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Learn2Analyze (L2A)

An Academia-Industry Knowledge Alliance for enhancing Online Training Professionals' (Instructional Designers and e-Trainers) Competences in Educational Data Analytics

Learn2Analyze

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R13. Initial Evaluation Report for Learn2Analyze MOOC Pilot Phase A & Recommendations

Public

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Executive Summary

The scope of **Result 13** (*Initial Evaluation Report for Learn2Analyze MOOC Pilot Phase A and Recommendations*) is to evaluate the Learn2Analyze MOOC Phase A and identify areas for possible improvement. This is done through pre- and post-course questionnaire-based surveys with the participants of the first implementation of the L2A MOOC which were conducted from the 3rd of September 2019 – when the enrolment process started - through 14th of January 2020 when the L2A MOOC Phase A ended. The document presents the design, the implementation and the analysis of the pre- and post-course surveys and provides recommendations for improvement of the initial L2A MOOC.

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1. Introduction

1.1 Scope

The scope of this evaluation study is to validate and provide areas of possible improvement of the Learn2Analyze MOOC Phase A. This is done through pre- and post-course questionnaire-based surveys with the participants of the first implementation of the L2A MOOC which were conducted from the 3rd of September 2019 – when the enrolment process started - through 14th of January 2020 when the L2A MOOC Phase A ended.

This document presents the design, the implementation and the analysis of the pre- and post-course surveys and provides recommendations for improvement of the initial L2A MOOC.

1.2 Background

Learn2Analyze (L2A) (http://learn2analyze.eu) is an Academia-Industry Knowledge Alliance for enhancing Online Training Professionals' Competences in Educational Data Literacy, co-funded by the European Commission through the Erasmus+ Program of the European Union. The key objectives of the Learn2Analyze (L2A) initiative are (i) to develop comprehensive proposal for an Educational Data Literacy Competence Framework for instructional designers and e-trainers of online and blended learning courses, and (ii) to design, develop and offer a competence-based Professional Development MOOC for cultivating these competences. To this end, the initial version of the L2A MOOC consists of 8 modules combining EDL theory (Modules 2-4) and practice with EDL tools in 3 widely used Course Management Systems, namely, Moodle, the Exact Suite and the IMC Learning Suite (Modules 5-7) following a self-directed MOOC educational design.

1.3 Synopsis of evaluation method

In order to validate this initiative and identify areas of possible improvement, **pre- and post-course questionnaire-driven online surveys** were designed and implemented, within the L2A MOOC Phase A participants**.** Participant characteristics along with their initial motives were examined in the pre-course survey, while participant' perception of the course design and the instructional elements examined in the post-course survey.

Our first goal was to profile the L2A MOOC Phase A participants to better understand the learners' cohort, so as to make better sense of their experience with the L2A MOOC. The findings e.g. in relation to their performance can help us identify and interpret trends and potential common issues, such as the underperformance of different subgroups of participants with different characteristics.

To this end, we collected data on demographic characteristics, motives, and background knowledge on the subject matter, using questionnaire-based surveys (pre-course survey). These data provide us insights into "***who our learners are***" and "***why they enroll in the course***" and it will be correlated with their learning experience and achieved learning outcomes collected through a post-course survey.

Learning experience is measured, both per module and through the course, in terms of the overall level of satisfaction, satisfaction with the platform, the workload, the level of interaction, the content (graphics, videos, complementary material, learning activities, and assessments), and the continuance intention. Our goal is to leverage the outcomes for improving the educational design of the course, the learning environment and thus to better meet the learning needs of our MOOC participants in future versions.

To measure success in the L2A MOOC, instead of considering only simple data such as ***certification*** and ***dropouts***, we focus on whether the L2A MOOC contributed to the advancement of the educational data literacy competence level of the participants. Thus, the starting competence level for every statement of the L2A Educational Data Literacy Competence Profile, was measured using a pre-course questionnaire. After the course completion, learners were asked to self-assess their learning accomplishment evaluating their current competence level to reveal the achieved progress.

The overall evaluation plan is graphically represented in **Appendix 1 – Evaluation plan**.

The core question of this study is:

- What are the areas of possible improvement for the offered competence-based Professional Development L2A MOOC to better the quality of the learning experience and effectively cultivate the Educational Data Literacy Competences that are described in the L2A EDL competence profile?

The core question is investigated at the following dimensions:

1. What are the main targeted groups of participants in the L2A MOOC and what is their profile? What are the individual characteristics and key differences of targeted participants' groups in relation to their motives, self-confidence, GRIT and initial EDL competence?
2. What characteristics of participants' profile are related to the course completion?
3. How do the characteristics of participants' profile affect their EDL competences advancement?
4. What is the perceived learning experience per module as reported by participants that completed the L2A MOOC? What is the perceived overall learning experience per targeted group?
5. How does the overall learning experience affect competences advancement?
6. Which are areas and recommendations for possible improvement.

1.4 Description of the evaluation process

Pre- and Post-course survey implementation

The main design aspects of the survey were:

- the instruments used for the data collection, namely invitation letter and pre- and post-course questionnaires,
- privacy and ethical issues, namely, the consent form used.

To match the answers of the participants in pre- and post-course surveys, we asked the participants to produce and provide an easy to remember and reproduce, and very difficult to decode Unique ID Code, based on their answers to the following questions:

1. The first letter of your first name (e.g. U)

2. The last 2 digits of your cell phone (if none use 00) (e.g. 17)
3. Your month of birth (e.g. 03)
4. The first letter of your middle name (if none, use X) (e.g. M)
5. The first letter of city/town you were born in (e.g. V)
(The above example would generate the unique code ID: U1703MV)
Next, we summarize the key design aspects.

Instruments

The instruments used for the implementation of the survey were:

Pre-course survey:
The ***invitation letter*** mentioning the description of the project and its objectives, guidelines for completing the survey and receiving the key to unlock the L2A MOOC content [Section 2 of the Online Questionnaire, see **Appendix 2 – Instruments**]

The ***consent form*** with all the information needed (purpose and procedure, potential benefits, potential risk or discomforts, storage of data, anonymity and confidentiality, right to withdraw, conflict of interest, compensation, participant concerns and reporting) for the participants to consent or not in the survey. The consent form follows the guidelines of the General Data Protection Regulation (EU) 679/2016 ('GDPR') [Section 2 of the Online Questionnaire, see **Appendix 2 – Instruments**]

The ***questionnaire*** in a web form (google form) to collect the participants' responses using the Likert scale. The questionnaire consists of 7 sections and will need approximately 20 minutes to be filled in. More specifically the online questionnaire consists of the following sections:

- Section 1 provides information about the project.
- Section 2 includes the **consent form.**
- Section 3 provides guidelines to the participant in order to create and provide his/her **Unique Code ID**. This code is used both in the pre- and post- course surveys to match the answers of the participants.
- Section 4 includes **12 items** on **demographics** and **general background**, namely:
    1. Year of birth
    2. Gender
    3. Country of residence
    4. Highest level of education completed
    5. Current job sector
    6. Definition of professional role (from a given list)
    7. Years involved in this role
    8. Years involved in the field of Digital Teaching and Learning
    9. English proficiency
    10. Comfort with technology
    11. Number of MOOCs enrolled in the past
    12. Number of MOOCs completed
- Section 5 includes **motives for enrolling** in the L2A MOOC

1. Goal in taking the course – Participants are asked to select from 7 statements or provide an alternative answer.
2. Reasons for enrolment – Participants are asked to rate 8 statements from "Not at all true" to "Very True" plus a "Not applicable" choice to identify their internal and external motives.
3. Self-Confidence – Participants are asked to rate in a 5-items likert scale their confidence in learning the material and their confidence in completing the course according to the time commitment defined in the syllabus.
4. Hours per week planning to spend.
5. 8-items GRIT scale –Participants are asked to rate 8 statements from "Very much like me" to "Not at all like me" in order to identify their **passion and perseverance for long-term and meaningful goals.**

- Section 6 includes 17 statements in 6 EDL Competence Dimensions where participants are asked to select their initial level of competence from 5 possible levels, namely: Novice, Advanced Beginner, Competent, Proficient and Expert.
- Section 7 includes instructions to unlock the L2A MOOC content.

Appendix 2 – Instruments presents the full online questionnaire and **Appendix 3 – Coding of Questions** provides the coding of the different types of questions.

Post-course survey:

The ***invitation letter*** mentioning the description of the project and its objectives, guidelines for completing the survey and receiving the key to unlock the L2A MOOC Certificate of Achievement [Section 2 of the Online Questionnaire, see **Appendix 2 – Instruments**]

The ***consent form*** with all the information needed (purpose and procedure, potential benefits, potential risk or discomforts, storage of data, anonymity and confidentiality, right to withdraw, conflict of interest, compensation, participant concerns and reporting) for the participants to consent or not in the survey. The consent form follows the guidelines of the General Data Protection Regulation (EU) 679/2016 ('GDPR') [Section 2 of the Online Questionnaire, see **Appendix 2 – Instruments**].

The ***questionnaire*** in a web form (google form) to collect the participants' responses using the Likert scale. The questionnaire consists of 7 sections and will need approximately 20 minutes to be filled in. More specifically the online questionnaire consists of the following sections:

- Section 1 provides information about the project.
- Section 2 includes the **consent form.**
- Section 3 provides guidelines to the participant in order to create and provide his/her **Unique Code ID**. This code is used both in the pre- and post- course surveys to match the answers of the participants.
- Section 4 includes 13 items in order to rate the Learning experience per module (using 5 point likert scale).
- Section 5 includes 20 items to rate (using 5 point likert scale).
    1. the Overall Learning Experience
    2. the Platform Ease of Use

3. the Satisfaction
4. the Confirmation of Expectations
5. the Continuance Intention

- Section 6 includes 17 statements in 6 EDL Competence Dimensions where participants are asked to select their achieved level of competence (after attending the course) from 5 possible levels, namely: Novice, Advanced Beginner, Competent, Proficient and Expert.
- Section 7 includes instructions to unlock the L2A MOOC Certificate of Achievement.

Appendix 2 – Instruments presents the full online questionnaire and **Appendix 3 – Coding of Questions** provides the coding of the different types of questions.

2. Analysis of Participants' Profile

2.1 Scope

The scope of this section is to describe the participants' profile, identify the **main targeted groups** participated in the L2A MOOC and describe their profile, highlighting their individual characteristics and **key differences** in relation to their motives, self-confidence, GRIT and initial EDL competence.

2.2 Background

Learn2Analyze MOOC started on October 21st, 2019 and was open until January 15th, 2020. During this time frame, **1920** users enrolled from **85** countries. Of these, **1147** participants answered the pre-course survey and started the MOOC. These participants were distributed in **75** countries (Appendix 5). We consider that the enrolled user has "started the MOOC" only if s/he submits the Pre-course survey to unlock Modules 2-8. **Table *1*** shows the different categories of enrolled users.

Table 1. Enrolled users

Enrolled users	frequency	percent
Started the MOOC: Enrolled users that submitted the pre-course survey	1147	59.74
Enrolled in the MOOC but never accessed Module 1	565	29.42
Started Module 1 but dropped without Pre-course	208	10.84
Total Enrolments	1920	100

2.3 Participants profile

This section describes the overall participants' profile as derived from the answers of the 1147 participants that answered the pre-course survey.

2.3.1 Demographics

First we use descriptive statistics for the **demographic data analysis,** re to: Age, Gender, and Country of Residence. This aims to confirm the distribution of participants across all anticipated demographic elements.

2.3.1.a Gender and Age

One half of the participants were between 18 and 41 years old, while 75% fell between 18 and 49 (**Table 2**). Age of participants follows the normal distribution with mean value 40.68 and standard deviation 10.51 (**Error! Reference source not found.**).

Table 2. Distribution of participants per Age

Age	**frequency**	**percent**
18-30	218	19.01
31-40	337	29.38
41-50	360	31.39
51-60	214	18.66
>60	18	1.57
Total	**1147**	**100**

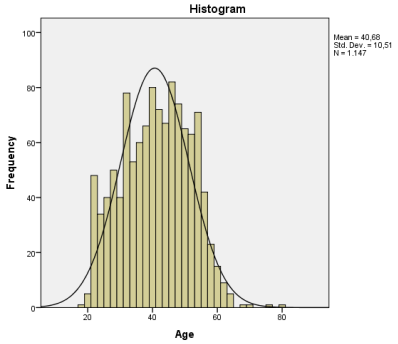

Figure 1. Distribution of participants per Age

Although approximately 2.61% of participants chose not to respond to the question related to gender, participants were almost evenly split in terms of gender with 41.67% male and 55.72% female (**Table 3**).

Table 3. Distribution of participants per Gender

Gender	frequency	percent
I prefer not to answer	30	2.61
Female	640	55.72
Male	477	41.67
Total	1147	100

The distribution of the participants is well balanced in terms of age and gender.

2.3.1.b Geographical distribution

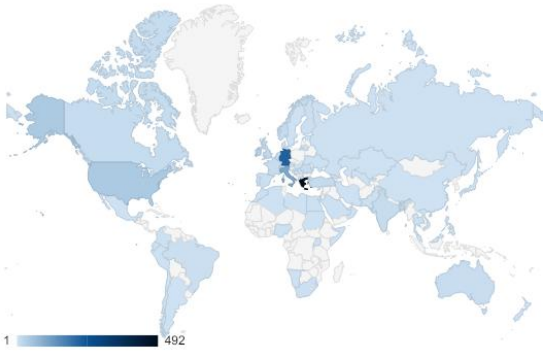

Figure 2. Participants' geographical distribution

Although participants are distributed in 75 countries around the world (**Figure 2**), the majority (86%) comes from Europe (**Table *4***), mainly from Greece (n=492), Germany (n=220) and Italy (n=110), which are the core Learn2Analyse partners' countries. **Appendix 5 - Distribution of participants in the pre-course survey per Demographics, General Background, Motives in taking the course and Initial EDL competences level**provides a detailed analysis of the distribution per country.

Table 4. Distribution of participants per continent

Continent	frequency	percent
Europe	987	86.0
North & South America	73	6.4
Asia-Pacific	54	4.7
Africa	33	2.9
Total	**1147**	**100**

2.3.2 General Background

Next, we analyze the **general background** of the participants, in terms of educational background and professional experience.

2.3.1.a Educational background

Of the 1147 participants 52.30% (n=600) holds a Master's Degree while 16.70% (n=192) holds a Doctoral Degree. (**Appendix 5**). In reference to their English proficiency, 69% reported high (n=360) and very high level (n=431), while 84.13% reported comfort (n=414) and much comfort (n=551) with technology. When asked about their previous experience with MOOCs 30.60% (n=351) reported they have never enrolled in a MOOC before and 41,85% (n=480) that they have never completed a MOOC before.

2.3.1.b Professional experience

Examining the current job sector of participants, we can notice that 68.87% (n=790) of them reported they work in K12 and Higher Education while 16.83% (n=193) come from the Industry/Business, with 8.98% (n=103) from Large enterprises>100 employees and 7.85% (n=90) from SMEs. Only 5.32 (n=61) reported Self-employed and 3.92% (n=45) reported Not-employed. (**Appendix 5**). **Table *5*** summarizes the answers of participants regarding the current job sector in relation to their reported professional role.

Table 5. Reported Current Job Sector in relation to the reported Professional role

Job Sector		Professional Role					
		eLearning Professionals (IDs, eTutors)	Higher Education Students	School Teachers	Others	Total	
						f	%
K12, Higher Education		174	90	370	156	790	68.87
Industry		105	8	12	68	193	16.83
Self Employed/Not Employed		42	29	18	17	106	9.24
Other		16	6	19	17	58	5.06
Total	**f**	**337**	**133**	**419**	**258**		**1147**
	%	**29.38**	**11.59**	**36.54**	**22.49**		**100**

Participants were asked to describe their professional role selecting multiple answers from a list of roles which are summarized in **Appendix 4 - Groups of Professional Roles**. As we can see, all possible answers are grouped in 6 categories. A total of 29.38% (n=337) of participants fall in the first professional role (eLearning Professionals), while 11.6% n=133 are Higher Education Students and 36.53% (n=419) are School Teachers.

Figure 3 shows the distribution of L2A MOOC participants according to their professional role.

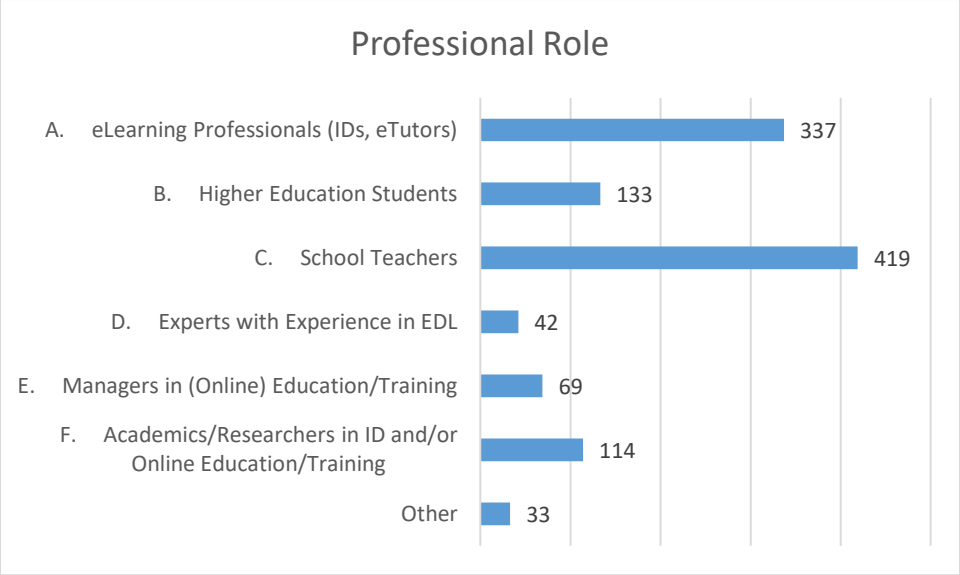

Figure 3. Distribution of participants per professional role

The distribution of the participants in professional roles, reveals three **major targeted groups** of participants:

A. eLearning Professionals (IDs, eTutors)
B. Higher Education Students
C. School Teachers

As calculated in **Appendix 5** participants reported **9.99** years of experience in professional role on average and **7.44** years of experience in online teaching and learning on average.

2.3.3 Motives

We continue the description of participants' profile exploring the motives that drives them to participate in the course.

2.3.3.a Goal in taking the course

Participants were asked to define their goal in taking the course from a list of possible answers. Most of the participants (66% - n=757) answered they are "*Planning to follow the course schedule and complete all activities to earn a certificate of completion*" (Appendix 5).

2.3.3.b Reasons for taking the course

Participants were asked to rate from "Not at all true" (1) to "Very true" (5) their agreement in 8 statements regarding the reasons for taking the course. **Figure 4** shows the distribution of participants' ratings.

Taking the course "*To extend my current knowledge of the topic*" and for "*personal development*" were characterized as true or very true from over 75% of the participants. On the other hand, being "*advised or ordered to take part in the course*" was true or very true only for 15.69% of the participants.

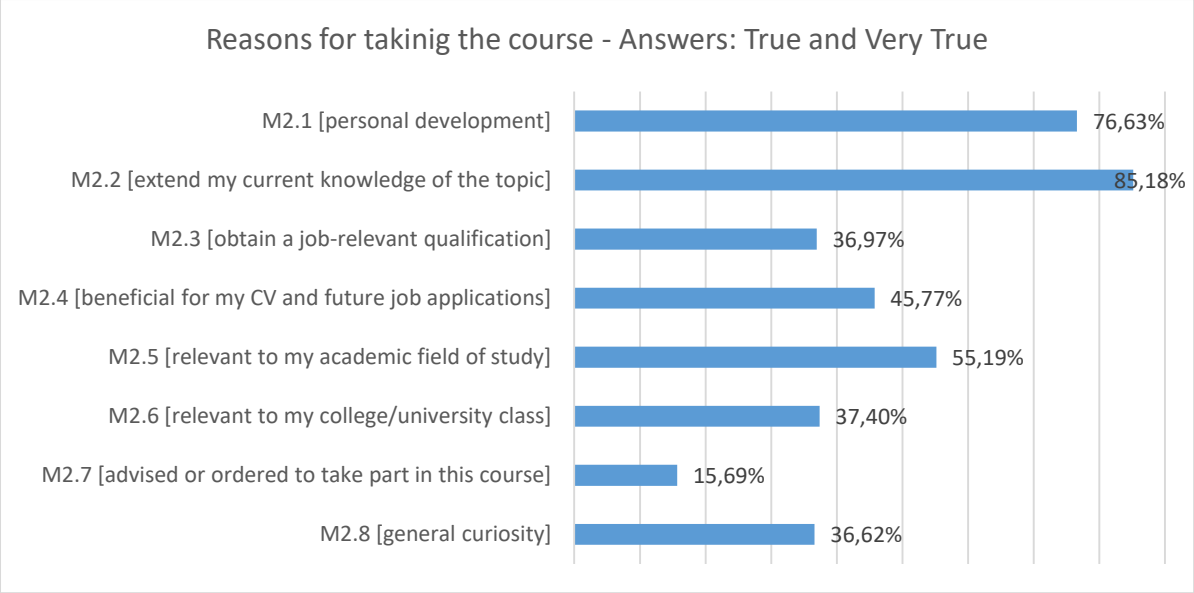

Figure 4. Reasons for taking the course

Participants had the option "Not applicable" if a proposed reason for enrolment was irrelevant. Taking part in the course because it is "*relevant to my college/university class*" and "*being advised or ordered to take part in the course*" were the reasons with the most "Not applicable" answers.

2.3.3.c GRIT score

GRIT is passion and perseverance for long-term and meaningful goals. It is the ability to persist in something you feel passionate about and persevere when you face obstacles. (Duckworth, 2016) Short-grit scale consists of 8 questions:

G.1 New ideas and projects sometimes distract me from previous ones.
G.2 Setbacks don't discourage me.
G.3 I have been obsessed with a certain idea or project for a short time but later lost interest.
G.4 I am a hard worker.
G.5 I often set a goal but later choose to pursue a different one.
G.6 I have difficulty maintaining my focus on projects that take more than a few months to complete.
G.7 I finish whatever I begin.
G.8 I am diligent.

To calculate the GRIT Score we follow the steps below:
1. For questions 2, 4, 7 and 8 assign the following points: 5 = Very much like me 4 = Mostly like me 3 = Somewhat like me 2 = Not much like me 1 = Not like me at all
2. For questions 1, 3, 5 and 6 assign the following points: 1 = Very much like me 2 = Mostly like me 3 = Somewhat like me 4 = Not much like me 5 = Not like me at all
3. Add up all the points and divide by 8. The maximum score on this scale is 5 (extremely gritty), and the lowest score on this scale is 1 (not at all gritty).

Mean GRIT score of all participants answered the pre-course questionnaire was **3.64** with standard deviation **0.615** which is about average (rates to 50th percentile) (Duckworth, 2016)

2.3.3.d Self-Confidence

In the question "*How confident are you in your ability to learn the material in this course*?" 62.1% (n=712) answered "Very confident" and "Extremely confident", while in the question "*How would you rate your possibility of finishing this course according to the anticipated time commitment as defined in the syllabus?*" 61.9% (n=710) answered "Very confident" and "Extremely confident" (see **Appendix 5**). This can be a good indicator for the actual course completion as students who complete MOOCs tend to have high self-efficacy and self-confidence in their ability to complete the course (Wang and Baker, 2015)

2.3.4 Initial EDL Competences

In the pre-course survey, participants self-evaluate their initial EDL competence level, from Novice (1) to Expert (5).

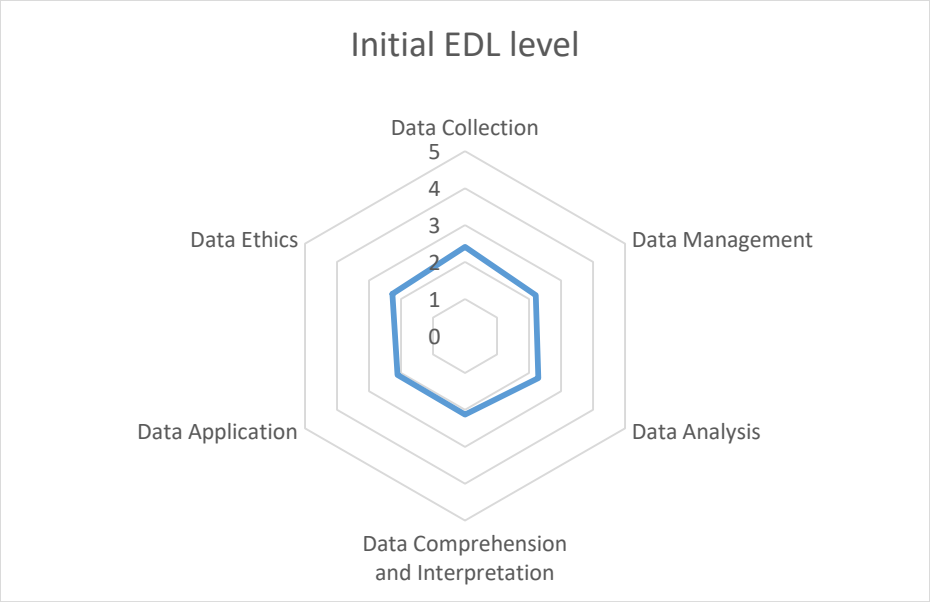

Figure 5. Initial EDL Competences Profile

In **Appendix 5** mean grades are calculated per EDL competence statements and dimensions as reported from participants in the pre-course survey. As shown in **Figure 5**, the initial EDL competence level for all dimensions is approximately *2=Advanced beginner*.

2.4 Participants profile per targeted group (eLearning Professionals, School Teachers, Higher Education Students)

2.4.1 Scope

The scope of this section is to describe the profile for each targeted group (eLearning Professionals, School Teachers, Higher Education Student) by highlighting their individual characteristics and key differences in relation to their motives, self-confidence, GRIT and initial EDL competence.

2.4.2 Background

In the previous section we described the participants' profile that is formed from the answers of the 1147 participants of the L2A MOOC in the pre-course survey and identified three major targeted groups, namely eLearning Professionals, School Teachers and Higher Education Student. In this section we will investigate the differences between these targeted groups.

2.4.3 Difference in Demographics between the targeted groups

Difference in mean Age value between the targeted groups

Mean and standard deviation for the age of participants are calculated for the major targeted groups, namely eLearning Professionals, Higher Education Students and School Teachers (**Table 6**)

Table 6. Mean age per targeted group

Professional Role	Mean Age	N	Std. Deviation
eLearning Professionals (IDs, eTutors)	41.46	337	9.621
Higher Education Students	29.27	133	9.122
School Teachers	44.62	419	9.243
Others	39.13	258	9.696
Total	**40.68**	**1147**	**10.510**

Mean age differs significantly between the targeted groups, as Higher Educational Students are much younger that the other targeted groups.

2.4.4 Difference in General Background between the targeted groups

Difference in mean years of experience between the targeted groups

Mean and standard deviation for the years of experience in professional role is calculated for the targeted groups, namely eLearning Professionals, School Teachers and Higher Education Students (**Appendix 6**). **Table 7** illustrates the distribution of the years of experience per targeted group, where School Teachers have significantly higher experience than eLearning professionals and Higher Education Students.

Table 7. Distribution of participants' years involved in their professional role per role

Years of experience in professional role	n	Mean Value	Standard deviation
A. eLearning Professionals (IDs, eTutors)	337	7.13	5.66
B. Higher Education Students	133	4.47	4.08
C. School Teachers	419	15.74	7.51
All participants	**1147**	**7.44**	**5.98**

Table 8 summarizes the means and standard deviation of years of experience in Digital T & L per targeted group, where School Teachers report longer experience in Digital T & L than the other two groups.

Table 8. Distribution of participants' years involved in Digital T & L per professional role

Years of experience in Digital T & L	n	Mean Value	Standard deviation
A. eLearning Professionals (IDs, eTutors)	337	7.82	5.78
B. Higher Education Students	133	4.03	3.14
C. School Teachers	419	8.40	6.43
All participants	**1147**	**7.44**	**5.98**

2.4.5 Difference in Motives between the targeted groups

2.4.5.a. Goal in taking the course

All three groups of participants reported, at a rate of 62% and higher, that their goal in taking the course is "*… to follow the course schedule and complete all activities to earn a certificate of completion*" (**Appendix 6**).

2.4.5.b. Reasons for Enrolment

Participants were prompt to rate from "Not at all true" to "Very true" eight statements/reasons for enrolment. They also had the option to choose "Not applicable". Mean rating per reason for enrolment for each targeted group is calculated in **Appendix 6**.

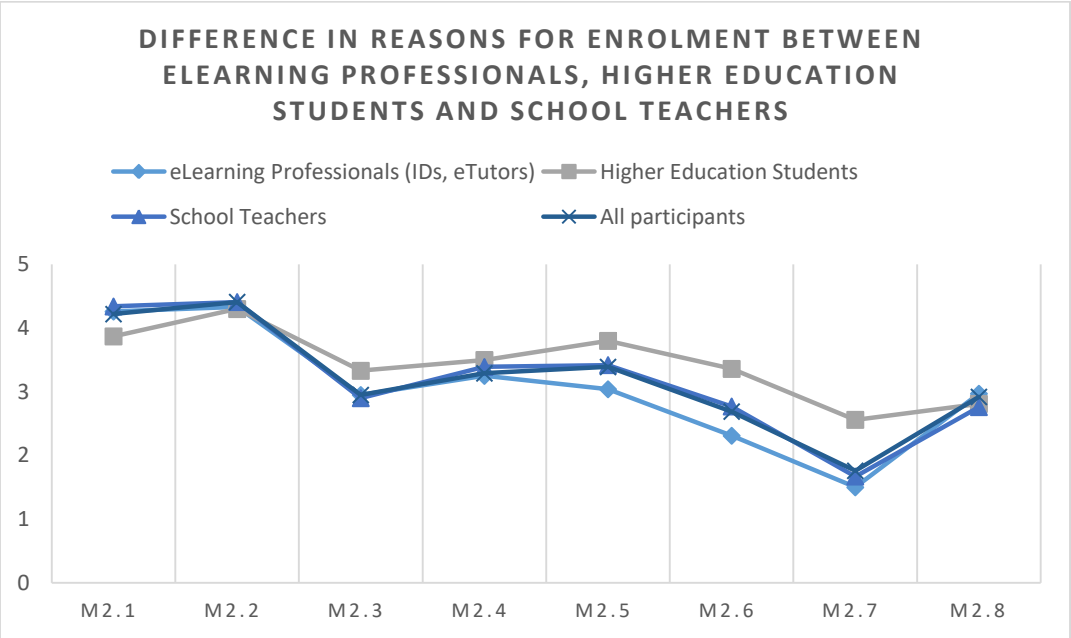

Figure 6. Difference in reasons for enrolment per targeted group

Figure 6 shows the difference in reasons for enrolment per targeted group. The comparison of the mean rating of Reasons for Enrolment (**Appendix 6**) for each targeted group shows that there is no significant difference for M2.2 [extend my current knowledge of the topic], M2.4 [beneficial for my CV and future job applications] and M2.8 [general curiosity] among the groups.

Furthermore, there is no significant difference between eLearning Professionals and School Teachers for M2.1, M2.4, M2.7, while School Teachers report higher mean rating in reasons M2.5 and M2.6.

On the other hand, Higher Education Students report significantly lower mean rating for M2.1 comparing both with eLearning Professionals and School Teachers. They also report significantly higher mean rating for M2.3, M2.6, M2.7 comparing with eLearning Professionals and School Teachers. **Table 9** summarizes the significant differences between the eight reasons for enrolment among the three targeted groups as calculated in **Appendix 6**.

Table 9. Difference in reasons for enrolment between targeted groups

Reasons for Enrolment	eLearning Professionals-Higher Education Students		eLearning Professionals-School Teachers		Higher Education Students - School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
M2.1	.386	.001	No significant difference		-.464	.000
M2.2	No significant difference					
M2.3	-.378	.016	No significant difference		.433	.003
M2.4	No significant difference					
M2.5	-.755	.000	-.376	.002	.379	.009
M2.6	-1.055	.000	-.465	.000	.590	.000
M2.7	-1.052	.000	No significant difference		.883	.000
M2.8	No significant difference					

Thus, it is useful to separate the reasons for enrolment, based on their relevance to **Internal Motives** (M2.1, M2.2, M2.5, M2.6, and M2.8) and **External Motives** (M2.3, M2.4, and M2.7). In **Figure *7*** mean values for internal and external motives for the three targeted groups are displayed.

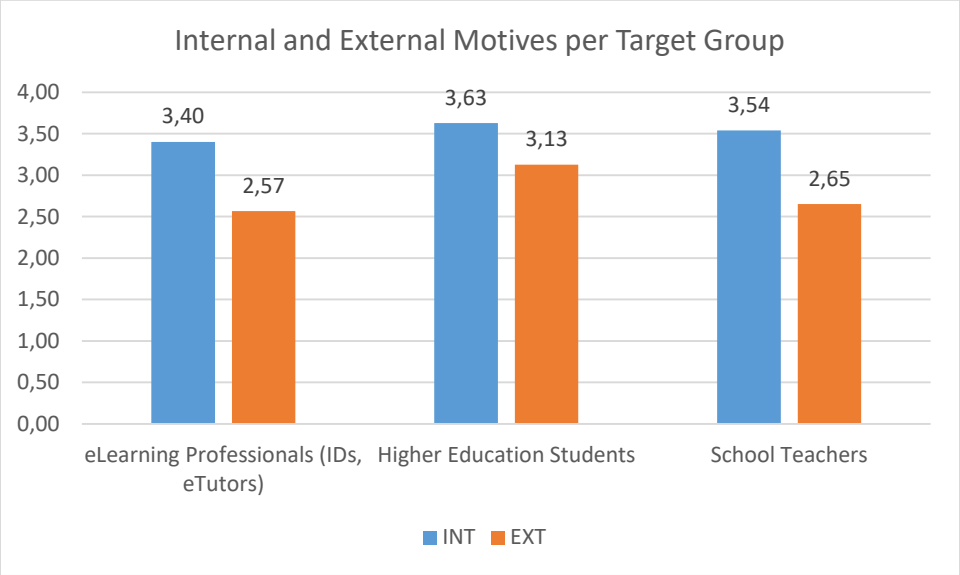

Figure 7. Internal and External Motives per Targeted Group

Table 10 summarizes the significant differences in internal and external motives among the targeted groups.

Table 10. Difference in internal and external motives per targeted group

	eLearning Professionals-Higher Education Students		eLearning Professionals-School Teachers		Higher Education Students - School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
INT	-.22620	.008	-.13557	.022	No significant difference	
EXT	-.56006	.000	No significant difference		.47547	.000

INT: Internal Motives = (M2.1 + M2.2 + M2.5 + M2.6 + M2.8)/5
EXT: External Motives = (M2.3 + M2.4 + M2.7)/3

The comparison of mean rating for Internal (average of M2.1, M2.2, M2.5, M2.6, and M2.8) and External Motives (average of M2.3, M2.4, and M2.7) among targeted groups, shows that (**Appendix 6**) **external motives score significantly higher among Higher Educational Students** compared to eLearning Professionals and School Teachers.

2.4.5.c. GRIT score

GRIT score is a measure for the tendency to sustain interest in and effort toward very long-term goals. It is calculated through an 8-items (GRIT statements) scale, where participants rate themselves from “Not at all like me” to “Very much like me” (**Appendix 6**).

Table 11 summarizes the differences in GRIT score between the targeted groups.

Table 11. Difference in GRIT score between the targeted groups

GRIT score	eLearning Professionals-Higher Education Students		eLearning Professionals-School Teachers		Higher Education Students - School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
GRIT	No significant difference		-.22076	.000	-.31438	.000

School Teachers reported higher GRIT score than eLearning Professionals and Higher Education Students while the GRIT score between the last groups does not differ significantly.

2.4.5.d. Self-Confidence

Participants rated from 1 to 5 their confidence in their ability to learn the material in the course (ConfAbility), and the possibility of finishing this course according to the anticipated time commitment as defined in the syllabus (ConfTime).

The significance of difference in mean values of confidence are calculated in **Appendix 6** and the results are summarized in **Table 12**.

Table 12. Difference in confidence between targeted groups

	eLearning Professionals (IDs, eTutors) - Higher Education Students		eLearning Professionals (IDs, eTutors) - School Teachers		Higher Education Students School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
ConfAbility	.479	.000	.108	.005	-.311	.000
ConfTime	No significant difference		-.266	.000	-.363	.000
SelfConf	.28834	.000	No significant difference		-.33712	.000

ConfAbility: How confident are you in your ability to learn the material in this course?
ConfTime: How would you rate your possibility of finishing this course according to the anticipated time commitment as defined in the syllabus?
SelfConf = (ConfAbility+ConfTime)/2

E-learning professionals are more confident in learning the material while School Teachers are more confident in completing the course on time. On the other hand, Higher Education Students report significantly lower confidence than the other two groups.

2.4.5.e. Hours planning to spend in the course

Participants were asked how much time they plan to spend per week in the course and the mean hours per week were calculated (**Appendix 6**) per targeted group. E-learning professionals intend to spend less hours per week (3.46) on average than Higher Education Students (4.17) and School Teachers (4.07), while the recommended time from the L2A MOOC designers was 8 hours per week.

2.4.6 Difference in Initial EDL competences level between the targeted groups

The initial EDL competences level for each dimension of the L2A EDL-CP, as well as the overall initial EDL competence level are calculated per targeted group (eLearning Professionals, School Teachers, Higher Education Students) in **Appendix 6**.

Figure 8 shows the initial EDL competences level for the three targeted groups. Note that for perspicuity reasons, min and max values for the y axis are set to 1 and 3 respectively.

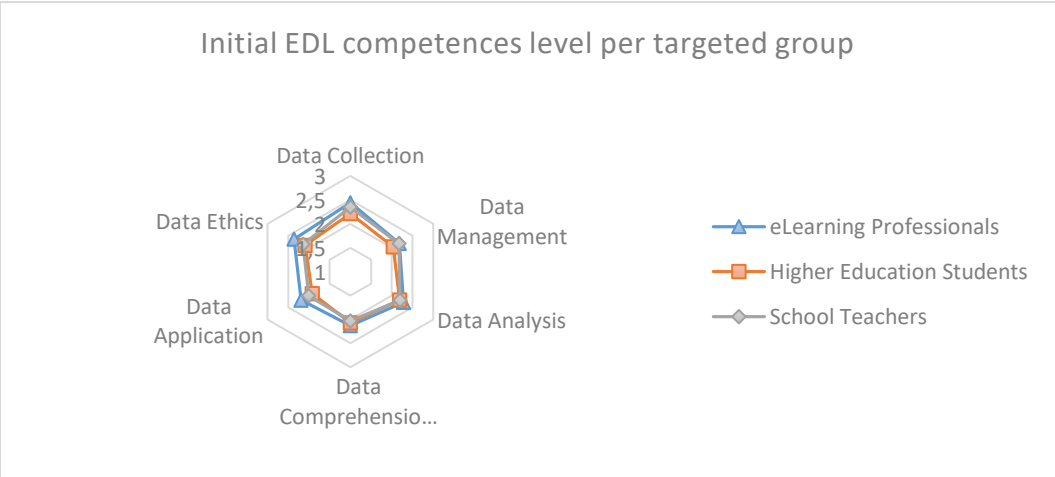

Figure 8. Initial EDL competences level per targeted group

Table 13. Differences in initial EDL competences level between targeted groups

Differences in initial EDL competences level between targeted groups	eLearning Professionals (IDs, eTutors) - Higher Education Students		eLearning Professionals (IDs, eTutors) - School Teachers		Higher Education Students - School Teachers	
	Mean difference	Sig.	Mean difference	Sig.	Mean difference	Sig.
D1. Data Collection	.028	.22340	No significant difference			
D2. Data Management	No significant difference					
D3. Data Analysis						
D4. Data Comprehension and Interpretation						
D5. Data Application	.008	.27183	.010	.18572	No significant difference	
D6. Data Ethics	.010	.26579	.004	.21863		
InitEDL	.042	.17607	No significant difference			

The initial level of EDL competences in all dimensions does not differ significantly between School Teachers and Higher Education Students. On the other hand, eLearning Professionals reported higher initial EDL competence level in Data Collection, Data Application and Data Ethics. There is no significant difference in initial EDL competence level in dimensions D2, D3 and D4 between these three targeted groups (**Table 13**).

2.5 Conclusions

Our scope was to identify the main targeted groups participated in the L2A MOOC and to describe their profile, highlighting their individual characteristics and key differences.

By analyzing data from the Pre-Course survey we were able to identify three major groups of participants:

a. eLearning Professionals (n=337) with 7.13 years of experience (mean value),
b. Higher Education Students (n=133) with 4.47 years of experience (mean value), and
c. School Teachers (n=419) with 15.74 years of experience (mean value).

In order to describe the participants' profile for each targeted group and identify significant differences between the groups, we examined the difference in (i) reported goal in taking the course, (ii) the internal and external motives for enrolment, as well as (iii) the self-confidence for learning the material and finishing the course on time, and (iv) the passion and perseverance for long-term and meaningful goals (GRIT) between eLearning Professionals (IDs, eTutors), Higher Education Students and University and School Teachers. We also examined the initial EDL competence level per targeted group (EDL).

We can conclude that there is small mean difference in internal motives for enrolling between the targeted groups with eLearning Professionals holding the lowest rating, but there is significantly higher mean rating in external motives among Higher Education Students. Overall, Higher Education Students are more motivated than the other groups of participants, possibly since the L2A MOOC has been recommended as part of the formal HE program requirements. School teachers, on the other hand, reported significantly higher GRIT score than eLearning Professionals and higher than

the Education Students. Regarding the self-confidence, Higher Education Students are significantly less confident in completing the course and learning the material than the other two groups, while eLearning professionals are more confident in learning the material and School teachers are more confident in completing the course on time. All groups of participants reported that they "*plan to follow the course schedule and complete all activities to earn a certificate of completion*" at a rate of 62% and higher, although they plan to spend only 3.72 hours per week on average (while the estimated workload is 8 hours per week), with eLearning Professionals planning to spend the less hours per week on average (3.36) than the other two groups. Regarding the initial EDL competence level, we concluded that Higher Education Students reported the lower initial EDL competence level, very close to School Teachers, while eLearning Professionals reported significantly higher EDL level in Data Collection, Data Application and Data Ethics dimensions of the L2A EDL-CP.

In **Figure 9** the three targeted groups are presented in a 5D bubble chart, where x, y, z axis represent the mean values in Self-confidence, Reasons for enrolment and GRIT while the initial EDL Level per group is presented by the color of each bubble. The size of the bubble is defined by the number of participants of each targeted group.

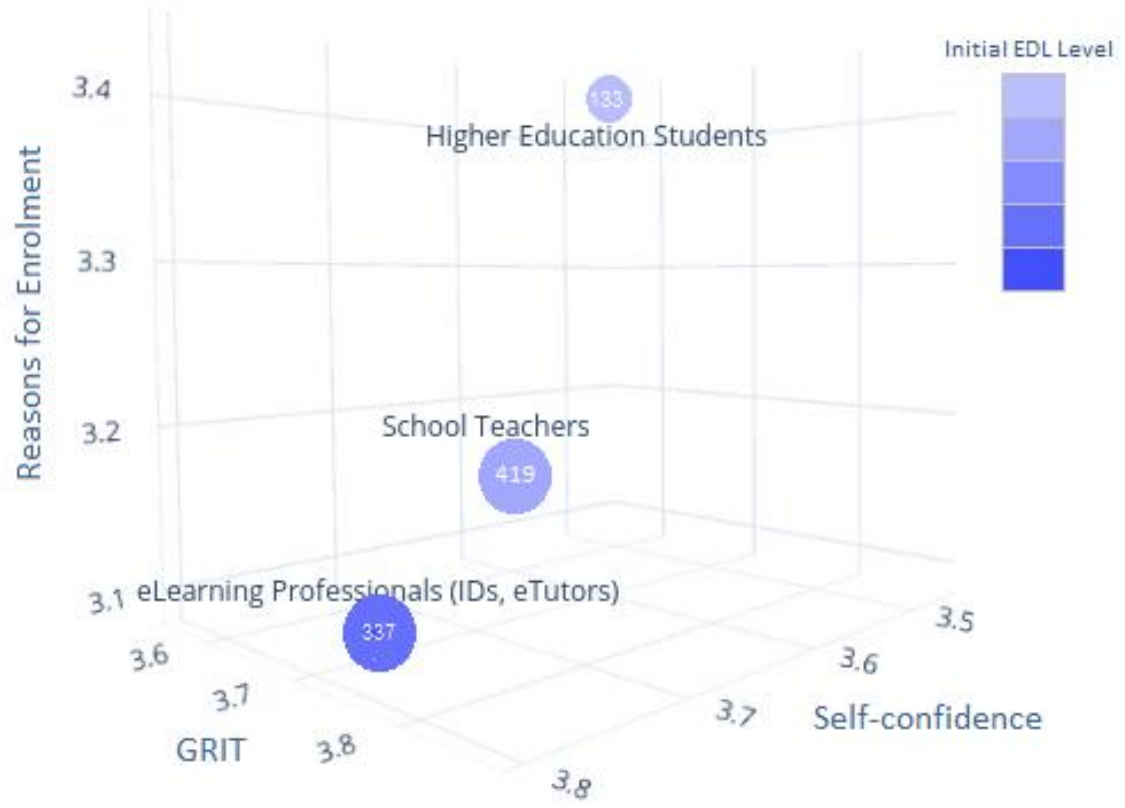

Figure 9. 5D bubble chart of the three major targeted groups

To summarize, we identified the following characteristics of participants' profile that differ significantly among eLearning Professionals, School Teachers and Higher Education Students:

- Age
- Reasons for enrolment: mainly External Motives (EXT)
- GRIT Score

- Self-confidence: both confidence in the ability to learn the material (ConfAbility) and to complete the course on time (ConfTime)
- Hours planning to spend in the course
- Initial EDL competence level

Next we will examine how these characteristics affect the completion rate and the EDL competences advancement.

3 Characteristics of participants' profile that are related to Course Completion

3.1 Scope

The scope of this section is to identify the **characteristics of participants' profile** that are related to course completion.

3.2 Background

Learn2Analyze MOOC started on October 21st, 2019 and was open until January 15th, 2020. During this time frame, 1920 users enrolled from 85 countries. Of these, 1147 participants answered the pre-course survey and *started the MOOC*, while 244 passed the final assessment and 235 of them answered the post-course survey to receive their certificate of achievement.

Passed the Final Assessment = 21.27%

Received the Certificate of Achievement = 20.45%

We consider that a participant has **completed the course** when s/he has received the certificate of achievement (i.e succeeded the final assessment and submitted both pre- and post-course surveys).

Completion Rate = 20.45%

To match the participants' answers in pre- and post-course surveys, participants were prompt to produce and provide an, easy to remember and difficult to decode, Unique ID Code.

In previous section we identified that the three targeted groups (eLearning Professionals, Higher Education Students and School Teachers) differ significantly in:

a. Reasons for enrolment (mainly external motives),
b. GRIT score,
c. Self-confidence and
d. The hours they intended to spend in the course.

Next we will describe the profile of participants that completed the course, calculate the completion rate for the different targeted groups of participants and examine how these above characteristics (reasons for enrolment, GRIT score, self-confidence and hours intended to spend in the course) are related to course completion.

3.3 Profile of participants that completed the course

The scope of this section is to describe the profile of participants that completed the course in terms of demographics and general background.

3.3.a Age

Figure 10 shows the distribution of age between participants that completed the course. The distribution is skewed to the right as younger participants have higher completion rate than the older ones.

One half of the participants that completed the course were 35 years old, while the mean value of age were 37.78 year with standard deviation 11.386.

The mean age of participants that completed the course is significantly lower than the mean age of those that did not complete the course (**Appendix 7**) .

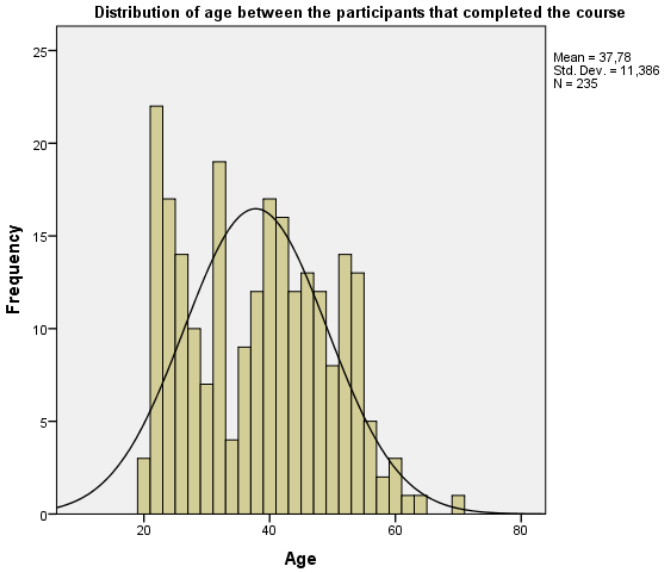

Figure 10. Distribution of age between participants that completed the course

3.3.b Gender

60% (n=141) of participants that completed the course were female (completion rate: 22%) and 37% (n=88) male (completion rate: 18%). Among the participants that selected not to report their gender, 6 completed the course (completion rate: 18%) (**Appendix 7**).

3.3.c Geographical distribution

The participants that completed the course were distributed in 27 countries (**Appendix 7**). Although most of the participants that completed the course were form Greece (126 participants – 53.62%) followed by Germany (71 participants – 30.21%), the participants from Germany had higher completion rate (30.59%). **Figure 11** shows the completion rates of the 10 most reported countries of residence in the pre-course survey.

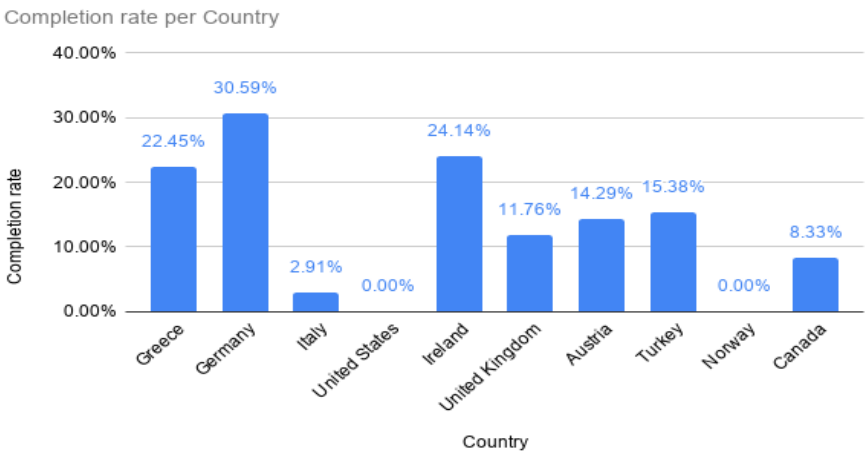

Figure 11. Completion rate per Country

3.3.d Distribution of participants that completed the course per highest level of Education

According to the reported highest level of education, 13% (n=31) of the participants that completed the course holds a Doctoral Degree, 45% (n=106) a Master's Degree and 20% (n=48) has a Bachelor's Degree (**Appendix 7**). The highest completion rate (44%) is among participants that report High School Diploma as their highest level of education (that is, Higher Education Students).

3.3.e Participants that completed the course per Job Sector

Although completion rates for participants coming from the Industry is lower than the other job sectors (**Figure 12**), there is no significant difference for the completion rates between the job sector groups (**Appendix 7**).

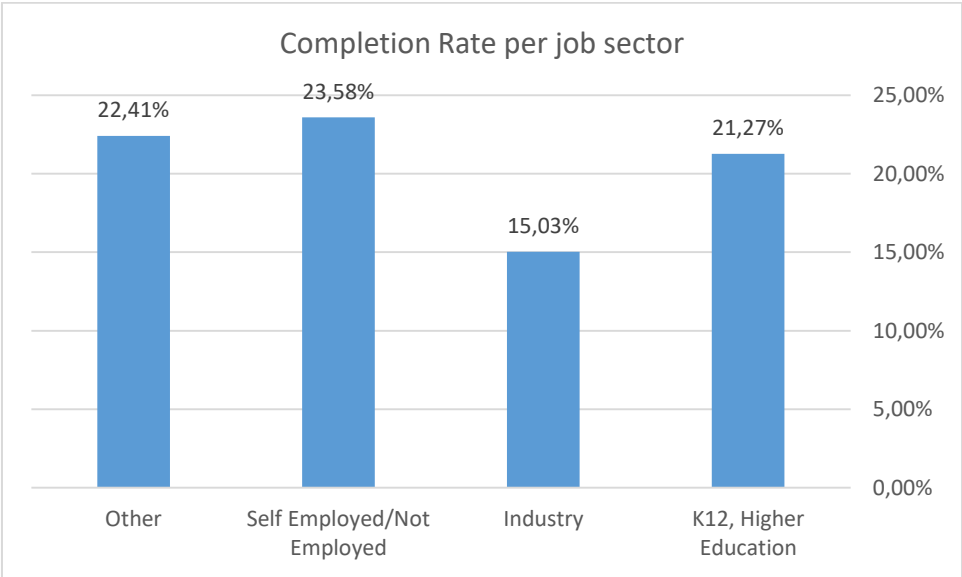

Figure 12. Completion rates per job sector

3.4 Course completion per targeted group

In previous section we identified three major targeted groups of participants that differ significantly:

a. eLearning Professionals (IDs, eTutors),
b. Higher Education Students and
c. School Teachers

Figure 13 shows the completion rate among these targeted groups.

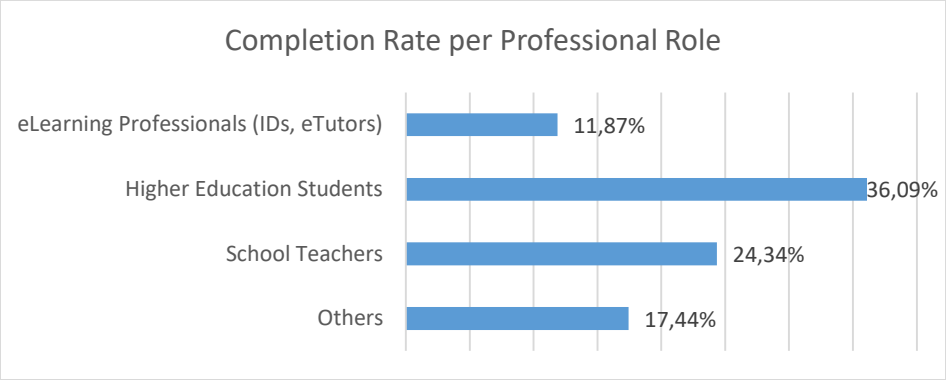

Figure 13. Completion rate among targeted groups

E-Learning professionals' completion rate is significantly lower than the completion rate of School Teachers and Higher Education Students, while Higher Education Students have significantly higher completion rate than the other two targeted groups (**Appendix 7**).

Regarding the years of experience in professional role and in digital teaching and learning, participants that completed the course reported 9.91 years on average involved in professional role (standard deviation 7.52) and 6.43 years on average involved in digital teaching and learning (standard deviation 5.22) (see **Appendix 7**).

Next we will examine if reasons for enrolment and especially external motives for enrolment, grit score, self-confidence in learning the material and in completing the course on time, as well as the hours a participant is planning to spend in the course, are related to course completion.

3.5 Relationship between participants' characteristics and course completion

The three targeted groups of participants (namely eLearning Professionals, School Teachers and Higher Education Students) differ significantly in:

a. Reasons for enrolment (mainly external motives),
b. GRIT score,
c. Self-confidence and
d. The hours per week they intended to spend in the course.

The scope of this section is to examine how reasons for enrolment, grit score, self-confidence does and hours per week intended to spend in the course are related to course completion.

3.5.a Reasons for Enrolment

As we can see in **Figure 14** some reported reasons for enrolment (2.4 - "It would be beneficial for my CV and future job applications" and 2.7 - "I was advised or ordered to take part in this course", as well as EXT - External motives) show significantly higher mean grade among participants that completed the course, compared with participants that dropped it. On the other hand, the internal motives for taking the course does not demonstrate any difference in rating between participants that completed the course and participants that dropped it (**Appendix 7**).

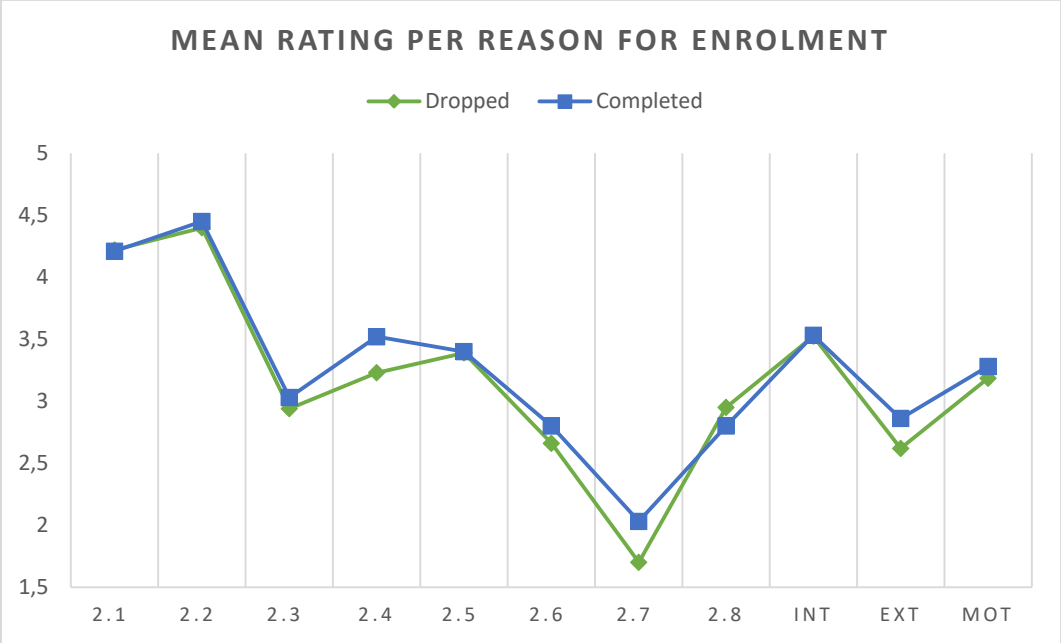

Figure 14. Relationship of "Reason for Enrolment" on course completion

Reasons for enrolment

2.1 For personal development.
2.2 To extend my current knowledge of the topic.
2.3 To obtain a job-relevant qualification.
2.4 It would be beneficial for my CV and future job applications.
2.5 It is relevant to my academic field of study.
2.6 It is relevant to my college/university class.
2.7 I was advised or ordered to take part in this course.
2.8 General curiosity.

INT (internal motives/reasons for enrolment): 2.1, 2.2, 2.5, 2.6, 2.8
EXT (external motives/reasons for enrolment): 2.3, 2.4, 2.7
MOT (internal + external motives)

We can conclude that external motives are related to course completion (**Figure 16**), as opposed to internal motives that do not appear to be relevant (**Figure 15**).

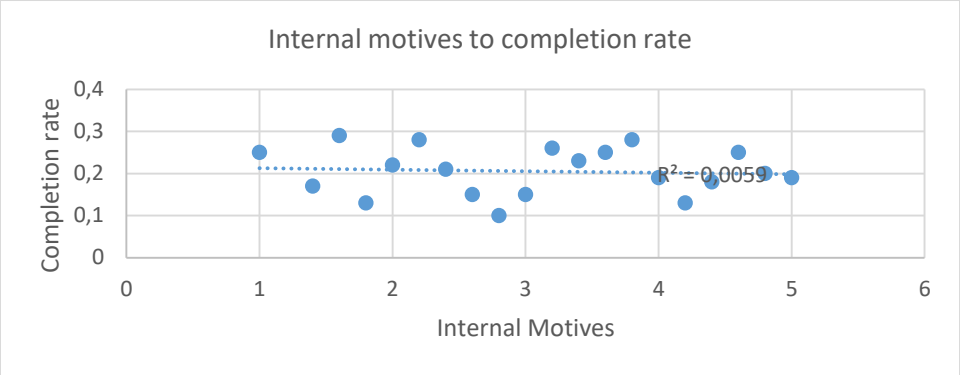

Figure 15. Relation of Internal Motives to Course completion

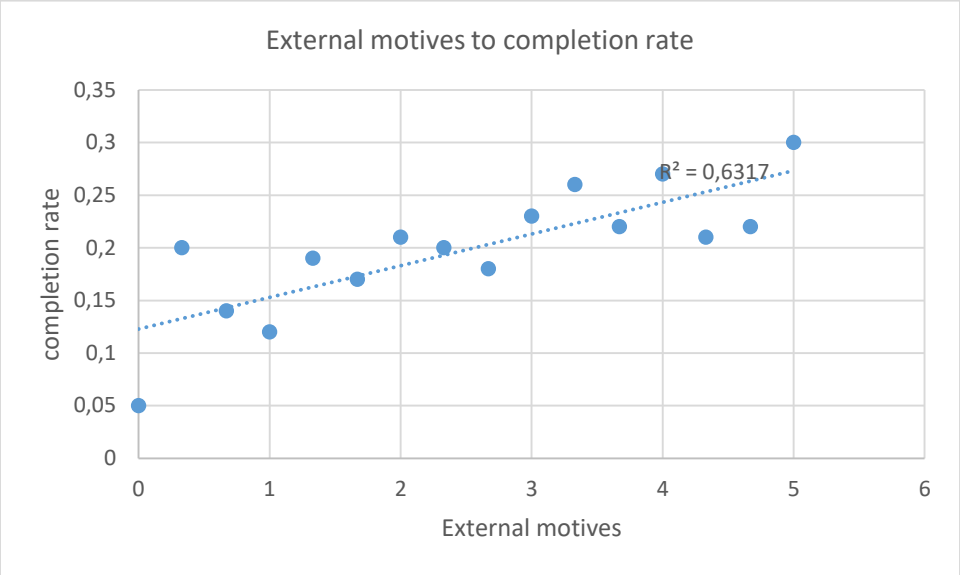

Figure 16. Relationship between external motives and course completion

3.5.b GRIT score

GRIT score marginally differs between participants that completed the course and those who dropped it, while the GRIT statement 6.7 – "I finish whatever I begin" differs significantly among them. (**Appendix 7**). Participants that completed the course rated the statement "I finish whatever I begin" with mean rating 4.03, while those that did not completed the course with 3.76.

3.5.c Self-confidence

Confidence in learning the material has week negative correlation to course completion, while confidence in completing the course on time seems to have strong positive correlation to course completion. **Figure 17** and **Figure 18** show the relationship between the two types of self-confident variables and course completion.

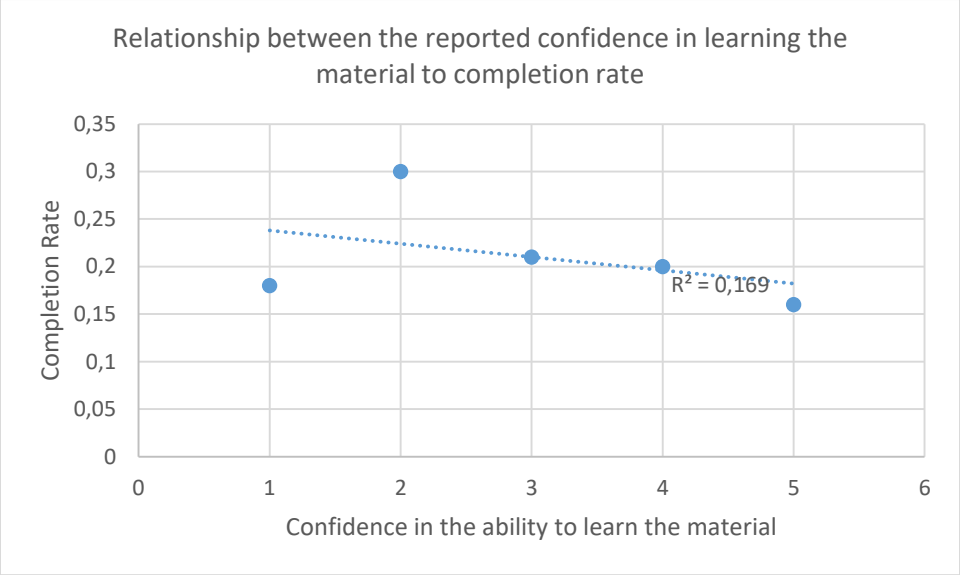

Figure 17. Relationship between the reported ability to learn the material and course completion

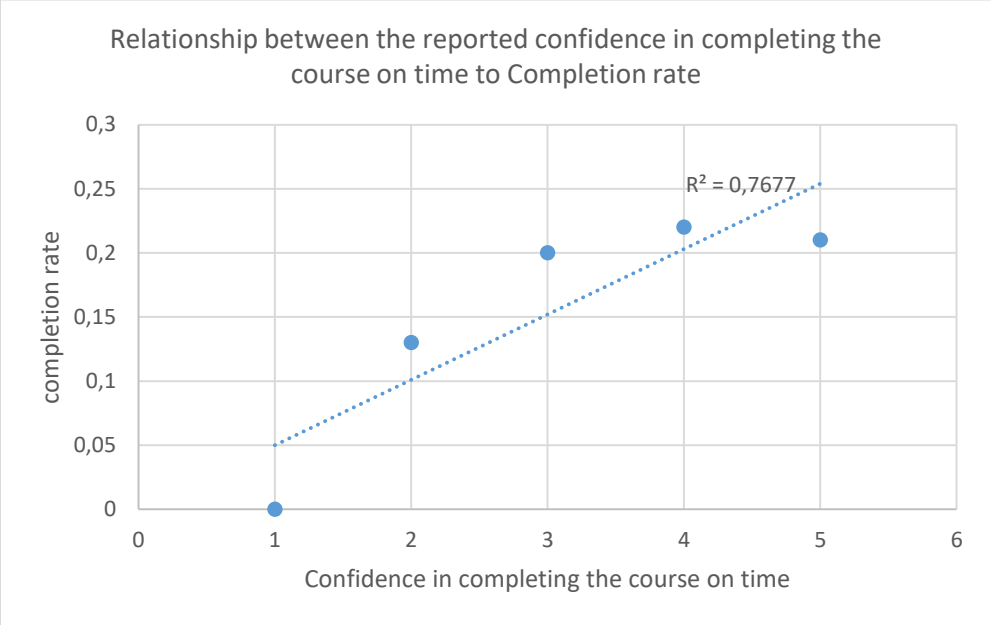

Figure 18. Relationship between the reported Confidence in finishing the course according to the anticipated time commitment and Course completion

3.5.d Hours per week planning to spend in the course

Participants that completed the course reported they plan to spend in the course 4.65 hours per week on average (std. deviation 1.94), while the participants that dropped the course were planning to spend 3.8 hours per week (std. deviation 1.76). **Figure 19** shows the strong positive relationship between the hours per week the participant was planning to spend in the course and the course completion.

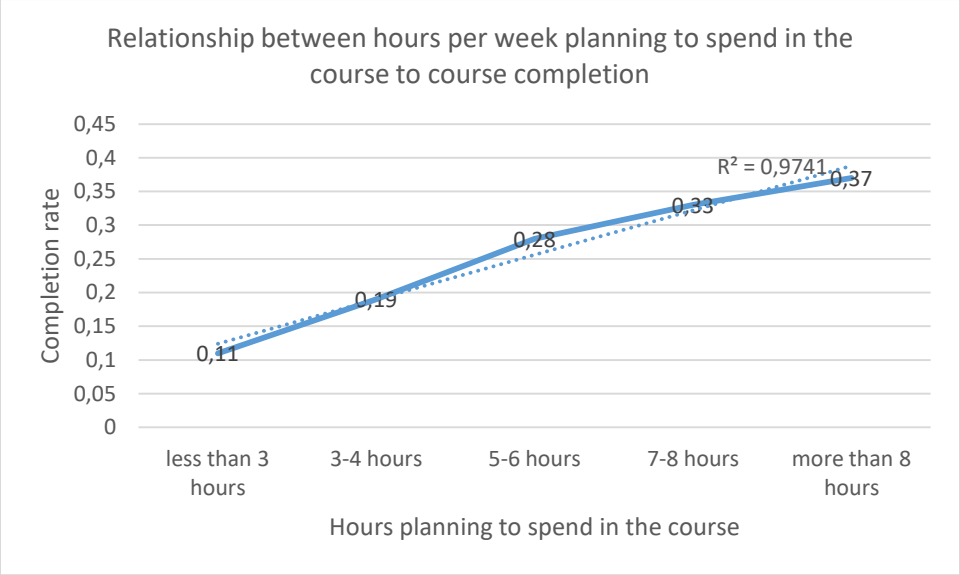

Figure 19. Relationship between the hours per week the participant is planning to spend in the course and Course completion

3.6 Conclusions

The scope of this section was to identify the characteristics of participants' profile that are related to course completion.

Completion rate seems to differ significantly among the targeted groups, as Higher Education Students comes first with 36%, while eLearning professionals' completion rate is only 11%. External motives could be the reason for this difference as they are positively related to course completion and HE students had significantly higher mean value (3.13) in external motives than the other two groups (section 2.2.3). Time scheduling also appears important for the course completion as we identified strong relationship between the hours per week the participant was planning to spend in the course and the completion rate. Furthermore, it seems that course completion is also related to the reported confidence in finishing this course according to the anticipated time commitment as defined in the syllabus.

Next we will examine the level of competence advancement that participants have attained completing the course.

4 EDL competences advancement

4.1 Scope

The scope of this section is to analyze the competence advancement the participants have achieved after the successful completion of the L2A MOOC.

4.2 Background

Participants of the L2A MOOC, in the pre-course survey, were prompt to rate their initial level of competence in the 17 competence statements distributed in the 6 dimensions of the L2A EDL-CP, namely:

- Data Collection
- Data Management
- Data Analysis
- Data Comprehension and Interpretation
- Data Application and
- Data Ethics

among five levels of competence:

- Novice
- Advanced beginner
- Competent
- Professional
- Expert

After the course completion, in the post-course survey, participants are asked to rate their achieved level of competence. The difference between the initial and achieved level of competence define the competence advancement.

In this section we will calculate the overall competence advancement for each EDL-CP dimension for the participants that completed the course and compare the competence advancement between the three targeted groups, eLearning Professional, School Teachers, and Higher Education Students.

In previous section we identified that the three targeted groups (eLearning Professionals, Higher Education Students and School Teachers) differ significantly in:

a. Reasons for enrolment (mainly external motives),
b. GRIT score,
c. Self-confidence and
d. The hours they intended to spend in the course.

Next we will examine how these above characteristics (reasons for enrolment, grit score, self-confidence and hours intended to spend in the course) are related to competence advancement.

4.3 EDL competences advancement for the participants that completed the course

In this section we will calculate the overall competence advancement per EDL-CP dimension for all participants that completed the course.

In **Appendix 8** mean grades are calculated per EDL competence statement and dimension as reported from participants that completed the course in the pre- and post-course survey. As shown in **Figure 20**, the initial EDL competence level for all dimensions is approximately 2=Advanced beginner and the achieved EDL competence level is approximately 3=Competent. Thus, completing the course results to one-level advancement of competences for each EDL competence dimension.

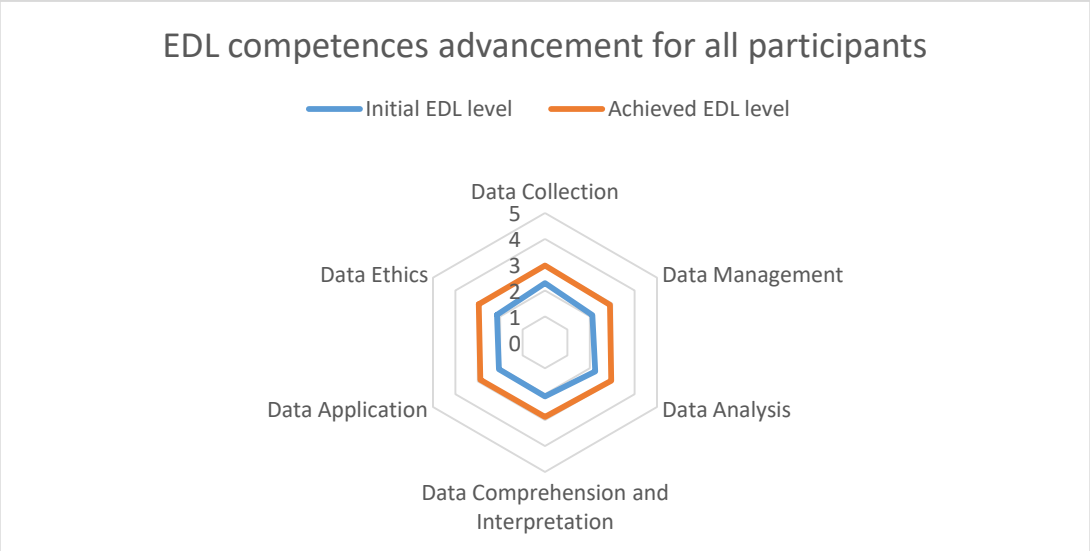

Figure 20. EDL competence advancement for all participants that completed the course

4.4 EDL competences advancement per targeted group

In this section we will compare the competence advancement per EDL-CP dimension between the three major targeted groups, eLearning Professional, Higher Education Students and School Teachers.

Regarding the initial EDL competence level, we concluded that Higher Education Students reported the lower initial EDL competence level, very close to School Teachers, while eLearning Professionals reported significantly higher EDL level in Data Collection, Data Application and Data Ethics dimensions of the L2A EDL-CP.

Examining the initially EDL competence level for the 1147 participants who started the course we found that Higher Education Students reported the lower initial EDL competence level, very close to School Teachers, while eLearning Professionals reported significantly higher EDL level in Data Collection, Data Application and Data Ethics dimensions of the L2A EDL-CP.

We continue with the calculation of the achieved EDL competence level for each of the six dimensions of EDL-CP for the participants that completed the course. Initial and achieved levels of competences for eLearning Professionals, Higher Education Students and School Teachers are presented in **Figure 21** to **Figure *23***. Note that for perspicuity reasons, min and max values for the y axis are set to 1 and 4 respectively.

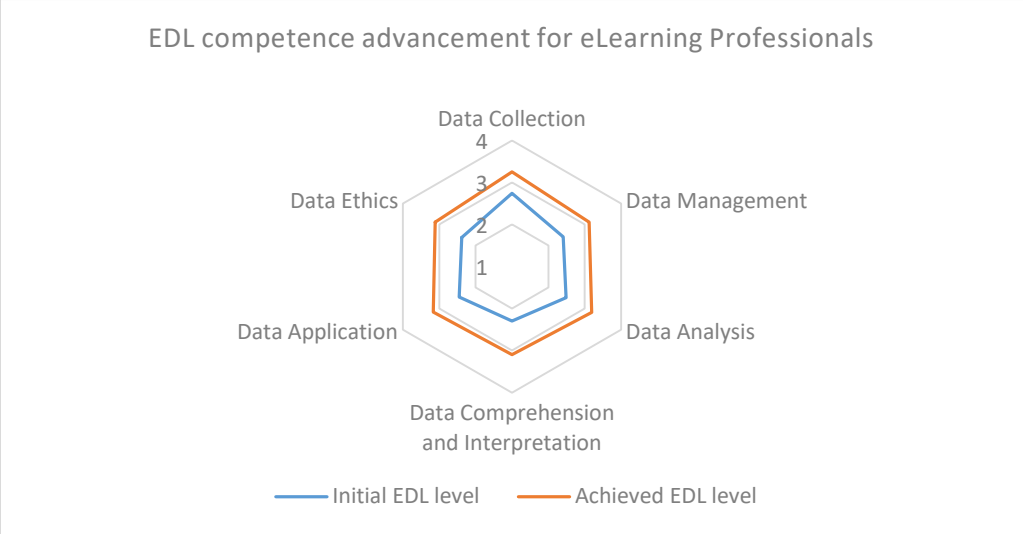

Figure 21. EDL competence advancement for eLearning Professionals

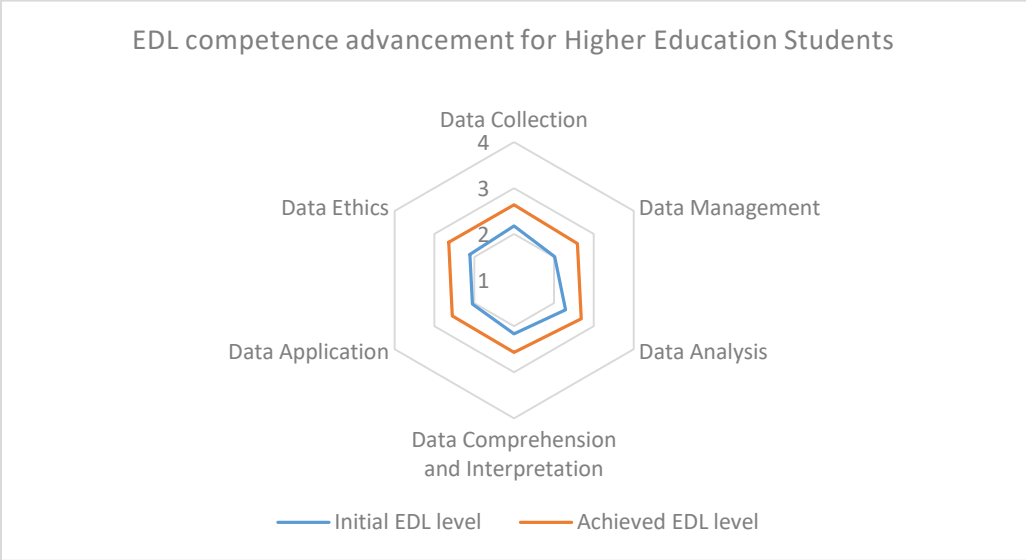

Figure 22. EDL competence advancement for Higher Education Students

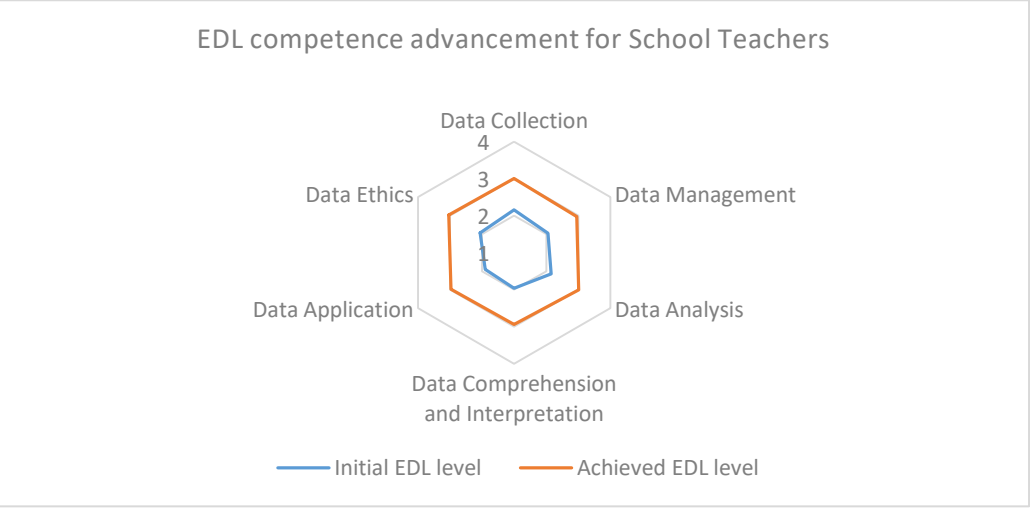

Figure 23. EDL competence advancement for School Teachers.

As illustrated in **Figure 21** to **Figure *23***, Higher Education Students reported lower achieved level in all dimensions and School Teachers achieved the higher competence advancement.

In **Appendix 8** significant mean differences for EDL competences between the targeted groups are calculated. Using ANOVA we conclude that significant mean differences in competence advancement are displayed only in two EDL dimensions:

- D4 (Data Comprehension and Interpretation)
- D5 (Data Application)

and in the overall EDL competence advancement.

The results from the T-tests between the targeted groups are presented in **Table 14**. Higher Education Students and School Teachers differ significantly in D4 (Data Comprehension and Interpretation), D5 (Data Application) and in the overall EDL competence advancement. E-learning professionals and Higher Education Students differ significantly only in D4 competence advancement, while eLearning Professional and School Teachers do not differ significantly in EDL competence advancement in any EDL dimension.

Table 14. Significant differences in mean EDL competences advancement between targeted groups

<table>
<tr><td></td><td colspan="2">eLearning Professionals – Higher Education Students</td><td colspan="2">eLearning Professionals – School Teachers</td><td colspan="2">Higher Education Students – School Teachers</td></tr>
<tr><td></td><td>Difference</td><td>Sig.</td><td>Difference</td><td>Sig.</td><td>Difference</td><td>Sig.</td></tr>
<tr><td>D1adv</td><td colspan="6" rowspan="3">No significant difference between targeted groups
No significant difference between targeted groups
No significant difference between targeted groups</td></tr>
<tr><td>D2adv</td></tr>
<tr><td>D3adv</td></tr>
<tr><td>D4adv</td><td>.38750</td><td>.043</td><td colspan="2" rowspan="2">No significant difference between targeted groups</td><td>-.57169</td><td>.000</td></tr>
<tr><td>D5adv</td><td colspan="2">No significant difference between targeted groups</td><td>-.55821</td><td>.002</td></tr>
<tr><td>D6adv</td><td colspan="6">No significant difference between targeted groups</td></tr>
<tr><td>EDLadv</td><td colspan="4">No significant difference between targeted groups</td><td>-.45992</td><td>.003</td></tr>
</table>

Next we will examine if reasons for enrolment, grit score and self-confidence, as well as the hours a participant is planning to spend in the course, are related to the achieved EDL competence advancement.

4.5 Relationship between participants' characteristics and EDL competences advancement

The scope of this section is to investigate the role of participant's profile (especially reasons for enrolment, grit score and self-confidence, as well as the hours a participant is planning to spend in the course) in EDL competence advancement.

4.5.a Reasons for enrolment

In the pre-course survey, participants were asked to rate, from "Not at all true" (1) to "Very true" (5), eight statements regarding the reasons for enrolment. These statements are divided into Internal Motives and External Motives for enrolment. In previous section, we found that Internal

Motives had no effect on course completion, while External Motives are strongly positively related to course completion. In **Figure 24** we can see there is no relation between internal motives and EDL competence advancement, as well.

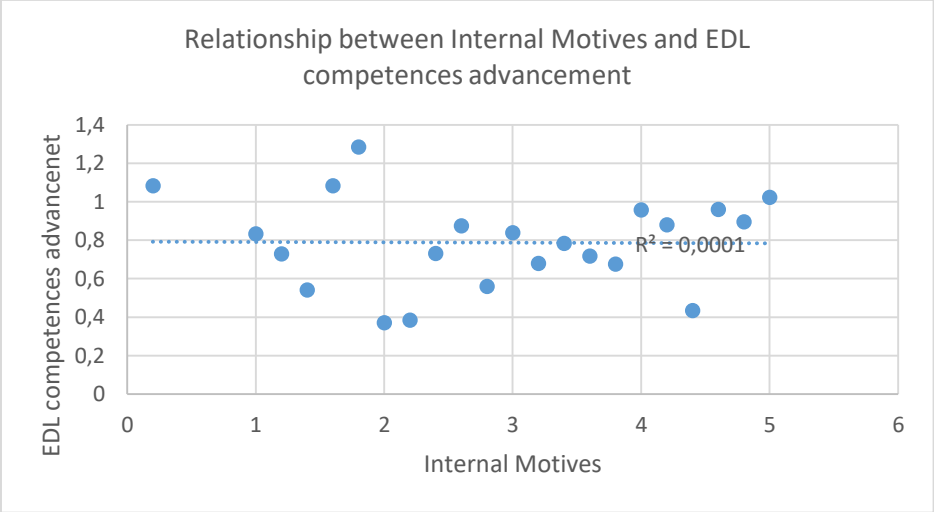

Figure 24. Relationship between Internal Motives and EDL competences advancement

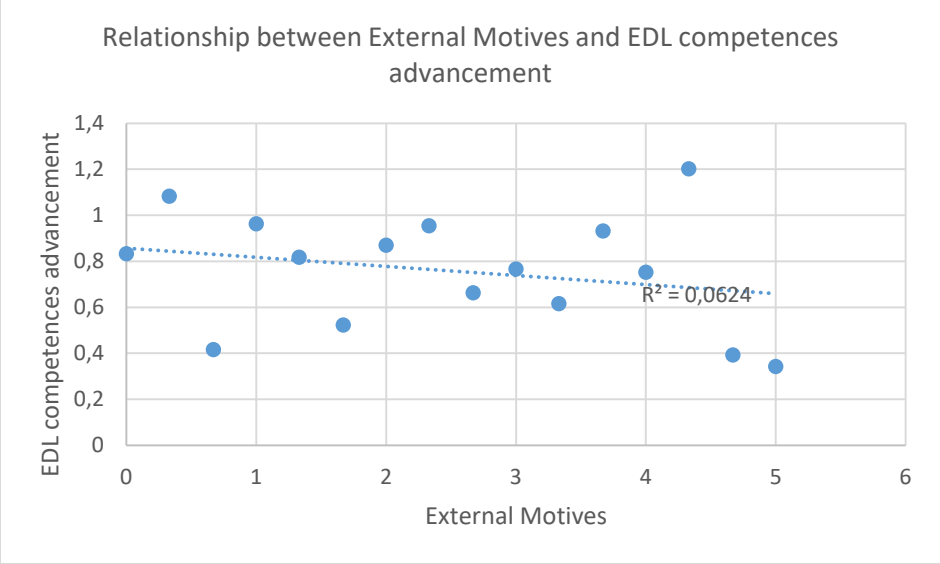

Figure 25. Relationship between External Motives and EDL competences advancement

Although we found that External Motives have strong positive relation to course completion, we cannot conclude the same for their relation to EDL competence advancement. There is no relationship between external motives and EDL competence advancement (**Figure 25**).

4.5.b GRIT score

GRIT score is a measure for perseverance for long-term goals. In previous section we found that only one statement of the 8-items GRIT scale differs significantly between participants that completed the course and those who didn't. **Figure 26** demonstrates positive relationship between the GRIT score and EDL competences advancement.

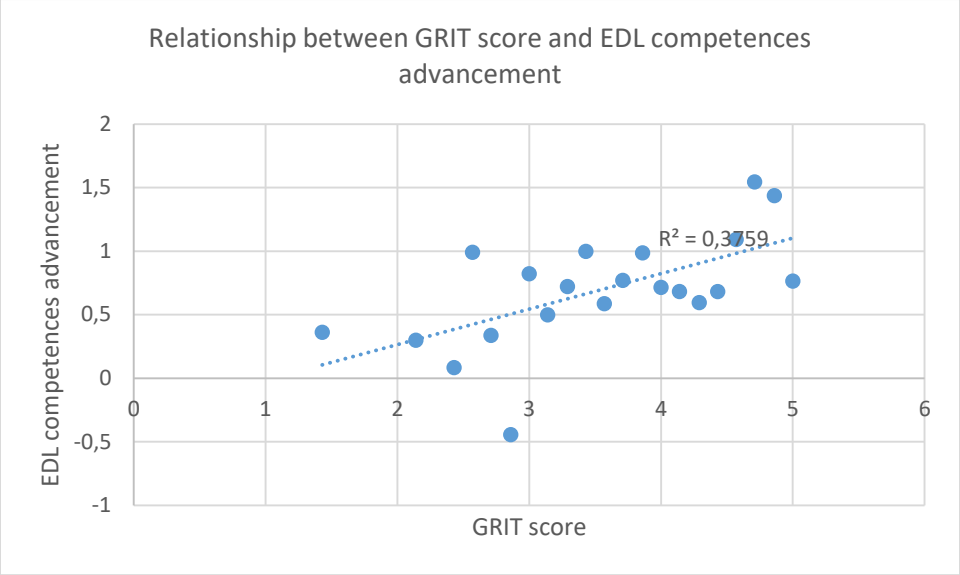

Figure 26. Relationship between GRIT score and EDL competences advancement

4.5.c Self-confidence

Participants in the pre-course survey were asked two questions regarding their self-confidence:

1. How confident are you in your ability to learn the material in this course?
2. How would you rate your possibility of finishing this course according to the anticipated time commitment as defined in the syllabus?

Examining their effect to EDL competence advancement we can conclude that there is positive relationship between self-confidence and EDL competence advancement (**Figure 27**).

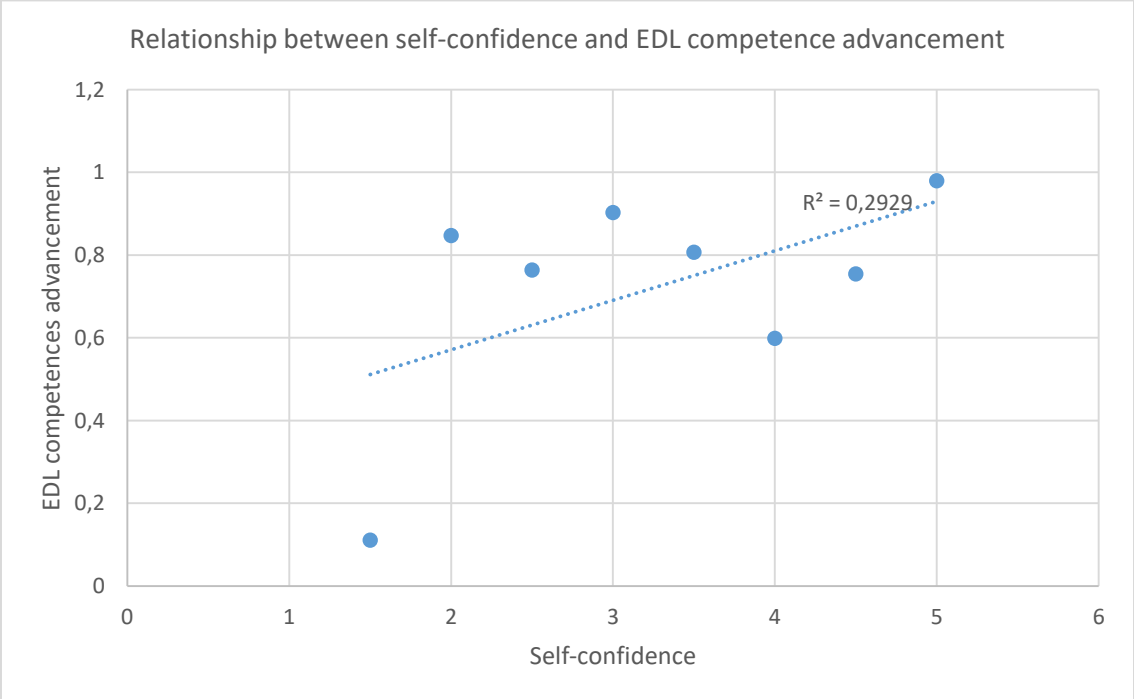

Figure 27. Relationship between Self-confidence and EDL competences advancement

4.5.d Hours per week planning to spend in the course

We've found that the hours per week the participant was planning to spend in the course affect course completion. As we can see in **Figure 28**, they are also positively related to EDL competence advancement.

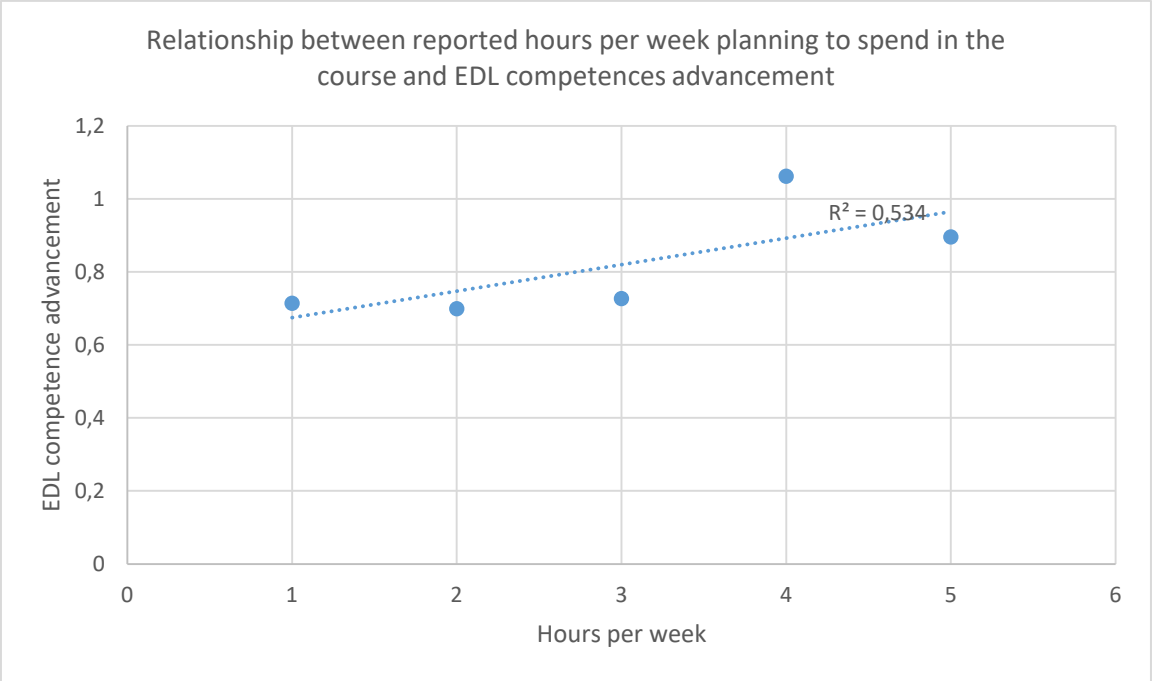

Figure 28. Relationship between the hours per week the participant is planning to spend in the course and EDL competences advancement

4.6 Conclusions

In this section, we examined the difference in EDL competences advancement reported from the three targeted groups (eLearning Professional, School Teachers and Higher Education Students).

Although external motives had strong positive relationship to course completion, we could not find any relation to EDL competence advancement. On the other hand, we found positive relationship between the GRIT score and EDL competences advancement. Furthermore, we examined the effect of self-confidence to EDL competences advancement and we found positive relationship.

The hours that the participants were planning to spend in the course are very important as they have strong relationship not only with the course completion, but with the EDL competences advancement as well.

Next we continue with the analysis of the post-course survey, where participants are asked about their learning experience in the L2A MOOC.

5 Learning Experience

In this section we analyze the post-course survey were participants reported their Learning Experience per module and the Overall Learning Experience from the course attendance.

5.1 Learning experience per module

In the post-course survey, participants were asked to rate from 1 to 5 their agreement to 11 statements, concerning their learning experience in each module of the course. As we can see in Figure 28, rating per module varies from 3.5 to 4.4 on average (3=Neither agree nor disagree, 4= Agree, 5=Strongly agree).

In **Figure 29** the reported learning experience per module is graphically illustrated. We define the areas of rating as per below:

- Relatively high (>4)
- Marginally (3.8-4)
- Relatively low (3.6 – 3.8)

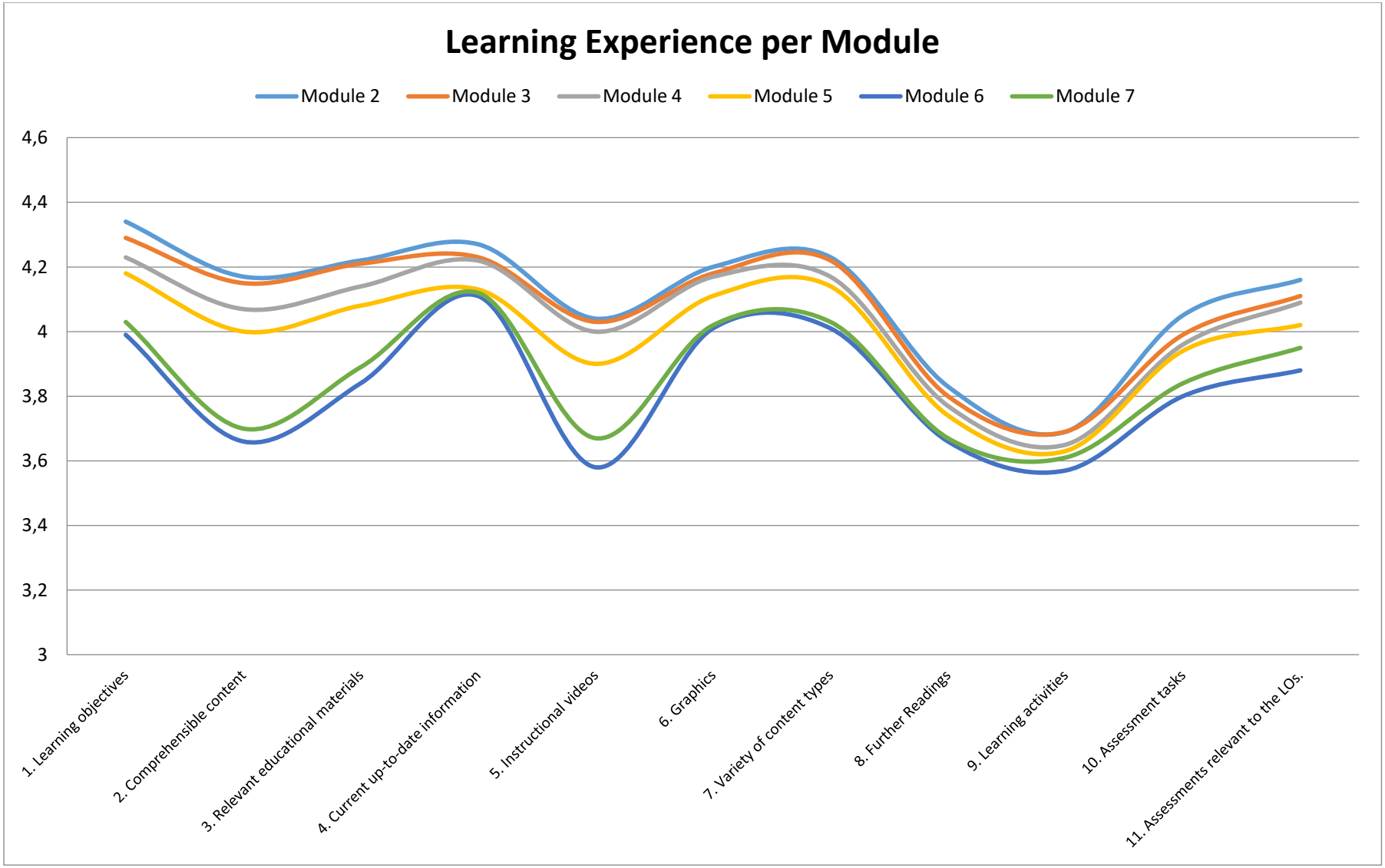

Figure 29. Learning Experience per Module

Survey participants rated relatively high (score>4) their agreement to statements about the ***instructional design of the course*** (learning objectives clearly stated, variety of content types, and relevance of the assessments with the LOs), and the ***content*** (relevant educational materials, current up-to-date information, graphics). Comprehensive content and instructional videos scored relatively high in modules 2-5 and relatively low in modules 6-7. Further readings, learning activities and assessment tasks need attention as they score relatively low in all modules.

In the same section of the post-course survey, participants were asked to report the hours per week they spent on each module, as well as the posts they contributed to the discussion forums per module.

Hours spent on each module

Participants were asked about the workload per module in relation to the hours they spent on each module. As we can see in **Figure 30**, the reported workload was evenly spread. About 50% of the participants reported they spent less than 6 hours per module, while the rest spent more than 6 hours per module.

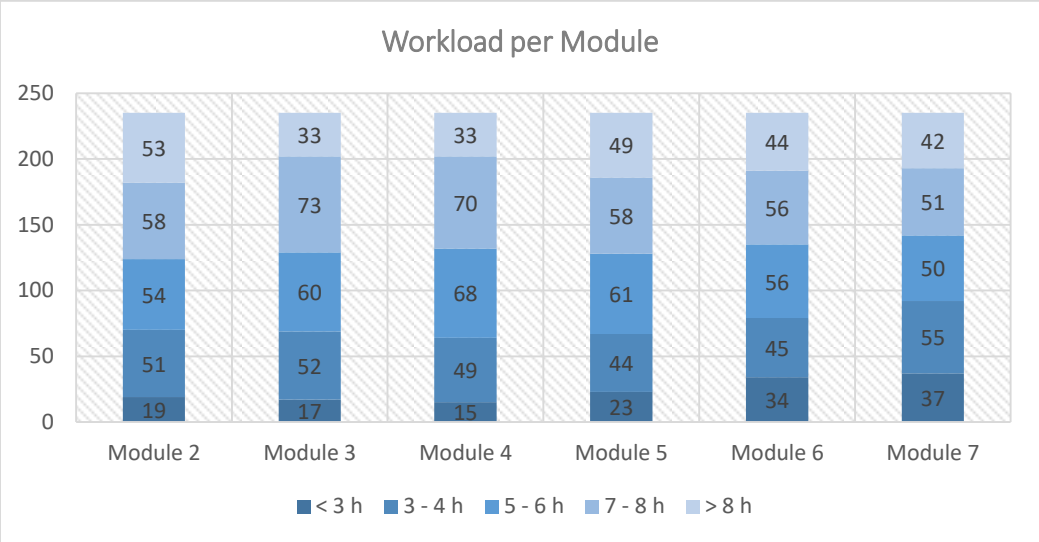

Figure 30. Distribution of the reported workload per Module

Forum participation per module

Figure 31 illustrates the forum participation as reported from participants in the post-course survey. Forums in Modules 2 and 3 seem to be more active than in Modules 4-7. Overall we can notice that over 50% of participants that completed the L2A MOOC and answered the post-course survey had contributed to forum discussions.

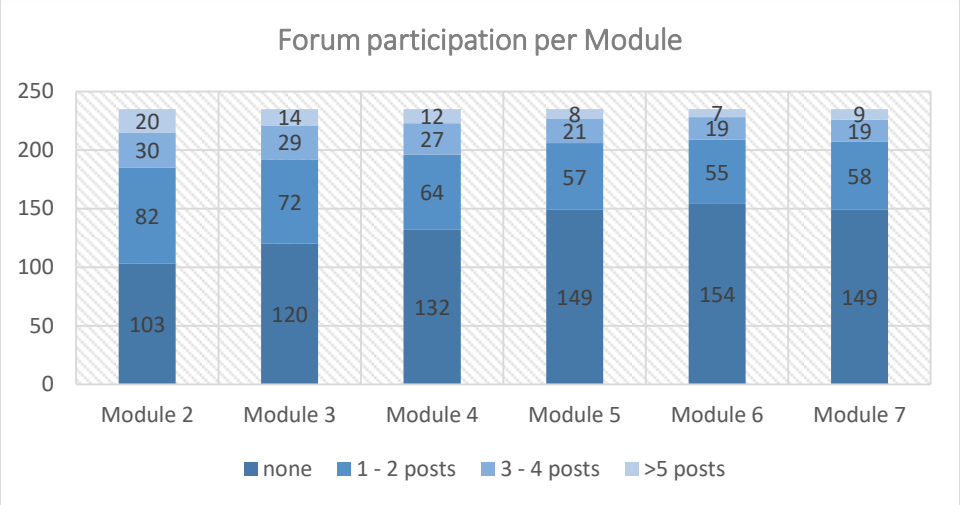

Figure 31. Reported forum participation

5.2 Overall learning experience

Participants in the post-course survey, were asked to rate 18 statements from "Strongly disagree" to "Strongly Agree", concerning the perceived Learning Experience from the L2A MOOC.

1. The course platform was easy to use.
2. The overall visual design of the course was appealing.
3. The course environment was well structured, topics and subtopics were logically arranged in a predictable pattern.
4. The learning path was easy to navigate.
5. Course objectives and learning goals were clearly stated.
6. The workload was reasonably spread.
7. The workload was in line with my expectations.
8. The course difficulty was in line with my expectations at the start of the course.
9. The difficulty level of assessments was appropriate for the course.
10. The level of interaction with peer learners was adequate.
11. The discussion forums were an effective tool for collaborating with other learners.
12. Help and support provided on the course platform were adequate.
13. I can apply the knowledge created in this course to my work or other related activities.
14. I was motivated to work through the course.
15. I feel like I achieved my personal goals for this course.
16. I enjoyed the course.
17. It is very likely to revisit the course materials in the future.
18. It is very likely to recommend this course e.g. to a colleague or friend.

These statements define the five dimensions of learning experience (**Appendix 1 – Evaluation plan**):

- Learning Experience [LX]: Statements 5 to 11
- Platform Ease of Use [PEoU]: Statements 1 to 4 & 12
- Confirmation of Expectations [CONF]: Statements 13 & 15
- Satisfaction [SAT]: Statements 14 & 16
- Continuance Intention [INT]: Statements 17 & 18

Results are presented in **Figure 32**, were percent agreeing (Strongly agree and Agree) is used.

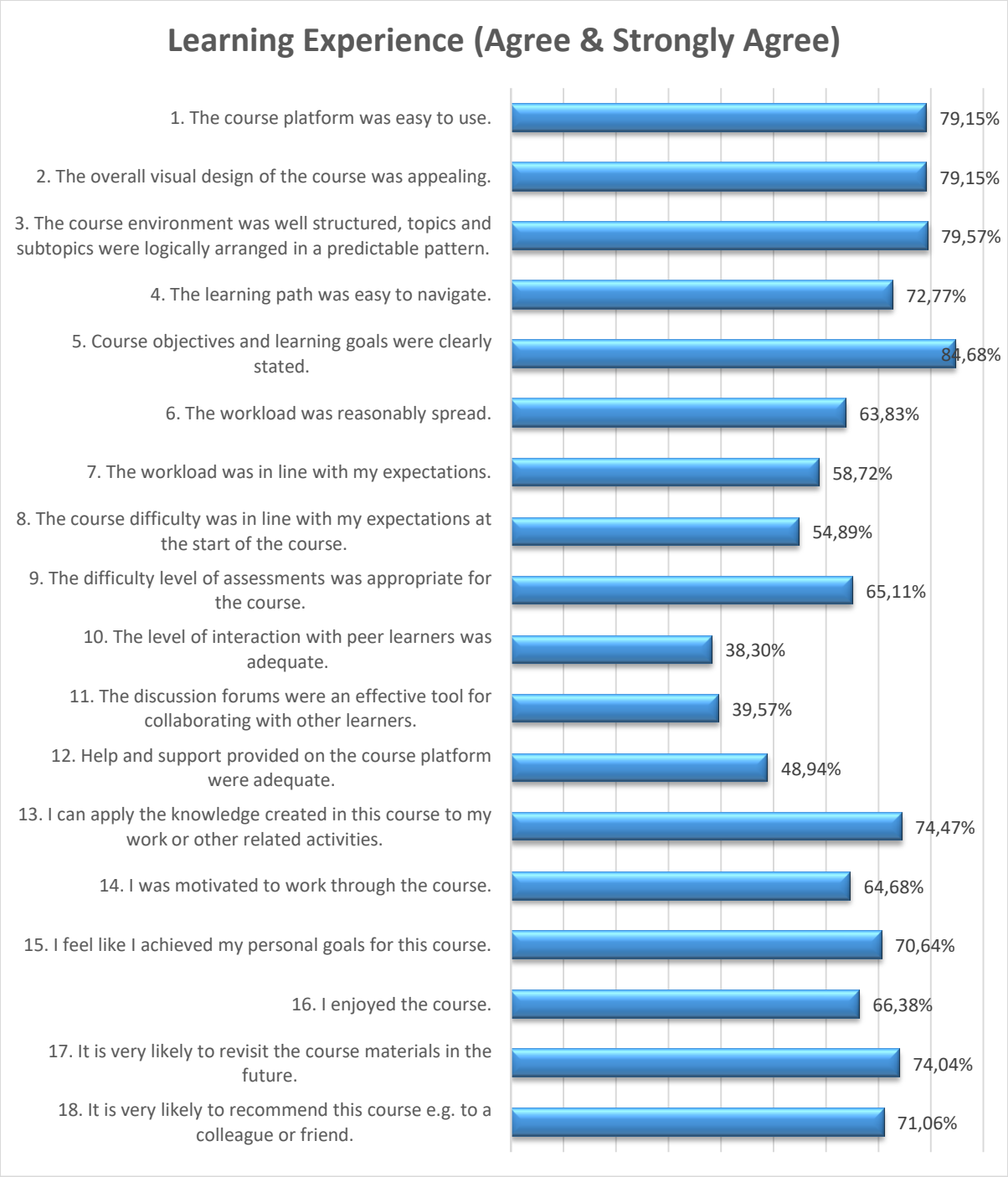

Figure 32. Percentage of Agree & Strongly Agree to 18 Learning Experience statements

As we can see, dimension "Platform Ease of Use" scores high almost in all statements, as well as dimensions "Confirmation of Expectations" and "Continuance intension". On the other hand, participants appear to face problems with the level of interaction with peers in the course, the course difficulty and the required workload.

In **Figure 33**, a comparison of the mean values for each dimension of Learning Experience between the three targeted groups is displayed. As we can note, Higher Education Students report lower

mean ratings for all dimensions of the Learning Experience [LX]. The least mean rating is reported from Higher Education Students and is related to Satisfaction [SAT].

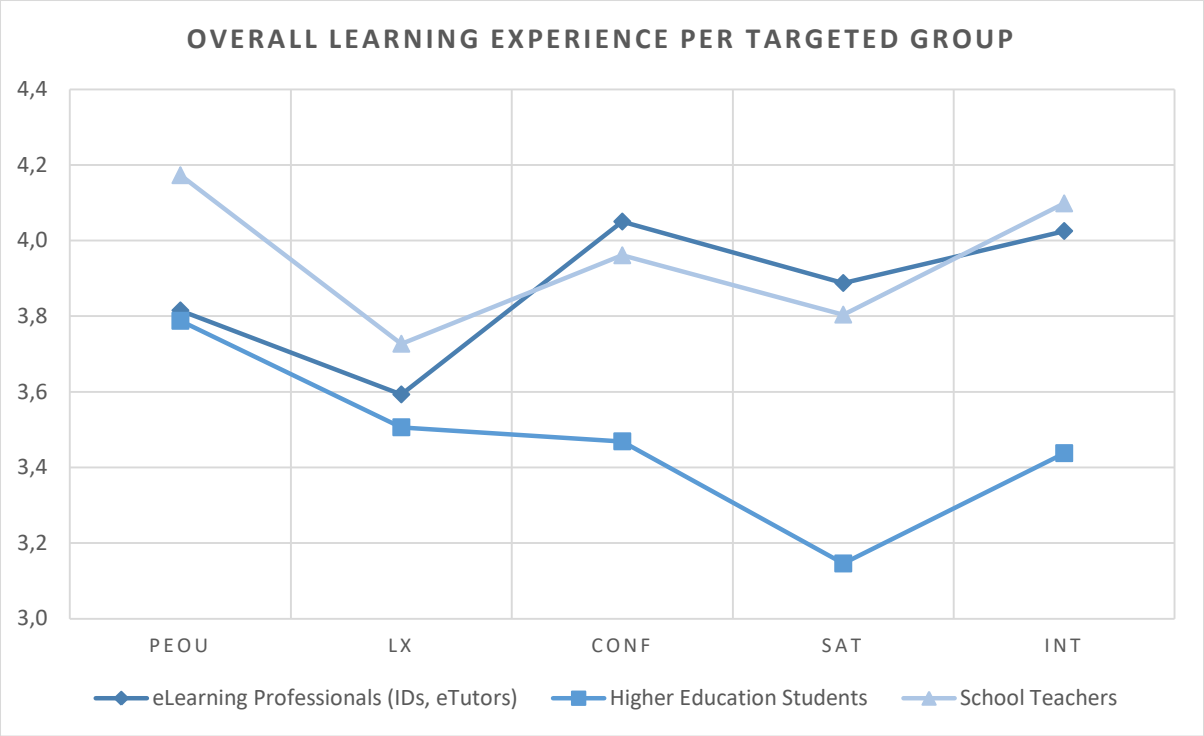

Figure 33. Comparison of the dimensions of Overall Learning Experience between the three targeted groups

Platform Ease of Use [PEoU] scores high among all targeted groups. E-Learning Professionals and School Teachers, that completed the course, report high Confirmation of Expectations [CONF], they intend to revisit the course material and recommend the course to a friend [INT].

5.3 Relationship between the Overall Learning Experience and EDL competences advancement

5.3.a Learning Experience [LX] to EDL competences advancement

Relationship between the Learning Experience (LX – statements 5 to 11) and the reported EDL competences advancement is shown in **Figure 34** It seems that the reported Learning Experience is positively related to EDL competences advancement.

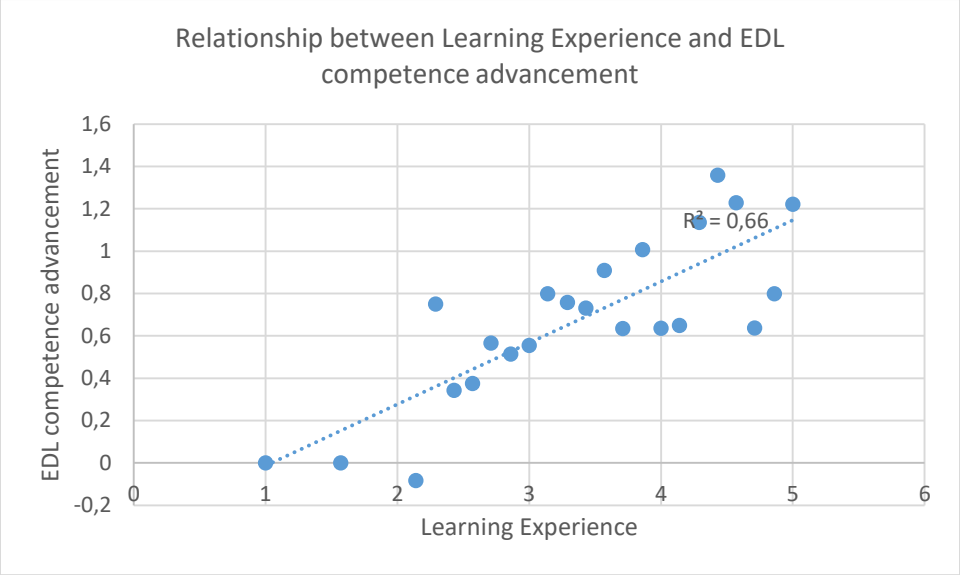

Figure 34. Learning Experience [LX] to EDL competences advancement

5.3.b Platform Ease of Use [PEoU] to EDL competences advancement

Relationship between Platform Ease of Use (PEoU– statements 1 to 4 & 12) and the reported EDL competences advancement is shown in **Figure 35**. The reported Platform Ease of Use is strongly positively related to EDL competences advancement.

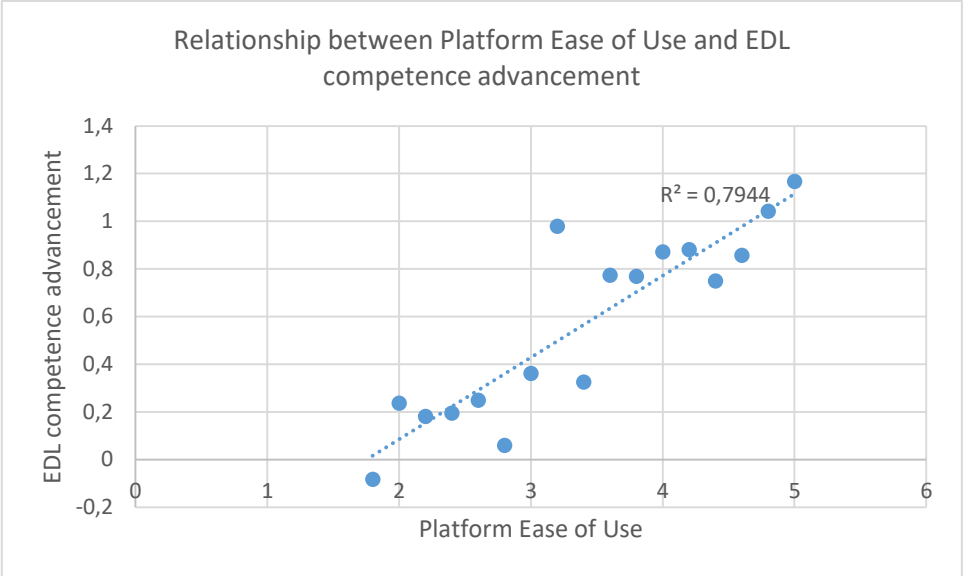

Figure 35. Platform Ease of Use to EDL competences advancement

5.3.c Confirmation of Expectations [CONF] to EDL competences advancement

Relationship between the Confirmation of Expectations (CONF – statements 13 & 15) and the reported EDL competences advancement is shown in **Figure 36**. The reported Confirmation of Expectations [CONF] is strongly positively related to EDL competences advancement.

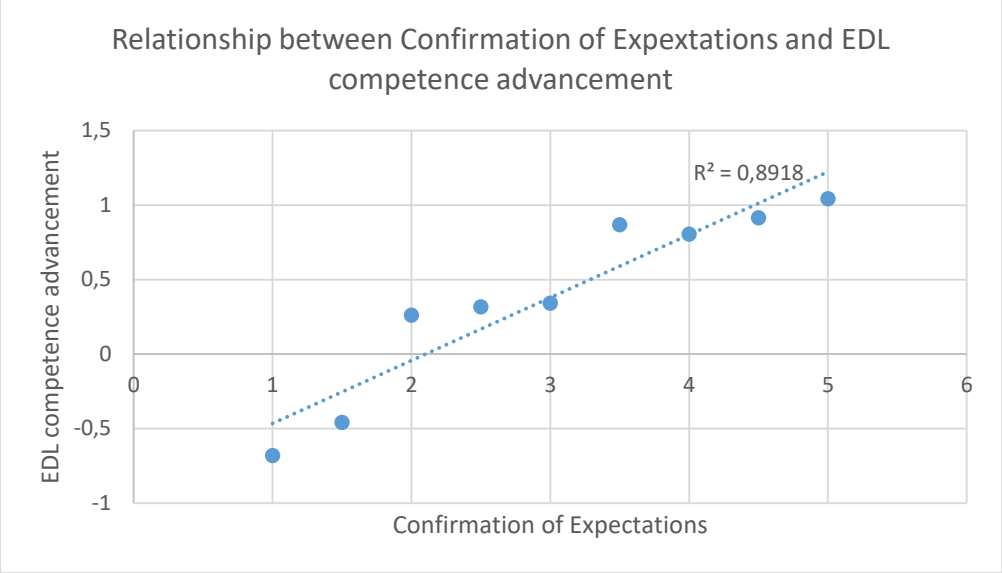

Figure 36. Confirmation of Expectations to EDL competences advancement

5.3.d Satisfaction [SAT] to EDL competences advancement

Relationship between the reported Satisfaction (SAT – statements 14 & 16) and the EDL competences advancement is shown in **Figure 37**. The reported Satisfaction [SAT] is positively related to EDL competences advancement.

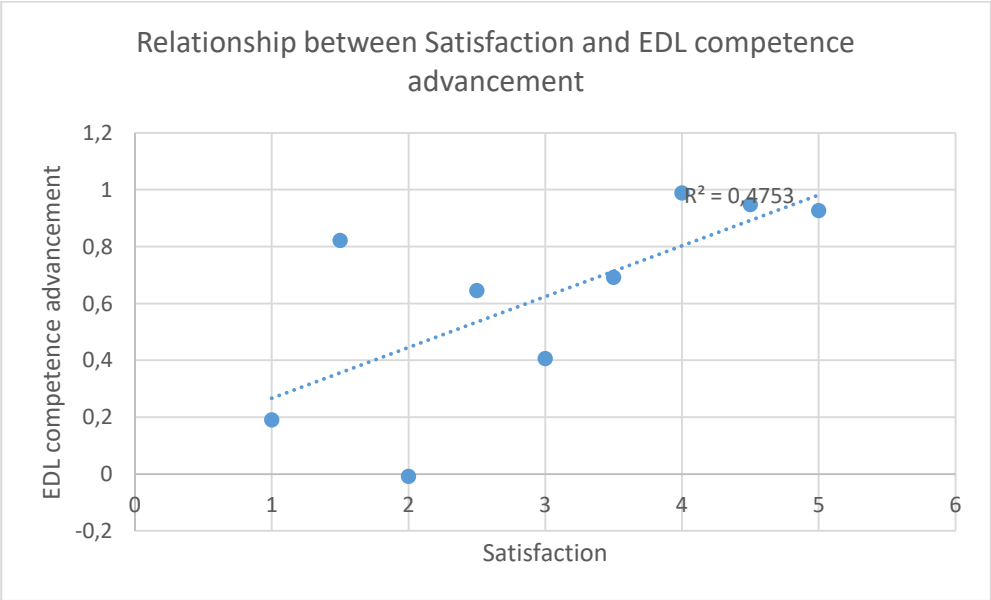

Figure 37. Satisfaction to EDL competences advancement

5.3.e Continuance Intention [INT] to EDL competences advancement

Relationship between the reported Continuance Intention (INT– statements 17 & 18) and the EDL competences advancement is shown in **Figure 38**. The reported Continuance Intention [INT] is positively related to EDL competences advancement.

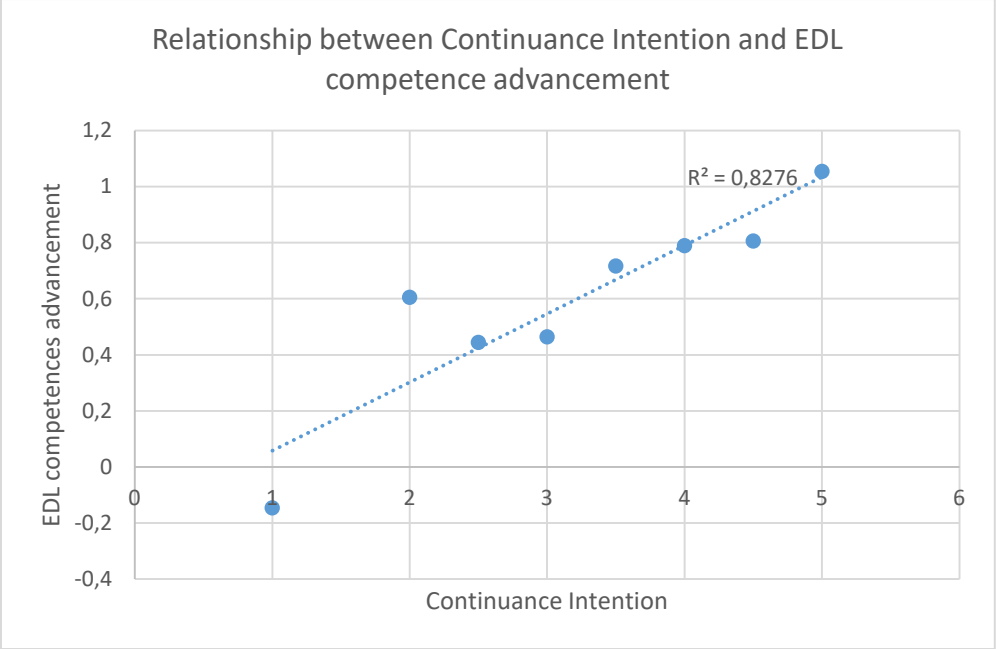

Figure 38. Continuance Intention to EDL competences advancement

5.4 Qualitative analysis of participants' comments in relation to their learning experience

5.4.1 Scope

The scope of this section is to analyze participants' comments in relation to their learning experience

5.4.2 Background

The post-course survey questionnaire included two open-ended questions so that learners could optionally comment what they liked most and least about taking part in the course.

Out of the total 235 of post-course survey participants, 229 provided feedback on what they liked most and 198 on what they liked least about the MOOC.

Following a thematic analysis (Braun & Clarke, 2006) of survey participants' remarks we identified five central themes, as per below:

- Course Content (learning material included in modules)
- Instructional Design (content delivery methods, structure, activities, videos)
- Interaction (interaction with other participants or instructors, forums)
- Assessment (final MCQ assessment activity and quizzes throughout the course)
- Platform (intuitive use, technical issues, navigation)

Table 15. *L2A MOOC comments* summarizes the number of positive and negative participants' comments pre theme.

Table 15. L2A MOOC comments

	Pros	**Cons**
Course Content	119	78
Instructional Design	77	65
Interaction	18	24
Assessment	22	40
Platform	12	18

In the following sections we present an overview of our key conclusions for each theme along with a selection of salient comments, for both positive and negative issues reported by the learners.

5.4.2 Participants' positive comments

In this section we summarize the positive comments as derived from participants' answers in the question "What did you enjoy most about your MOOC experience?"

5.4.2.a Course Content

The majority of the learners (119 comments in total) provided positive feedback about the content of the MOOC. Many learners valued highly their hands-on experience, acknowledging the combination of Educational Data Analytics theory and practice through the use of existing educational data analytics tools from world market leaders. In particular, learners emphasized on module 5 presenting tools available in Moodle platform (12 comments).

- *"Engaging with new material, paths not taken, and climbing up toward new peaks."*
- *"It was surprisingly more interesting than expected so it made me engage and get involved."*
- *"I liked that fact that I learnt about data analytics much more than I could imagine."*
- *"The updated information and the tools for educational data analytics in Moodle."*
- *"Getting an introduction to three different kinds of LMSs."*
- *"The hands-on-approach!"*
- *"I have especially enjoyed applying my knowledge, testing the different platforms and having a structured course."*
- *"Learning about learning and teaching analytics and the explanation provided of why and how to do it."*
- *"Learning things that you can apply in your work."*
- *"I really liked the fact that I gained so much knowledge in order to enhance my teaching methods and generally my performance as a teacher and maybe as an instructional designer in the future."*
- *"The relation to the job at school."*
- *"It was an area I had given little thought to - so it now interesting to contemplate how I might put this into practice in the future."*
- *"I feel confident in applying the learned knowledge and methods."*

5.4.2.b Instructional Design

There were many remarks about the instructional design of the course (77 in total) such as the course structure and the multimodal content. Most of the learners found the videos to be the most engaging learning method (29 comments), while they also acknowledged that the learning goals were clearly stated. Some learners expressed their gratification over the self-paced nature of the course.

- *"The videos were very well made, explanatory, appealing."*
- *"Very nice mixture of videos and text."*
- *"I liked the self-paced nature of the course."*
- *"Up-to-date learning material, interesting and very well presented."*
- *"It was well-planned, my whole experience was positive, the material aroused my interest and though my time is restricted I wanted to log in again as soon as possible."*
- *"the variety of the content really overcame my expectations...all forms of presentation were included and motivated the volume of my dedication"*
- *"The learning goals were clearly stated and the course well-structured for the most part."*

5.4.2.c Interaction

The forums of the course were quite popular (18 remarks) and contributed to the interaction with peers in discussing course topics.

- *"I had the opportunity to view different opinions and experiences via forum discussions."*
- *"As this is a MOOC, I expected very little interaction with other participants - and I surprisingly had a feeling that I got a lot out of the exchange with other course participants. I really felt I was getting to know some of the other digital colleagues."*
- *"I enjoyed most the participation in discussions, where I could elaborate in other peers' opinions."*

5.4.2.d Assessment

Several learners also commented positively the final MSQ assessment activity and quizzes throughout the course (22 comments).

- *"Liked the test in the end, covered the course very well."*
- *"The quizzes that needed me to work with excel files in order to answer."*

5.4.2.e Platform

Learners reported comments (10 comments) about the platform mainly focusing on its intuitive use.

- *"How easy it was to use the portal."*
- *"I really enjoyed the online course. I thought it was well planned and laid out, easy for me to follow."*

- *"I enjoyed the course because the platform was easy to use and I achieved my personal goals."*
- *"The environment was well structured; the visual design of the course was appealing."*

5.4.3 Participants' negative comments

In this section we summarize the negative comments as derived from participants' answers in the question "What did you like least about taking part in the MOOC?"

5.4.3.a Course Content

Most of the negative remarks regarding course content (76 comments in total) were related to the detailed, quite specialized and complex content provided for specific LMS (26 comments), especially since learners could not practice using these tools (module 6 and 7). Many learners also criticized the information overload throughout the whole course (20 comments), the overlaps across modules (13 comments) and the level of difficulty (9 comments). Further, there were comments about the quality of some videos in specific sections (7 comments).

- *"it was a lot information, which I had to learn in a relatively short time; some information esp. regarding Learning Management Systems (LMS) are easier to learn in practice"*
- *"Module 6 and 7. Maybe because I did not have a lot of time to complete these two modules. However, I found them very difficult to complete...and the questions in the final assessment were difficult as well. The topic of these modules was quite complex and especially if one cannot use the tools practically."*
- *"I didn't like the fact that we had to attend three LMS and not only one (for example MOODLE) and penetrate more via practice."*
- *"Platform specific models offered redundant content and were hard to link with the initial modules."*
- *"Module 6 and 7 are - for me - not interesting and I wasn't highly motivated to spend much time with these topics. "*
- *"Content overload and difficulty. Too much information."*
- *"same theory parts were repeated in different modules, making me losing interest"*
- *"The course material volume exceeded my expectations. I had to leave important work behind in my personal and professional life."*
- *"I think that the material could have been structured a bit better, in the sense that I found some overlaps in the different sections, and also found some material being repeated towards the end. Although the modules were pretty clear, I think it could have been organised a bit better as a course."*
- *"Constant repetitions of the same concepts, especially in Modules 2-3-4 and lack of opportunity to test the platforms in Modules 5-6-7."*

- *"the videos - they were not relevant to the course and tiring"*

5.4.3.b Instructional Design

The critical feedback of the participants for this theme (54 comments in total) was centered on the required workload (31 comments), that as they reported, was much higher than the expected compared to the required time commitment anticipated in syllabus of the course. Some learners acknowledged that the extension of the duration of the course may lighten the load of content presented each week. There was also some criticism (16 comments) about the multi-level structure and increased number of HTML pages making learners feeling demotivated, nevertheless the multiple level structure of the course highly depends on platform's functionality. Few learners commented the quality and length of some videos and that there was too much reading material (7 comments).

- *"I needed to spend a lot of time to the course. Much more than you suggest!"*
- *"I didn't like that I spent more time than I anticipated."*
- *"The workload. I am the type of learner who takes notes in order to master new knowledge. It got time consuming and hectic sometimes."*
- *"I didn't have the time to follow the course as I would like to. Better to spread the course to more weeks in order to be easier to be followed by people who would like to but they have many obligations."*
- *"The confusion structure of the content (many levels, sub-levels and so on)."*
- *"The intricate, mazy learning path. Too many steps in order to complete a single Module."*
- *"The structure of the content in hundreds of html pages was at times infuriating."*
- *"some videos were way too long, not very well recorded, sometimes attention diverted"*

5.4.3.c Interaction

Some learners did not enjoy the forums included in the course e.g. since they experienced lack of interaction with their peers and e-tutors, while others seem concerned about the quality of the discussions (24 comments in total).

- "*lack of interaction with other students and teachers, lack of contact with teachers and module creators*"
- "*I didn't get the feeling that the forums and their threads/posts would help me through the course. (I've got to say: I took this course with a group already and we exchanged there*.)
- "*I never interacted with somebody, because I started late and that is what I really missed*."
- "*The forum posts seemed unnecessary to me, but possibly also because I was so late and felt there was no one else there*."
- "*Quality of discussions was very variable*."

- "*Discussion forums - were disappointing. I was expecting to get more from them. Personally, I put quite a bit of work into them but continually asked myself why I was bothering - they are not part of the assessment and many contributions were very weak*."
- "*I know from other courses, that there are weekly live-webinars that would help my personal learning style*."

5.4.3.d Assessment

Learners expressed their frustration (40 comments) about the type of the final assessment using MCQs, the increased number of questions, the fact that no meaningful feedback was provided for wrong answers, as well as about the questions focusing on the three LMS reporting details.

- "*I am not a great multiple-choice enthusiast - and even though I passed the final test, I still feel that I would have preferred a slightly more flexible type of assessment. However, I do understand the need for automatic grading - and given the limitations of a MOOC course environment, I thought that the assessment process was transparent and encouraging*."
- "*too long final assessment*"
- "*The tests because I couldn't know the right answers, no feedback*"
- "*having assessment questions about different LMS reporting details, like certain columns etc. - I feel like I don't need to know this by heart*"
- "*included questions based on the content not covered or not clearly explained in corresponding modules*"
- "*Another major annoyance for me was pedagogical. Although I thought the overall learning design was excellent, I was frustrated with the quizzes and the lack of explanations of why particular answers were wrong. I had to spend much time 'guessing' the right answers and when the system told me what answer was correct, I had to go back over the learning material for figure out what misconceptions I had. This is a classic problem of lack of meaningful feedback provided. I suggest that the quiz sections are reviewed and explanations provided as to why the required answers were correct and where to look if wrong answers were selected or provided. The 'fill-in' responses that I got wrong were most off-putting because I had no clue how to arrive at the correct answers*."

5.4.3.e Platform

The post-course survey reported 18 comments on platform issues referring mainly to the long page loading time and the lack of ease of navigation resulting in low discoverability of a specific subsection of the course or a forum message.

- "*System performance: poor loading times (tried from different machines, different access points, asked colleagues, same result = slow homepage). Checking a green box makes the page load again, which takes forever ...*"
- "*Platform loading*"

- *"The delay after clicking to get to the next page was frustrating."*
- *"Hard to monitor the forums messages. Hard to find the replies of your comments."*
- *"The way the course was "sectioned"... sometimes I felt the material was divided into too many small bits, and we had to click the next window very frequently, and it was, thus, sometimes more difficult to find an information that we wanted to revisit, for example."*

5.5 System data analysis

In this section we analyzed system data to reveal insights into learners' behaviour and participation.

5.5.1 Participants level of engagement with MOOC learning material

During the L2A MOOC Phase A, 1920 users enrolled, 1321 started Module 1 and 1147 submitted the pre-course survey and unlocked the MOOC content. Table 11 and figure 55 depict the level of engagement with MOOC learning material during Phase A.

Table 16 Progress per module

Progress	Mod 1	Mod 2	Mod 3	Mod 4	Mod 5	Mod 6	Mod 7	Mod 8
LEVEL1 (< 20%)	568	339	129	94	80	68	73	49
LEVEL2 (20% - 40%)	50	68	18	12	20	9	2	8
LEVEL3 (40% - 60%)	37	34	11	3	6	4	1	6
LEVEL4 (60% - 80%)	179	36	10	9	6	8	8	99
LEVEL5 (> 80%)	487	357	306	270	240	215	206	133
Grand Total	**1321**	**834**	**474**	**388**	**352**	**304**	**290**	**295**

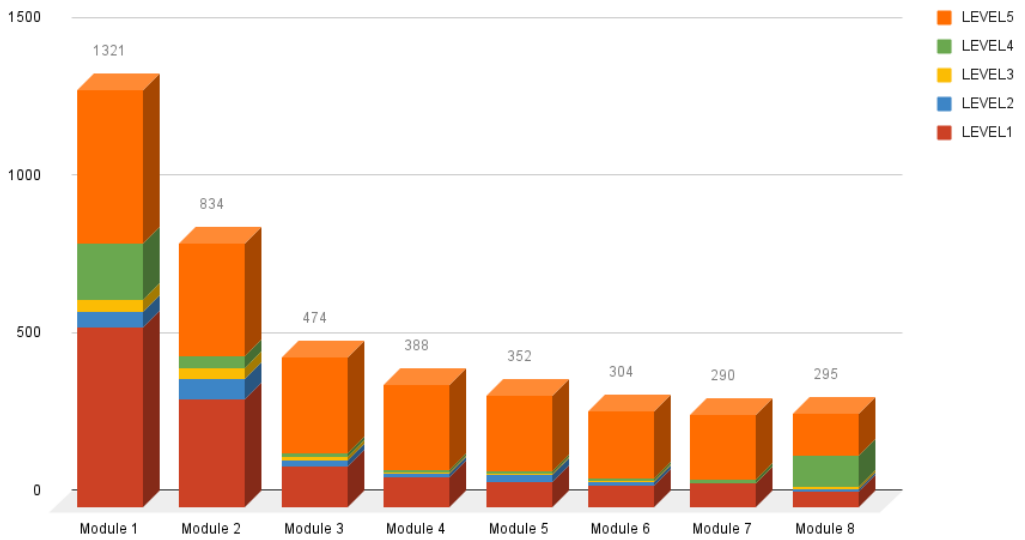

Figure 39 Progress per module

During L2A MOOC Phase A learning activities where in the form of polls and quizzes, as well as collaborative learning activities, i.e. questions in the forum discussions (see Participants level of engagement with MOOC collaborative learning activities).

5.5.2 Participants level of engagement with Quiz activities

Table 17 shows the number of quiz activities per module, the number of questions per quiz and the number of answers collected.

Table 17 Level of engagement with quiz activities

	Quiz activity	no of questions	no of answers	participants	Average participation for quiz learning activities' per module
Module 2	2.1.6.1 Topic 1 Quiz	3	1482	494	440
	2.1.6.1 Topic 1 Quiz	2	865	433	
	2.3.6.1 Topic 3 Quiz	3	1182	394	
Module 5	5.1.5 - Site Level Reporting Quiz	3	1396	465	307
	5.2.4 - Course Level Reporting Quiz	5	1311	262	
	5.3.3 - User Level Reporting Quiz	5	1266	253	
	5.4.5 - 3rd Party Reporting Tools in Moodle Quiz	5	1230	246	
Module 6	6.1.1.6 Fill in the blanks: e-learning Formats	1	214	214	212
	6.1.3.9 Quiz: Understanding reports and taking decisions	4	900	225	
	6.2.1.3-5 - Evaluation Models	3	639	213	
	6.3.1.8 - Drag & Drop: Match activities and learning types	1	208	208	
	6.3.1.9 - Quiz : tracking non formal learning	3	624	208	
	6.3.2.6 - Quiz: eXact Delivery Portal	1	208	208	
	6.3.3.7 - Quiz: eXact Delivery Portal Tracking capabilities	3	630	210	
Module 7	7.3.3.3 - Quiz: Course Learning History	3	609	203	202
	7.3.3.5 - Quiz: Select the best tutor view for your task	1	203	203	
	7.3.4.3 - Quiz: Working with the report “Test questions per user”	2	398	199	

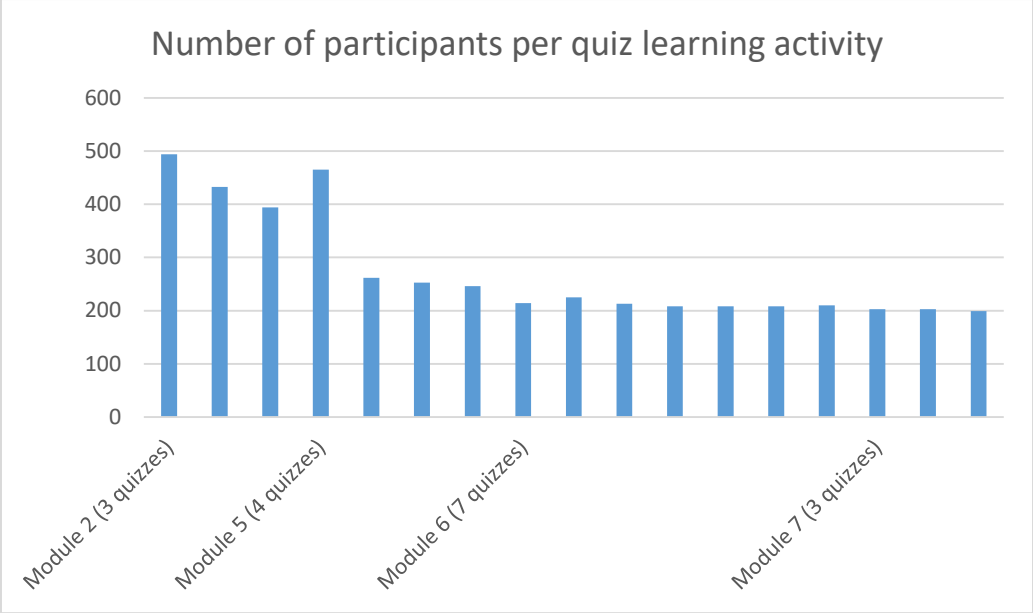

Figure 40 Participation in micro-quizzes

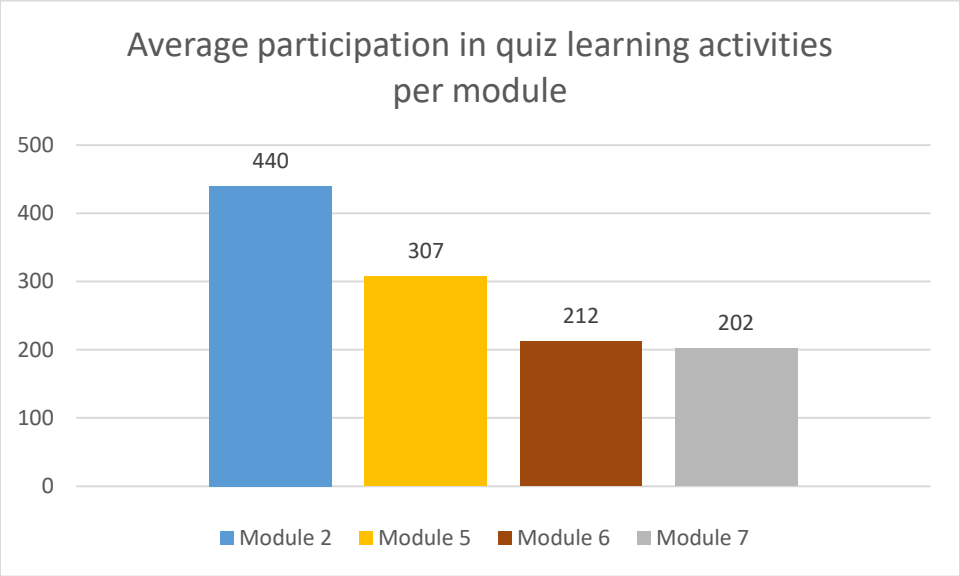

Figure 41 Average participation in quiz learning activities per module

5.5.3 Participation in Polls

During the L2A MOOC Phase A 45135 poll interactions where reported in a total of 131 poll questions.

5.5.4 Forum participation

Level of engagement in collaborative learning activities (forum participation and workshops) per module (platform data) are shown in figure 42:

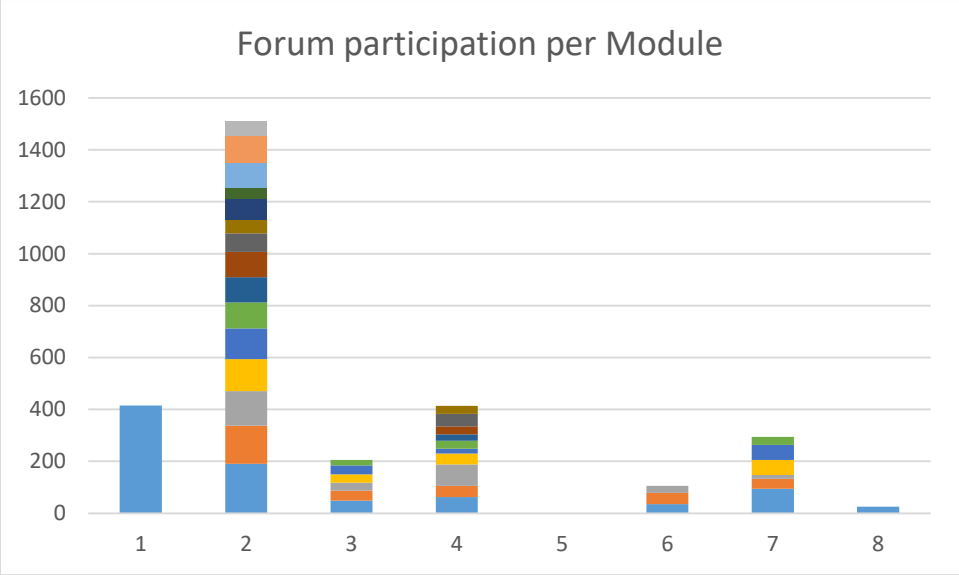

Figure 42 Forum participation

Different colors indicate the different collaborative learning activities of the module (forum discussions and workshops)

Total participation in collaborative activities per module is depicted in Table 18.

Table 18 Participation in collaborative activities per module

Module 1	Module 2	Module 3	Module 4	Module 5	Module 6	Module 7	Module 8	Total
415	1509	206	414	0	106	294	26	2970

5.5.5 Participation in the Final Assessment

During the L2A MOOC Phase A, all assessment activities where located in Module 8. From the 1147 participants that submitted the pre-course survey and unlocked the MOOC content, 295 reached module 8. 235 participants succeeded in the final assessment and received the Certificate of Achievement. Participants' level of engagement with MOOC assessment activities is shown in the table 19:

Table 19 Level of engagement with MOOC assessment activities

Progress	Module 8
LEVEL1 (< 20%)	49
LEVEL2 (20% - 40%)	8
LEVEL3 (40% - 60%)	6
LEVEL4 (60% - 80%)	99
LEVEL5 (> 80%)	133
Grand Total	**295**

5.6 Conclusions

In this section we examined participants' learning experience as it was reported in the post-course survey from the 235 participant who completed the course. The evaluation of the learning experience had three parts:

- Learning experience per module
- Overall learning experience of the course
- Participants' comments in relation to their learning experience

The first part revealed the strengths and weaknesses per module. More specifically, participants rated high their agreement to statements related to the instructional design, across all modules. Statements about the content (learning materials, up to date information) also score relatively high. Instructional videos and comprehensiveness of the content seems problematic in modules 6 and 7. Further readings, learning activities and assessment tasks need attention as they score relatively low in all modules.

The second part revealed problems in learning experience throughout the course related mainly to the workload and the course difficulty, as well as the lack of interaction and collaboration in the course. Attention is needed to the fact that one third of participants that completed the course do not agree with statements related to satisfaction ("I enjoyed the course" and "I was motivated to work through the course").

Next we examined the effect of the Overall Learning Experience (analyzed in Learning Experience, Platform Ease of Use, Satisfaction, Confirmation of Expectations and Continuance Intension) to EDL competences advancement and concluded there is strong positive relation of all dimensions of the Overall Learning Experience to EDL competence advancement.

The third part, where participants were asked about what they liked most and least in the course, provides useful insights for the evaluation. Many positive comments were about the platform's ease of use. Learners also, valued highly their hands-on experience emphasizing on module 5, presenting tools available in Moodle platform. They liked the multimodal content, highlighting videos as the most engaging learning method. They also appreciated and the self-paced nature of the course and the fact that learning goals were clearly stated. The forums were quite popular and contributed to the interaction with peers in discussing course topics. Several learners also commented positively the final MSQ assessment quiz and the activities throughout the course.

Negative remarks were related to the detailed, quite specialized and complex content provided for specific LMS, especially since learners could not practice using these tools, the information overload throughout the whole course, the workload that was much higher than the expected compared to the needed time commitment defined in syllabus of the course, the overlaps across modules, and level of difficulty. They reported lack of interaction with their peers and e-tutors, while others seem concerned about the quality of the discussions.

Participants also mentioned their concerns about the final assessment, the fact that no meaningful feedback was provided for wrong answers, as well as about the questions focusing on the three LMSs reporting details and on content that was not clearly explained in corresponding modules. They also reported that some quizzes did not work properly. Issues concerning the use of platform

include problems with the navigation through the content and difficulty to locate posts in the discussion forums.

6 Areas and recommendations for possible improvement

Table 20. Areas and recommendations of possible improvement

Area	Issue	Possible solution	Priority level
Learners profile	1. The analysis of participants' profile revealed three major targeted groups namely eLearning Professionals, School Teachers and HE Students.	Leverage this information to properly adjust content and activities to customized per group. [*MOOC Content/Activities: All Modules*]	High
	2. E-Learning professionals' completion rate is significantly lower (11.87%) than the completion rate of School Teachers (24.37%) and Higher Education Students (36.09%), while HE students have significantly higher completion rate than the other two targeted groups. E-learning professional is the group that indicates lower external motives among the groups. Completion rate is highly impacted by participants' external motives such as earning a certificate.	In order to increase learners' external motives, we suggest to incorporate competence credential (i.e competence badge) to be issued to the learner for each of the 6 dimensions of the L2A EDL-CP Framework, for providing evidence of their ability/ prove mastery in this particular competence. To earn the competence credential the learner needs to achieve all the learning outcomes as specified by the respective statements of the dimension. [*MOOC Educational Design: Gamification*]	High
	3. HE students, which are the group that reported significantly lower EDL competence advancement, also reported significantly lower satisfaction from the learning experience. These participants also reported higher external motivation and had significantly higher completion rates.	Given the fact that HE students in general do not have professional experience, we should motivate these learners to take ownership of their learning by making meaningful connections that can be applied to their future professional role. [*MOOC Educational Design: Gamification*]	Medium
	4. HE students are significantly	Add gamification to attract	Medium

	younger than other targeted groups. Their mean age is 29 years old.	millennials and increase participants' motivation and engagement. [*MOOC Educational Design: Gamification*]	
Content	5. Participants reported overlaps in content material "*Constant repetitions of the same concepts, especially in Modules 2-3-4*"	Content material within and across modules needs to be reviewed and updated so as to minimize overlaps, be more concrete and concise. [*MOOC Content/Activities: Modules 2-3-4*]	High
	6. Problematic comprehensiveness of the content in some modules. Participants' agreement in the statement "The content per module was presented in a comprehensible manner" for Modules 6 and 7 was relatively low.	Combine theory to practice and avoid complex and very detailed reporting information in LMS-related content that users cannot practice. [*MOOC Content/Activities: Modules 6-7*]	High
	7. Several participants reported information overload throughout the entire course and complained about the level of difficulty	Review detailed, quite specialized and complex content. [*MOOC Content/Activities: All Modules*]	Medium
	8. Participants negatively commented the quality of some videos in modules 6 and 7.	Videos in specific sections need to be cross-checked for quality assurance. [*MOOC Content/Activities: Modules 6-7*]	High
	9. Participants reported that some videos are very long.	Video lectures or interviews longer than 10' should be removed as they are considered disengaging for the learners. [*MOOC Content/Activities: All Modules*]	Medium
Workload	10. In the pre-course survey, participants reported they were planning to spend **3.72** hours per	The workload should be distributed in more weeks, extending the course duration	High

	week on average, but 70% of the participants in the post-course survey reported they spent more than 4 hours on average per module.	so as to lighten the load of content presented each week [*MOOC Educational Design: Syllabus*]	
	11. As derived from the quantitative analysis, "confidence in finishing the course according to the anticipated time commitment as defined in the syllabus" is strongly related both to course completion, as well as to EDL competences advancement. Nevertheless, the statement "*The workload was in line with my expectations*" scored relatively low in the post-course survey (63.83% agreement)	Provide guidelines and time scheduling that clearly communicate to the learners how much time should be allocated per each module. [*MOOC Educational Design: Syllabus*]	Medium
	12. Some participants reported (31 negative comments) that "*workload that was much higher than the expected compared to the needed time commitment defined in syllabus of the course*"	Consider revising the overall workload of the course [*MOOC Educational Design: Syllabus*].	Low
Learning activities	13. Learning activities scored relatively low across all modules.	Self(/Peer)-graded authentic activities should be added at the end of each topic, to enable learners to put theory into practice, boost motivation and engage them productively to the content. [*MOOC Content/Activities: All Modules*]	High
	14. Interaction with learning content	Add gamified activities to enhance learners' interaction with content material. These activities could be MCQs related to the video watched or the topic studied providing regular and meaningful feedback to the learners.	High

		[*MOOC Educational Design: Gamification*]	
Feedback	15. Participants reported "*lack of meaningful feedback provided*" in quizzes	Provide regular feedback with explanations why the required answers in MCQ activities are correct and where to look if wrong answers were selected or provided. [*MOOC Educational Design: Gamification*]	High
	16. Grading and feedback for human-assessed authentic activities.	Use clear grading rubrics to **self-grade** or **peer grade** learning activities. [*MOOC Content/Activities: All Modules*]	Medium
		Add gamification elements like points and progress bar to provide feedback for content and activities completion. [*MOOC Educational Design: Gamification*]	Medium
Assessment	17. Assessment tasks per module scored relatively low across all modules. Furthermore, learners expressed their frustration (40 comments) about the type of the final assessment using MCQs. On the other hand, several participants reported they liked the quizzes "*that needed me to work with excel files in order to answer*".	Consider revising the final assessment exploiting Use-case scenarios to create more authentic assessment activities. [*MOOC Educational Design: Assessment for Certification*]	Medium
	18. Participants complained about some final assessment questions focusing on the three LMS	Consider revising assessment in modules 5, 6, 7 [*MOOC Content/Activities: Modules 5-6-7*]	Medium
Platform	19. Structure of the content	We need to decrease the detailed organization of topics and subtopics, providing a clear learning path.	Medium

	20. Navigational issues	It is essential to improve navigation and discoverability by using breadcrumb or incorporating a navigation map on top of the screen.	Medium
Interaction with peers	21. Participants reported (24 comments) lack of interaction between peers in the course. Furthermore, only 38.3% of participants agreed with the statement "The level of interaction with peer learners was adequate.	To enhance interactivity between peers, implementation of gamification features, such as points and/or badges for forum participation is widely used. Gamification is used to support collaboration among participants, handle isolation and improve social participation (Antonaci et al., 2018) [*MOOC Educational Design: Gamification*]	High
	22. Lack of collaboration. Only 39.57% of participants agreed with the statement "*The discussion forums were an effective tool for collaborating with other learners*".	Add forum discussions related to human assessed learning activities to enhance collaboration. [*MOOC Content/Activities: All Modules*]	High

7 Key Performance Indicators

The consortium has defined a number of indicators to monitor the progress of the core project activities. These indicators also support the assessment of the quality of the project outcomes from a quantitative perspective.

Table 21 Key Performance Indicators

WP#	WP PI	
WP4	**PI4.1:** Number of MOOC Participants Involved in Phase A	During L2A MOOC Phase A, **1920** users enrolled from **85** countries. Out of these, **1147** participants answered the pre-course survey and started the MOOC. These participants were distributed in **75** countries. We consider that an enrolled user has "started the MOOC" only if (s)he submits the Pre-course survey to unlock Modules 2-8.
	PI4.2: Number of MOOC participants successfully completed the MOOC during Phase A	During Phase A, **235** participants successfully completed the L2A MOOC and received their certificate of achievement. **Completion Rate = 20.45%**
	PI4.5: Diversity in demographics of participants Involved in Phase A	**Age diversity:** Half of the participants were between 18 and 41 years old, while 75% fell between 18 and 49. The age of participants follows the normal distribution with mean value 40.68 and standard deviation 10.51. **Gender diversity:** Although approximately 2.61% of the participants chose not to respond to the question related to their gender, the participants were almost evenly split in terms of gender with 41.67% male and 55.72% female. **Geographical distribution:** Although the participants are distributed in 75 countries around the world, the majority (86%) comes from Europe, mainly from Greece (n=492), Germany (n=220) and Italy (n=110), which are the core Learn2Analyse partners' countries.
	PI4.5: Diversity in competence profiles of participants Involved in	**Educational background:** Out of the 1147 participants, 52.30% (n=600) hold a Master's Degree while 16.70% (n=192) hold a Doctoral Degree.

	Phase A	**English proficiency:** 69% reported high (n=360) and very high level (n=431) in English proficiency. **Comfort with technology:** 84.13% reported comfort (n=414) and much comfort (n=551) with technology. **Previous experience with MOOCs:** 30.60% (n=351) reported that they have never enrolled in a MOOC before and 41.85% (n=480) that they have never completed a MOOC before. **Initial EDL competence level:** The initial EDL competence level for all six dimensions is approximately 2 corresponding to an Advanced beginner. The initial level of EDL competences in all dimensions does not differ significantly between School Teachers and Higher Education Students. On the other hand, eLearning Professionals reported higher initial EDL competence level in Data Collection (D1), Data Application (D5) and Data Ethics (D6), while there is no significant difference in initial EDL competence level in Data Management (D2), Data Analysis (D3) and Data Comprehension and Interpretation (D4) between these three targeted groups.
	PI4.7: Diversity in professional experience of participants Involved in Phase A	**Current job sector:** 68.87% (n=790) of the participants reported that they work in K12 and Higher Education while 16.83% (n=193) come from the Industry/Business, with 8.98% (n=103) from Large enterprises (> 100 employees) and 7.85% (n=90) from SMEs. Only 5.32% (n=61) reported “Self-employed” and 3.92% (n=45) reported “Not-employed”. **Professional role:** 29.38% (n=337) of the participants describe themselves as eLearning Professionals, while 11.60% n=133 are Higher Education Students and 36.53% (n=419) are School Teachers. **Years of experience in professional role:** Participants reported on average 9.99 years of experience in professional role. More particularly 43.50% (n=499) of the participants reported 1-5 years of experience in their professional role, 17% (n=195) reported 6-10 years, 27.46% (n=315) reported 11-20 years and 12.03% (n=138) reported more than 20 years of experience.

<table>
<tr><td></td><td></td><td>Years involved in digital teaching and learning:

Participants reported on average 7.44 years of experience in online teaching and learning. More particularly 53.18% (n=610) of the participants reported 1-5 years involved in Digital T & L, 24.15% (n=277) reported 6-10 years, 18.66% (n=214) reported 11-20 years and 4.01% (n=46) reported more than 20 years.</td></tr>
<tr><td>WP5</td><td>PI5.1: Number of recommendations for improvements collected from MOOC participants (per module, in total)</td><td>In the Post-course survey 205 participants in total, reported recommendations for improvements, mainly related to: the course content (76 comments), the quizzes and the type of the final assessment (40 comments), the workload (31 comments), the discussion forums (24 comments), the platform functionality (18 comments), the multilevel structure of the course (16 comments)</td></tr>
<tr><td></td><td>PI5.3: Participants' level of educational objectives attainment (per module, in total)</td><td>EDL competence level advancement:

The initial EDL competence level for all dimensions, as reported in the pre-course survey, was on average of level 2 corresponding to an Advanced beginner level. The achieved EDL competence level for all dimensions, as reported in the post-course survey, is approximately of level 3 corresponding to the Competent level. Thus, the completion of the course resulted in one-level advancement of the competences for each EDL competence dimension.</td></tr>
<tr><td></td><td>PI5.4: Participants level of engagement with MOOC learning material (access patterns, timeframe and frequency) (per module, in total)</td><td>During the L2A MOOC Phase A, 1920 users enrolled, 1321 started Module 1 and 1147 submitted the pre-course survey and unlocked the MOOC content. The table below depicts the level of engagement with MOOC learning material during Phase A.

Table 22 Level of engagement

<table>
<tr><th>Progress</th><th>Mod 1</th><th>Mod 2</th><th>Mod 3</th><th>Mod 4</th><th>Mod 5</th><th>Mod 6</th><th>Mod 7</th><th>Mod 8</th></tr>
<tr><td>LEVEL1 (< 20%)</td><td>568</td><td>339</td><td>129</td><td>94</td><td>80</td><td>68</td><td>73</td><td>49</td></tr>
<tr><td>LEVEL2 (20% - 40%)</td><td>50</td><td>68</td><td>18</td><td>12</td><td>20</td><td>9</td><td>2</td><td>8</td></tr>
<tr><td>LEVEL3 (40% - 60%)</td><td>37</td><td>34</td><td>11</td><td>3</td><td>6</td><td>4</td><td>1</td><td>6</td></tr>
<tr><td>LEVEL4 (60% - 80%)</td><td>179</td><td>36</td><td>10</td><td>9</td><td>6</td><td>8</td><td>8</td><td>99</td></tr>
<tr><td>LEVEL5 (> 80%)</td><td>487</td><td>357</td><td>306</td><td>270</td><td>240</td><td>215</td><td>206</td><td>133</td></tr>
<tr><td>Grand Total</td><td>1321</td><td>834</td><td>474</td><td>388</td><td>352</td><td>304</td><td>290</td><td>295</td></tr>
</table></td></tr>
<tr><td></td><td>PI5.5a: Participants level of engagement with MOOC individual learning activities</td><td>During L2A MOOC Phase A learning activities where in the form of collaborative learning activities, i.e. questions in the forum discussions (see Participants level of engagement with MOOC collaborative learning activities), polls and quizzes.</td></tr>
</table>

(access patterns, timeframe and frequency) (per module, in total)

Quizzes

The table below shows the number of quiz activities per module, the number of questions per quiz and the number of answers collected.

Table 23 Participation in quiz learning activities

	Quiz activity	no of questions	no of answers	participants	Average participation for quiz learning activities' per module
Module 2	2.1.6.1 Topic 1 Quiz	3	1482	494	440
	2.1.6.1 Topic 1 Quiz	2	865	433	
	2.3.6.1 Topic 3 Quiz	3	1182	394	
Module 5	5.1.5 - Site Level Reporting Quiz	3	1396	465	307
	5.2.4 - Course Level Reporting Quiz	5	1311	262	
	5.3.3 - User Level Reporting Quiz	5	1266	253	
	5.4.5 - 3rd Party Reporting Tools in Moodle Quiz	5	1230	246	
Module 6	6.1.1.6 Fill in the blanks: e-learning Formats	1	214	214	212
	6.1.3.9 Quiz: Understanding reports and taking decisions	4	900	225	
	6.2.1.3-5 - Evaluation Models	3	639	213	
	6.3.1.8 - Drag & Drop: Match activities and learning types	1	208	208	
	6.3.1.9 - Quiz : tracking non formal learning	3	624	208	
	6.3.2.6 - Quiz: eXact Delivery Portal	1	208	208	
	6.3.3.7 - Quiz: eXact Delivery Portal Tracking capabilities	3	630	210	

Module 7	7.3.3.3 - Quiz: Course Learning History	3	609	203	202
	7.3.3.5 - Quiz: Select the best tutor view for your task	1	203	203	
	7.3.4.3 - Quiz: Working with the report "Test questions per user"	2	398	199	

Polls

During the L2A MOOC Phase A 45135 poll interactions where reported in a total of 131 poll questions.

PI5.5b: Participants level of engagement with MOOC collaborative learning activities (access patterns, number of contributions, Social Network Analysis) (per module, in total)

Table 24 shows the distribution of the collaborative activities per module, while Table 25 depicts the participation in the collaborative learning activities per module.

Table 24 Number of collaborative activities per module

Module 1	Module 2	Module 3	Module 4	Module 5	Module 6	Module 7	Module 8
1	18	10	10	5	7	7	1

Table 25 Participation in collaborative activities per module

Module 1	Module 2	Module 3	Module 4	Module 5	Module 6	Module 7	Module 8	Total
415	1509	206	414	0	106	294	26	2970

PI5.6: Participants level of engagement with MOOC learning assessment activities (access patterns, timeframe and frequency) (per module, in total)

During the L2A MOOC Phase A, all assessment activities where located in Module 8. From the 1147 participants that submitted the pre-course survey and unlocked the MOOC content, 295 reached module 8 and 235 passed the final assessment and received the Certification of Achievement.

8 References

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Appendix 1 – Evaluation plan

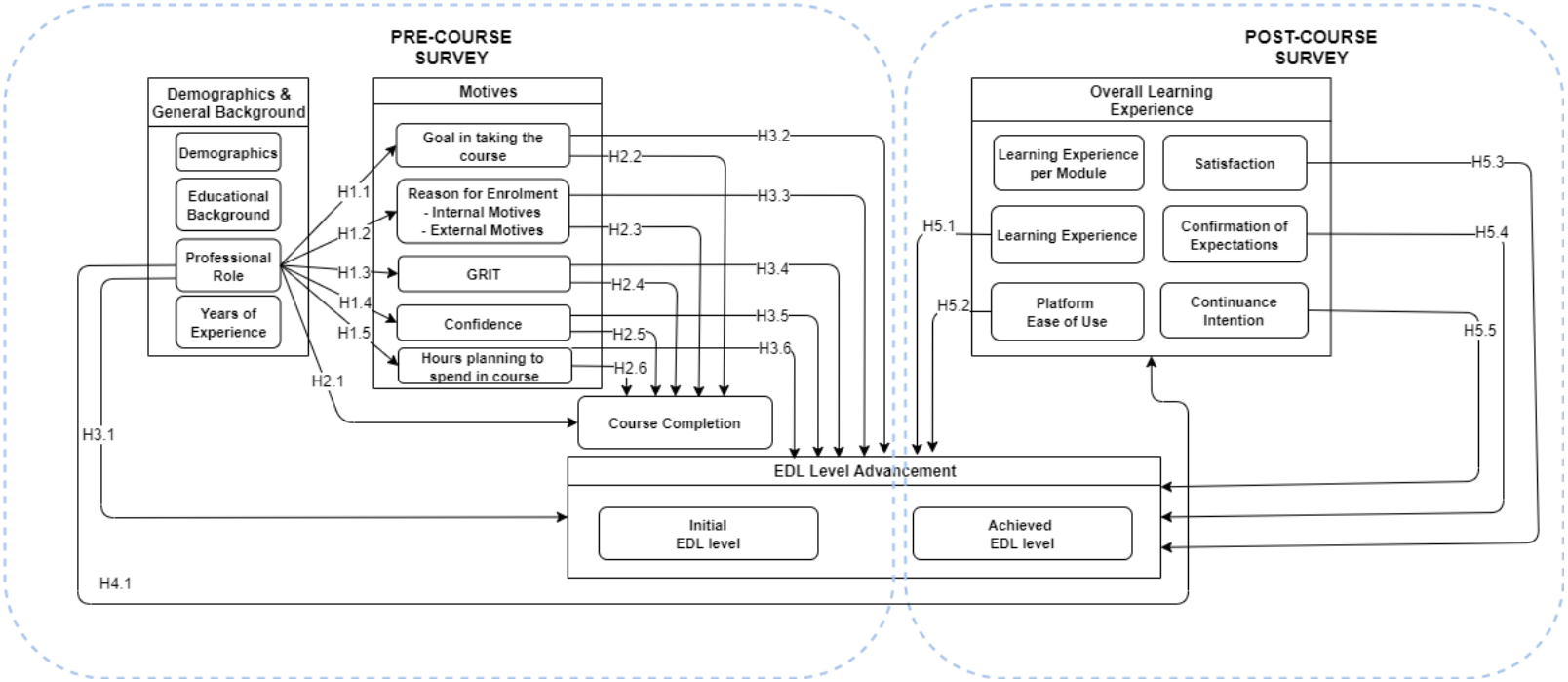

Figure 43. Evaluation Plan

The core question of this survey is:

- What are the areas of possible improvement for the offered competence-based Professional Development MOOC to better the quality of the learning experience and effectively cultivate the Educational Data Literacy Competences that are described in the L2A EDL competence profile?

The core question is investigated at the following dimensions:

1. What are the main **targeted groups** participated in the L2A MOOC and what is their profile? What are the individual characteristics and key differences of participants' targeted groups in relation to their **motives, self-confidence, GRIT and initial EDL competence**?
2. What characteristics of **participants' profile** are related to the **course completion**?
3. How does the characteristics of **participants' profile** affect their **EDL competences advancement**?
4. What is the perceived learning experience per module as reported by participants that completed the L2A MOOC? What is the perceived **overall learning experience** per **targeted group**?
5. How does the **overall learning experience** affect **competences advancement**?

Table 26. Evaluation plan

Dimensions	Research Questions
DEM: Demographics **GB**: General Background **ROLE**: Professional Role **YoE**: Years of Experience in Digital Teaching and Learning **MOTIVES** **GOAL**: Goal in taking the course **RfE**: Reasons for Enrolment **MOT.INT**: Internal motives **MOT.EXT**: External motives **GRIT**: 8 items short GRIT scale **SelfConf**: Confidence in completing the course **LEARNING EXPERIENCE** **LXM**: Learning experience per module **LX**: Overall Learning Experience **PEoU**: Platform Ease of Use **SAT**: Satisfaction **CONF**: Confirmation of expectations **INT**: Continuance Intention **EDL LEVEL**	**Learners profile** ***What is the difference in Motives between IDs, eTutors and School Teachers?*** **Variables:** Goal in taking the course (GOAL), Reasons for Enrolment (RfE), GRIT score (GRIT), Confidence in completing the course (SelfConf) **Groups:** IDs, eTutors and School Teachers ***What is the relationship of Motives on Course Completion amongst MOOC Participants?*** **Dependent Variable:** Course Completion (certificate) **Independent Variables:** Goal in taking the course (GOAL), Reasons for Enrolment (RfE), GRIT score (GRIT), Confidence in completing the course (SelfConf) **Group:** MOOC Participants **Participants' Learning experience** ***What is the perceived overall learning experience per module as reported by participants that completed the L2A MOOC?*** **Variables:** Overall Learning Experience [LXM+LX+PEoU+SAT+CONF+INT] **Groups:** MOOC Participants ***What is the perceived overall learning experience per targeted group?*** **Variables:** Overall Learning Experience [LXM+LX+PEoU+SAT+CONF+INT] **Groups:** IDs, eTutors and School Teachers **EDL Level Advancement** ***What is the difference in EDL Level Advancement between IDs, eTutors and School Teachers?*** **Variable:** EDL Level Advancement [EDL] **Groups:** IDs, eTutors and School Teachers ***What is the relationship of Motives, Learning Experience and Satisfaction on EDL Level Advancement amongst MOOC Participants?*** **Dependent Variable:** EDL Level Advancement **Independent Variables:** Motives [GOAL+RoE+GRIT+SelfConf], Learning Experience [LXM+LX+PEoU] and Satisfaction [SAT+CONF+INT] **Groups:** MOOC Participants ***How does the overall learning experience affect competences advancement?***

ADVANCEMENT **EDL**: EDL Level Advancement = Achieved EDL Level - Initial EDL Level	**Dependent Variable:** EDL Level Advancement [EDL] **Independent Variables:** Overall Learning Experience [LXM+LX+PEoU+SAT+CONF+INT] **Group:** MOOC Participants

Appendix 2 – Instruments

Pre-course Survey

Section 1 – Invitation

You are invited to participate in the Learn2Analyze MOOC Pre-Course Survey. Your responses to this survey will help us to evaluate the Learn2Analyze MOOC and improve it in future versions.

The survey is expected to take approximately 20 minutes to complete. You will be asked to provide answers to a series of questions related to your demographics and general background, your motives for enrolling in the Learn2Analyze (L2A) MOOC and your existing competence level per "Educational Data Literacy (EDL) Competence Profile (CP) Statement" for each competence dimension of the Learn2Analyze EDL Competence framework. Upon completion of the Pre-Course Survey you will receive the Learn2Analyze MOOC "Unlock Code". After the course opening (21st of October 2019), you can return to the Learn2Analyze MOOC on OpenCourseWorld (https://www.opencourseworld.de/pages/programmes.jsf#!/2287711/1700) and use this code as a key to unlock the Learn2Analyze MOOC content.

We greatly appreciate your willingness to share your time by participating. Your responses to these surveys will help us to improve the quality of the learning experience and to better our course offerings.

On behalf of the Learn2Analyze Consortium, we express our sincere thanks for your participation in our survey acknowledging that your insights on the questions in this survey will prove invaluable.

How did you learn about the Learn2Analyze MOOC?

- A Mailing List
- A Facebook Group posting
- A LinkedIn Group posting
- A Twitter Group posting
- A Ning Group posting
- A Blog Posting
- A Newsletter Posting
- An Article Posted Online or Printed
- A MOOC Aggregator or Course Catalogue Posting
- A Physical Event
- Other

Please define (name which one)

_____

Section 2 - Consent form to participate in Web-based Survey

Title of Survey: Learn2Analyze MOOC Pre-course survey Questionnaire

Purpose and Procedure:

The Learn2Analyze (L2A) is an Academia-Industry Knowledge Alliance for enhancing Online Training Professionals' (Instructional Designers and e-Trainers) Competences in Educational Data Analytics. L2A is an action co-funded by the European Commission through the Erasmus+ Program of the European Union (Cooperation for innovation and the exchange of good practices - Knowledge Alliances, Agreement n. 2017-2733 / 001-001, Project No 588067-EPP-1-2017-1-EL-EPPKA2-KA).
More information about the project is available at www.learn2analyze.eu.

Please note:

1. The survey will be carried out from 01/09/2019 to 31/12 /2019.
2. Before you proceed to the survey questions, you will be asked to indicate your consent.
3. Should you decide you do not wish to further participate, you may leave the survey at any time, just by exiting your browser.
4. The questionnaire consists of 5 sections and needs approximately 15-20 minutes to be completed.
5. The first section includes the consent form for participating in the survey.
6. The second section includes a set of questions about demographics and general background.
7. The third section includes a set of questions on your motives for enrolling in the Learn2Analyze (L2A) MOOC.
8. The fourth section includes a set of questions on your existing competence level per "Educational Data Literacy (EDL) Competence Profile (CP) Statement" for each competence dimension of the Learn2Analyze EDL Competence framework.
9. In the final section, you will be asked for your email address in order to receive the Learn2Analyze MOOC "Unlock Code". You will need it as a key to unlock the Learn2Analyze MOOC content, after the 21st of October 2019, when the course starts.

Legal basis for processing personal and sensitive data:

Personal Data:

In connection with this research, the Learn2Analyze Consortium's collection and processing of the following Personal Data is lawful based on consent (Article 6.1(a), GDPR):

□ Name, Email Address

□ Education Information

Sensitive Data:

In connection with this research, the Learn2Analyze Consortium's collection and processing of the following Sensitive Data is lawful based on consent (Article 9.2(a), GDPR):

□ Gender

Potential Benefits:

There are no direct benefits for participating in the survey. The survey results will help us evaluate the L2A MOOC and improve its future versions.

Potential Risk or Discomforts:

We do not perceive any risk or discomfort in the completion of the survey.

Storage of Data:
The survey is completed in a Google Docs form and stored in a secure Google Drive folder under the e-mail l2a.r12.survey@gmail.com, for the time required by the purposes described in this document, for maximum 2 years.

Data transfer outside the European Union:
We may share some of the data collected with services located outside the European Union, in particular through the aforementioned Google services. The transfer is authorized on the basis of provisions of the European Union, on the adequacy of the protection offered by the EU-US privacy shield scheme.

Right to Withdraw:
Your participation in this survey is voluntary. You are under no obligation to complete the survey and you can withdraw from the survey prior to submitting it. If you do not want to participate simply stop participating or close the browser window. You can simply exit the Web Browser without saving your responses, and they will not be recorded.

Rights of research participants:
You have the right to request access to, a copy of, rectification, restriction in the use of, or erasure of your information in accordance with all applicable laws, contacting the lead Learn2Analyze researcher for this survey in l2a.r12.survey@gmail.com. The erasure of your information shall be subject to the Learn2Analyze Consortium's need to retain certain information pursuant to any other identified lawful basis.
If the Learn2Analyze Consortium's use of your information is pursuant to your consent, you have the right to withdraw consent without affecting the lawfulness of the Learn2Analyze Consortium's use of the information prior to receipt of your request.
If you think your data protection rights have been breached, you have the right to lodge a complaint with your national Data Protection Authority (DPA).

Participant Concerns and Reporting:
If you have any questions concerning the survey or experience any discomfort related to the survey, please contact the lead Learn2Analyze researcher for this survey in l2a.r12.survey@gmail.com

Conflict of Interest:
We do not perceive any conflicts of interest in the development of this survey.

Compensation:
There is no compensation for participants in this survey.

Confidentiality:
The only people processing your input will be the researcher(s) involved in the Learn2Analyze project. The researcher(s) undertake to keep any information provided herein confidential, not to let

it out of our possession and to report on the findings from the perspective of the entire participating group and not from the perspective of an individual. Please note that confidentiality cannot be guaranteed while data are in transit over the Internet.

How will results be used:
The results of the survey will be used for evaluating the L2A MOOC. The results from the survey may be used for research study, for scholarly purposes only and might be presented in conferences, published in journals or articles for educational purposes.
By indicating consent to participate in this survey you also indicate consent for the possible secondary use of this data at a later date if we decide to undertake a further longitudinal study for the enhancement of the Learn2Analyze MOOC.

Debriefing and Dissemination of Results:
The final report will be made publicly available through the official website of the project www.learn2analyze.eu.
On behalf of the Learn2Analyze Consortium, we would like to sincerely thank you for your participation in our survey acknowledging that your insights on the questions in this survey will prove invaluable.

Selecting "I Agree" below indicates that:

You have read the above information;
You voluntarily agree to participate in this survey;
You understand the procedures described above;
You give consent for the use of your Personal Data for the purposes outlined in this notice;
You give consent for the use of your Sensitive Data for the purposes outlined in this notice;
You are at least 18 years of age.

- o I Agree

Section 3 - Create your Unique Code ID

To create your unique code ID please use:

1. The first letter of your first name (e.g. U)
2. The last 2 digits of your cell phone (if none use 00) (e.g. 17)
3. Your month of birth (e.g. 03)
4. The first letter of your middle name (if none, use X) (e.g. M)
5. The first letter of city/town you were born in (e.g. V)

(The above example would generate the unique code ID: U1703MV)

Please provide your unique code ID as per instructions:

_____

Section 4 - Demographics & General Background

You will be asked to provide answers to a series of questions related to your demographics and educational/professional background.

Number of questions in current section: 12

3. What is your year of birth? Please enter (YYYY)

   _____

4. What is your gender?
   - Female
   - Male
   - I prefer not to answer

5. Please specify your country of residence.
   (Select from drop-down list)

6. What is the highest level of education you have completed?
   - High School Diploma (or equivalent)
   - Associate degree / technical diploma - occupational / technical / vocational program
   - Associate degree - academic program
   - Bachelor's degree (e.g., BSc, BA, AB, BS, BPS)
   - Master's Degree (e.g., MA, MS, MSc, MEng, MEd, MSW, MBA)
   - Professional School Degree (e.g., JD, MD, DDS, DVM, LLB)
   - Doctoral Degree (e.g., PhD, EdD)
   - Other

7. What is your current job sector?
   - Self-employed
   - Large (>100 people) for-profit company
   - Small (<100 people) for-profit company
   - Large (>100 people) non-profit
   - Small (<100 people) non-profit
   - K-12 Education
   - College
   - University
   - Governmental Education Agency
   - Other Governmental Agency
   - Not-employed
   - Other

6. What is your professional role? (select all that apply)

- ☐ Higher Education Students
- ☐ Professional Instructional Designer of Online and/or Blended Courses
- ☐ (e-) Tutor of Online and or Blended Courses
- ☐ School Teacher in K-12 Education
- ☐ Professional involved in supporting Teaching & Learning in Higher Education and/or Professional involved in supporting Professional Development
- ☐ Professional involved in supporting Educational Data in Higher Education and/or Professional Development
- ☐ Manager in a Higher Education Institute
- ☐ Manager in a Professional Development Service Provider
- ☐ Manager in an e-Learning Service Provider
- ☐ Manager in a Governmental Education Policy Making Institute
- ☐ Academic involved in teaching Higher Education Courses on Digital Learning and/or Learning Technologies
- ☐ Academic involved in teaching Higher Education Courses specifically for Instructional Designers and/or (e-) Tutors
- ☐ Academic involved in teaching Higher Education Courses specifically for Educational Data Literacy
- ☐ Researcher in Digital Learning and/or Learning Technologies
- ☐ Researcher in Instructional Design of Online and/or Blended Courses
- ☐ Researcher in Educational Data Literacy
- ☐ Other

7. How many years are you involved in this role?
    - 1-5
    - 6-10
    - 11-20
    - 21+

8. How many years are you involved in the field of Digital Teaching and Learning?
    - 1-5
    - 6-10
    - 11-20
    - 21+

9. On a scale from 1 (low) to 5 (high), please rate your English proficiency

10. On a scale from 1 (low) to 5 (high), please rate your comfort with Technology

11. In how many MOOCs have you enrolled?

    - None
    - 1

- 2-4
- 5-10
- >10

12.How many MOOCs have you completed?

- None
- 1
- 2-4
- 5-10
- >10

Section 5 - Motives for enrolling in the L2A MOOC

You will be asked to answer a series of questions on your motives for enrolling in the Learn2Analyze (L2A) MOOC.

Number of questions in current section: 6

1. Which of the following best describes your goal in taking this course? Please select one of the following
   - Planning to follow the course schedule and complete all activities to earn a certificate of completion
   - Auditing, but intend to follow the course schedule
   - Auditing, but do not intend to follow the course schedule
   - Just checking what this course is about
   - Bookmaking it as a learning resource
   - Interested in a small subset of course topics
   - General curiosity
   - Other

2. Can you tell us why you have enrolled in this course?
   Please select the number [1..5] that best describes what you think.

	Not at all true	2	Somewhat true	4	Very True	Not Applicable
M2.1 Participating in this course is relevant for my personal development.						
M2.2 Participating in this course will extend my current knowledge of the topic.						
M2.3 I will use this course to obtain a job-relevant						

qualification.						
M2.4 I think the L2A certificate is beneficial for my CV and future job applications.						
M2.5 The subject of the course is relevant to my academic field of study.						
M2.6 The subject of the course is relevant to my college/university class.						
M2.7 I have been advised or ordered to take part in this course.						
M2.8 I have enrolled in this course out of general curiosity.						

3. How confident are you in your ability to learn the material in this course?
    - Not confident at all
    - A little confident
    - Moderately confident
    - Very confident
    - Extremely confident

4. How would you rate your possibility of finishing this course according to the anticipated time commitment as defined in the syllabus?
    - Not confident at all
    - A little confident
    - Moderately confident
    - Very confident
    - Extremely confident

5. How many hours per week do you plan to spend studying on this course?
    - less than 3 hours
    - 3-4 hours
    - 5-6 hours
    - 7-8 hours
    - more than 8 hours

6. How would you describe yourself?
   Please select the choice that best describes what you think.

	Very	Mostly	Somewh	Not	Not like

	much like me	like me	at like me	much like me	me at all
G6.1 New ideas and projects sometimes distract me from previous ones.					
G6.2 Setbacks don't discourage me					
G6.3 I have been obsessed with a certain idea or project for a short time but later lost interest.					
G6.4 I am a hard worker.					
G6.5 I often set a goal but later choose to pursue a different one					
G6.6 I have difficulty maintaining my focus on projects that take more than a few months to complete.					
G6.7 I finish whatever I begin.					
G6.8 I am diligent.					

Section 6 - Existing Competence Level per L2A EDL-CP Statement

Dimension 1: Data Collection

1.1 Obtain, access and gather the appropriate data and/or data sources

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

1.2 Apply data limitations and quality measures (e.g., validity, reliability, biases in the data, difficulty in collection, accuracy, completeness)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

Dimension 2: Data Management

2.1 Apply data processing and handling methods (i.e., methods for cleaning and changing data to make it more organized – e.g., duplication, data structuring)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

2.2 Apply data description (i.e., metadata)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

2.3 Apply data curation processes (i.e., to ensure that data is reliably retrievable for future reuse, and to determine what data is worth saving and for how long)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

2.4 Apply the technologies to preserve data (i.e., store, persist, maintain, backup data), e.g., storage mediums/services, tools, mechanisms

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

Dimension 3: Data Analysis

3.1 Apply data analysis and modelling methods (e.g. application of descriptive statistics, exploratory data analysis, data mining).

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

3.2 Apply data presentation methods (e.g., pictorial visualisation of the data by using graphs, charts, maps and other data forms like textual or tabular representations)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

Dimension 4: Data Comprehension & Interpretation

4.1 Interpret data properties (e.g., measurement error, outliers, discrepancies within data, key take-away points, data dependencies)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

4.2 Interpret statistics commonly used with educational data (e.g., randomness, central tendencies, mean, standard deviation, significance)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

4.3 Interpret insights from data analysis (e.g., explanations of patterns, identification of hypotheses, connection of multiple observations, underlying trends)

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

4.4 Elicit potential implications/links of the data analysis insights to instruction

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

Dimension 5: Data Application

5.1 Use data analysis results to make decisions to revise instruction

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

5.2 Evaluate the data-driven revision of instruction

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

Dimension 6: Data Ethics

1.1 Use the informed consent

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

1.2 Protect individuals' data privacy, confidentiality, integrity and security

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

1.3 Apply authorship, ownership, data access (governance), re-negotiation and data-sharing

- Novice
- Advanced beginner
- Competent
- Proficient
- Expert

Section 7 - Instructions to unlock the L2A MOOC content

Submit the form and get access to the Learn2Analyze MOOC.

After the course opening (21st of October 2019), you can return to the Learn2Analyze MOOC on OpenCourseWorld (https://www.opencourseworld.de/pages/programmes.jsf#!/2287711/1700) and use this code as a key to unlock the Learn2Analyze MOOC content.

Post-course Survey

Section 1 - Invitation

You are invited to participate in this survey because you have registered for the online course administered by Learn2Analyze Consortium. Your responses to this survey will help us to evaluate the Learn2Analyze MOOC and improve it in future versions.

The Post-Course Survey is expected to take approximately 20 minutes to complete and it is a requirement for the Certificate of Achievement.

In the Post-Course Survey, you will be asked questions about your level of satisfaction and learning experience per module, as well as the overall learning experience of the Learn2Analyze (L2A) MOOC. Finally, you will report on your achieved competence level per "Educational Data Literacy (EDL) Competence Profile (CP) Statement" for each competence dimension of the Learn2Analyze EDL Competence framework, after attending the Learn2Analyze (L2A) MOOC.

Submit the form and get the key to unlock the Learn2Analyze Certificate of Achievement. Return to the OpenCourseWorld platform, use this key and download your certificate.

We greatly appreciate your willingness to share your time by participating. Your responses to this survey will help us to improve the quality of the learning experience and to better our course offerings, acknowledging your insights will prove invaluable.

Section 2 - Consent form to participate in Web-based Survey

Title of Survey: Learn2Analyze MOOC Post-Course Survey Questionnaire

Purpose and Procedure:

The Learn2Analyze (L2A) is an Academia-Industry Knowledge Alliance for enhancing Online Training Professionals' (Instructional Designers and e-Trainers) Competences in Educational Data Analytics. L2A is an action co-funded by the European Commission through the Erasmus+ Program of

the European Union (Cooperation for innovation and the exchange of good practices - Knowledge Alliances, Agreement n. 2017-2733 / 001-001, Project No 588067-EPP-1-2017-1-EL-EPPKA2-KA). More information about the project is available at www.learn2analyze.eu.

Please note:
1. The survey will be carried out from 21/10/2019 to 31/12/2019.
2. Before you proceed to the survey questions, you will be asked to indicate your consent.
3. Should you decide you do not wish to further participate, you may leave the survey at any time, just by exiting your browser.
4. The questionnaire consists of 6 sections and needs approximately 20 minutes to be completed.
5. In the first section, you are invited to participate in the post-course survey.
6. The second section includes the consent form for participating in the survey.
7. The third section includes a set of questions on your level of satisfaction and learning experience per module of the Learn2Analyze (L2A) MOOC.
8. The fourth section includes a set of questions on your overall level of satisfaction and learning experience after attending the Learn2Analyze (L2A) MOOC.
9. The fifth section includes a set of questions on your competence level per "Educational Data Literacy (EDL) Competence Profile (CP) Statement" for each competence dimension of the Learn2Analyze EDL Competence framework, after attending the Learn2Analyze (L2A) MOOC.
10. In the final section, you will be asked for your name and email address in order to receive a key to unlock the Learn2Analyze Certificate of Achievement. Return to the OpenCourseWorld platform, use this key and download your certificate.

(Same as Pre-course survey consent form)

Selecting "I Agree" below indicates that:

You have read the above information;
You voluntarily agree to participate in this survey;
You understand the procedures described above;
You give consent for the use of your Personal Data for the purposes outlined in this notice;
You give consent for the use of your Sensitive Data for the purposes outlined in this notice;
You are at least 18 years of age.

- o I Agree

Section 3 - Create your Unique Code ID

To create your unique code ID please use:
1. The first letter of your first name (e.g. U)
2. The last 2 digits of your cell phone (if none use 00) (e.g. 17)
3. Your month of birth (e.g. 03)

4. The first letter of your middle name (if none, use X) (e.g. M)
5. The first letter of city/town you were born in (e.g. V)

(The above example would generate the unique code ID: U1703MV)

Please provide your unique code ID as per instructions:

_____

Section 4 - Learning experience per module

1. Learning objectives per module were clearly stated.
2. The content per module was presented in a comprehensible manner.
3. The educational materials and content per module were relevant and addressed the topic identified in the title.
4. The educational materials and content per module were based on current up-to-date information.
5. The instructional videos per module supported my learning and added value to the course content.
6. The graphics per module supported my learning and added value to the course content.
7. There was a good variety of content types (i.e., written notes, videos, graphics, etc.).
8. Further Readings per module were relevant and supported my learning.
9. Learning activities (Polls, Discussions and Workshops) used in the module were effective and helped me construct explanations/solutions.
10. Assessment tasks used per module challenged my thinking and supported my learning
11. The assessments per module were relevant to the learning objectives.

(questions 1..11)	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Module 2 Online and Blended Teaching and Learning supported by Educational Data					
Module 3 Learning Analytics					
Module 4 Teaching Analytics					
Module 5 Applying Teaching & Learning Analytics with Moodle					
Module 6 Applying Teaching & Learning Analytics with eXact Suite					
Module 7 Applying Teaching &					

Learning Analytics with IMC Learning Suite					

12. How many hours per week did you spend on each module?

	< 3 h	3 - 4 h	5 - 6 h	7 - 8 h	> 8 h
Module 2 Online and Blended Teaching and Learning supported by Educational Data					
Module 3 Learning Analytics					
Module 4 Teaching Analytics					
Module 5 Applying Teaching & Learning Analytics with Moodle					
Module 6 Applying Teaching & Learning Analytics with eXact Suite					
Module 7 Applying Teaching & Learning Analytics with IMC Learning Suite					

13. How many posts did you contribute to discussion forums per module?

	none	1 - 2 posts	3 - 4 posts	>5 posts
Module 2 Online and Blended Teaching and Learning supported by Educational Data				
Module 3 Learning Analytics				
Module 4 Teaching Analytics				
Module 5 Applying Teaching & Learning Analytics with Moodle				
Module 6 Applying Teaching & Learning Analytics with eXact Suite				
Module 7 Applying Teaching & Learning Analytics with IMC Learning Suite				

Section 5 - Overall learning experience

Number of questions in current section: 20

Please rate [1..5] your agreement to the following statements:
(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

1. The course platform was easy to use.
2. The overall visual design of the course was appealing.
3. The course environment was well structured, topics and subtopics were logically arranged in a predictable pattern.
4. The learning path was easy to navigate.
5. Course objectives and learning goals were clearly stated.

6. The workload was reasonably spread.
7. The workload was in line with my expectations.
8. The course difficulty was in line with my expectations at the start of the course.
9. The difficulty level of assessments was appropriate for the course.
10. The level of interaction with peer learners was adequate.
11. The discussion forums were an effective tool for collaborating with other learners.
12. Help and support provided on the course platform were adequate.
13. I can apply the knowledge created in this course to my work or other related activities.
14. I was motivated to work through the course.
15. I feel like I achieved my personal goals for this course.
16. I enjoyed the course.
17. It is very likely to revisit the course materials in the future.
18. It is very likely to recommend this course e.g. to a colleague or friend.

Please share your thoughts and recommendations:

19. What did you enjoy most about your course experience?

    _____

20. What did you like least about taking part in the course?

    _____

Section 6 - Achieved Competence Level per L2A EDL-CP Statement

Please rate your achieved competence level for each statement of the L2A Educational Data Literacy Competence Dimensions addressed in this course

You can find additional information about L2A EDL-CP in http://www.learn2analyze.eu/

(Same as Pre-course survey section 6)

Section 7 - Instructions to unlock the L2A MOOC Certificate of Achievement

Congratulations, you have reached the end of our trip. You have successfully completed the L2A MOOC and submitted the Pre and Post-Course Surveys. Thank you for your participation.

Submit the form and get the key to unlock the Learn2Analyze Certificate of Achievement. Return to the OpenCourseWorld platform, use this key and download your certificate.

Appendix 3 – Coding of Questions

Appendix 3.1 - Pre-Course Survey

Table 27. Coding of Questions (Pre-course survey)

A. **DEMOGRAPHICS & GENERAL BACKGROUND**	
1. Demographics	
[Age]	Q1*. What is your current age?
[Gender]	Q2.* What is your gender?
[Country]	Q3*. Please specify your country or region of residence.
2. General Background	
[EducLevel]	Q4*. What is the highest level of education you have completed?
[JobSector]	Q5*. What is your current job sector?
[ProfRole]	Q6*. What is your professional role? (select all that apply)
[YoEinPR]	Q7*. How many years are you involved in this role?
[YoEinDTL]	Q8*. How many years are you involved in the field of Digital Teaching and Learning?
[EnglProf]	Q9*. On a scale from 1 (low) to 5 (high), please your English proficiency
[ComfTech]	Q10*. On a scale from 1 (low) to 5 (high), please rate your comfort with Technology
[MOOCsEnr]	Q11*. In how many MOOCs have you enrolled?
[MOOCsCompl]	Q12*. How many MOOCs have you completed?
B. **MOTIVES**	
1. Goal	
[GOAL]	**Q1*. Which of the following best describes your goal in taking this course? Please select one of the following** ○ Planning to follow the course schedule and complete all activities to earn a certificate of completion ○ Auditing, but intend to follow the course schedule ○ Auditing, but do not intend to follow the course schedule ○ Just checking what this course is about ○ Bookmaking it as a learning resource ○ Interested in a small subset of course topics ○ General curiosity ○ Other - Please specify
2. Reasons for Enrolment (internal – external motives)	
	Q2*. Can you tell us why you have enrolled in this course? Please select the number [1..5] that best describes what you think.
[M2.1]	M2.1. Participating in this course is relevant for my personal development.
[M2.2]	M2.2. Participating in this course will extend my current knowledge of the topic.
[M2.3]	M2.3. I will use this course to obtain a job-relevant qualification.
[M2.4]	M2.4. I think L2A certificate is beneficial for my CV and future job applications.
[M2.5]	M2.5. The subject of the course is relevant to my academic field of study.
[M2.6]	M2.6. The subject of the course is relevant to my college/university class.
[M2.7]	M2.7. I have been advised or ordered to take part in this course.

[M2.8]	M2.8. I have enrolled in this course out of general curiosity.
2. Self-Confidence	
[ConfAbility]	Q3. How confident are you in your ability to learn the material in this course?
[ConfTime]	Q4. How would you rate your possibility of finishing this course according to the anticipated time commitment as defined in the syllabus?
[Hours]	Q5. How many hours per week do you plan to spend studying on this course?
3. GRIT	
	6. How would you describe yourself?
[G6.1]	G6.1. New ideas and projects sometimes distract me from previous ones.
[G6.2]	G6.2. Setbacks don't discourage me.
[G6.3]	G6.3. I have been obsessed with a certain idea or project for a short time but later lost interest.
[G6.4]	G6.4. I am a hard worker.
[G6.5]	G6.5. I often set a goal but later choose to pursue a different one.
[G6.6]	G6.6. I have difficulty maintaining my focus on projects that take more than a few months to complete.
[G6.7]	G6.7. I finish whatever I begin.
[G6.8]	G6.8. I am diligent.
C. **EDL INITIAL COMPETENCE LEVEL**	
1. Data Collection	
[D1S1a]	1.1 Obtain, access and gather the appropriate data and/or data sources
[D1S2a]	1.2 Apply data limitations and quality measures (e.g., validity, reliability, biases in the data, difficulty in collection, accuracy, completeness)
2. Data Management	
[D2S1a]	2.1 Apply data processing and handling methods (i.e., methods for cleaning and changing data to make it more organized – e.g., duplication, data structuring)
[D2S2a]	2.2 Apply data description (i.e., metadata)
[D2S3a]	2.3 Apply data curation processes (i.e., to ensure that data is reliably retrievable for future reuse, and to determine what data is worth saving and for how long)
[D2S4a]	2.4 Apply the technologies to preserve data (i.e., store, persist, maintain, backup data), e.g., storage mediums/services, tools, mechanisms
3. Data Analysis	
[D3S1a]	3.1 Apply data analysis and modelling methods (e.g. application of descriptive statistics, exploratory data analysis, data mining).
[D3S2a]	3.2 Apply data presentation methods (e.g., pictorial visualisation of the data by using graphs, charts, maps and other data forms like textual or tabular representations)
4. Data Comprehension and Interpretation	
[D4S1a]	4.1 Interpret data properties (e.g., measurement error, outliers, discrepancies within data, key take-away points, data dependencies)
[D4S2a]	4.2 Interpret statistics commonly used with educational data (e.g., randomness, central tendencies, mean, standard deviation, significance)
[D4S3a]	4.3 Interpret insights from data analysis (e.g., explanations of patterns, identification of hypotheses, connection of multiple observations, underlying trends)
[D4S4a]	4.4 Elicit potential implications/links of the data analysis insights to instruction

4. Data Application	
[D5S1a]	5.1 Use data analysis results to make decisions to revise instruction
[D5S2a]	5.2 Evaluate the data-driven revision of instruction
5. Data Ethics	
[D6S1a]	6.1 Use the informed consent
[D6S2a]	6.2 Protect individuals' data privacy, confidentiality, integrity and security
[D6S1a]	6.3 Apply authorship, ownership, data access (governance), re-negotiation and data-sharing

Appendix 3.2 - Post-Course Survey

Table 28. Coding of questions (Post course survey)

A. OVERALL LEARNING EXPERIENCE						
1. Learning Experience per Module [LXM]						
[LXM]	**Module 2** LXMiM2	**Module 3** LXMiM3	**Module 4** LXMiM4	**Module 5** LXMiM5	**Module 6** LXMiM6	**Module 7** LXMiM7
Q1*. Learning objectives per module were clearly stated. [LXM1]	LXM1M2	LXM1M3	LXM1M4	LXM1M5	LXM1M6	LXM1M7
Q2*. The content per module was presented in a comprehensible manner. [LXM2]	LXM2M2	LXM2M3	LXM2M4	LXM2M5	LXM2M6	LXM2M7
Q3*. The educational materials and content per module were relevant and addressed the topic identified in the title. [LXM3]	LXM3M2	LXM3M3	LXM3M4	LXM3M5	LXM3M6	LXM3M7
Q4*. The educational materials and content per module were based on current up-to-date information. [LXM4]	LXM4M2	LXM4M3	LXM4M4	LXM4M5	LXM4M6	LXM4M7
Q5*. The instructional videos per module supported my learning and added value to the course content. [LXM5]	LXM5M2	LXM5M3	LXM5M4	LXM5M5	LXM5M6	LXM5M7

Q6*. The graphics per module supported my learning and added value to the course content. [LXM6]	LXM6M2	LXM6M3	LXM6M4	LXM6M5	LXM6M6	LXM6M7
Q7*. There was a good variety of content types (i.e., written notes, videos, graphics, etc.). [LXM7]	LXM7M2	LXM7M3	LXM7M4	LXM7M5	LXM7M6	LXM7M7
Q8*. Further Readings per module were relevant and supported my learning. [LXM8]	LXM8M2	LXM8M3	LXM8M4	LXM8M5	LXM8M6	LXM8M7
Q9*. Learning activities used in the module were effective and helped me construct explanations/solutions. [LXM9]	LXM9M2	LXM9M3	LXM9M4	LXM9M5	LXM9M6	LXM9M7
Q10*. Self-Assessment tasks used per module challenged my thinking and supported my learning. [LXM10]	LXM10M2	LXM10M3	LXM10M4	LXM10M5	LXM10M6	LXM10M7
Q11*. The assessments per module were relevant to the learning objectives.[LXM11]	LXM11M2	LXM11M3	LXM11M4	LXM11M5	LXM11M6	LXM11M7
Q12*. How many hours per week did you spend on each module? [LXM12]	LXM12M2	LXM12M3	LXM12M4	LXM12M5	LXM12M6	LXM12M7
Q13*. How many posts did you contribute to discussion forums per module? [LXM13]	LXM13M2	LXM13M3	LXM13M4	LXM13M5	LXM13M6	LXM13M7
2. Overall Learning Experience [OLX]						
a. Learning Experience [LX]						
[LX1]	Q5. Course objectives and learning goals were clearly stated.					
[LX2]	Q6. The workload was reasonably spread.					
[LX3]	Q7. The workload was in line with my expectations.					
[LX4]	Q8. The course difficulty was in line with my expectations at the start of the course.					

[LX5]	Q9. The difficulty level of assessments was appropriate for the course.
[LX6]	Q10. The level of interaction with peer learners was adequate.
[LX7]	Q11. The discussion forums were an effective tool for collaborating with other learners.
b. Platform Ease of Use [PEoU]	
[PEoU1]	Q1. The course platform was easy to use.
[PEoU2]	Q2. The overall visual design of the course was appealing.
[PEoU3]	Q3. The course environment was well structured, topics and subtopics were logically arranged in a predictable pattern.
[PEoU4]	Q4. The learning path was easy to navigate.
[PEoU5]	Q12. Help and support provided on the course platform were adequate.
c. Satisfaction [SAT]	
[SAT1]	Q14. I was motivated to work through the course.
[SAT2]	Q16. I enjoyed the course.
d. Confirmation [CONF]	
[CONF1]	Q13. I can apply the knowledge created in this course to my work or other related activities.
[CONF2]	Q15. I feel like I achieved my personal goals for this course.
e. Continuance Intention [INT]	
[INT1]	17. It is very likely to revisit the course materials in the future.
[INT2]	18. It is very likely to recommend this course e.g. to a colleague or friend.
B. EDL ACHIEVED COMPETENCE LEVEL	
1. Data Collection [D1]	
[D1S1b]	1.1 Obtain, access and gather the appropriate data and/or data sources
[D1S2b]	1.2 Apply data limitations and quality measures (e.g., validity, reliability, biases in the data, difficulty in collection, accuracy, completeness)
2. Data Management [D2]	
[D2S1b]	2.1 Apply data processing and handling methods (i.e., methods for cleaning and changing data to make it more organized – e.g., duplication, data structuring)
[D2S2b]	2.2 Apply data description (i.e., metadata)
[D2S3b]	2.3 Apply data curation processes (i.e., to ensure that data is reliably retrievable for future reuse, and to determine what data is worth saving and for how long)
[D2S4b]	2.4 Apply the technologies to preserve data (i.e., store, persist, maintain, backup data), e.g., storage mediums/services, tools, mechanisms
3. Data Analysis [D3]	
[D3S1b]	3.1 Apply data analysis and modelling methods (e.g. application of descriptive statistics, exploratory data analysis, and data mining).
[D3S2b]	3.2 Apply data presentation methods (e.g., pictorial visualisation of the data by using graphs, charts, maps and other data forms like textual or tabular

	representations)
d. **Data Comprehension and Interpretation [D4]**	
[D4S1b]	4.1 Interpret data properties (e.g., measurement error, outliers, discrepancies within data, key take-away points, data dependencies)
[D4S2b]	4.2 Interpret statistics commonly used with educational data (e.g., randomness, central tendencies, mean, standard deviation, significance)
[D4S3b]	4.3 Interpret insights from data analysis (e.g., explanations of patterns, identification of hypotheses, connection of multiple observations, underlying trends)
[D4S4b]	4.4 Elicit potential implications/links of the data analysis insights to instruction
e. **Data Application [D5]**	
[D5S1b]	5.1 Use data analysis results to make decisions to revise instruction
[D5S2b]	5.2 Evaluate the data-driven revision of instruction
f. **Data Ethics [D6]**	
[D6S1b]	6.1 Use the informed consent
[D6S2b]	6.2 Protect individuals' data privacy, confidentiality, integrity and security
[D6S1b]	6.3 Apply authorship, ownership, data access (governance), re-negotiation and data-sharing

Appendix 4 - Groups of Professional Roles

A. eLearning Professionals (IDs, eTutors)

1. Professional Instructional Designer and/or (e-) Tutor of Online and/or Blended Courses

2. Professional involved in supporting Teaching & Learning in Higher Education and/or Professional involved in supporting Professional Development

B. Higher Education Students

1. Higher Education Students

C. School Teachers

1. K12 Teachers

D. Experts with Experience in EDL

1. Academic involved in teaching Higher Education Courses specifically for Educational Data Literacy Researchers in Digital Learning and/or Learning Technologies

2. Researcher in Educational Data Literacy

3. Professional involved in supporting Educational Data in Higher Education and/or Professional Development

E. Managers in (Online) Education/Training

1. Senior Manager in a Higher Education Institute

2. Senior Manager in a Professional Development Service Provider

3. Senior Manager in an e-Learning Service Provider

4. Senior Manager in a Governmental Education Policy Making Institute

F. Academics/Researchers in ID and/or Online Education/Training

1. Academic involved in teaching Higher Education Courses on Digital Learning and/or Learning Technologies

2. Academic involved in teaching Higher Education Courses specifically for Instructional Designers and/or e-Tutors

3. Researcher in Instructional Design of Online and/or Blended Courses

Appendix 5 - Distribution of participants in the pre-course survey per Demographics, General Background, Motives in taking the course and Initial EDL competences level

A1. Demographics

Distribution of participants per Country

Table 29. Distribution of participants per Country

	Country of residence	Frequency	Percent
1.	Greece	492	42.89%
2.	Germany	220	19.18%
3.	Italy	103	8.98%
4.	United States	45	3.92%
5.	Ireland	29	2.53%
6.	United Kingdom	17	1.48%
7.	Austria	14	1.22%
8.	Norway	13	1.13%
9.	Turkey	12	1.05%
10.	France	12	1.05%
11.	Canada	12	1.05%
12.	Romania	11	0.96%
13.	Israel	11	0.96%
14.	India	11	0.96%
15.	Australia	10	0.87%
16.	Switzerland	8	0.70%
17.	Belgium	7	0.61%
18.	Portugal	6	0.52%
19.	Brazil	6	0.52%
20.	Morocco	5	0.44%
21.	Lithuania	5	0.44%
22.	Finland	5	0.44%
23.	Spain	4	0.35%
24.	South Africa	4	0.35%
25.	Singapore	4	0.35%
26.	Serbia	4	0.35%

27. Croatia	4	0.35%
28. Ukraine	3	0.26%
29. Thailand	3	0.26%
30. Philippines	3	0.26%
31. Pakistan	3	0.26%
32. Netherlands	3	0.26%
33. Maldives	3	0.26%
34. Egypt	3	0.26%
35. United Arab Emirates	2	0.17%
36. Saudi Arabia	2	0.17%
37. Russia	2	0.17%
38. Nigeria	2	0.17%
39. Lebanon	2	0.17%
40. Estonia	2	0.17%
41. Ecuador	2	0.17%
42. Denmark	2	0.17%
43. Cyprus	2	0.17%
44. Colombia	2	0.17%
45. Bangladesh	2	0.17%
46. Vietnam	1	0.09%
47. Uzbekistan	1	0.09%
48. Uganda	1	0.09%
49. Taiwan	1	0.09%
50. Sweden	1	0.09%
51. Sudan	1	0.09%
52. Somalia	1	0.09%
53. Peru	1	0.09%
54. Oman	1	0.09%
55. New Zealand	1	0.09%
56. Namibia	1	0.09%
57. Mexico	1	0.09%
58. Malaysia	1	0.09%
59. Macedonia	1	0.09%

60.	Luxembourg	1	0.09%
61.	Libya	1	0.09%
62.	Korea, South	1	0.09%
63.	Kazakhstan	1	0.09%
64.	Japan	1	0.09%
65.	Jamaica	1	0.09%
66.	Iran	1	0.09%
67.	Hungary	1	0.09%
68.	Georgia	1	0.09%
69.	Faroe Islands	1	0.09%
70.	China	1	0.09%
71.	Chile	1	0.09%
72.	Bosnia and Herzegovina	1	0.09%
73.	Argentina	1	0.09%
74.	Algeria	1	0.09%
75.	Albania	1	0.09%
	Total	1147	100.00%

Distribution of participants per age and gender

Table 30. Distribution of participants per age

N	**Valid**	**1147**
	Missing	**0**
Mean		40,68
Median		41,00
Mode		48
Std. Deviation		10,510
Variance		110,457
Percentiles	25	32,00
	50	41,00
	75	49,00

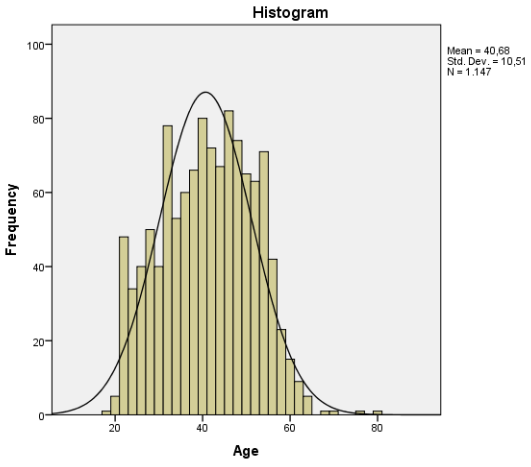

Figure 44. Distribution of participants per age in the pre-course survey

Table 31. Gender distribution

Gender	Frequency	Percent
I prefer not to answer	30	2,6
Female	640	55,8
Male	477	41,6
Total	1147	100,0

A.2 General Background

Educational background

1. **Highest level of Education**

Table 32. Distribution per Highest level of Education

Highest Level of Education	Frequency	Percent
Doctoral Degree (e.g., PhD, EdD)	193	16,8
Master's Degree (e.g., MA, MS, MSc, MEng, MEd, MSW, MBA)	600	52,3
Bachelor's degree (e.g., BSc, BA, AB, BS, BPS)	195	17,0
Associate degree - academic program	28	2,4
Professional School Degree (e.g., JD, MD, DDS, DVM, LLB)	20	1,7
High School Diploma (or equivalent)	86	7,5
Other	25	2,2
Total	1147	100,0

2. **Reported English proficiency and comfort with technology**

Table 33. Distribution per English proficiency

On a scale from 1 (low) to 5 (high), please rate your English proficiency	frequency	percent
1	10	0.87%
2	39	3.40%
3	307	26.77%
4	360	31.39%
5	431	37.58%
Total	1147	100.00%

Table 34. Distribution per reported comfort with technology

On a scale from 1 (low) to 5 (high), please rate your comfort with Technology	frequency	percent
1	4	0.35%
2	30	2.62%
3	148	12.90%
4	414	36.09%
5	551	48.04%
Total	1147	100.00%

3. **Reported experience with MOOCs**

Table 35. Experience with MOOCs (enrolled)

In how many MOOCs have you enrolled?	frequency	percent
None	351	30.60%
1	179	15.61%
2-4	299	26.07%
5-10	182	15.87%
>10	136	11.86%
Total	1147	100.00%

Table 36. Experience with MOOCs (completed)

How many MOOCs have you completed?	frequency	percent
None	480	41.85%
1	164	14.30%
2-4	280	24.41%
5-10	121	10.55%
>10	102	8.89%
Total	1147	100.00%

Table 37. Mean experience with MOOCs

Number of MOOCs (enrolled)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
None	0	0	351	0	0	30.60%
1	1	1	179	179	179	15.61%
2-4	3	9	299	2691	897	26.07%

5-10	7	49	182	8918	1274	15.87%
11-15	13	169	136	22984	1768	11.86%
Total			1147	34772	4118	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 3.59$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 4.17$$

Number of MOOCs (completed)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
None	0	0	480	0	0	41.85%
1	1	1	164	164	164	14.30%
2-4	3	9	280	2520	840	24.41%
5-10	7	49	121	5929	847	10.55%
11-15	13	169	102	17238	1326	8.89%
Total			1147	25851	3177	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 2.77$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 3.86$$

Professional Experience

1. Current Job sector/Professional role

Table 38. Reported current job sector

Current Job Sector	frequency	percent
University	352	31%
K-12 Education	308	27%
Large (>100 people) for-profit company	76	7%
Small (<100 people) for-profit company	66	6%
Governmental Education Agency	66	6%
College	64	6%
Self-employed	61	5%
Not-employed	45	4%
Large (>100 people) non-profit	27	2%
Small (<100 people) non-profit	24	2%
Other	58	5%
Total	1147	100%

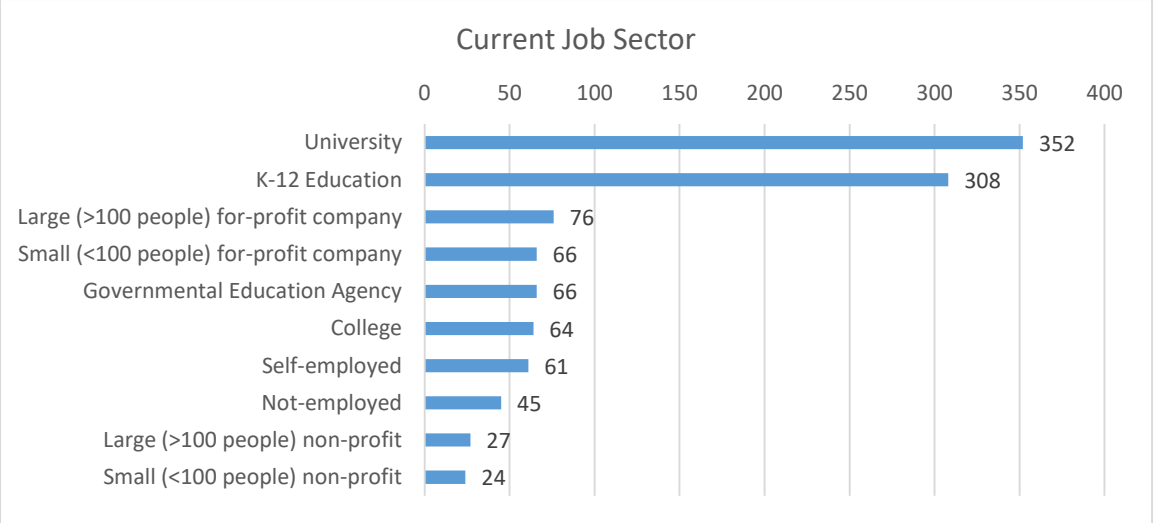

Figure 45. Current Job Sector

Table 39. Reported Job sector per Professional Role distribution

Job Sector		Professional Role					
		eLearning Professionals (IDs, eTutors)	Higher Education Students	School Teachers	Others	Total	
						f	%
K12, Higher Education		174	90	370	156	790	68.87
Industry		105	8	12	68	193	16.83
Self Employed/Not Employed		42	29	18	17	106	9.24
Other		16	6	19	17	58	5.06
Total	f	337	133	419	258	1147	
	%	29.38	11.59	36.54	22.49		

2. Years of experience

Table 40. Distribution of participants per years involved in their professional role

Years involved in professional role	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
1-5	3	9	499	4491	1497	43.50%
6-10	8	64	195	12480	1560	17.00%
11-20	15.5	240.25	315	75678.75	4882.5	27.46%
21-30	25.5	650.25	138	89734.5	3519	12.03%

Total			1147	182384.25	11458.5	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 9.99$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 7.69$$

Table 41. Distribution of participants per years involved in field of Digital T & L

Years involved in Digital T & L	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
1-5	3	9	610	5490	1830	53.18%
6-10	8	64	277	17728	2216	24.15%
11-20	15.5	240.25	214	51413.5	3317	18.66%
21-30	25.5	650.25	46	29911.5	1173	4.01%
Total			1147	104543	8536	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 7.44$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 5.98$$

A.3 Motives

Goal in taking the course

Table 42. Distribution of participants per reported Goal in taking the course

Goal in taking the course	frequency	percent
Planning to follow the course schedule and complete all activities to earn a certificate of completion	757	66%
Auditing, but intend to follow the course schedule	115	10%
General curiosity	66	6%
Just checking what this course is about	63	5%
Interested in a small subset of course topics	47	4%
Bookmaking it as a learning resource	45	4%
Auditing, but do not intend to follow the course schedule	29	3%
Other	25	2%
Total	1147	100%

Reasons for taking the course

Table 43. Reasons for Enrolment

Reasons for taking the course	Average rating	True and Very true		Not Applicable	
		f	%	f	%
M2.1 For personal development.	4,22	879	76,6	15	1,3
M2.2 To extend my current knowledge of the topic	4,41	977	85,1	25	2,2
M2.3 To obtain a job-relevant qualification.	2,95	424	36,9	60	5,2
M2.4 It would be beneficial for my CV and future job applications.	3,29	525	45,7	52	4,5
M2.5 It is relevant to my academic field of study.	3,39	633	55,2	92	8,0
M2.6 It is relevant to my college/university class.	2,69	429	37,4	166	14,5
M2.7 I was advised or ordered to take part in this course.	1,76	180	15,7	113	9,9
M2.8 General curiosity.	2,92	420	36,6	67	5,8

GRIT Score

Table 44. Distribution of participants per GRIT score

GRIT

N	Valid	1147
	Missing	0
Mean		3,64
Std. Deviation		,615

Self-Confidence

Table 45. Distribution of participants per reported confidence in learning the material

Confidence in the ability to learn the material (ConfAbility)	Frequency	Percent
1	11	1,0
2	74	6,5
3	350	30,5
4	546	47,6
5	166	14,5
Total	1147	100,0

Table 46. Distribution of participants per confidence in finishing the course on time

Confidence in finishing the course according to the anticipated time commitment as defined in the syllabus (ConfTime)	Frequency	Percent
1	12	1,0
2	78	6,8
3	347	30,3
4	470	41,0
5	240	20,9
Total	1147	100,0

Table 47. Mean confidence

		ConfAbility	ConfTime	Self-confidence
N	Valid	1147	1147	1147
	Missing	0	0	0
Mean		3,68	3,74	3,7105
Std. Deviation		,833	,900	,72382

Hours per week planning to spend in the course

Table 48. Distribution of participants per hours per week planning to spend in course

Hours per week (all participants)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
0-2	1	1	313	313	313	27.29%
3-4	3.5	12.25	484	5929	1694	42.20%
5-6	5.5	30.25	215	6503.75	1182.5	18.74%
7-8	7.5	56.25	92	5175	690	8.02%
8-10	9	81	43	3483	387	3.75%
Total			1147	21403.75	4266.5	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 3.72$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 2.20$$

A.4 Initial EDL Competences

Table 49. Mean values for initial EDL competences level

		D1S1a	D1S2a	D2S1a	D2S2a	D2S3a	D2S4a
N	Valid	1147	1147	1147	1147	1147	1147
	Missing	0	0	0	0	0	0
Mean		2,54	2,29	2,26	2,14	2,07	2,36
Std. Deviation		1,079	1,055	1,077	1,038	1,013	1,080
		D3S1a	D3S2a	D4S1a	D4S2a	D4S3a	D4S4a
N	1149	1147	1147	1147	1147	1147	1147
	0	0	0	0	0	0	0
Mean		2,13	2,44	2,12	2,21	2,14	2,06
Std. Deviation		1,048	1,066	1,025	1,064	1,019	1,010
		D5S1a	D5S2a	D6S1a	D6S2a	D6S3a	
N	1149	1147	1147	1147	1147	1147	
	0	0	0	0	0	0	
Mean		2,16	2,06	2,29	2,40	2,14	
Std. Deviation		1,027	1,020	1,097	1,124	1,074	
		D1a	D2a	D3a	D4a	D5a	D6a
N	Valid	1147	1147	1147	1147	1147	1147
	Missing	0	0	0	0	0	0
Mean		2,41	2,21	2,29	2,13	2,11	2,27
Std. Deviation		1,016	,954	,982	,963	,999	1,024

Appendix 6 - Key differences between participants' targeted groups in relation to their motives, self-confidence, GRIT and initial EDL competence

B1. Demographics

Distribution of participants per age per targeted group

Table 50. Age per targeted group

Professional Role	Mean	N	Std. Deviation
eLearning Professionals (IDs, eTutors)	41,46	337	9,621
Higher Education Students	29,27	133	9,122
School Teachers	44,62	419	9,243
Others	39,13	258	9,696
Total	40,68	1147	10,510

Compare mean age per targeted group

Table 51. Comparison of mean age values among targeted groups

	eLearning Professionals - HES		eLearning Professionals – School Teachers		HES – School Teachers	
	Difference	Sig.	Difference	Sig.	Difference	Sig.
Age	12,189	,000	-3,156	,000	-15,345	,000

B2. General Background

Distribution of participants per years involved in their professional role

Table 52. Distribution of participants per years involved in professional role

Professional role	7. How many years are you involved in this role?	frequency
Academics/Researchers in ID and/or Online Education/Training	1-5	67
	6-10	15

	11-20	28
	21+	4
Academics/Researchers in ID and/or Online Education/Training	Total	114
eLearning Professionals (IDs, eTutors)	1-5	181
	6-10	89
	11-20	56
	21+	11
eLearning Professionals (IDs, eTutors)	Total	337
Experts with Experience in EDL	1-5	19
	6-10	13
	11-20	9
	21+	1
Experts with Experience in EDL	Total	42
Higher Education Students	1-5	113
	6-10	13
	11-20	4
	21+	3
Higher Education Students	Total	133
Managers in (Online) Education/Training	1-5	35
	6-10	16
	11-20	15
	21+	3
Managers in (Online) Education/Training	Total	69
Others	1-5	20
	6-10	7
	11-20	3
	21+	3
Others	Total	33
School Teachers	1-5	64
	6-10	42
	11-20	200
	21+	113
School Teachers	Total	418

Grand Total	1147

Years in Professional Role: Mean value and Standard Deviation per Professional Role

Table 53. Years in Professional Role: Mean value and Standard Deviation per Professional Role

Years in Professional Role: Mean value and Standard Deviation per Professional Role						
A. eLearning Professionals (IDs, eTutors)	ci=center	ci2	fi=frequency	ci2. fi	ci . fi	%
1-5	3	9	181	1629	543	53.71%
6-10	8	64	89	5696	712	26.41%
11-20	15.5	240.25	56	13454	868	16.62%
21-30	25.5	650.25	11	7152.75	280.5	3.26%
Total			337	27931.75	2403.5	100.00%
Mean	$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 7.13$					
Std Deviation	$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 5.66$					
B. Higher Education Students	ci=center	ci2	fi=frequency	ci2. fi	ci . fi	%
1-5	3	9	113	1017	339	84.96%
6-10	8	64	13	832	104	9.77%
11-20	15.5	240.25	4	961	62	3.01%
21-30	25.5	650.25	3	1950.75	76.5	2.26%
Total			133	4760.75	581.5	100.00%
Mean	$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 4.37$					
Std Deviation	$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 4.08$					
C. School Teachers	ci=center	ci2	fi=frequency	ci2. fi	ci . fi	%
1-5	3	9	64	576	192	15.27%
6-10	8	64	42	2688	336	10.02%
11-20	15.5	240.25	200	48050	3100	47.73%
21-30	25.5	650.25	113	73478.25	2881.5	26.97%

Total			419	124792.25	6509.5	100.00%
Mean	$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 15.74$					
Std Deviation	$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 7.51$					

Distribution of participants per years involved in their professional role

Table 54. Distribution of participants per years involved in their professional role

Professional role	Years involved in Digital T & L?	frequency
Academics/Researchers in ID and/or Online Education/Training	1-5	61
	6-10	27
	11-20	21
	21+	5
Academics/Researchers in ID and/or Online Education/Training	Total	114
eLearning Professionals (IDs, eTutors)	1-5	162
	6-10	87
	11-20	79
	21+	9
eLearning Professionals (IDs, eTutors)	Total	337
Experts with Experience in EDL	1-5	26
	6-10	10
	11-20	4
	21+	2
Experts with Experience in EDL	Total	42
Higher Education Students	1-5	115
	6-10	13
	11-20	4
	21+	1
Higher Education Students	Total	133
Managers in (Online) Education/Training	1-5	35
	6-10	13
	11-20	18
	21+	3

Managers in (Online) Education/Training	Total	69
Others	1-5	26
	6-10	33
	11-20	3
	21+	4
Others	Total	33
School Teachers	1-5	85
	6-10	419
	11-20	26
	21+	123
School Teachers	Total	418
Grand Total		**1147**

Years in Digital Teaching and Learning: Mean value and Standard Deviation per Professional Role

Table 55. Years in Digital Teaching and Learning: Mean value and Standard Deviation per Professional Role

eLearning Professionals	ci=center	ci2	fi=frequency	ci2. fi	ci . fi	%
1-5	3	9	162	1458	486	48.07%
6-10	8	64	87	5568	696	25.82%
11-20	15.5	240.25	79	18979.75	1224.5	23.44%
21-30	25.5	650.25	9	5852.25	229.5	2.67%
Total			337	31858	2636	100.00%
Mean	$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 7.82$					
Std Deviation	$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 5.78$					
Higher Education Students	ci=center	ci2	fi=frequency	ci2. fi	ci . fi	%
1-5	3	9	115	1035	345	86.47%
6-10	8	64	13	832	104	9.77%
11-20	15.5	240.25	4	961	62	3.01%
21-30	25.5	650.25	1	650.25	25.5	0.75%
Total			133	3478.25	536.5	100.00%
Mean	$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 4.03$					

Std Deviation	$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 3.14$					
School Teachers	ci=center	ci2	fi=frequency	ci2. fi	ci . fi	%
1-5	3	9	185	1665	555	44.15%
6-10	8	64	123	7872	984	29.36%
11-20	15.5	240.25	85	20421.25	1317.5	20.29%
21-30	25.5	650.25	26	16906.5	663	6.21%
Total			419	46864.75	3519.5	100.00%
Mean	$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 8.40$					
Std Deviation	$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 6.43$					

B3. Motives

Goal in taking the course

Table 56. Goal in taking the course per targeted group

		Professional Role						
		eLearning Professionals (IDs, eTutors)		Higher Education Students		School Teachers		Total
Goal	Planning to follow the course schedule and complete all activities to earn a certificate of completion	211	62,61%	85	63,91%	317	75,66%	758
	Auditing, but intend to follow the course schedule	37	10,98%	10	7,52%	26	6,21%	115

	Auditing, but do not intend to follow the course schedule	15	4,45%	5	3,76%	1	0,24%	29
	Bookmaking it as a learning resource	14	4,15%	2	1,50%	21	5,01%	45
	Interested in a small subset of course topics	16	4,75%	9	6,77%	10	2,39%	47
	Just checking what this course is about	23	6,82%	11	8,27%	16	3,82%	63
	General curiosity	13	3,86%	9	6,77%	22	5,25%	66
	Other	8	2,37%	2	1,50%	6	1,43%	24
	Total	337	100,00%	133	100,00%	419	100,00%	1147

Reasons for Enrolment

Mean values per targeted group

Table 57. Mean values for reasons for enrolment per professional group

Professional Role		M2.1	M2.2	M2.3	M2.4	M2.5	M2.6	M2.7	M2.8	MOT
eLearning Professionals (IDs, eTutors)	Mean	4,26	4,43	2,95	3,25	3,04	2,31	1,50	2,97	3,0894
	N	337	337	337	337	337	337	337	337	337
	Std. Deviation	1,070	1,001	1,573	1,506	1,815	1,819	1,254	1,559	,76366
Higher Education Students	Mean	3,87	4,30	3,33	3,50	3,80	3,36	2,56	2,81	3,4408
	N	133	133	133	133	133	133	133	133	133
	Std. Deviation	1,144	1,000	1,391	1,480	1,418	1,760	1,725	1,388	,76292
School Teachers	Mean	4,34	4,41	2,90	3,39	3,42	2,77	1,67	2,76	3,2058
	N	419	419	419	419	419	419	419	419	419
	Std. Deviation	1,060	1,133	1,513	1,388	1,472	1,625	1,349	1,484	,76044
Others	Mean	4,16	4,44	2,86	3,07	3,59	2,71	1,84	3,18	3,2311
	N	258	258	258	258	258	258	258	258	258

	Std. Deviation	1,093	,949	1,555	1,497	1,578	1,777	1,540	1,563	,79077
	Mean	4,22	4,41	2,95	3,29	3,39	2,69	1,76	2,92	3,2046
Total	N	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Std. Deviation	1,088	1,040	1,531	1,464	1,616	1,760	1,448	1,521	,77441

Compare Reasons for enrolment per targeted group

Table 58. Difference in reasons for enrolment between targeted groups

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
M2.1	Between Groups	23,113	3	7,704	6,601	**,000**
	Within Groups	1334,081	1143	1,167		
	Total	1357,194	1146			
M2.2	Between Groups	2,039	3	,680	,628	,597
	Within Groups	1237,372	1143	1,083		
	Total	1239,411	1146			
M2.3	Between Groups	22,678	3	7,559	3,242	**,021**
	Within Groups	2664,965	1143	2,332		
	Total	2687,643	1146			
M2.4	Between Groups	23,153	3	7,718	3,626	**,013**
	Within Groups	2433,051	1143	2,129		
	Total	2456,204	1146			
M2.5	Between Groups	73,904	3	24,635	9,646	**,000**
	Within Groups	2919,114	1143	2,554		
	Total	2993,018	1146			
M2.6	Between Groups	112,448	3	37,483	12,469	**,000**
	Within Groups	3435,813	1143	3,006		
	Total	3548,262	1146			
M2.7	Between Groups	111,369	3	37,123	18,520	**,000**
	Within Groups	2291,074	1143	2,004		
	Total	2402,443	1146			
M2.8	Between Groups	30,581	3	10,194	4,448	**,004**
	Within Groups	2619,513	1143	2,292		
	Total	2650,094	1146			

Compare means of reasons for enrolment per targeted group

Table 59. Reasons for enrolment mean rating difference between targeted groups

Reasons for Enrolment	eLearning Professionals-Higher Education Students		eLearning Professionals-School Teachers		Higher Education Students - School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
M2.1	,386	,001	No significant difference		-,464	,000
M2.2			No significant difference			
M2.3	-,378	,016	No significant difference		,433	,003
M2.4			No significant difference			
M2.5	-,755	,000	-,376	,002	-,379	,009
M2.6	-1,055	,000	-,465	,000	,590	,000
M2.7	-1,052	,000	No significant difference		,883	,000
M2.8			No significant difference			

Mean values of internal/external motives per targeted group

Table 60. Mean values for internal/external motives per targeted group

ProfRole		INT	EXT	MOT
eLearning Professionals (IDs, eTutors)	Mean	3,4024	2,5678	3,0894
	N	337	337	337
	Std. Deviation	,83765	1,06071	,76366
Higher Education Students	Mean	3,6286	3,1278	3,4408
	N	133	133	133
	Std. Deviation	,82504	1,09539	,76292
School Teachers	Mean	3,5379	2,6523	3,2058
	N	419	419	419
	Std. Deviation	,78647	1,05096	,76044
Others	Mean	3,6163	2,5891	3,2311
	N	258	258	258
	Std. Deviation	,85066	1,18829	,79077

Total	Mean	3,5262	2,6684	3,2046
	N	1147	1147	1147
	Std. Deviation	,82439	1,10299	,77441

INT: Internal Motives = (M2.1 + M2.2 + M2.5 + M2.6 + M2.8)/5

EXT: External Motives = (M2.3 + M2.4 + M2.7)/3

MOT: Motives = (M2.1+M2.2+M2.3+M2.4+M2.5+M2.6+M2.7+M2.8)/8

Compare means of internal and external motives for enrolment per targeted group

Table 61. Mean differences for Internal and External motives for enrolment per targeted group

	eLearning Professionals-Higher Education Students		eLearning Professionals-School Teachers		Higher Education Students - School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
INT Internal motives	-,22620	,008	-,13557	,022	No significant difference	
EXT External Motives	-,56006	,000	No significant difference		,47547	,000
MOT Motives	-,35140	,000	-,11646	,037	,23494	,002

GRIT Score

GRIT Score per targeted group

Table 62. GRIT score per targeted group

Professional Role		G6.1	G6.2	G6.3	G6.4	G6.5	G6.6	G6.7	G6.8	GRIT
eLearning Professionals (IDs, eTutors)	Mean	2,96	3,49	3,43	4,17	3,44	3,55	3,68	3,93	3,5823
	N	337	337	337	337	337	337	337	337	337
	Std. Deviation	1,064	1,021	,974	,890	,944	1,090	1,004	,943	,58637
Higher Education Students	Mean	3,05	3,35	3,35	3,98	3,36	3,35	3,74	3,72	3,4887
	N	133	133	133	133	133	133	133	133	133
	Std. Deviation	1,010	1,046	,985	,887	1,003	1,088	,984	1,018	,56207

School Teachers	Mean	3,30	3,65	3,59	4,23	3,74	3,86	4,00	4,05	3,8031
	N	419	419	419	419	419	419	419	419	419
	Std. Deviation	1,107	1,039	1,002	,880	,961	1,018	,988	,967	,64265
Others	Mean	2,98	3,45	3,44	3,99	3,40	3,58	3,72	3,83	3,5480
	N	258	258	258	258	258	258	258	258	258
	Std. Deviation	1,009	,982	,974	,938	,975	1,049	,918	,961	,57874
Total	Mean	3,10	3,52	3,48	4,13	3,53	3,64	3,81	3,93	3,6444
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Std. Deviation	1,072	1,026	,988	,902	,976	1,068	,987	,970	,61498

Compare means of GRIT score per targeted group

Table 63. Difference in mean GRIT score per targeted group

GRIT	eLearning Professionals- Higher Education Students		eLearning Professionals- School Teachers		Higher Education Students - School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
GRIT score	No significant difference		-,22076	**,000**	-,31438	**,000**

Self-Confidence

Self-confidence per targeted group

Table 64. Self-confidence per targeted group

Professional Role		ConfAbility	ConfTime	Self-Confidence
eLearning Professionals (IDs, eTutors)	Mean	3,81	3,69	3,7507
	N	337	337	337
	Std. Deviation	,823	,948	,71248
Higher Education	Mean	3,33	3,59	3,4624

Students	N	133	133	133
	Std. Deviation	,868	,930	,78002
	Mean	3,64	3,96	3,7995
School Teachers	N	419	419	419
	Std. Deviation	,798	,784	,68066
	Mean	3,76	3,52	3,6415
Others	N	258	258	258
	Std. Deviation	,830	,926	,74486
	Mean	3,68	3,74	3,7105
Total	N	1147	1147	1147
	Std. Deviation	,833	,900	,72382

Confidence in ability to learn the material (CONF1),
Confidence in completing the course on time (CONF2)
Overall confidence (CONF=(CONF1+CONF2)/2)

Compare self-confidence per targeted group

Table 65. Difference in self-confidence per targeted group

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
ConfAbility	Between Groups	24,158	3	8,053	11,943	**,000**
	Within Groups	770,691	1143	,674		
	Total	794,849	1146			
ConfTime	Between Groups	35,489	3	11,830	15,132	**,000**
	Within Groups	893,567	1143	,782		
	Total	929,057	1146			
Self-confidence	Between Groups	13,282	3	4,427	8,619	**,000**
	Within Groups	587,120	1143	,514		
	Total	600,402	1146			

Compare means of self-confidence between targeted groups

Table 66. Compare means of self-confidence between targeted groups

	eLearning Professionals (IDs, eTutors)		Higher Education Students		School Teachers	
	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)	Mean Difference	Sig. (2-tailed)
ConfAbility	.479	**.000**	.108	**.005**	-.311	**.000**
ConfTime	Not significant		-.266	**.000**	-.363	**.000**
Self-confidence	.28834	**.000**	Not significant		-.33712	**.000**

Hours per week planning to spend in the course per targeted group

Table 67. Distribution of hours per week planning to spend in course for eLearning professionals

Hours per week (eLearning Professionals)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
0-2	1	1	112	112	112	33.23%
3-4	3.5	12.25	133	1629.25	465.5	39.47%
5-6	5.5	30.25	60	1815	330	17.80%
7-8	7.5	56.25	19	1068.75	142.5	5.64%
8-10	9	81	13	1053	117	3.86%
Total			337	5678	1167	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 3.46$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 2.20$$

Table 68. Distribution of hours per week planning to spend in course for Higher Education Students

Hours per week (Higher Education Students)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
0-2	1	1	29	29	29	21.80%
3-4	3.5	12.25	57	698.25	199.5	42.86%
5-6	5.5	30.25	21	635.25	115.5	15.79%
7-8	7.5	56.25	17	956.25	127.5	12.78%
8-10	9	81	9	729	81	6.77%
Total			133	3047.75	552.5	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 4.15$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 2.38$$

Table 69. Distribution of hours per week planning to spend in course for School Teachers

Hours per week (School Teachers)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
0-2	1	1	76	76	76	18.14%
3-4	3.5	12.25	194	2376.5	679	46.30%
5-6	5.5	30.25	94	2843.5	517	22.43%
7-8	7.5	56.25	42	2362.5	315	10.02%
8-10	9	81	13	1053	117	3.10%
Total			419	8711.5	1704	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 4.07$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 2.06$$

Compare mean hours per week planning to spend in the course per targeted group

Table 70. Compare mean hours per week planning to spend in the course per targeted group

Targeted group	n	Mean hours per week	Standard Deviation
eLearning Professional	337	3.36	2.20
Higher Education Students	133	4.15	2.38
School Teachers	419	4.07	2.06
All participants	1147	3.72	2.20

B4. Initial EDL competence level per targeted group

Table 71. Initial EDL competence level per targeted group

Professional Role		D1a	D2a	D3a	D4a	D5a	D6a	InitEDL
eLearning Professionals (IDs, eTutors)	Mean	2,4377	2,1788	2,2834	2,1283	2,1929	2,3610	2,2637
	N	337	337	337	337	337	337	337
	Std. Deviation	1,02381	,91436	,95616	,97649	1,03144	1,04901	,86322
Higher Education Students	Mean	2,2143	2,0357	2,1880	2,0714	1,9211	2,0952	2,0876
	N	133	133	133	133	133	133	133
	Std. Deviation	,90094	,90827	,95664	,91420	,89367	,90227	,79342
School Teachers	Mean	2,3496	2,1748	2,1981	2,0316	2,0072	2,1424	2,1506
	N	419	419	419	419	419	419	419
	Std. Deviation	,96658	,92206	,91317	,89492	,95406	1,00959	,85684
Others	Mean	2,5969	2,3818	2,4845	2,3362	2,2636	2,4651	2,4214
	N	258	258	258	258	258	258	258
	Std. Deviation	1,10987	1,05241	1,10524	1,04754	1,04858	1,03624	,95682
Total	Mean	2,4154	2,2064	2,2864	2,1332	2,1094	2,2738	2,2374
	N	1147	1147	1147	1147	1147	1147	1147
	Std. Deviation	1,01571	,95369	,98202	,96309	,99892	1,02444	,88162

Table 72. Mean EDL competence level per EDL Dimension per professional role

	Professional Role	N	Mean	Std. Deviation	Std. Error Mean
D1a	eLearning Professionals (IDs, eTutors)	337	2,4377	1,02381	,05577
	Higher Education Students	133	2,2143	,90094	,07812
D2a	eLearning Professionals (IDs, eTutors)	337	2,1788	,91436	,04981
	Higher Education Students	133	2,0357	,90827	,07876

D3a	eLearning Professionals (IDs, eTutors)	337	2,2834	,95616	,05209
	Higher Education Students	133	2,1880	,95664	,08295
D4a	eLearning Professionals (IDs, eTutors)	337	2,1283	,97649	,05319
	Higher Education Students	133	2,0714	,91420	,07927
D5a	eLearning Professionals (IDs, eTutors)	337	2,1929	1,03144	,05619
	Higher Education Students	133	1,9211	,89367	,07749
D6a	eLearning Professionals (IDs, eTutors)	337	2,3610	1,04901	,05714
	Higher Education Students	133	2,0952	,90227	,07824
InitEDL	eLearning Professionals (IDs, eTutors)	337	2,2637	,86322	,04702
	Higher Education Students	133	2,0876	,79342	,06880

Table 73. Compare mean EDL level per professional role (eLearning Professionals - HE Students)

Independent Samples Test

eLearning Professionals (IDs, eTutors) Higher Education Students		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
D1a	Equal variances assumed	3,805	,052	2,202	468	**,028**	**,22340**	,10145	,02405	,42275
	Equal variances not assumed			2,327	272,978	,021	,22340	,09599	,03443	,41237
D2a	Equal variances assumed	,585	,445	1,531	468	,126	,14307	,09346	-,04058	,32672

	Equal variances not assumed			1,535	243,413	,126	,14307	,09319	-,04048	,32662
D3a	Equal variances assumed	,250	,618	,974	468	,330	,09541	,09793	-,09702	,28784
	Equal variances not assumed			,974	241,837	,331	,09541	,09795	-,09753	,28835
D4a	Equal variances assumed	,606	,437	,579	468	,563	,05691	,09824	-,13613	,24995
	Equal variances not assumed			,596	257,151	,552	,05691	,09546	-,13108	,24490
D5a	Equal variances assumed	3,412	,065	2,669	468	**,008**	**,27183**	,10184	,07170	,47195
	Equal variances not assumed			2,840	277,179	,005	,27183	,09572	,08340	,46025
D6a	Equal variances assumed	3,728	,054	2,570	468	**,010**	**,26579**	,10340	,06260	,46898
	Equal variances not assumed			2,743	279,187	,006	,26579	,09688	,07508	,45650
Init EDL	Equal variances assumed	1,151	,284	2,037	468	**,042**	**,17607**	,08644	,00621	,34593
	Equal variances not assumed			2,113	261,697	,036	,17607	,08333	,01198	,34016

Table 74. Compare mean EDL level per professional role (eLearning Professionals - School Teachers)

Independent Samples Test

eLearning Professionals (IDs, eTutors) School Teachers	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper

D1a	Equal variances assumed	,650	,420	1,212	754	,226	,08804	,07262	-,05452	,23061
	Equal variances not assumed			1,205	700,886	,229	,08804	,07308	-,05543	,23152
D2a	Equal variances assumed	,000	,999	,059	754	,953	,00396	,06722	-,12799	,13592
	Equal variances not assumed			,059	722,103	,953	,00396	,06716	-,12788	,13581
D3a	Equal variances assumed	,263	,608	1,250	754	,212	,08529	,06824	-,04867	,21925
	Equal variances not assumed			1,244	704,874	,214	,08529	,06858	-,04935	,21994
D4a	Equal variances assumed	2,589	,108	1,418	754	,157	,09672	,06821	-,03718	,23061
	Equal variances not assumed			1,405	690,134	,161	,09672	,06885	-,03847	,23190
D5a	Equal variances assumed	2,532	,112	2,566	754	**,010**	**,18572**	,07239	,04361	,32782
	Equal variances not assumed			2,544	693,546	,011	,18572	,07300	,04239	,32905
D6a	Equal variances assumed	,327	,567	2,908	754	**,004**	**,21863**	,07517	,07106	,36620
	Equal variances not assumed			2,896	707,485	,004	,21863	,07549	,07042	,36683
InitEDL	Equal variances assumed	,003	,959	1,797	754	,073	,11306	,06290	-,01043	,23655
	Equal variances not assumed			1,796	717,398	,073	,11306	,06296	-,01054	,23666

Table 75. Compare mean EDL level per professional role (HE Students - School Teachers)

Independent Samples Test

Higher Education Students School Teachers		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
D1a	Equal variances assumed	2,380	,124	-1,430	550	,153	-,13536	,09467	-,32132	,05061
	Equal variances not assumed			-1,483	236,123	,139	-,13536	,09128	-,31519	,04448
D2a	Equal variances assumed	,596	,440	-1,521	550	,129	-,13911	,09144	-,31872	,04051
	Equal variances not assumed			-1,533	224,891	,127	-,13911	,09073	-,31789	,03968
D3a	Equal variances assumed	,891	,346	-,110	550	,912	-,01012	,09194	-,19072	,17048
	Equal variances not assumed			-,107	213,752	,915	-,01012	,09419	-,19577	,17553
D4a	Equal variances assumed	,141	,707	,445	550	,657	,03981	,08953	-,13606	,21567
	Equal variances not assumed			,440	218,141	,661	,03981	,09053	-,13862	,21823
D5a	Equal variances assumed	,582	,446	-,920	550	,358	-,08611	,09355	-,26986	,09765
	Equal variances not assumed			-,952	235,069	,342	-,08611	,09043	-,26426	,09205
D6a	Equal variances assumed	2,643	,105	-,481	550	,631	-,04716	,09802	-,23971	,14538

	Equal variances not assumed			-,510	245,523	,611	-,04716	,09249	-,22933	,13500
Init EDL	Equal variances assumed	1,353	,245	-,752	550	,452	-,06301	,08381	-,22763	,10161
	Equal variances not assumed			-,782	237,542	,435	-,06301	,08053	-,22166	,09564

Appendix 7 – Characteristics of participants' profile that are related to the course completion

A. Profile of Participants that completed the course

a. Participants that completed the course per Age

Table 76. Distribution of Age for participants that completed the course

Age of participants that completed the course

N	Valid	235
	Missing	0
Mean		37,78
Median		39,00
Mode		22
Std. Deviation		11,386
Variance		129,643
Percentiles	25	27,00
	50	39,00
	75	47,00

Compare means between the Age of participants who completed the course and participants who dropped the course

Table 77. Mean values of age between participants

Age

Completed	Mean	N	Std. Deviation
No	41,42	912	10,145
Yes	37,78	235	11,386
Total	40,68	1147	10,510

Table 78. Compare of mean age between participants who completed and those who dropped the course

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Age	Equal variances assumed	9,596	**,002**	4,784	1145	,000	3,643	,762	2,149	5,138
	Equal variances not assumed			4,469	335,923	**,000**	3,643	,815	2,040	5,247

b. Distribution of participants that completed the course per Gender

Table 79. Distribution of participants that completed the course per Gender

Gender	N	Completed	Completion Rate
I prefer not to answer	30	6	20%
Female	640	141	22%
Male	477	88	18%
Total	1147	235	20%

c. Geographical distribution of participants that completed the course

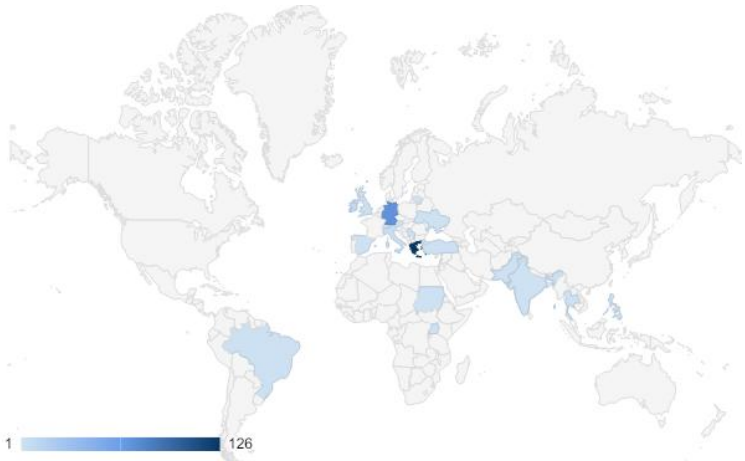

Figure 46. Geographical distribution of participants that completed the course (World map)

Geographical distribution of participants that completed the course

Table 80. Geographical distribution of participants that completed the course

	Country	Frequency	Percent
1.	Greece	126	53.62%
2.	Germany	71	30.21%
3.	Ireland	8	3.40%
4.	Italy	3	1.28%
5.	United Kingdom	2	0.85%
6.	Turkey	2	0.85%
7.	Brazil	2	0.85%
8.	Austria	2	0.85%
9.	Ukraine	1	0.43%
10.	Uganda	1	0.43%
11.	Thailand	1	0.43%
12.	Switzerland	1	0.43%
13.	Sudan	1	0.43%
14.	Spain	1	0.43%
15.	Serbia	1	0.43%
16.	Philippines	1	0.43%
17.	Pakistan	1	0.43%
18.	Luxembourg	1	0.43%
19.	Lithuania	1	0.43%
20.	Lebanon	1	0.43%
21.	India	1	0.43%
22.	France	1	0.43%
23.	Faroe Islands	1	0.43%
24.	Denmark	1	0.43%
25.	Croatia	1	0.43%

26.	Canada	1	0.43%
27.	Australia	1	0.43%
	Grand Total	235	100.00%

d. Distribution of participants that completed the course per highest level of Education

Table 81. Distribution of participants that completed the course per highest level of Education

Highest Education Level	N	Completed	Completion Rate
Doctoral Degree (e.g., PhD, EdD)	193	31	16%
Master's Degree (e.g., MA, MS, MSc, MEng, MEd, MSW, MBA)	600	106	18%
Bachelor's degree (e.g., BSc, BA, AB, BS, BPS)	195	48	25%
Associate degree - academic program	28	6	21%
Professional School Degree (e.g., JD, MD, DDS, DVM, LLB)	20	3	15%
High School Diploma (or equivalent)	86	38	44%
Other	25	3	12%
Total	1147	235	20%

e. Participants that completed the course per Job Sector

Table 82. Participants that completed the course per Job Sector

Job Sector	N	Completed	Completion Rate
K12, Higher Education	790	168	21%
Industry	193	29	15%
Self Employed/Not Employed	106	25	24%
Other	58	13	22%
Total	1147	235	20%

f. Distribution of participants that completed the course per years involved in their professional role

Table 83. Distribution of participants that completed the course per years involved in their professional role

Years involved in professional role	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
1-5	3	9	105	945	315	44.68%

6-10	8	64	32	2048	256	13.62%
11-20	15.5	240.25	74	17778.5	1147	31.49%
21-30	25.5	650.25	24	15606	612	10.21%
Total			235	36377.5	2330	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 9.91$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 7.52$$

Completion rates per Years of Experience in Professional Role

Table 84. Completion rates per Years of Experience in Professional Role

YoEinPR	N	Completed	Completion Rate
1-5	499	105	21%
6-10	195	32	16%
11-20	315	74	23%
21+	138	24	17%
Total	1147	235	205

g. Distribution of participants that completed the course per years involved in field of Digital T & L

Table 85. Distribution of participants that completed the course per years involved in field of Digital T & L

Years involved in Digital T & L	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
1-5	3	9	145	1305	435	61.70%
6-10	8	64	48	3072	384	20.43%
11-20	15.5	240.25	38	9129.5	589	16.17%
21-30	25.5	650.25	4	2601	102	1.70%
Total			235	16107.5	1510	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 6.43$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 5.22$$

Completion rates per Years of Experience in Digital T & L

Table 86. Completion rates per Years of Experience in Digital T & L

YoEinDTL	N	Completed	Completion Rate
1-5	610	145	24%
6-10	277	48	17%
11-20	214	38	18%
21+	46	4	09%
Total	1147	235	20%

h. Compare means of English Proficiency between participants that completed the course and those that dropped it.

Table 87. Compare means of English Proficiency between participants that completed the course and those that dropped it.

Group Statistics

	Completed	N	Mean	Std. Deviation	Std. Error Mean
EnglProf	No	912	4,04	,925	,031
	Yes	235	3,91	,927	,060

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Engl Prof	Equal variances assumed	,120	,729	1,952	1145	,051	,132	,068	-,001	,265
	Equal variances not assumed			1,949	363,280	,052	,132	,068	-,001	,265

i. Compare means of Comfort with Technology between participants that completed the course and those that dropped it.

Table 88. Compare means of Comfort with Technology between participants that completed the course and those that dropped it

Group Statistics

	Completed	N	Mean	Std. Deviation	Std. Error Mean
Comfort with Technology	No	912	4,33	,796	,026
	Yes	235	4,13	,863	,056

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Comf Tech	Equal variances assumed	,000	,996	3,472	1145	**,001**	**,206**	,059	,089	,322
	Equal variances not assumed			3,310	343,557	,001	,206	,062	,083	,328

j. MOOCs enrolled

Table 89. Mean number of MOOCs enrolled among participants that completed the course

Number of MOOCs (enrolled)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
None	0	0	97	0	0	41.28%
1	1	1	38	38	38	16.17%
2-4	3	9	51	459	153	21.70%
5-10	7	49	27	1323	189	11.49%

11-15	13	169	22	3718	286	9.36%
Total			235	5538	666	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 2.83$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 3.94$$

k. MOOCs completed

Table 90. Mean number of MOOCs completed among participants that completed the course

Number of MOOCs (completed)	c_i=center	c_i^2	f_i=frequency	$c_i^2 . f_i$	$c_i . f_i$	%
None	0	0	119	0	0	50.64%
1	1	1	30	30	30	12.77%
2-4	3	9	46	414	138	19.57%
5-10	7	49	21	1029	147	8.94%
11-15	13	169	19	3211	247	8.09%
Total			235	4684	562	100.00%

$$\bar{x} = \frac{\sum f_i \cdot c_i}{\sum f_i} = 2.39$$

$$s = \sqrt{\frac{f_i \cdot {c_i}^2}{n} - \bar{x}^2} = 3.77$$

B. Participants that completed the course per Professional Role

Table 91. Participants that completed the course per Professional Role

Professional Role	Dropped	Completed	Total	Completion Rate
eLearning Professionals (IDs, eTutors)	297	40	337	11,87%
Higher Education Students	85	48	133	36,10%
School Teachers	317	102	419	24,34%
Others	213	45	258	17,44%
Total	912	235	1147	

Table 92. Mean differences in completion rate between eLearning Professionals and HE students

Group Statistics

	Professional fRole	N	Mean	Std. Deviation	Std. Error Mean
Completed	eLearning Professionals (IDs, eTutors)	337	,12	,324	,018
	Higher Education Students	133	,36	,482	,042

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Completed	Equal variances assumed	123,984	,000	-6,302	468	,000	-,242	,038	-,318	-,167
	Equal variances not assumed			-5,338	180,970	**,000**	**-,242**	,045	-,332	-,153

Table 93. Mean differences in completion rate between eLearning Professionals and School Teachers

Group Statistics

	ProfRole	N	Mean	Std. Deviation	Std. Error Mean
Completed	eLearning Professionals (IDs, eTutors)	337	,12	,324	,018
	School Teachers	419	,24	,430	,021

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Completed	Equal variances assumed	87,371	,000	-4,415	754	,000	-,125	,028	-,180	-,069
	Equal variances not assumed			-4,549	750,966	**,000**	**-,125**	,027	-,179	-,071

Table 94. Mean differences in completion rate between HE students and School Teachers

Group Statistics

	ProfRole	N	Mean	Std. Deviation	Std. Error Mean
Completed	Higher Education Students	133	,36	,482	,042
	School Teachers	419	,24	,430	,021

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Completed	Equal variances assumed	21,141	,000	2,665	550	,008	,117	,044	,031	,204
	Equal variances not assumed			2,511	202,889	**,013**	**,117**	,047	,025	,210

C. Relationship between participants' characteristics and course completion

a. Reasons for enrolment

Table 95. Mean rating per Reason for Enrolment between participants who completed the MOOC and those who dropped

Report

Completed		M2.1	M2.2	M2.3	M2.4	M2.5	M2.6	M2.7	M2.8	INT	EXT	MOT
No	Mean	4,22	4,40	2,94	3,23	3,39	2,66	1,70	2,95	3,5248	2,6188	3,1850
	N	912	912	912	912	912	912	912	912	912	912	912
	Std. Deviation	1,084	1,045	1,549	1,493	1,622	1,751	1,397	1,523	,82443	1,11045	,77874
Yes	Mean	4,21	4,45	3,03	3,52	3,40	2,80	2,03	2,80	3,5319	2,8610	3,2803
	N	235	235	235	235	235	235	235	235	235	235	235
	Std. Deviation	1,107	1,021	1,460	1,322	1,597	1,792	1,606	1,507	,82594	1,05390	,75422
Total	Mean	4,22	4,41	2,95	3,29	3,39	2,69	1,76	2,92	3,5262	2,6684	3,2046
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Std. Deviation	1,088	1,040	1,531	1,464	1,616	1,760	1,448	1,521	,82439	1,10299	,77441

Table 96. Difference in mean rating per Reason for Enrolment for participants who completed the MOOC between targeted groups

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
M2.1	Between Groups	,043	1	,043	,036	,849
	Within Groups	1357,151	1145	1,185		
	Total	1357,194	1146			
M2.2	Between Groups	,406	1	,406	,375	,541
	Within Groups	1239,005	1145	1,082		
	Total	1239,411	1146			
M2.3	Between Groups	1,668	1	1,668	,711	,399
	Within Groups	2685,975	1145	2,346		
	Total	2687,643	1146			
M2.4	Between Groups	16,071	1	16,071	7,541	**,006**

	Within Groups	2440,133	1145	2,131		
	Total	2456,204	1146			
M2.5	Between Groups	,055	1	,055	,021	,884
	Within Groups	2992,963	1145	2,614		
	Total	2993,018	1146			
M2.6	Between Groups	3,715	1	3,715	1,200	,274
	Within Groups	3544,546	1145	3,096		
	Total	3548,262	1146			
M2.7	Between Groups	21,456	1	21,456	10,318	**,001**
	Within Groups	2380,986	1145	2,079		
	Total	2402,443	1146			
M2.8	Between Groups	4,428	1	4,428	1,917	,167
	Within Groups	2645,666	1145	2,311		
	Total	2650,094	1146			
INT	Between Groups	,010	1	,010	,014	,906
	Within Groups	778,831	1145	,680		
	Total	778,840	1146			
EXT	Between Groups	10,962	1	10,962	9,073	**,003**
	Within Groups	1383,257	1145	1,208		
	Total	1394,219	1146			
MOT	Between Groups	1,697	1	1,697	2,833	,093
	Within Groups	685,575	1145	,599		
	Total	687,272	1146			

Table 97. Internal motives to completion rate

Internal motives to completion rate

Completed

INT	Mean	N	Std. Deviation
,00	,00	2	,000
,20	1,00	1	.
,40	,00	1	.

,60	,00	1	.
1,00	,25	4	,500
1,20	,67	3	,577
1,40	,17	6	,408
1,60	,29	7	,488
1,80	,13	16	,342
2,00	,22	18	,428
2,20	,28	25	,458
2,40	,21	28	,418
2,60	,15	61	,358
2,80	,10	59	,305
3,00	,15	111	,362
3,20	,26	73	,442
3,40	,23	111	,420
3,60	,25	103	,437
3,80	,28	123	,453
4,00	,19	103	,397
4,20	,13	102	,335
4,40	,18	57	,384
4,60	,25	55	,440
4,80	,20	30	,407
5,00	,19	47	,398
Total	,20	1147	,404

Table 98. External motives to completion rate

External motives to completion rate

Completed

EXT	Mean	N	Std. Deviation
,00	,05	20	,224
,33	,20	5	,447
,67	,14	14	,363
1,00	,12	68	,325
1,33	,19	59	,393
1,67	,17	118	,377
2,00	,21	100	,409
2,33	,20	138	,404
2,67	,18	102	,383
3,00	,23	138	,424
3,33	,26	89	,440

3,67	,22	146	,415
4,00	,27	52	,448
4,33	,21	34	,410
4,67	,22	27	,424
5,00	,30	37	,463
Total	,20	1147	,404

Table 99. Reasons for Enrolment to completion rate

Reasons for Enrolment to completion rate

Completed

MOT	Mean	N	Std. Deviation
,00	,00	2	,000
,25	1,00	1	.
,63	,33	3	,577
1,00	,00	3	,000
1,13	,00	3	,000
1,25	,00	4	,000
1,38	,20	5	,447
1,50	,00	4	,000
1,63	,25	8	,463
1,75	,25	12	,452
1,88	,21	14	,426
2,00	,17	18	,383
2,13	,07	14	,267
2,25	,14	35	,355
2,38	,18	34	,387
2,50	,18	60	,390
2,63	,18	57	,384
2,75	,21	57	,411
2,88	,25	63	,439
3,00	,09	92	,283
3,13	,20	76	,401
3,25	,23	74	,424
3,38	,23	66	,422
3,50	,22	77	,417
3,63	,38	64	,488
3,75	,22	64	,417
3,88	,23	47	,428
4,00	,28	47	,452

4,13	,10	29	,310
4,25	,17	23	,388
4,38	,22	27	,424
4,50	,15	20	,366
4,63	,15	13	,376
4,75	,25	8	,463
4,88	,17	6	,408
5,00	,29	17	,470
Total	,20	1147	,404

b. GRIT

Table 100. GRIT between participants that completed the MOOC and those that dropped

Group Statistics

	Completed	N	Mean	Std. Deviation	Std. Error Mean
G6.1	No	912	3,11	1,073	,036
	Yes	235	3,07	1,070	,070
G6.2	No	912	3,51	1,030	,034
	Yes	235	3,58	1,011	,066
G6.3	No	912	3,47	,995	,033
	Yes	235	3,53	,962	,063
G6.4	No	912	4,12	,915	,030
	Yes	235	4,19	,848	,055
G6.5	No	912	3,51	,979	,032
	Yes	235	3,63	,959	,063
G6.6	No	912	3,64	1,072	,035
	Yes	235	3,66	1,056	,069
G6.7	No	912	3,76	1,011	,033
	Yes	235	4,03	,857	,056
G6.8	No	912	3,90	,984	,033
	Yes	235	4,03	,908	,059
GRIT	No	912	3,63	,618	,020
	Yes	235	3,71	,601	,039

Table 101. Mean differences for GRIT statements between participants that completed the MOOC and those that dropped

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
G6.1	Equal variances assumed	,002	,968	,434	1145	,665	,034	,078	-,120	,188
	Equal variances not assumed			,434	364,738	,664	,034	,078	-,120	,188
G6.2	Equal variances assumed	,217	,641	-,974	1145	,330	-,073	,075	-,220	,074
	Equal variances not assumed			-,985	369,066	,325	-,073	,074	-,219	,073
G6.3	Equal variances assumed	,602	,438	-,823	1145	,411	-,059	,072	-,201	,082
	Equal variances not assumed			-,839	373,351	,402	-,059	,071	-,199	,080
G6.4	Equal variances assumed	,781	,377	-1,157	1145	,247	-,076	,066	-,206	,053
	Equal variances not assumed			-1,210	386,460	,227	-,076	,063	-,200	,048
G6.5	Equal variances assumed	1,142	,285	-1,606	1145	,109	-,115	,071	-,255	,025
	Equal variances not assumed			-1,626	369,929	,105	-,115	,070	-,253	,024
G6.6	Equal variances assumed	,005	,941	-,246	1145	,806	-,019	,078	-,173	,134
	Equal variances not assumed			-,248	368,085	,804	-,019	,077	-,172	,133
G6.7	Equal variances assumed	28,552	,000	-3,701	1145	,000	-,266	,072	-,406	-,125
	Equal variances not assumed			-4,078	417,969	**,000**	**-,266**	,065	-,394	-,138
G6.8	Equal variances assumed	6,863	,009	-1,828	1145	,068	-,130	,071	-,269	,009
	Equal variances not assumed			-1,917	388,010	,056	-,130	,068	-,262	,003
GRIT	Equal variances assumed	,131	,718	-1,958	1145	**,050**	**-,088**	,045	-,176	,000
	Equal variances not assumed			-1,989	371,437	,047	-,088	,044	-,175	-,001

c. Self-confidence

Table 102. Mean confidence between participants that completed the MOOC and those who dropped

	Completed	N	Mean	Std. Deviation	Std. Error Mean
ConfAbility	No	912	3,71	,828	,027
	Yes	235	3,58	,845	,055
ConfTime	No	912	3,71	,921	,030
	Yes	235	3,84	,811	,053
Self-confidence	No	912	3,7105	,72556	,02403
	Yes	235	3,7106	,71857	,04687

Table 103. Compare means for confidence between participants that completed the MOOC and those who dropped

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ConfAbility	Equal variances assumed	1,189	,276	2,042	1145	**,041**	**,124**	,061	,005	,244
	Equal variances not assumed			2,018	358,492	,044	,124	,062	,003	,245
ConfTime	Equal variances assumed	9,254	,002	-1,892	1145	,059	-,124	,066	-,254	,005
	Equal variances not assumed			-2,039	403,865	**,042**	**-,124**	,061	-,245	-,004

Self-Confidence	Equal variances assumed	,061	,805	-,002	1145	,998	-,00011	,05297	-,10405	,10383
	Equal variances not assumed			-,002	366,600	,998	-,00011	,05267	-,10369	,10347

Correlations

		Completed	ConfAbility
Completed	Pearson Correlation	1	-,060*
	Sig. (2-tailed)		,041
	N	1147	1147
ConfAbility	Pearson Correlation	-,060*	1
	Sig. (2-tailed)	,041	
	N	1147	1147

*. Correlation is significant at the 0.05 level (2-tailed).

Confidence in the ability to learn the material

ConfAbility	Mean	N	Std. Deviation
1	,18	11	,405
2	,30	74	,460
3	,21	350	,411
4	,20	546	,400
5	,16	166	,370
Total	,20	1147	,404

Confidence in the Ability to complete the course on time

ConfTime	Mean	N	Std. Deviation
1	,00	12	,000
2	,13	78	,336
3	,20	347	,400
4	,22	470	,417
5	,21	240	,410
Total	,20	1147	,404

d. Hours planning to spend in the course

Table 104. Completion rate per reported hours per week planning to spend in the course

Completed

Hours	Mean	N	Std. Deviation

less than 3 hours	,11	313	,312
3-4 hours	,19	484	,396
5-6 hours	,28	215	,452
7-8 hours	,33	92	,471
more than 8 hours	,37	43	,489
Total	,20	1147	,404

Table 105. Distribution of participants per hours per week planning to spend in the course

		Hours planning to spend in the course					Total
		3-4 hours	5-6 hours	7-8 hours	less than 3 hours	more than 8 hours	
Completed	No	390	154	62	279	27	912
	Yes	94	61	30	34	16	235
Total		484	215	92	313	43	1147

Appendix 8 - Characteristics of participants' profile that are related to the EDL competences advancement

Table 106. Initial EDL level for participants that competed the course per targeted group

Initial EDL Level per Targeted group

Targeted group		D1a	D2a	D3a	D4a	D5a	D6a
eLearning Professionals (IDs, eTutors)	Mean	2,7375	2,4063	2,4875	2,3000	2,4500	2,3833
	N	40	40	40	40	40	40
	Std. Deviation	1,21417	1,03572	1,12368	1,16051	1,17014	1,19722
Higher Education Students	Mean	2,1771	2,0208	2,2917	2,1667	2,0417	2,1111
	N	48	48	48	48	48	48
	Std. Deviation	,88420	,79029	,89224	,83528	,90409	,81746
School Teachers	Mean	2,1569	2,0564	2,1520	1,9632	1,9020	2,0621
	N	102	102	102	102	102	102
	Std. Deviation	,91191	,86022	,88382	,86916	,93088	,93311
Others	Mean	2,3000	2,1111	2,2000	2,0833	2,0889	2,1259
	N	45	45	45	45	45	45
	Std. Deviation	1,07872	,96318	1,09959	,92319	1,00730	,90255
Total	Mean	2,2872	2,1191	2,2468	2,0851	2,0596	2,1390
	N	235	235	235	235	235	235
	Std. Deviation	1,01245	,90326	,97443	,93094	,99715	,95659

Table 107. Achieved EDL level per targeted group

Achieved EDL Level per Targeted group

Professional Role		D1b	D2b	D3b	D4b	D5b	D6b
eLearning Professionals (IDs, eTutors)	Mean	3,2500	3,1188	3,1875	3,0938	3,1625	3,1083
	N	40	40	40	40	40	40
	Std. Deviation	,80064	,87521	,91769	,92627	,81953	,82479
Higher Education Students	Mean	2,6354	2,5885	2,6875	2,5729	2,5521	2,6389
	N	48	48	48	48	48	48
	Std. Deviation	,86750	,88650	1,03977	,89466	,83945	,89610
School Teachers	Mean	3,0000	2,9559	3,0147	2,9412	2,9706	3,0359
	N	102	102	102	102	102	102

	Std. Deviation	,82654	,86059	,87443	,86185	,93296	,86987
	Mean	2,9889	2,9222	2,9444	2,8778	2,7667	2,9778
Others	N	45	45	45	45	45	45
	Std. Deviation	,85605	,86901	,89964	,93027	,79487	,90565
	Mean	2,9660	2,9021	2,9638	2,8798	2,8787	2,9560
Total	N	235	235	235	235	235	235
	Std. Deviation	,85292	,88131	,93013	,90326	,88866	,88485

Table 108. Mean EDL advancement per EDL dimension per targeted group

Report

Targeted group		D1adv	D2adv	D3adv	D4adv	D5adv	D6adv
eLearning Professionals (IDs, eTutors)	Mean	,5125	,7125	,7000	,7938	,7125	,7250
	N	40	40	40	40	40	40
	Std. Deviation	1,22206	,99284	,93233	,92661	1,00567	1,12188
	Mean	,4583	,5677	,3958	,4063	,5104	,5278
Higher Education Students	N	48	48	48	48	48	48
	Std. Deviation	,89224	,86716	,99978	,84051	,87816	,93230
	Mean	,8431	,8995	,8627	,9779	1,0686	,9739
School Teachers	N	102	102	102	102	102	102
	Std. Deviation	1,04118	,98457	,97787	,93944	1,08098	1,16011
	Mean	,6889	,8111	,7444	,7944	,6778	,8519
Others	N	45	45	45	45	45	45
	Std. Deviation	1,02961	1,02961	1,06399	1,05433	,96622	1,12716
	Mean	,6787	,7830	,7170	,7947	,8191	,8170
Total	N	235	235	235	235	235	235
	Std. Deviation	1,05002	,97442	1,00092	,95945	1,02754	1,11072

Table 109. Compare means of EDL advancement between targeted groups

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	6,199	3	2,066	1,896	,131
D1adv	Within Groups	251,795	231	1,090		
	Total	257,994	234			
	Between Groups	3,844	3	1,281	1,356	,257
D2adv	Within Groups	218,338	231	,945		
	Total	222,182	234			
	Between Groups	7,163	3	2,388	2,427	,066
D3adv	Within Groups	227,269	231	,984		
	Total	234,432	234			
	Between Groups	10,668	3	3,556	4,012	**,008**
D4adv	Within Groups	204,738	231	,886		
	Total	215,406	234			
	Between Groups	12,278	3	4,093	4,027	**,008**
D5adv	Within Groups	234,786	231	1,016		
	Total	247,064	234			

D6adv	Between Groups	6,918	3	2,306	1,891	,132
	Within Groups	281,769	231	1,220		
	Total	288,687	234			
EDLadv	Between Groups	7,208	3	2,403	3,088	**,028**
	Within Groups	179,743	231	,778		
	Total	186,952	234			

Table 110. Significant differences of EDL competence dimensions' advancement between targeted groups

	eLearning Professionals – Higher Education Students		eLearning Professionals – School Teachers		Higher Education Students – School Teachers	
	Difference	Sig.	Difference	Sig.	Difference	Sig.
D1adv	No significant difference between targeted groups					
D2adv	No significant difference between targeted groups					
D3adv	No significant difference between targeted groups					
D4adv	,38750	**,043**	No significant difference between targeted groups		-,57169	**,000**
D5adv	No significant difference between targeted groups				-,.55821	**,002**
D6adv	No significant difference between targeted groups					
EDLadv	No significant difference between targeted groups				-,45992	**,003**

Table 111. Compare Motives, EDL Advancement and Learning Experience between eLearning Professionals and HE students

Independent Samples Test

eLearning professionals – Higher Education Students	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
								Lower / Upper

	Equal variances assumed	,456	,502	,500	86	,619	,06215	,12436	-,18507	,30938
OLX	Equal variances not assumed			,491	75,579	,625	,06215	,12656	-,18994	,31425
	Equal variances assumed	,868	,354	3,669	86	**,000**	,58125	,15844	,26628	,89622
CONF	Equal variances not assumed			3,727	85,991	,000	,58125	,15595	,27123	,89127
	Equal variances assumed	,058	,811	3,587	86	**,001**	,74167	,20677	,33062	1,15271
SAT	Equal variances not assumed			3,588	83,263	,001	,74167	,20671	,33056	1,15278
	Equal variances assumed	,242	,624	2,993	86	**,004**	,58750	,19628	,19731	,97769
INT	Equal variances not assumed			2,988	82,566	,004	,58750	,19663	,19638	,97862
	Equal variances assumed	2,036	,157	1,249	86	,215	,21499	,17207	-,12708	,55706
EDLadv	Equal variances not assumed			1,227	75,376	,224	,21499	,17519	-,13397	,56395
	Equal variances assumed	,253	,616	1,018	86	,312	,13350	,13114	-,12720	,39420
GRIT										

	Equal variances not assumed			1,022	84,300	,310	,13350	,13062	-,12625	,39325
ConfAbility	Equal variances assumed	5,699	,019	4,403	86	,000	,77917	,17695	,42739	1,13094
	Equal variances not assumed			4,517	85,174	**,000**	,77917	,17250	,43620	1,12213
Conf Time	Equal variances assumed	3,537	,063	1,137	86	,259	,20833	,18330	-,15605	,57272
	Equal variances not assumed			1,151	85,810	,253	,20833	,18101	-,15151	,56818
SelfConf	Equal variances assumed	3,822	,054	3,245	86	**,002**	,49375	,15213	,19132	,79618
	Equal variances not assumed			3,333	84,921	,001	,49375	,14812	,19924	,78826
INT mot	Equal variances assumed	5,567	,021	,004	86	,996	,00083	,18886	-,37460	,37627
	Equal variances not assumed			,005	81,759	,996	,00083	,18205	-,36134	,36300
EXT mot	Equal variances assumed	,069	,794	-1,662	86	,100	-,36975	,22249	-,81205	,07255
	Equal variances not assumed			-1,666	83,940	,099	-,36975	,22192	-,81107	,07157

Table 112. Compare Motives, EDL Advancement and Learning Experience between eLearning Professionals and School Teachers

Independent Samples Test

eLearning Professional – School Teachers		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OLX	Equal variances assumed	1,073	,302	-1,802	140	,074	-,22717	,12604	-,47635	,02202
	Equal variances not assumed			-1,862	76,468	,066	-,22717	,12198	-,47009	,01576
CONF	Equal variances assumed	,227	,635	,634	140	,527	,08922	,14080	-,18915	,36758
	Equal variances not assumed			,680	83,328	,498	,08922	,13117	-,17166	,35009
SAT	Equal variances assumed	,304	,582	,493	140	,623	,08358	,16969	-,25190	,41906
	Equal variances not assumed			,475	66,410	,636	,08358	,17595	-,26767	,43483
INT	Equal variances assumed	,048	,827	-,429	140	,668	-,07304	,17018	-,40949	,26341
	Equal variances not assumed			-,425	69,982	,672	-,07304	,17180	-,41569	,26962

EDLadv	Equal variances assumed	,004	,948	-1,429	140	,155	-,24493	,17134	-,58367	,09382
	Equal variances not assumed			-1,460	74,584	,148	-,24493	,16775	-,57913	,08928
GRIT	Equal variances assumed	,066	,798	-1,935	140	,055	-,21496	,11110	-,43460	,00469
	Equal variances not assumed			-1,930	70,959	,058	-,21496	,11140	-,43708	,00717
ConfAbility	Equal variances assumed	2,615	,108	2,426	140	**,017**	,33676	,13879	,06238	,61115
	Equal variances not assumed			2,529	77,929	,013	,33676	,13317	,07164	,60189
ConfTime	Equal variances assumed	,618	,433	-,831	140	,408	-,11520	,13868	-,38938	,15899
	Equal variances not assumed			-,799	66,136	,427	-,11520	,14411	-,40292	,17252
SelfConf	Equal variances assumed	1,190	,277	,928	140	,355	,11078	,11937	-,12522	,34679
	Equal variances not assumed			,973	78,983	,333	,11078	,11385	-,11583	,33740
INTmot	Equal variances assumed	,450	,504	-,421	140	,674	-,05725	,13598	-,32610	,21159

EXT mot	Equal variances not assumed			-,442	79,169	,660	-,05725	,12956	-,31512	,20061
	Equal variances assumed	,066	,797	1,051	140	,295	,20307	,19316	-,17881	,58495
	Equal variances not assumed			1,059	72,414	,293	,20307	,19178	-,17920	,58533

Table 113. Compare Motives, EDL Advancement and Learning Experience between HE students and School Teachers

Independent Samples Test

Higher Education Students - School Teachers		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OLX	Equal variances assumed	3,981	,048	-2,574	148	,011	-,28932	,11239	-,51141	-,06722
	Equal variances not assumed			-2,831	117,551	**,005**	-,28932	,10221	-,49174	-,08690
CONF	Equal variances assumed	,259	,611	-3,564	148	**,000**	-,49203	,13804	-,76481	-,21926
	Equal variances not assumed			-3,549	91,171	,001	-,49203	,13863	-,76740	-,21667

	Equal variances assumed	,812	,369	-4,115	148	**,000**	-,65809	,15993	-,97413	-,34205
SAT	Equal variances not assumed			-3,989	85,388	,000	-,65809	,16498	-,98609	-,33008
	Equal variances assumed	,138	,711	-4,159	148	**,000**	-,66054	,15881	-,97437	-,34671
INT	Equal variances not assumed			-4,156	91,954	,000	-,66054	,15894	-,97621	-,34486
	Equal variances assumed	1,931	,167	-3,016	148	**,003**	-,45992	,15249	-,76125	-,15858
EDLadv	Equal variances not assumed			-3,292	115,337	,001	-,45992	,13973	-,73668	-,18316
	Equal variances assumed	,133	,716	-3,295	148	**,001**	-,34846	,10574	-,55741	-,13950
GRIT	Equal variances not assumed			-3,238	88,204	,002	-,34846	,10763	-,56234	-,13457
	Equal variances assumed	2,426	,121	-3,095	148	**,002**	-,44240	,14293	-,72485	-,15996
Conf Ability	Equal variances not assumed			-2,891	78,318	,005	-,44240	,15304	-,74705	-,13775
	Equal variances assumed	9,819	,002	-2,349	148	,020	-,32353	,13775	-,59573	-,05133
Conf Time										

SelfConf	Equal variances not assumed	2,035	,156	-2,167	76,247	**,033**	-,32353	,14928	-,62082	-,02624
	Equal variances assumed			-3,104	148	**,002**	-,38297	,12339	-,62680	-,13914
	Equal variances not assumed			-2,898	78,260	,005	-,38297	,13216	-,64606	-,11988
INT mot	Equal variances assumed	5,577	,020	-,392	148	,696	-,05809	,14823	-,35100	,23483
	Equal variances not assumed			-,351	71,567	,727	-,05809	,16548	-,38800	,27182
EXT mot	Equal variances assumed	,351	,555	3,135	148	**,002**	,57282	,18273	,21172	,93392
	Equal variances not assumed			3,121	91,168	,002	,57282	,18352	,20829	,93734

Appendix 9 – Learning Experience

Learning Experience per module

Table 114. Distribution of posts in L2A MOOC

Posts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	,00	88	37,4	37,4	37,4
	1,00	25	10,6	10,6	48,1
	2,00	15	6,4	6,4	54,5
	3,00	17	7,2	7,2	61,7
	4,00	2	,9	,9	62,6
	5,00	4	1,7	1,7	64,3
	6,00	37	15,7	15,7	80,0
	7,00	6	2,6	2,6	82,6
	8,00	2	,9	,9	83,4
	9,00	6	2,6	2,6	86,0
	10,00	4	1,7	1,7	87,7
	11,00	6	2,6	2,6	90,2
	12,00	10	4,3	4,3	94,5
	13,00	6	2,6	2,6	97,0
	14,00	2	,9	,9	97,9
	16,00	1	,4	,4	98,3
	18,00	4	1,7	1,7	100,0
	Total	235	100,0	100,0	

Overall Learning Experience per Professional Role

Table 115. Learning Experience per targeted group

Report

ProfRole		LX	CONF	SAT	INT
eLearning Professionals (IDs, eTutors)	Mean	3,8080	3,9130	3,7935	4,0978
	N	46	46	46	46
	Std. Deviation	,64067	,83203	,96365	,91055
Higher Education Students	Mean	3,7049	3,9167	3,5417	3,5625
	N	24	24	24	24
	Std. Deviation	,59129	,74697	,94313	1,16388
School Teachers	Mean	3,7386	3,8068	3,6098	3,8788
	N	132	132	132	132
	Std. Deviation	,64061	,78060	,96368	,92695
Others	Mean	4,0859	4,1970	4,1515	4,3333
	N	33	33	33	33
	Std. Deviation	,70326	,68396	,93946	,86301
Total	Mean	3,7975	3,8936	3,7149	3,9532
	N	235	235	235	235
	Std. Deviation	,65212	,78130	,97160	,95851

Table 116. Mean differences of learning experience among groups

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
OLX	Between Groups	3,412	3	1,137	2,734	**,044**
	Within Groups	96,099	231	,416		
	Total	99,511	234			
CONF	Between Groups	4,061	3	1,354	2,253	,083
	Within Groups	138,779	231	,601		
	Total	142,840	234			
SAT	Between Groups	8,752	3	2,917	3,177	**,025**
	Within Groups	212,146	231	,918		
	Total	220,898	234			
INT	Between Groups	10,125	3	3,375	3,806	**,011**
	Within Groups	204,860	231	,887		
	Total	214,985	234			

Table 117. Relationship between EDL competence advancement and Confirmation of Expectations

EDLadv

CONF	Mean	N	Std. Deviation
1,00	-,6806	1	.
1,50	-,4583	2	1,29636
2,00	,2611	5	,91700
2,50	,3167	10	,75489
3,00	,3419	26	,80101
3,50	,8677	40	,82754
4,00	,8050	80	,79953
4,50	,9146	34	,99331
5,00	1,0424	37	,96889
Total	,7683	235	,89383

Table 118. Relationship between EDL competence advancement and Learning Experience

EDLadv

LX	Mean	N	Std. Deviation
1,67	,0000	1	.
1,92	,0000	1	.
2,17	,0000	1	.
2,42	-1,0000	1	.
2,58	,7083	3	,21651
2,67	,5833	4	,58608
2,75	-,1875	2	,34373
2,83	,2972	5	,28626
2,92	,4688	8	,83369

3,00	,1616	11	,61996
3,08	,5532	6	,73689
3,17	,9722	5	,51604
3,25	1,2222	6	,91219
3,33	,4645	9	,77190
3,42	,6458	8	,89578
3,50	1,0324	6	1,24520
3,58	,7837	7	,70642
3,67	,8512	14	,60854
3,75	,4681	10	1,43896
3,83	,5817	17	,81161
3,92	1,0846	11	,85611
4,00	1,0353	13	1,28575
4,08	,8182	11	,82646
4,17	,8598	11	,77962
4,25	,6312	9	1,04995
4,33	1,0952	14	,71909
4,42	,7269	6	,66746
4,50	1,2556	5	1,52906
4,58	1,0556	3	,70874
4,67	,8611	5	,56254
4,75	,8715	4	,37805
4,83	1,1349	7	,79470
4,92	1,3333	1	.
5,00	1,1681	10	1,26034
Total	,7683	235	,89383

Table 119. Relationship between EDL competence advancement and satisfaction

EDLadv

SAT	Mean	N	Std. Deviation
1,00	,1910	8	,55450
1,50	,8222	5	,62626
2,00	-,0079	7	1,15497
2,50	,6458	10	,76217
3,00	,4066	36	,82122
3,50	,6923	33	,86294
4,00	,9892	67	,88470
4,50	,9483	36	,75828
5,00	,9272	33	1,02417
Total	,7683	235	,89383

Table 120. Relationship between EDL competence advancement and Continuance Intention

EDLadv

INT	Mean	N	Std. Deviation
1,00	-,1458	6	,80731
2,00	,6052	7	,98470
2,50	,4444	11	,70555

3,00	,4642	31	,89119
3,50	,7168	23	,75773
4,00	,7894	61	,87967
4,50	,8060	32	,82006
5,00	1,0543	64	,93073
Total	,7683	235	,89383

Table 121. Relationship between EDL competence advancement and Confidence in the ability to learn the material

EDLadv

CONF1	Mean	N	Std. Deviation
1,00	,2569	2	,20624
2,00	,7153	22	,81937
3,00	,8550	75	,81393
4,00	,7661	109	,88842
5,00	,6173	27	1,18934
Total	,7683	235	,89383

Table 122. Relationship between EDL competence advancement and Confidence in the ability complete the course on time

EDLadv

CONF2	Mean	N	Std. Deviation
2,00	,6486	10	,95017
3,00	,9052	69	,80704
4,00	,6083	105	,83815
5,00	,9357	51	1,05759
Total	,7683	235	,89383

Table 123. Relationship between EDL competence advancement and Internal Motives

EDLadv

INTmot	Mean	N	Std. Deviation
,20	1,0833	1	.
1,00	,8333	1	.
1,20	,7292	2	,12767
1,40	,5417	1	.
1,60	1,0833	2	,00000
1,80	1,2847	2	,02946
2,00	,3715	4	,93151
2,20	,3849	7	,80889
2,40	,7315	6	,58884
2,60	,8750	9	,49413
2,80	,5602	6	,97826
3,00	,8391	17	,77065
3,20	,6798	19	,68075

3,40	,7839	25	,95000
3,60	,7179	26	1,01887
3,80	,6762	35	,96466
4,00	,9576	20	,77846
4,20	,8803	13	,90625
4,40	,4347	10	,54280
4,60	,9603	14	1,43163
4,80	,8958	6	,91163
5,00	1,0231	9	1,28957
Total	,7683	235	,89383

Table 124. Relationship between EDL competence advancement and External Motives

EDLadv

EXTmot	Mean	N	Std. Deviation
,00	,8333	1	.
,33	1,0833	1	.
,67	,4167	2	,56961
1,00	,9635	8	,54210
1,33	,8182	11	,74116
1,67	,5236	20	,97795
2,00	,8704	21	,87418
2,33	,9549	28	,93998
2,67	,6636	18	,98869
3,00	,7669	32	,79414
3,33	,6165	23	,74132
3,67	,9323	32	1,07476
4,00	,7530	14	,67626
4,33	1,2024	7	1,30897
4,67	,3935	6	,69581
5,00	,3434	11	1,01195
Total	,7683	235	,89383

Tests of Normality – Pre-course Survey

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Completed	,489	1147	,000	,495	1147	,000
Age	,055	1147	,000	,982	1147	,000
Gender	,349	1147	,000	,700	1147	,000
EducLevel	,330	1147	,000	,742	1147	,000
JobSector	,410	1147	,000	,632	1147	,000
ProfRole	,254	1147	,000	,829	1147	,000
YoEinPR	,274	1147	,000	,809	1147	,000
YoEinDTL	,325	1147	,000	,762	1147	,000
EnglProf	,233	1147	,000	,836	1147	,000
ComfTech	,290	1147	,000	,778	1147	,000
M2.1	,325	1147	,000	,728	1147	,000
M2.2	,372	1147	,000	,619	1147	,000
M2.3	,139	1147	,000	,910	1147	,000
M2.4	,163	1147	,000	,894	1147	,000
M2.5	,199	1147	,000	,850	1147	,000
M2.6	,161	1147	,000	,891	1147	,000
M2.7	,348	1147	,000	,780	1147	,000
M2.8	,146	1147	,000	,916	1147	,000
INT	,081	1147	,000	,973	1147	,000
EXT	,075	1147	,000	,983	1147	,000
MOT	,050	1147	,000	,990	1147	,000
ConfAbility	,270	1147	,000	,865	1147	,000
ConfTime	,233	1147	,000	,877	1147	,000
CONF	,163	1147	,000	,948	1147	,000
G6.1	,198	1147	,000	,911	1147	,000
G6.2	,229	1147	,000	,896	1147	,000
G6.3	,250	1147	,000	,887	1147	,000
G6.4	,239	1147	,000	,811	1147	,000
G6.5	,271	1147	,000	,876	1147	,000
G6.6	,271	1147	,000	,869	1147	,000
G6.7	,243	1147	,000	,870	1147	,000
G6.8	,221	1147	,000	,856	1147	,000
GRIT	,059	1147	,000	,989	1147	,000
D1S1a	,182	1147	,000	,904	1147	,000
D1S2a	,193	1147	,000	,882	1147	,000
D2S1a	,193	1147	,000	,877	1147	,000
D2S2a	,206	1147	,000	,862	1147	,000
D2S3a	,221	1147	,000	,849	1147	,000
D2S4a	,192	1147	,000	,889	1147	,000
D3S1a	,209	1147	,000	,859	1147	,000
D3S2a	,191	1147	,000	,897	1147	,000
D4S1a	,221	1147	,000	,858	1147	,000
D4S2a	,209	1147	,000	,871	1147	,000
D4S3a	,205	1147	,000	,864	1147	,000
D4S4a	,215	1147	,000	,849	1147	,000
D5S1a	,201	1147	,000	,866	1147	,000
D5S2a	,218	1147	,000	,848	1147	,000
D6S1a	,210	1147	,000	,879	1147	,000
D6S2a	,201	1147	,000	,890	1147	,000

D6S3a	,208	1147	,000	,857	1147	,000
D1a	,144	1147	,000	,938	1147	,000
D2a	,130	1147	,000	,935	1147	,000
D3a	,167	1147	,000	,928	1147	,000
D4a	,143	1147	,000	,918	1147	,000
D5a	,179	1147	,000	,886	1147	,000
D6a	,152	1147	,000	,926	1147	,000
InitEDL	,080	1147	,000	,959	1147	,000

a. Lilliefors Significance Correction

Tests of Normality – Overall Learning Experience

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
OLX1	,274	235	,000	,773	235	,000
OLX2	,256	235	,000	,799	235	,000
OLX3	,246	235	,000	,805	235	,000
OLX4	,234	235	,000	,818	235	,000
OLX5	,316	235	,000	,759	235	,000
OLX6	,233	235	,000	,874	235	,000
OLX7	,240	235	,000	,883	235	,000
OLX8	,220	235	,000	,897	235	,000
OLX9	,229	235	,000	,868	235	,000
OLX10	,264	235	,000	,875	235	,000
OLX11	,192	235	,000	,912	235	,000
OLX12	,215	235	,000	,882	235	,000
OLX13	,276	235	,000	,839	235	,000
OLX14	,251	235	,000	,868	235	,000
OLX15	,267	235	,000	,858	235	,000
OLX16	,273	235	,000	,858	235	,000
OLX17	,234	235	,000	,814	235	,000
OLX18	,253	235	,000	,846	235	,000

a. Lilliefors Significance Correction

Reasons for Enrolment

Reliability Statistics

Cronbach's Alpha	N of Items
,641	8

Correlations – Reasons for Enrolment

		M2.1	M2.2	M2.3	M2.4	M2.5	M2.6	M2.7	M2.8
M2.1	Pearson Correlation	1	,505**	,264**	,316**	,216**	,128**	-,016	,076**
	Sig. (2-tailed)		,000	,000	,000	,000	,000	,581	,010
	N	1147	1147	1147	1147	1147	1147	1147	1147
M2.2	Pearson Correlation	,505**	1	,192**	,238**	,219**	,090**	-,038	,104**
	Sig. (2-tailed)	,000		,000	,000	,000	,002	,200	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147
M2.3	Pearson Correlation	,264**	,192**	1	,577**	,195**	,195**	,208**	-,003
	Sig. (2-tailed)	,000	,000		,000	,000	,000	,000	,929
	N	1147	1147	1147	1147	1147	1147	1147	1147
M2.4	Pearson Correlation	,316**	,238**	,577**	1	,242**	,225**	,202**	,033
	Sig. (2-tailed)	,000	,000	,000		,000	,000	,000	,257
	N	1147	1147	1147	1147	1147	1147	1147	1147
M2.5	Pearson Correlation	,216**	,219**	,195**	,242**	1	,496**	,214**	,001
	Sig. (2-tailed)	,000	,000	,000	,000		,000	,000	,983
	N	1147	1147	1147	1147	1147	1147	1147	1147
M2.6	Pearson Correlation	,128**	,090**	,195**	,225**	,496**	1	,325**	-,030
	Sig. (2-tailed)	,000	,002	,000	,000	,000		,000	,316
	N	1147	1147	1147	1147	1147	1147	1147	1147
M2.7	Pearson Correlation	-,016	-,038	,208**	,202**	,214**	,325**	1	,060*
	Sig. (2-tailed)	,581	,200	,000	,000	,000	,000		,041
	N	1147	1147	1147	1147	1147	1147	1147	1147
M2.8	Pearson Correlation	,076**	,104**	-,003	,033	,001	-,030	,060*	1
	Sig. (2-tailed)	,010	,000	,929	,257	,983	,316	,041	
	N	1147	1147	1147	1147	1147	1147	1147	1147

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

EDL competence statements

Reliability Statistics

Cronbach's Alpha	N of Items
,975	17

Correlations – EDL competence statements

		D1S 1a	D1S 2a	D2S 1a	D2S 2a	D2S 3a	D2S 4a	D3S 1a	D3S 2a	D4S 1a	D4S 2a	D4S 3a	D4S 4a	D5S 1a	D5S 2a	D6S 1a	D6S 2a	D6S 3a
D1S 1a	Pearson Correlation	1	,812**	,754**	,690**	,692**	,655**	,646**	,661**	,672**	,622**	,632**	,644**	,632**	,636**	,626**	,617**	,606**
	Sig. (2-tailed)		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
D1S 2a	Pearson Correlation	,812**	1	,789**	,718**	,745**	,643**	,736**	,663**	,742**	,704**	,720**	,703**	,649**	,661**	,635**	,591**	,610**

	Sig. (2-tailed)	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,754**	,789**	1	,814**	,803**	,731**	,728**	,701**	,729**	,671**	,700**	,677**	,631**	,640**	,608**	,603**	,626**
D2S1a	Sig. (2-tailed)	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,690**	,718**	,814**	1	,810**	,681**	,739**	,632**	,710**	,644**	,669**	,679**	,642**	,665**	,619**	,584**	,645**
D2S2a	Sig. (2-tailed)	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,692**	,745**	,803**	,810**	1	,737**	,714**	,652**	,726**	,665**	,708**	,723**	,693**	,719**	,632**	,606**	,660**
D2S3a	Sig. (2-tailed)	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,655**	,643**	,731**	,681**	,737**	1	,621**	,684**	,630**	,579**	,596**	,610**	,595**	,585**	,577**	,589**	,641**
D2S4a	Sig. (2-tailed)	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,646**	,736**	,728**	,739**	,714**	,621**	1	,726**	,815**	,784**	,788**	,740**	,664**	,689**	,609**	,554**	,600**
D3S1a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,661**	,663**	,701**	,632**	,652**	,684**	,726**	1	,733**	,696**	,715**	,692**	,661**	,651**	,582**	,585**	,578**
D3S2a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,672**	,742**	,729**	,710**	,726**	,630**	,815**	,733**	1	,844**	,847**	,806**	,708**	,726**	,641**	,602**	,637**
D4S1a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,622**	,704**	,671**	,644**	,665**	,579**	,784**	,696**	,844**	1	,865**	,783**	,668**	,673**	,598**	,548**	,581**
D4S2a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,632**	,720**	,700**	,669**	,708**	,596**	,788**	,715**	,847**	,865**	1	,857**	,740**	,751**	,637**	,606**	,630**
D4S3a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147

	Pearson Correlation	,644**	,703**	,677**	,679**	,723**	,610**	,740**	,692**	,806**	,783**	,857**	1	,801**	,801**	,669**	,620**	,658**
D4S4a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,632**	,649**	,631**	,642**	,693**	,595**	,664**	,661**	,708**	,668**	,740**	,801**	1	,906**	,670**	,648**	,662**
D5S1a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,636**	,661**	,640**	,665**	,719**	,585**	,689**	,651**	,726**	,673**	,751**	,801**	,906**	1	,689**	,644**	,680**
D5S2a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,626**	,635**	,608**	,619**	,632**	,577**	,609**	,582**	,641**	,598**	,637**	,669**	,670**	,689**	1	,825**	,779**
D6S1a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,617**	,591**	,603**	,584**	,606**	,589**	,554**	,585**	,602**	,548**	,606**	,620**	,648**	,644**	,825**	1	,809**
D6S2a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,606**	,610**	,626**	,645**	,660**	,641**	,600**	,578**	,637**	,581**	,630**	,658**	,662**	,680**	,779**	,809**	1
D6S3a	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	
	N	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147	1147

**. Correlation is significant at the 0.01 level (2-tailed).

GRIT

Reliability Statistics

Cronbach's Alpha	N of Items
,765	8

Correlations - GRIT

		G6.1	G6.2	G6.3	G6.4	G6.5	G6.6	G6.7	G6.8
	Pearson Correlation	1	,006	,467**	,056	,421**	,399**	,168**	,140**
G6.1	Sig. (2-tailed)		,847	,000	,058	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,006	1	,040	,325**	,074*	,143**	,202**	,240**
G6.2	Sig. (2-tailed)	,847		,173	,000	,012	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147

	Pearson Correlation	,467**	,040	1	,182**	,571**	,478**	,294**	,207**
G6.3	Sig. (2-tailed)	,000	,173		,000	,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,056	,325**	,182**	1	,192**	,249**	,459**	,579**
G6.4	Sig. (2-tailed)	,058	,000	,000		,000	,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,421**	,074*	,571**	,192**	1	,584**	,308**	,215**
G6.5	Sig. (2-tailed)	,000	,012	,000	,000		,000	,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,399**	,143**	,478**	,249**	,584**	1	,317**	,254**
G6.6	Sig. (2-tailed)	,000	,000	,000	,000	,000		,000	,000
	N	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,168**	,202**	,294**	,459**	,308**	,317**	1	,607**
G6.7	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000		,000
	N	1147	1147	1147	1147	1147	1147	1147	1147
	Pearson Correlation	,140**	,240**	,207**	,579**	,215**	,254**	,607**	1
G6.8	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	
	N	1147	1147	1147	1147	1147	1147	1147	1147

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Overall Learning Experience

Reliability Statistics

Cronbach's Alpha	N of Items
,919	18

Correlations – Overall Learning Experience

		LX1	LX2	LX3	LX4	LX5	LX6	LX7	LX8	LX9	LX10	LX11	LX12	LX13	LX14	LX15	LX16	LX17	LX18
LX1	Pearson Correlation	1	,642**	,455**	,631**	,394**	,330**	,206**	,235**	,322**	,079	,090	,173**	,239**	,335**	,259**	,366**	,219**	,344**
	Sig. (2-tailed)		,000	,000	,000	,000	,000	,001	,000	,000	,230	,167	,008	,000	,000	,000	,000	,001	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX2	Pearson Correlation	,642**	1	,538**	,548**	,340**	,428**	,241**	,229**	,270**	,258**	,178**	,322**	,241**	,292**	,317**	,376**	,203**	,434**
	Sig. (2-tailed)	,000		,000	,000	,000	,000	,000	,000	,000	,000	,006	,000	,000	,000	,000	,000	,002	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX3	Pearson Correlation	,455**	,538**	1	,653**	,478**	,465**	,376**	,375**	,486**	,306**	,241**	,353**	,307**	,376**	,286**	,453**	,300**	,476**
	Sig. (2-tailed)	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX4	Pearson Correlation	,631**	,548**	,653**	1	,481**	,538**	,415**	,366**	,402**	,207**	,172**	,266**	,308**	,316**	,177**	,398**	,238**	,376**
	Sig. (2-tailed)	,000	,000	,000		,000	,000	,000	,000	,000	,001	,008	,000	,000	,000	,006	,000	,000	,000

	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX5	Pearson Correlation	,394**	,340**	,478**	,481**	1	,530**	,411**	,349**	,389**	,174**	,101	,250**	,411**	,313**	,372**	,392**	,309**	,336**
	Sig. (2-tailed)	,000	,000	,000	,000		,000	,000	,000	,000	,007	,122	,000	,000	,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX6	Pearson Correlation	,330**	,428**	,465**	,538**	,530**	1	,668**	,539**	,487**	,324**	,170**	,357**	,472**	,503**	,393**	,540**	,342**	,479**
	Sig. (2-tailed)	,000	,000	,000	,000	,000		,000	,000	,000	,000	,009	,000	,000	,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX7	Pearson Correlation	,206**	,241**	,376**	,415**	,411**	,668**	1	,630**	,519**	,354**	,271**	,346**	,394**	,429**	,330**	,493**	,326**	,424**
	Sig. (2-tailed)	,001	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX8	Pearson Correlation	,235**	,229**	,375**	,366**	,349**	,539**	,630**	1	,609**	,374**	,348**	,374**	,461**	,442**	,413**	,456**	,295**	,432**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX9	Pearson Correlation	,322**	,270**	,486**	,402**	,389**	,487**	,519**	,609**	1	,385**	,314**	,421**	,506**	,466**	,440**	,518**	,398**	,493**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX10	Pearson Correlation	,079	,258**	,306**	,207**	,174**	,324**	,354**	,374**	,385**	1	,635**	,541**	,318**	,295**	,279**	,259**	,189**	,351**
	Sig. (2-tailed)	,230	,000	,000	,001	,007	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000	,004	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX11	Pearson Correlation	,090	,178**	,241**	,172**	,101	,170**	,271**	,348**	,314**	,635**	1	,517**	,244**	,238**	,138*	,235**	,168**	,295**
	Sig. (2-tailed)	,167	,006	,000	,008	,122	,009	,000	,000	,000	,000		,000	,000	,000	,035	,000	,010	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX12	Pearson Correlation	,173**	,322**	,353**	,266**	,250**	,357**	,346**	,374**	,421**	,541**	,517**	1	,363**	,416**	,323**	,388**	,276**	,460**
	Sig. (2-tailed)	,008	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX13	Pearson Correlation	,239**	,241**	,307**	,308**	,411**	,472**	,394**	,461**	,506**	,318**	,244**	,363**	1	,616**	,482**	,557**	,475**	,581**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX14	Pearson Correlation	,335**	,292**	,376**	,316**	,313**	,503**	,429**	,442**	,466**	,295**	,238**	,416**	,616**	1	,560**	,713**	,586**	,579**

	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX15	Pearson Correlation	,259**	,317**	,286**	,177**	,372**	,393**	,330**	,413**	,440**	,279**	,138*	,323**	,482**	,560**	1	,620**	,533**	,527**
	Sig. (2-tailed)	,000	,000	,000	,006	,000	,000	,000	,000	,000	,000	,035	,000	,000	,000		,000	,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX16	Pearson Correlation	,366**	,376**	,453**	,398**	,392**	,540**	,493**	,456**	,518**	,259**	,235**	,388**	,557**	,713**	,620**	1	,698**	,726**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000		,000	,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
LX17	Pearson Correlation	,219**	,203**	,300**	,238**	,309**	,342**	,326**	,295**	,398**	,189**	,168**	,276**	,475**	,586**	,533**	,698**	1	,657**
	Sig. (2-tailed)	,001	,002	,000	,000	,000	,000	,000	,000	,000	,004	,010	,000	,000	,000	,000	,000		,000
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235
OLX18	Pearson Correlation	,344**	,434**	,476**	,376**	,336**	,479**	,424**	,432**	,493**	,351**	,295**	,460**	,581**	,579**	,527**	,726**	,657**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	
	N	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235	235

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

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