the educational system. Forum/Chat Options)
- I liked discovering new assessment activities. Forum/Chat Options)
- My key takeaway from the lever task is to be up-to-date, which means I have to keep in touch with subject content experts and find suitable (not outdated) texts and design tasks that are relevant to them. Forum/Chat Options)

RQ7: In the future, do the pilotees plan to return to the selected modules and/or to those, which they have not chosen this time?

Table 13. The participants' plans to return to modules in the future

Themes	Excerpts
Expressing agreement	Yes, I do.
	Yes, definitely.
	Yes, why not? especially for module 2 and 5.
	Yes, I will return to the selected modules to refresh my knowledge and also to finish the module that I did not choose this time.
	I plan to review LSP teaching skills.
	Yes, I'd like to retake those I haven't had the opportunity to finish properly.
	Assessment is my area of interest, but I didn't have time to access this Module.
	Yes, I intended to do all 7 but has time limitations personally.
	Yes, I would like to work with the modules I've missed now.
	Yes, I would like to complete all modules next time.
	I took all modules. I would like to have access to the course in the future, for reference.
	I would like to have the possibility of coming back to them and finishing the rest, of course.
	Yes, if I have the option to complete them.
Expressing uncertainty	I do not know yet.
	No idea
	Maybe in the future
	I have done them all, But probably.
	Not really, I would change and focus on new ones.
	If needed, yes, depends on the situation.
	Yes, if I only can (if I am allowed, technically).
	I might, I didn't know it would be possible.

As seen in **Table 13** above, two main themes emerged from our analysis of the qualitative data in response to the question: "In the future, do you plan to return to selected modules and/or to those which you have not chosen this time?". According to the first theme "expressing agreement", most participants agreed that they would like to return to some modules such as those that are in their area of interest, or those, which they intended to take this time but

failed to do so due to the lack of time. On the other hand, some participants expressed uncertainty stating that they had no idea; it depended on the situation and a few said "No".

RQ8: Would the pilotees recommend LSP-TEOC.Pro course to other LSP teachers (or students)?

Table 14. Participants' opinions about recommending the course to other LSP teachers (or students)

Themes	Excerpts
Recommendation	• Yes, definitely. • It's a big yes for me. The reasons are intuitive: all teachers need LSP theory and practice, even the experienced teacher's videos and audios you provided were illuminating. • Yes, of course. This was useful and interesting, and I believe it will surely be helpful for other teachers as well *Prospective LSP teachers* • Yes, to students who intend to become LSP teachers. • Definitely, not only for LSP but also for general instruction I believe is useful. • I would recommend it to someone preparing to become an LSP teacher because it is detailed and very informative. • Absolutely to both novice and experienced teachers as well as students • The students would also be a good target audience, but in my opinion at higher levels of education (such as MA) Absolutely! • Maybe it is too complex for undergrad. students but it is perfect for MA students or PhD students like me. • Absolutely to both novice and experienced teachers and students.
Conditional Recommendation	*If they have background LSP knowledge* • Only if they have enough background knowledge. Not for beginners. • Yes, but it is not a beginner course. *If some changes have been made on Moodle* • I would like to but after a couple of changes and reorganizations have done. After some revisions are completed, the training will definitely improve LSP teaching practice of participants.

As illustrated in **Table 14,** most pilotees agreed that they would recommend the LSP-TEOC.pro course to others. There were different groups of people that they would recommend it to: Some stated that they would recommend it to students who intend to become LSP teachers,

and MA or PhD students with some background knowledge on LSP. Some pilotees expressed condition before recommending the LSP-TEOC.Pro course. One participant stated, "I would like to recommend it after some changes and reorganizations have been made".

RQ9: What type of questions are included in the quizzes, and what is the rationale behind each question type?

Table 15. Descriptive statistics of scores from the Quizzes

Descriptive Statistics				
Assessment	N	Minimum	Maximum	Mean
M0 QUIZ 1	145	5,00	9,00	8,21
M0 QUIZ 2	137	4,84	9,00	7,46
M0 QUIZ 3	134	2,14	5,00	4,08
M0 QUIZ 4	132	0,25	1,00	0,94
M1 QUIZ 1	113	6,83	10,00	9,08
M1 QUIZ 2	111	5,00	10,00	8,30
M1 QUIZ 3	108	6,00	10,00	8,87
M1 QUIZ 4	104	5,00	10,00	8,57
M1 QUIZ 5	102	5,33	10,00	8,83
M1 QUIZ 6	95	5,67	10,00	8,49
M1 QUIZ 7	94	0,11	1,00	0,88
M2 QUIZ 1	101	5,00	10,00	8,51
M2 QUIZ 2	99	5,20	10,00	8,29
M2 QUIZ 3	99	5,00	10,00	8,46
M2 QUIZ 4	98	16,00	32,00	24,89
M2 QUIZ 5	91	0,14	1,00	0,89
M3.1 QUIZ 1	69	2,80	5,00	4,59
M3.1 QUIZ 2	68	0,13	1,00	0,55
M3.2 QUIZ 1 Disciplinary genres: Definition	66	5,00	20,00	16,72
M3.2 QUIZ 1 Pre-input stage	50	2,00	4,00	3,26
M3.2 QUIZ 2 Disciplinary genres - Genre analysis	64	3	5	4,22
M3.2 QUIZ 2 Input comprehension stage	43	3,07	7,00	5,68
M3.2 QUIZ 3 Disciplinary genres - Teaching disciplinary genres	64	4	7	5,86
M3.2 QUIZ 3 Terminology and/or grammar development stage	42	5,50	10,00	8,35
M3.2 QUIZ 4 Pre-input stage	64	0,67	1,00	0,98
M3.2 QUIZ 4 Post-input stage	42	1	1	1,00
M3.2 QUIZ 5	63	12,0	22,0	20,69
M3.2 QUIZ 6	62	1	2	1,65
M3.2 QUIZ 7	61	16,08	29,00	20,69
M3.2 QUIZ 8	61	18	30	27,51
M3.2 QUIZ 9	61	12,00	18,00	17,09
M3.2 QUIZ 10	59	0,25	1,00	0,86
M3.3 QUIZ 1	54	2	4	3,28
M3.3 QUIZ 2	53	4	8	6,83
M3.3 QUIZ 3	53	6,00	10,00	8,60
M3.3 QUIZ 4	53	0,4	1,0	0,90

M4 QUIZ 1	80	5,50	10,00	9,11
M4 QUIZ 2	78	1,51	3,00	2,58
M4 QUIZ 3	78	7,13	10,00	9,26
M4 QUIZ 4	78	5,33	10,00	8,69
M4 QUIZ 5	77	5,19	10,00	8,78
M4 QUIZ 6	76	5,00	10,00	8,24
M4 QUIZ 7	76	4,38	7,00	6,43
M4 QUIZ 8	75	0,55	1,00	0,93
M5 QUIZ 1 Introduction to Materials Design	13	0,00	8,00	6,49
M5 QUIZ 1 Role of Materials; Commercially-Produced Materials (CPMs)	66	0,00	9,00	8,15
M5 QUIZ 2 Materials Evaluation	63	3,86	7,00	6,54
M5 QUIZ 2 Carrier Content; Authenticity	12	0,00	9,86	7,59
M5 QUIZ 3 Materials Adaptation	61	3,60	6,00	5,34
M5 QUIZ 3 Explanations; Revisions	12	0,00	7,00	5,83
M5 QUIZ 4	61	5,00	10,00	9,36
M5 QUIZ 5	59	0,4	1,0	0,95
M6 QUIZ 1 Gold standard practices for PjBL	12	0	10	8,17
M6 QUIZ 1 Definitions of TBL, PBL, PjBL in LSP	42	6	10	8,38
M6 QUIZ 2 Seven Principles	9	7,00	10,00	8,90
M6 QUIZ 2 Main features of TBL, PBL, PjBL	40	0,00	12,00	10,25
M6 QUIZ 3	39	4,83	9,00	7,78
M6 QUIZ 4	39	4	6	5,85
M6 QUIZ 5	39	7	10	9,26
M6 QUIZ 6	38	5	10	8,11
M6 QUIZ 7	38	0,33	1,00	0,90
M7 QUIZ 1 LSP assessment: Paper-based vs. computer-based assessment	29	0	10	7,38
M7 QUIZ 1 LSP assessment: Basic terms	45	4	8	6,13
M7 QUIZ 2 LSP assessment: The lever - final quiz	28	0	5	3,86
M7 QUIZ 2 LSP assessment: Exam examples	45	2	4	3,56
M7 QUIZ 3 LSP assessment: Reliability and validity of assessment	26	0	9	6,54
M7 QUIZ 3 LSP assessment: Consolidation	45	9	12	11,13
M7 QUIZ 4	45	8	15	12,53
M7 QUIZ 5	43	7	13	11,12
M7 QUIZ 6	42	0,00	13,00	10,94
M7 QUIZ 7	42	0,33	1,00	0,96
PreParticipation Test Module 0	155	1	1	1,00
PreParticipation Test Module 1	117	1	2	1,98
PreParticipation Test Module 2	106	2	2	2,00
PreParticipation Test Module 3	75	2	2	2,00
PreParticipation Test Module 4	83	2	2	2,00
PreParticipation Test Module 5	68	2	2	2,00
PreParticipation Test Module 6	44	2	2	2,00
PreParticipation Test Module 7	47	2	2	2,00
PostParticipation Test Module 0	128	5	6	5,99
PostParticipation Test Module 1	88	6	7	6,98

PostParticipation Test Module 2	89	6	7	6,96
PostParticipation Test Module 3	51	7	7	7,00
PostParticipation Test Module 4	74	7	7	7,00
PostParticipation Test Module 5	56	6	7	6,98
PostParticipation Test Module 6	37	6	7	6,97
PostParticipation Test Module 7	42	7	7	7,00
Course total	**168**	**1,00**	**632,81**	**234,98**

Table 16 Overall quiz analysis

Modules	Multiple Choice	True/False	Short answer	Matching	Drag and drop into text	Select missing words	Total number of questions in each module
Module 0	7	13	2	1	1	0	**24**
Module 1	17	12	4	6	14	7	**60**
Module 2	3	7	0	8	2	4	**24**
Module 3.1	2	2	1	1	0	0	**6**
Module 3.2	24	14	5	0	0	0	**43**
Module 3.3	7	15	0	0	0	0	**22**
Module 4	5	15	0	13	12	4	**49**
Module 5	4	9	0	10	9	11	**43**
Module 6	16	15	0	5	2	0	**38**
Module 7	0	24	0	3	0	0	**27**
Total number of questions for each question type	**85**	**126**	**12**	**47**	**40**	**26**	**336**

Multiple Choice: Receptive knowledge – checking the understanding of notions related to the modules.
True/False: Receptive knowledge – checking the understanding of notions related to the modules.
Short answer: Productive knowledge – checking the recalling of a notion related to the modules.
Matching: Productive knowledge – checking the recalling of a notion related to the modules.
Drag and drop into text: Receptive knowledge – checking the understanding of notions related to the modules.
Select missing words: Productive knowledge – checking the recalling of a notion related to the modules.

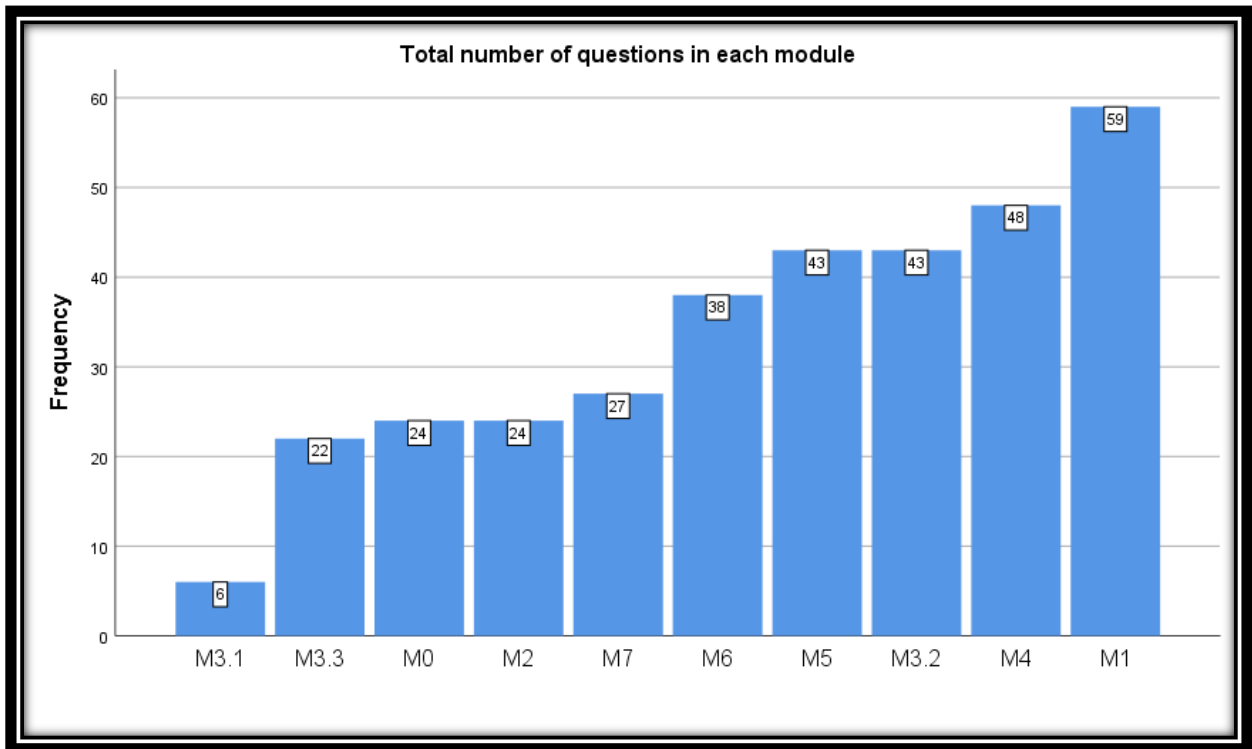*Figure 12. Total number of questions in each module*

Figure 12 shows that Module 1 included the highest number of questions (*n*=60; 19, 10%) in the course. It was followed by Module 4 (*n*=49; 15,60%), Module 3.2 (*n*=43; 13,9%), Module 5 (*n*=43; 13,9%), Module 6 (*n*=38; 12,10%), Module 7 (*n*=27, 8,59%), Module 2 (*n*=24; 7,64%), Module 0 (*n*=24; 7,64%), Module 3.3 (*n*=22; 6,6%), and Module 3.1 (*n*=6; 1,91).

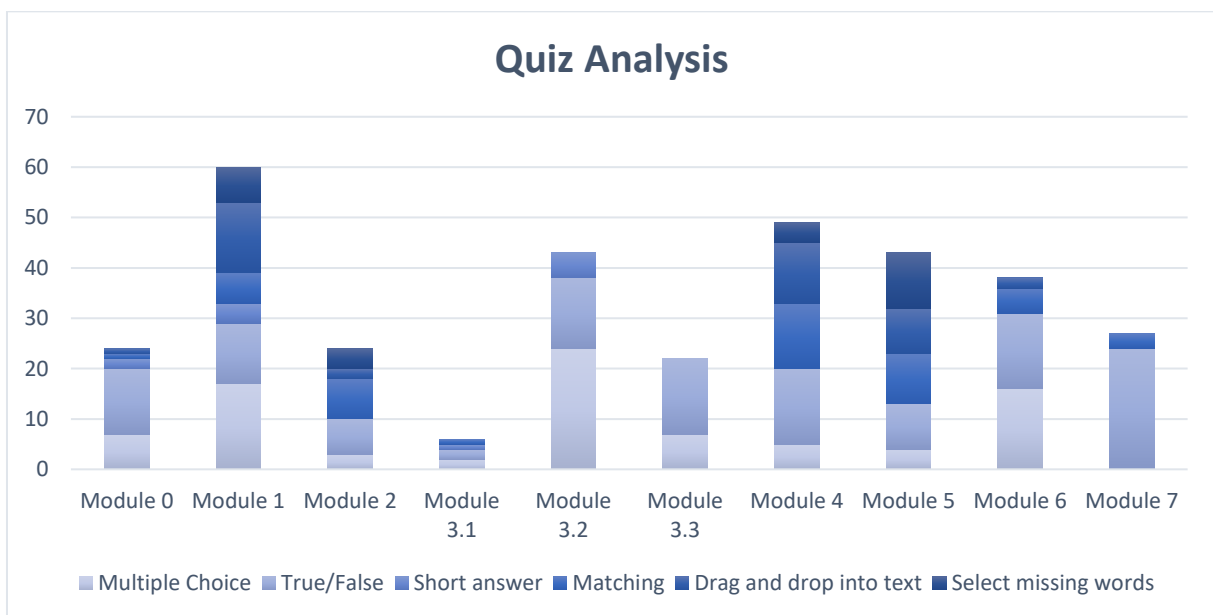*Figure 13. Distribution of the question types in each module*

Figure 14. Types of questions
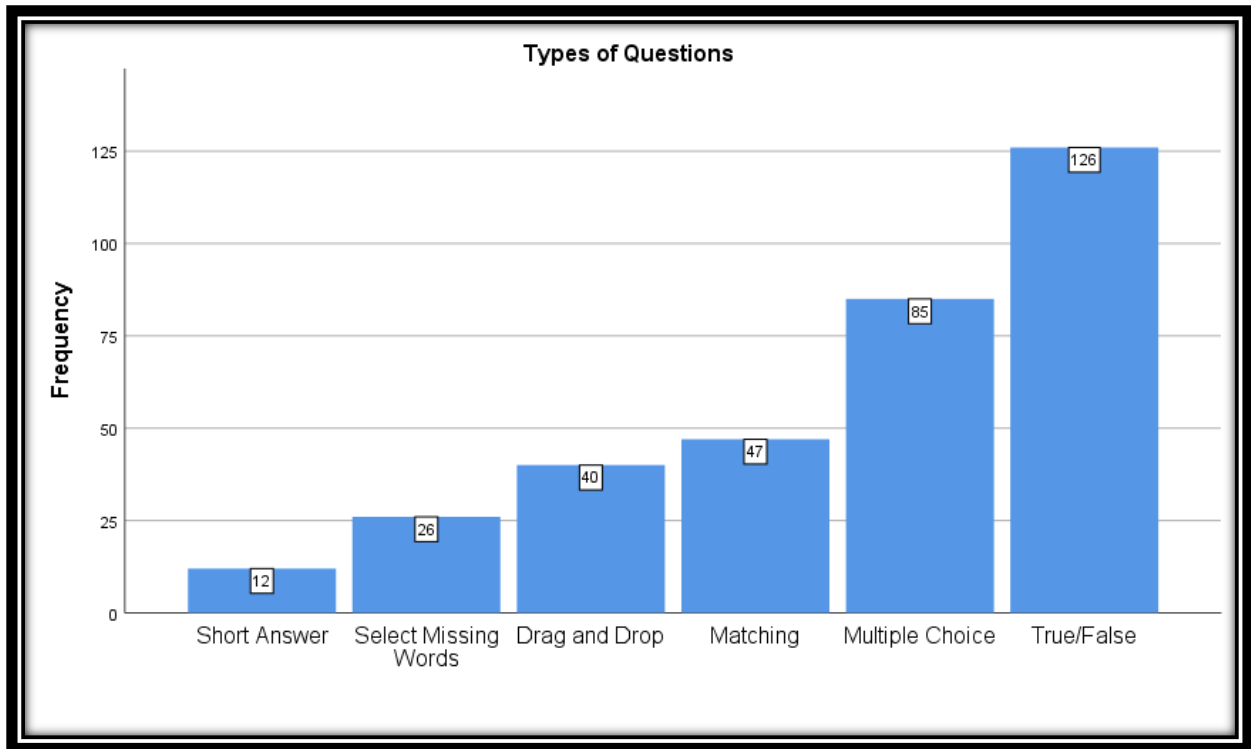
Figure 13 and **14** show that "True/False" question type (*n*=126; 37,5%) made up the biggest portion of all questions whereas "Short answer" question type made up the smallest portion (*n*=12; 3,6%). Also, "True/False" question type was followed by "Multiple Choice" (*n*=85; 25,3%), "Matching" (*n*=47; 14,0%), "Drag and drop into text" (*n*=40; 11,9%), and "Select missing words" (*n*=26; 8,28%) question types, respectively.

RQ10: Overall, with which three words would the piloted describe LSP-TEOC.Pro course?

In the post-participation test, we asked the pilotees to give an overall description of each module with three key words. For the purpose of analyzing this particular question, we compiled all the key words under a single word file; in this way we created a corpus of key words. The corpus includes 1806 word tokens (total number of words) and 344 word types (different words). Our aim was to find the most frequently used key words that pilotees used to describe the LSP-TEOC.Pro course. To proceed with corpus analysis, we used AntConc software. In the analysis, frequencies and the rank of the words are identified. The following

figures show the frequencies of the words, which are grouped based on their ranking in the whole corpus.

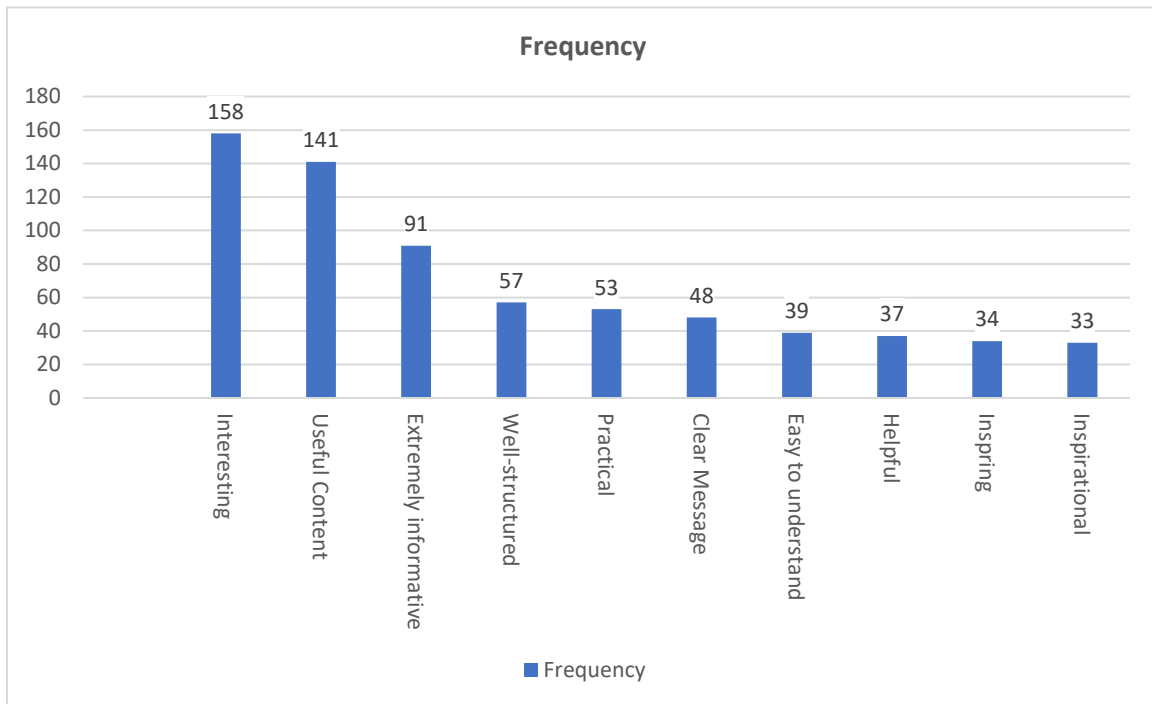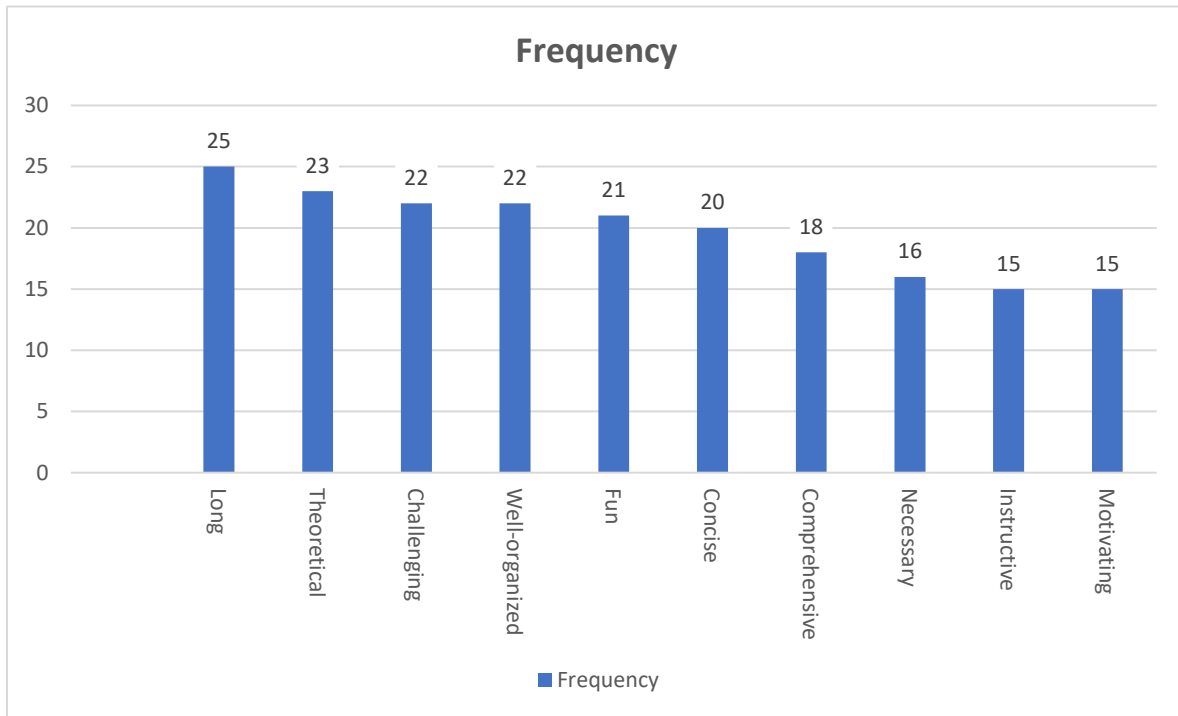*Figure 15. Most frequent words in the corpus (Ranks 1-10)*

Figure 15 shows the first ten most frequent words in the corpus. "Interesting" is the most frequent word with 158 word count. The second most frequent word in the corpus is "useful content." "Extremely informative" and "well-structured" are also among the most frequent words with 91 and 57 word counts, respectively.

Figure 16. Most frequent words in the corpus (Ranks 11-20)

According to **Figure 16,** the most frequent words in the corpus within Ranks from 11 to 20) are *long, theoretical, challenging, well-organized, fun, concise, comprehensive, necessary, instructive and motivating.*

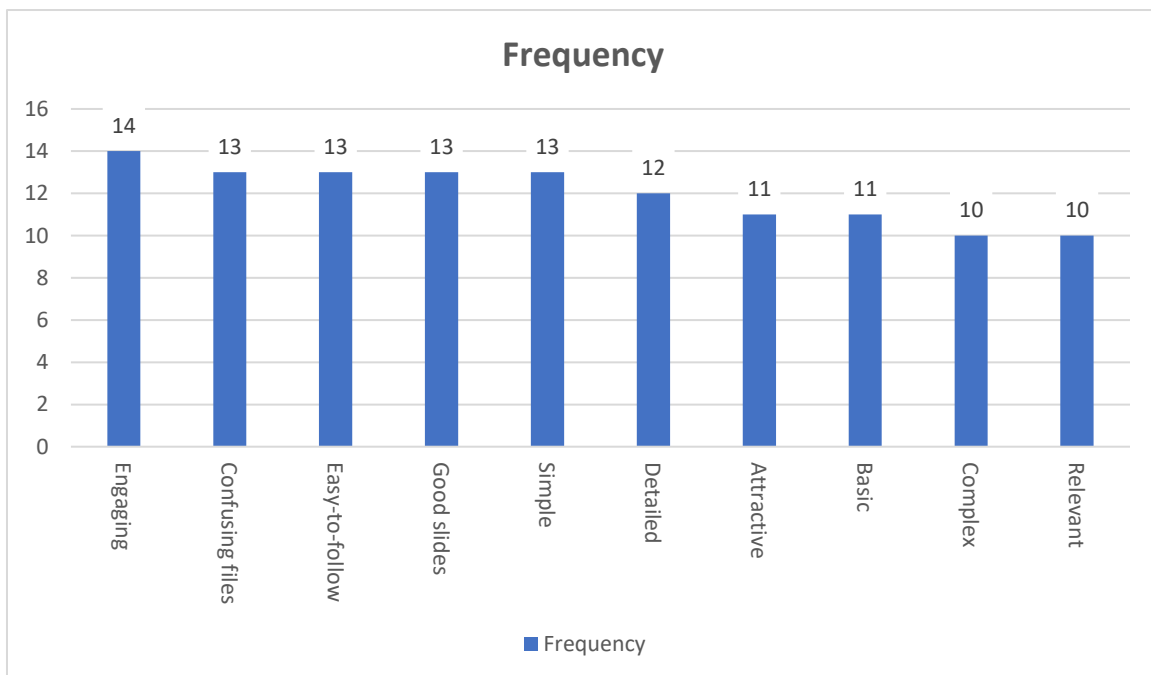*Figure 17. Most frequent words in the corpus (Ranks 21-30)*

Figure 17 shows the third group of words that have the most occurrence in the corpus within the ranks 21-30. Engaging" has 14 counts; "Confusing files, easy-to-follow- good slides and simple" have 13 occurrence in the corpus.

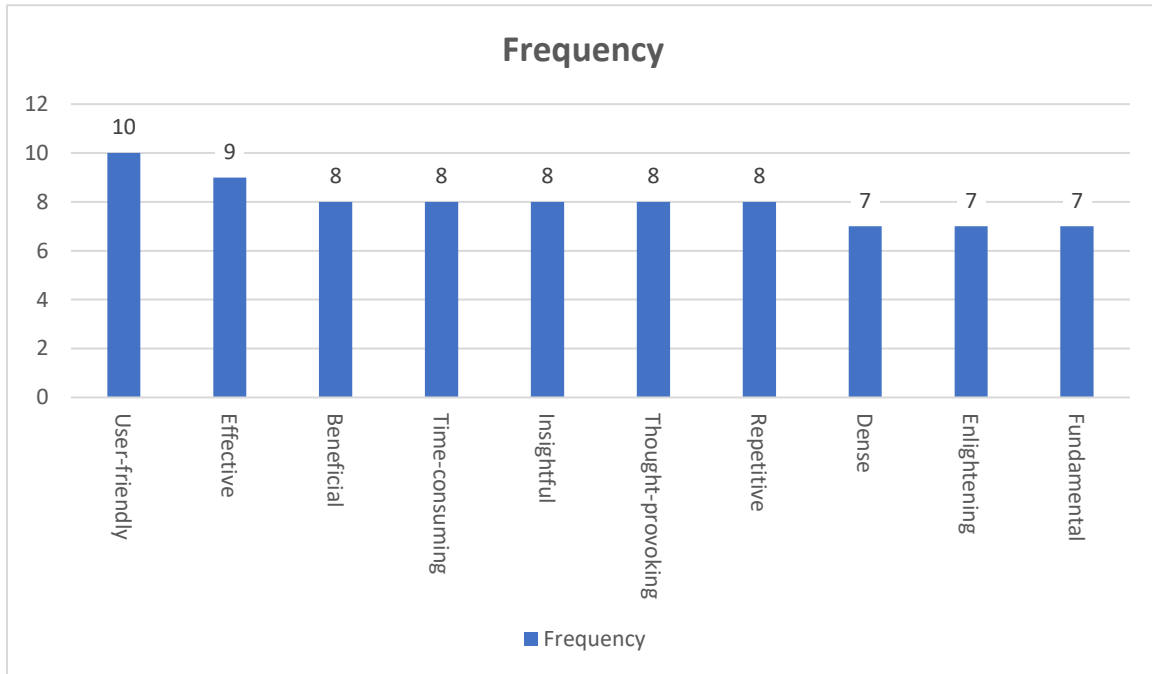*Figure 18. Most frequent words in the corpus (Ranks 31-40)*

Figure 18 depicts the less frequent words ranking from 31 to 40, including *user-friendly, effective, beneficial, time-consuming, insightful, thought provoking, repetitive, dense, enlightening and fundamental.*

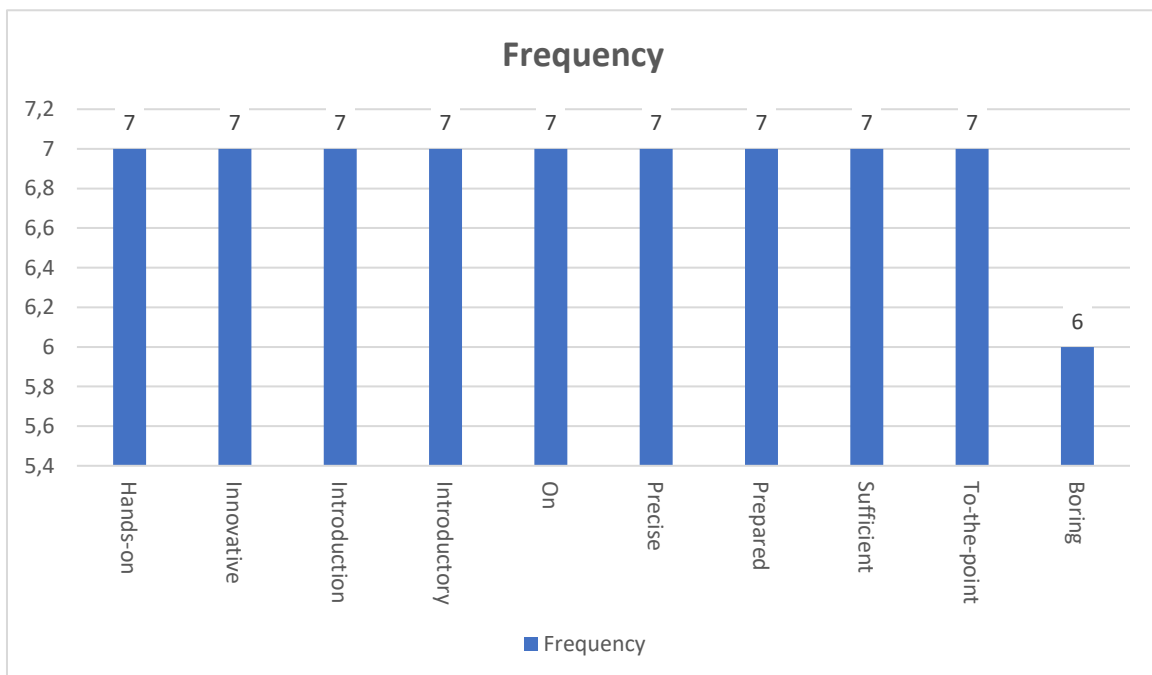*Figure 19. Most frequent words in the corpus (Ranks 41-50)*

Figure 19 illustrates the fifth group of most frequent words in the corpus. As can be seen in the figure, "hands-on, innovative, introduction, introductory, practice, prepared, sufficient, and to-the-point" has same word counts with seven occurrences.

Figure 20. Most frequent words in the corpus (Ranks 51-60)
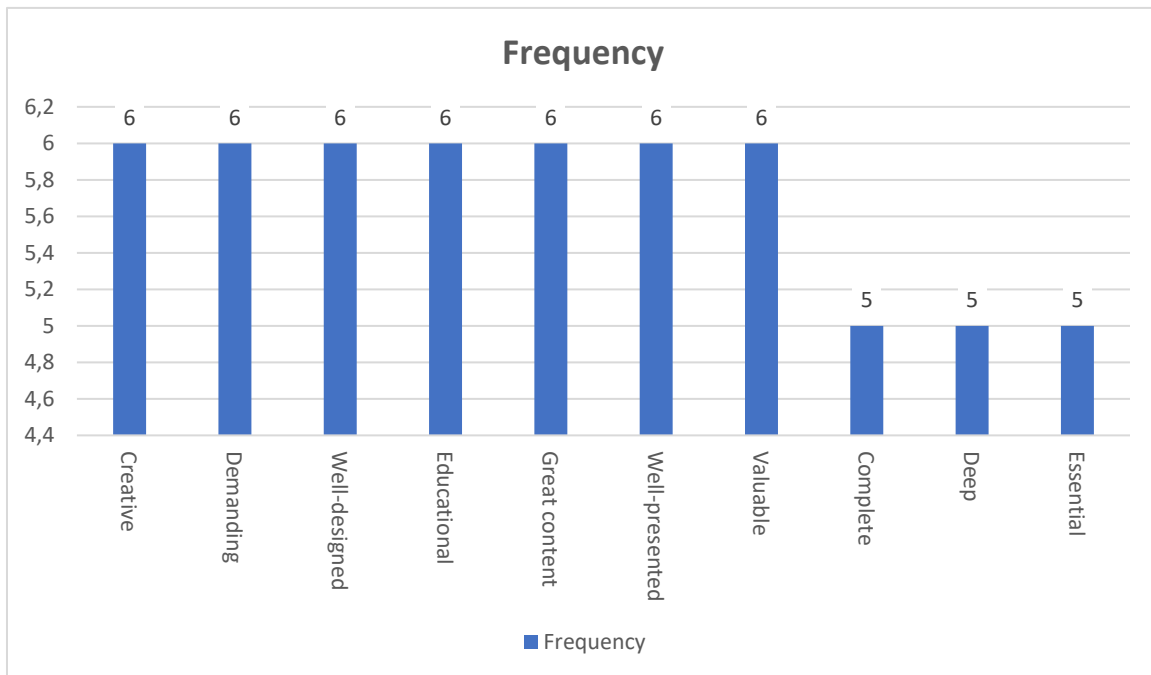

Figure 20 shows the least frequent group of words. Words that have less than five count were not taken into the analysis as they were not taken as the "key" words statistically.

Conclusion

In this report, we presented the results of Intellectual Output 6 (I06), which involved a large-scale trialing of the multilingual online LSP-TEOC.Pro Teacher Education Online Course. The trialing phase of I06 started on January 24, 2023 and ended on March 14, 2023 on Moodle. Using a survey, as the main data collection tool, we collected both qualitative and quantitative data from the Moodle. The quantitative data was analyzed mainly using statistical analytics whereas the qualitative data was analyzed using content analysis. Initially, we compiled information from diaries and comments made by the pilotees expressing their opinions about the modules they have completed, and analyzed this qualitative data using content analysis. This analysis gave us valuable information about various aspects of the LSP-TEOC.Pro online course. Based on this information, each module producer made the necessary improvements on their respective modules to enhance the quality of the modules. Finally, our analysis of both quantitative and qualitative data seem to suggest that the trialing phase of

the LSP-TEOC.Pro Teacher Education Online course has been very critical in leading us to gain deeper knowledge and understanding on LSP users' reflections on various elements of the course including pedagogy, spaced learning, quizzes, online materials and learning activities.

References

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What *is spaced learning & (why does it matter) in eLearning?* https://www.instancy.com/what-is-spaced-learning/.