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(Strategic Partnerships for
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DELTA: Digital Excavation through
Learning and Training in Archaeology

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<http://www.project-delta.eu/>



INTELLECTUAL OUTPUT II

EVALUATION REPORT

**National and Kapodistrian University of
Athens**



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Abstract:	Evaluation of the course and deliverables. During and after completion of course in DELTA project, evaluation procedures were designed and implemented. The aim of this activity was twofold: a). to assess the knowledge and the skills of trainees and b). to evaluate the quality of content of the project. The evaluation report summarizes the results derived by the feedback we received after the DELTA blended and online courses as well as the participants in ISP. was based on online forms for the blended. The forms were designed by all partners, while the process of data was made by NKUA.
Authors:	Yiannis Papadatos, Antigoni Kalara, NKUA



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1. Abstract

The blended course of “Digital Excavation” was first implemented in 2021, combining various educational tools and methods:

- a) An *online course* (MOOC) on “Digital Excavation”, implemented through the DELTA online platform,
- b) *Face-to-face activities*, combining theory and practice, which was organized by the partners in their countries, but, due to the pandemic restrictions, had to be implemented online,
- c) An *Intensive Study Program* (ISP) for training in the excavation field and the laboratory, which took place at the excavation of the National and Kapodistrian University of Athens, at Marathon.

2. Introduction

The DELTA course was addressed to a wide audience, with emphasis on undergraduate and postgraduate students of Archaeology, Museology, and Cultural Heritage Management. Moreover, it targeted graduates and professionals of the relevant fields who wished to advance their knowledge and be familiarized with digital tools and techniques used in archaeological practice in the 21st century. No previous knowledge was required for the successful fulfillment of the learning material; the only prerequisite for the attendance of the online course was the enrollment in the platform.

This evaluation report refers to (1) the online part of the DELTA course (MOOC), which was implemented in two phases: in the spring semester of 2021 (Pilot phase) and the spring semester of 2022, and (2) the Intensive Study Program (ISP), which took place in October 2021.



3. Evaluation of DELTA pilot blended course (spring 2021)

The pilot phase of the blended course of “Digital Excavation” was delivered from 10 May until 29 August 2021. A total of **151** students enrolled in the platform: 74 from Italy, 45 from Greece, 18 from the Czech Republic, 11 from Slovakia, and 3 students from other countries. On the basis of their academic affiliation, the enrolled students are distributed as following: 74 from the University of Basilicata, 44 from the National and Kapodistrian University of Athens, 29 from the Masaryk University, and 4 students from other universities.

Since the course was in a pilot phase, it was our conscious decision to confine the course to students of the collaborating countries and universities, in order to be able to evaluate and control better the results and the outcomes. The students enrolled in the platform in 2021 belonged to all educational levels. As expected, most of them were students. More specifically:

- **30%** Undergraduate students
- **25%** MA/MSc holders
- **24%** Postgraduate students
- **7%** Graduates
- **5%** PhD candidates of Archaeology
- **5%** PhD holders, and
- **3%** Students of Italian Specialization Schools

The vast majority of the participants were Undergraduate students and MA/MSc students/holders (79% of the total), who were the main target group of the DELTA course in the first place. On the contrary, graduates, including professionals in Archaeology, PhD candidates, PhD holders, and students at Italian Specialization Schools were underrepresented,

because they were not targeted for this first, pilot phase of the DELTA online course.

The **attendance/study** and the **assessment** of the learners in the course were carried out through the DELTA platform. The learning material hosted in the platform was designed by the four universities-partners of the consortium, aiming at covering a wide range of subjects related to the *detection, excavation, recovery, study, analysis, visualization, interpretation, presentation, and dissemination* of the archaeological material. More specifically, the **educational material** consisted of:

- a. A Student's Handbook in digital form, focusing on four different subjects, each comprising several Units and Learning Objects.
- b. A large number of Power Point presentations with voice narration which followed the content and the structure of the Student's Handbook. Each ppt presentation was devoted to an individual Learning Object.

The **assessment** of the learners in the educational material consisted of 20 multiple choice questions at the end of each Unit. In the online course of 2021, the minimum score required for the successful completion of the course was 80% in all four Modules (i.e. 136/170).

Regarding the **successful completion** of the online course, 54 of the 151 enrolled students (36%) completed the course. The percentages of the successful learners per educational level are the following:

- **58%** of the total number of Undergraduate students
- **36%** of the total number of Postgraduate students
- **33%** of the total number of Graduates

- **25%** of the total number of PhD holders
- **24%** of the total number of MA/MSc holders, and
- **20%** of the total number of Students of Italian Specialization Schools

The above show that undergraduate students were more consistent than other categories of learners, who, in many cases did not follow the course after their registration in the platform. The devotion of most undergraduate students is, to a large degree related to the fact that the online course was incorporated in the curriculum of the three participating universities (NKUA, MUNI, UNIBAS) as an optional taught course, providing a certain amount of ECTS, and its successful completion was a prerequisite for the fulfillment of the taught course.

The average score of the successful learners in the online course was **156.7/170**. Overall, the learners succeeded better scores in Module 4 (48.4/50), while in the three modules the scores were lower and comparable to each other (Module 1: 36.6/40; Module 2: 35/40; Module 3: 37.1/40). Within each Module the average score of each unit was comparable:

Module 1	Module 2	Module 3	Module 4
M1.1: 9.1/10	M2.1: 9/10	M3.1: 8.7/10	M4.1: 9.5/10
M1.2: 9/10	M2.2: 8.6/10	M3.2: 9.6/10	M4.2: 9.8/10
M1.3: 9.3/10	M2.3: 8.8/10	M3.3: 9.3/10	M4.3: 9.8/10
M1.4: 9.2/10	M2.4: 8.6/10	M3.4: 9.6/10	M4.4: 9.9/10
			M4.5: 9.9/10



The lowest average score in the entire course, in Unit 4 of Module 2 (8.6/10), is probably related to the highly technical character of the specific unit.

4. Evaluation of DELTA pilot online course (spring 2022)

The experience and the results of the pilot course proved extremely important for the organization of the second online DELTA course, which was redelivered one year later, in the spring of 2022. The course became available from the 1st of March and remained open for attendance and completion until the 6th of June 2022. The DELTA 2022 course targeted a wider audience, providing the opportunity to a greater number of both students and graduates/professionals to improve their digital skills. Indeed, a total of **580** students, that is four times more than the pilot course, were registered in the platform. As expected, most of the participants (424) were from the three participating countries (357 from Greece, 36 from Italy, 31 from the Czech Republic), but there was also a large percentage (156, i.e., 27% of the total) from other countries, including countries from outside Europe, such as Egypt, Peru, India and Vietnam.

In contrast to the DELTA 2021 course, which targeted mostly students from the participating universities, DELTA 2022 succeeded to attract more learners (317, i.e., 61%) from other universities and institutions. Consequently, the percentage of the learners from the four participating universities was much lower (39%). More particularly, those learners are: 174 students from the National and Kapodistrian University of Athens, 34 students from the Hellenic Open



University, 10 students from the University of Basilicata, and 7 students from the Masaryk University.

The learners enrolled in the platform represent **all educational levels**, which are distributed as following:

- **34%** Undergraduate students
- **18%** Postgraduate students
- **15%** MA/MSc holders
- **9%** Graduates
- **8%** PhD holders
- **8%** PhD candidates of Archaeology, and
- **2%** Students of Italian Specialization Schools

5. Comparison analysis of the DELTA pilot courses (2021, 2022)

The comparison between the DELTA 2021 and DELTA 2022 course shows similar percentages, although there is a small decrease in the percentage of postgraduate students and MA holders.

DELTA 2021: 151 applications	DELTA 2022: 580 applications
30% Undergraduate students	34% Undergraduate students
24% Postgraduate students	18% Postgraduate students
25% MA/MSc holders	15% MA/MSc holders
7% Graduates	9% Graduates
5% PhD candidates of Archaeology	8% PhD holders
5% PhD holders	8% PhD candidates of Archaeology, and



3% Students of Specialization Schools (IT)	2% Students of Specialization Schools (IT)
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Regarding the **successful completion** of the online course, out of a total of 580 enrolled learners, 115 have completed the course, which amounts to 20% the learners. This percentage is lower than the percentage of DELTA 2021 course (36%).

The percentages of the learners who succeed in the DELTA 2022 course per educational level are distributed as following:

- **40%** of the total number of Students of Italian Specialization Schools
- **25%** of the total number of Undergraduate students
- **20%** of the total number of PhD candidates of Archaeology
- **16%** of the total number of Postgraduate students
- **16%** of the total number of MA/MSc holders
- **15%** of the total number of Graduates, and
- **14%** of the total number of PhD holders

In comparison to the DELTA 2021 course, the results of the DELTA 2022 course show some interesting deviations. More specifically, undergraduate students still hold a high percentage in the successful completion of the course (25%), however, this is significantly lower in comparison to the results of the first MOOC, where over half of the enrolled undergraduate students succeeded in the course. Apart from undergraduate students, a significant percentage is represented by Students of Italian Specialization Schools and PhD candidates of Archaeology, in sharp contrast to the pilot phase of the course.



The active involvement of Students of Italian Specialization Schools and PhD students in the DELTA 2022 course indicates that the successful completion of the course of “*Digital Excavation*” is not exclusively related to the attendance and completion of a mandatory course that provides ECTS. On the other hand, the percentage of postgraduate students who succeeded in the course of 2022 is significantly decreased in comparison to the pilot course. Generally speaking, with the exception of PhD candidates, the number of the participants who fulfilled DELTA 2022 course is proportionally lower.

The average score of the successful learners in the DELTA 2022 course was **155.3/170** in all four Modules’ this score is almost identical to the DELTA 2021 course (156.7/170). Equally comparable are the scores in each Module and Unit, between the DELTA 2021 and 2022 courses. More specifically, the average score in Module 1 was **36.3/40**; in Module 2: **34.5/40**; in Module 3: **37.1/40**; and lastly, in Module 4: **48.4/50**, which is the module with the highest average score in both MOOCs. Finally, as in the case of the DELTA 2021 course, the lowest average score in the entire course was in Unit 4 of Module 2 (8.4/10).



6. Final remarks

The comparison of the results between DELTA 2021 and 2022 courses indicates some significant differences regarding: the **number**, the **country** and the **University/Institution** of the enrolled students, the **percentage of the successful learners**, as well as the **percentage achieved per educational level**. In general, the DELTA 2022 course attracted a larger number of learners from many different countries, as well as from other institutions. Concerning the educational level of the enrolled learners, the percentage of the undergraduate students in DELTA 2022 was slightly higher, as opposed to the percentage of Postgraduate students and MA/MSc holders who was significantly lower. On the other hand, the percentages of Graduates, PhD holders, and PhD candidates of Archaeology Museology, and Cultural Heritage Management appear to be slightly higher than they were in the first year of the course.

Regarding the successful completion of the course, the average score in DELTA 2022 was almost identical to the DELTA 2021 course. Also, the undergraduate students remained in both courses, the category with the highest successful rates. This is of particular significance, since this educational category were the main and most important target group of the DELTA project since the beginning. On the other hand, in the DELTA 2022 course, postgraduate students were not consistent in the attendance and completion of the course. Conversely, the surprisingly higher percentage of PhD candidates and Students of Italian Specialization Schools in the successful fulfillment of the DELTA 2022 course indicates a target group that should be taken more into account in future courses.



An important final point that should be made is that there is no special connection between the average score and the educational level or the current position of the successful learners. High and low scores were achieved by learners of all categories. This actually means that the successful completion of the course does not require specialized knowledge and could be equally achieved by learners of different educational levels. It seems that the successful completion of the course is more related to the degree of involvement of the learners with the educational material, and their devotion to the course, rather than their educational level, and their previous experience or knowledge of digital technologies.

7. DELTA ISP (October 2021)

The Intensive Study Program (ISP) of DELTA took place at the excavation of the National and Kapodistrian University of Athens, at Marathon, in October 2021.

The aim of the ISP was to train a number of selected learners in digital archaeological methods and techniques in the excavation field and in the laboratory. It was organized in such a way to follow the modules of the DELTA online course, but it included also educational visits to archaeological sites and excavations in Athens. More particularly, the program and the aim of each day was as follows:

Day 1: orientation and introduction to the site and the methodology of excavation. The aim was to introduce the learners to the archaeological site of Plasi, Marathon, to the excavation methodology, and to the structure and program of the 5-days ISP.



Day 2: Module 1, Digital tools for archaeological excavations. The aim was to cover the subjects of Module 1 of the DELTA online course: (1) the principles and basic elements of topographic instruments (RTK GNSS), and (2) the use of topographic instruments for the production of 2D and 3D images of an excavation trench, archaeological feature or ancient building

Day 3: Module 2, Digital documentation in the excavation. The aim was to cover the subjects of Module 2 of the DELTA online course: (1) the use tablets and data collection software in order to record excavation data in the field, and (2) how to create digital forms, fill in, upload and manage excavation data.

Day 4: Module 3, Digital preservation of cultural artifacts. The aim was to cover the subjects of Module 3 of the DELTA online course: (1) present the basic principles about the creation of 3D models with Laser Scanning and Structure from Motion (SfM), and (2) practice on how to use SfM in order to create 3D models of movable finds

Day 5: Module 4, Open-air museums and public archaeology. The aim was to cover the subjects of Module 4 of the DELTA online course: (1) presentation of the basic principles of Public Archaeology, and discussion on how to turn an excavation into an open-air museum as part of a strategy for public engagement and public awareness, (2) participate to a specially designed educational program for high-school pupils, which will take place this day in the excavation field of Marathon. Unfortunately, due to bad weather conditions, the second part had to be cancelled, and replaced by in-door activity without pupils.



The ISP was followed by 14 learners, from three participating universities (NKUA, UNIBAS, MUNI), who stayed for one week in Athens and participated every day in the excavation, from 8.00 until 14.00. In the evaluation of the ISP afterwards, the learners were asked to evaluate anonymously every day of the ISP, and the ISP as a whole, through a structured questionnaire, but also to write comments, thoughts, ideas and suggestions for improvement.

The questions of the questionnaire were as follows:

1. The content of the XXX day of the ISP was relevant to the objectives covered by Module 1 of the DELTA online course
2. The material taught during the XXX day of the ISP was well organized
3. The training methodology followed during the XXX day of the ISP (working in small groups, rotation-system) was efficient
4. The presentation/demonstration of the tasks was made in a simple and interesting way
5. The instructions on how to use the digital tools were given in an analytical and detailed way
6. Your previous knowledge has been sufficient for successfully completing the tasks of the XXX day of the ISP
7. The level of difficulty of the tasks performed during the XXX day of the ISP was suitable for your level
8. The estimated time for completing each task was reasonable
9. The XXX day of the ISP kept your interest
10. Overall, how you rate your experience on the XXX day of the ISP



For the entire ISP the questions were the following:

1. The aims and objectives of the ISP were clear
2. Each of the 4 modules of the DELTA online course was equally covered by the ISP
3. The time spent on tasks in the excavation field and the laboratory was sufficient in order to learn how to record, visualize, analyze, and present the archaeological evidence with the use of digital tools
4. After your participation in the ISP, you will be able to use the digital tools and the techniques taught (total station, RTK GNSS, drone, SfM, tablets, data collection software, photogrammetry) for excavation and post-excavation tasks
5. The knowledge provided by the ISP was connected with what was learned from other courses of your university program of studies or archaeological projects (excavations, surveys, post-excavation research) conducted by your university
6. Tutors were consistent in their obligations (explain in detail the tasks, demonstrate the procedure on how to use the digital tools in an analytical way, answering questions etc.)

None of the above questions received grades less than 4,20/5, the average was 4,58 and the main range was between 4,45 and 4,70. This shows the satisfaction of the learners by the ISP program. But of greater importance were the comments and the suggestions written at the end of the questionnaire. In the following paragraphs we transfer some of the positive and negative comments and suggestions, indicative of the general feeling of satisfaction among all the learners.

The most important suggestion, to which almost all students agreed, was to extend the ISP for more days.

Question: 1. According to your opinion, which were the best features of the ISP? The answers received:

The introduction into new techniques and their use in the excavation field, the collaboration with other colleagues from different universities and the multidisciplinary character of the program

Working with students from different universities, working in the field, interesting lectures by competent tutors, the possibility to directly communicate with tutors in a friendly manner.

The ability to apply the knowledge earned during the courses was really important for better understanding the challenges and benefits of digital technologies in archaeology. The tutors were always willing to help, the groups worked got along really quick so the overall experience was precious.

The variety of subjects, the cooperation with other students and the different environments to practice our knowledge

To me the ISP was generally quite successful in the sense that the students were given the opportunity not only to be more familiarized with the use of various digital tools and techniques already taught in the DELTA online course, but also to employ most of them, in order to record features and artifacts in an actual ongoing excavation project. They were able to follow every stage of the excavation and post-excavation documentation, from the initial recording of the archaeological data in the field and the laboratory to the interpretation, dissemination and presentation of the results to the public.

I believe that one of the best features of the ISP was the collaboration among students from different universities/countries with a different academic background, in order to perform various tasks, as well as the sharing of know-how regarding excavation methodology, recording techniques, and dissemination strategies of the archeological information."

The possibility of comparing the archaeological methodology used by different universities is certainly one of the project's greatest strengths, which is linked not only to its international nature, but more importantly to the way in which the time for exchange and discussion was organized and managed.

2. What changes would you recommend improving a future ISP? The answers received:

Nothing, everything was great

More time to devote to practical learning

Better mix of teams since the first day of lectures.

I would really enjoy a few more days for practice which would also allow the tutors or students with that kind of expertise to "shine".

Generally, the programme keeps me full interested and happy. Maybe had to has little, longer duration.

Extend the activities and introduce more relevant subjects

Maybe the duration of the programme has more days for practice and get known with colleagues from Italy and Czech Republic.

3. What is your general appreciation of the organization of the ISP (programme, cultural visits, accommodation)? The answers received:



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Everything it was great and very well organised

My overall view is that this was one of the best experiences in my whole life. The program and visits of various museums and archaeological monuments were highly educational and enjoyable.

Whole ISP was beyond my expectations.

Truly and fully satisfied with the organisation of the ISP since it covered my expectations and offered me a great experience

A very nice experience, i will for sure recommended to other students

In my opinion, the general organization of the ISP was quite successful, considering the fact that the main goals were achieved. The scheduled lectures and practical assignments were effectively conducted, despite some modifications in the initial program, as well as the visits in some of the most important archaeological museums and sites.

I think that the level of organisation of the ISP was very good, both for the management of the module parts of the course and for the structuring of the activity into practice in the morning and cultural visits in the afternoon. Having common accommodation would have been more efficient.

