



View of the Acropolis south wall. Photo T. Souvlakis, 2015

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Introduction

In March 2013, the Information and Education Department completed the online educational application “The Glafka Project”, in Greek and in English. Designed for children over 12 years, the application refers to the restoration of the Acropolis monuments and follows the holistic and multi-dimensional approach that we implement in all our projects. Thus, after the organization of an educational programme and the issuing of a relevant Teacher’s Pack, we proceeded with the designing of a web application. As is evident in all our projects, the Department places special emphasis on the evaluation of our activities, a process followed also with this new application and presented in this paper.

Presentation of the application

The theme of the application is presented with the help of Glafka, a flying owl-robot mascot. It is based on a scenario with five thematic units combining characters, roles, missions and the awarding of the child-user. Each unit includes the *preparation*, that is, a brief presentation of the theme, and the *test*, a game in which knowledge of the entire unit is summarized.

- “The Journey”, the first thematic unit, has as a theme the problems of the monuments and the reasons for the interventions. In the game the children are invited to “guide” a digital model of the Acropolis in its virtual voyage through time, avoiding the obstacles that cause the damage.
- “The Help” is the unit that presents the types of interventions, the structural restoration and conservation of the surface of the monument. In the game the child has to place the steps of structural restoration in the correct order.
- “The Crew”, the third unit, refers to the various specialties of the restoration group who carry out the restoration works. In the game the child



The “GLAFKA project”, an online game about the restoration of the Acropolis monuments

recognises the professions of the restoration group.

- “The Action” presents the restoration work carried out on each one of the monuments with the help of numerous images giving examples of actual practice. The game emulates the re-assembling of the temple of Athena Nike, which was dismantled and put back together during the restoration project.
- In the last unit, “In the Future”, the theme is the machines and the new technologies used today in the restoration project. During the game, children are asked to find where and how the new technologies are now being used in the restorations.

When the children-users have gone through all five tests, they have completed their mission and can now proceed to the final stage: to design the robot, to colour it and, of course, to receive their prize.

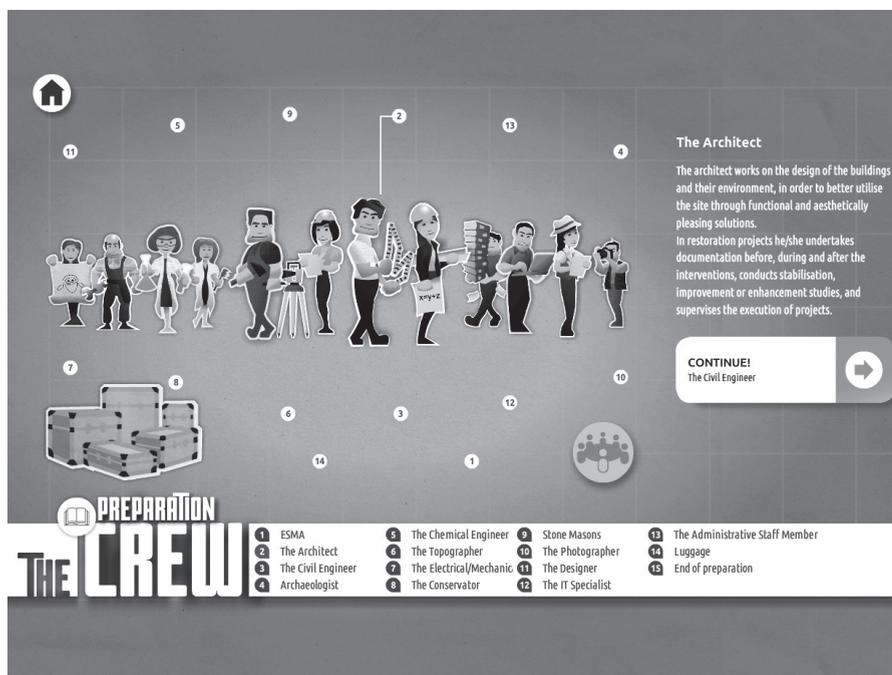
The aim of the application is to familiarize the children with the restoration works carried out on the Acropolis Rock, a subject that is not well known either to the pupils, or to the general public. It is

an application that works independently, even if the children do not visit the archaeological site. It can also be used as a supplement in order to re-enforce the experience of their visit. The information is combined in a pedagogical way, with several goals for the children:

- to have a pleasant interactive experience and to enjoy themselves,
- to be stimulated to process the information through the scenario,
- to comprehend significant and possibly difficult concepts making use of the multimedia presentation and
- to be encouraged to visit the archaeological site of the Acropolis or another site where comparable restoration works are being done.

The designing, development and artistic editing was done by the web designer Y. Koutsoukos. Professor K. Antoniadis was the consultant for the application. During the designing phase, we defined the technical specifications and the features of the application, taking into consideration the principles of contemporary standards of cultural information. There was general agreement on:

- the high aesthetics of the graphic environment,



“The Crew” is the unit that presents the various specialties of the restoration group who carry out the restoration works

- user-friendly navigation and clear menu,
- comprehensible presentation of the contents and
- interactive approach of the contents both in the units of presentation and in the several games.

In particular, for the implementation of the scenarios of the games, the following criteria were followed:

- limited extent of the games (mini-games) so that as a total they can be finished in a short time (for example a school hour),
- easy launching and then gradually more difficult and
- the evident progress that is presented and identified in the course of the game.

In the course of designing, the application was evaluated by various users, especially by High School pupils. The formative evaluation was an ongoing process and did not follow any strict or specific methodology. It was especially

helpful for the language, the contents, the navigation and in general the designing of the interface.

Evaluation of the online application

After the first year on the internet, we tried to find out how the application affected school groups. A systematic evaluation of the application, which would include detailed statistical analysis, observation and interviews of various groups of users together with the use of questionnaires, would have been ideal. This, however, was not feasible within the resources of the Information and Education Department. Despite the objective difficulties, with the process of feedback as a priority, we conducted a pilot evaluation by means of a questionnaire. The evaluation was aimed at testing the extent to which the application meets the aims and specifications set during the designing phase and to ascertain that the contents fulfill its goals.

Three hundred and sixty pupils (15-16 years old) from 18 schools in Attica

took part in the evaluation, in addition to the 38 teachers who escorted them in the open-day educational programme “Acropolis and Restoration” in March 2014. Prior to the programme, in a special preparatory seminar organized for the teachers the application “Glafka” was presented. The teachers were advised to navigate in the application at school or to urge their pupils to navigate at home and then, whoever wanted, to evaluate it. Two forms of questionnaires, one for the pupils and one for the teachers, were returned to the Information and Education Department before the programme. A particularly large number of questionnaires was collected: 347 from the students and 37 from the teachers.

The questionnaire for the pupils comprised closed type simple questions that would not discourage the pupils to answer. Predefined replies to the questions, YES, NO and PERHAPS, were set for the pupils to indicate what they liked in the application, with the possibility of adding clarifications or comments.

The questionnaire for the teachers included both open and closed type questions. The teachers graded predefined features of the application on a scale of 1 to 4, with 4 being the best. From the teachers we principally wanted to draw suggestions and ideas as to how the “Glafka” could be utilised in the educational procedure.

Analysis of the results of evaluation

Of the 347 pupils who participated, 62% were girls and 38% were boys. The educators were mainly philologists (81%). By assessing “Glafka”, we have tried to check if the application features such as a) the technical characteristics, b) the concept and process of navigation and c) the contents of the application, are applied in accordance with requirements.



“Glafka”, the flying owl-robot mascot, designed by Y. Koutsoukos

The technical characteristics of the application

Analysis of the questionnaires shows that only 3% of the pupils had a technical problem, without specifying it.

In terms of the graphic environment, around half of the pupils (53%) replied favourably that they liked it, whereas only 15% replied negatively and 32% “PERHAPS”. It is of interest that out of the total number of pupils who replied favourably, 68% were girls and 32% were boys. A few pupils commented that the addition of sound was needed (8%). Some pupils (12%) asked for more interaction in the games. The comments about interaction came from pupils who had visited “Glafka” in the classroom and will therefore have wanted a team involvement apart from an individual one.

Of the 37 teachers, 31 visited the application at school and remained for an average of one hour, without reporting any technical problem connected with the functioning of the programme. Two of the other 6 replied that they had a problem with the infrastructure (probably the lack of IT labs or a weak internet access) and 4 noted lack of

time because of having to complete the curriculum. To the request to grade the colours and graphics of the application, 4 marked it excellent, while most of the teachers asked, graded it with an average of 3.3.

Navigation of the application

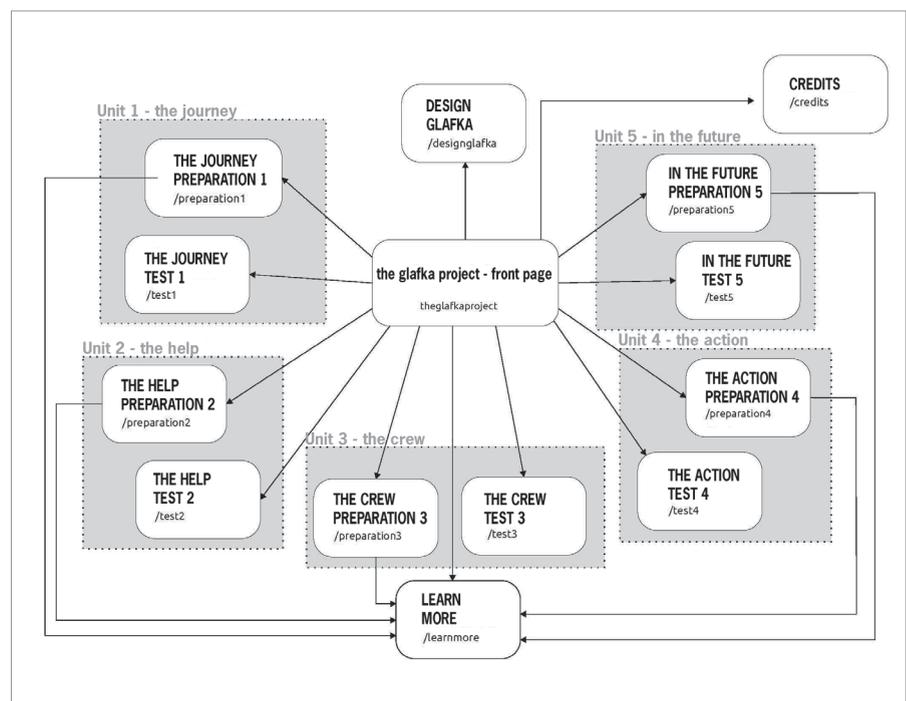
The navigation was based on the following scenario: the young user meets “Glafka” in the technology lab where he/she has to prove through 5 tests that he/she is a specialist in the subject of the Acropolis restoration. Before each test the user is prepared with the help of Glafka.

Seventy percent of the pupils spent 10-45 minutes on the application and the rest was divided between a span of less than 10 minutes (14%) and over 45 (16%). Around 30% needed to enter more than once to complete the tests. The majority of the pupils finished all the tests of the application (86%). Most of the pupils who did not enter at all or who broke off their navigation noted that they did

not have available free time. Only 3% of them met with difficulties or got tired.

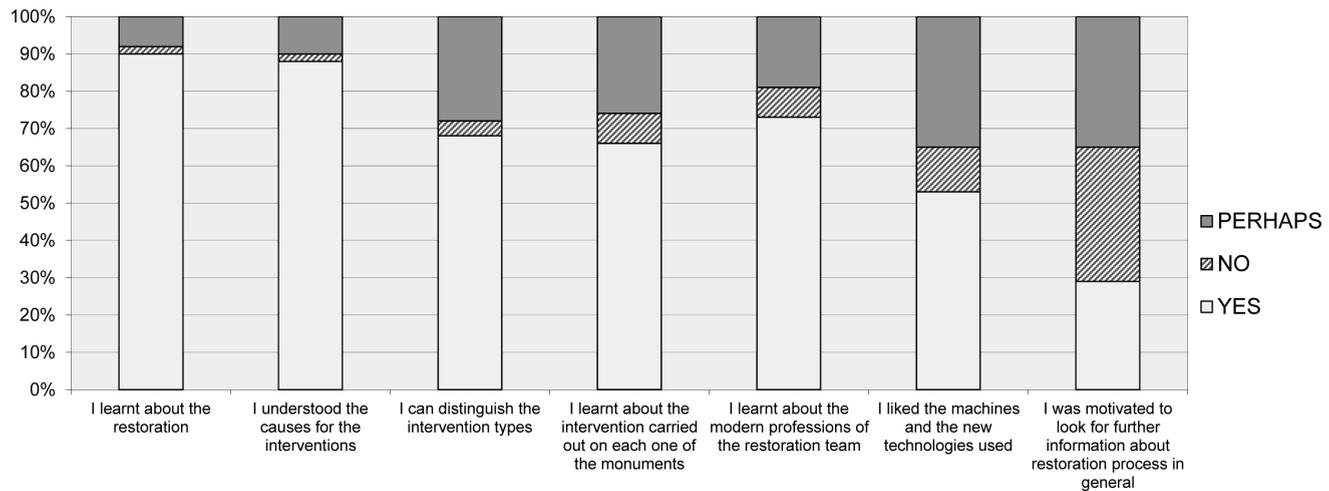
It is interesting that the most popular method of navigation was the linear. Most of the pupils (75%) completed all the tests in turn, while some (15%) chose chance navigation or selective exploration. The rest did not specify.

Moreover, a big majority of the pupils (72%) replied positively that they liked the idea of separating each unit to preparation/game. The same proportion found the navigation from one unit to another user-friendly. The motivation to unlock the design section of the application after successfully completing the tests, appears to have worked well since 65% replied that they liked it. Finally, even if the pupils were 16 years old, only a limited number (7%) said they thought the application unsuitable for their age. Some specified that they would have preferred a gradual increase in difficulty in order to hold interest.



Application map: Y. Koutsoukos

I found "The Glafka Project" interesting because:



The pupils' impressions. We set a list of 7 predefined replies related to what they liked in the application checking YES, NO and PERHAPS.

The teachers also evaluated the characteristics of the navigation in the same way. It is notable that they gave the best grade (3.8) to the concept of presentation of the theme. At the same time, it is apparent from the grades that they were satisfied with the menu and with the navigation from one unit to another (3.4). The division of each unit into theory and practice likewise met with their approval (3.6). Referring to the age to which the application is addressed (over 12 years), 27 teachers considered it suitable and 8 did not. Seven (7) of the 8, considered that it is also addressed to children under 12 years and one to children of 14 and older.

Contents of the application

The pupils in general, during the special programmes on the Acropolis restoration works, view the theme of restoration as interesting and captivating, since it combines antiquity with the new technologies and science. This precise feeling is what the application "Glafka" was intended to achieve. By

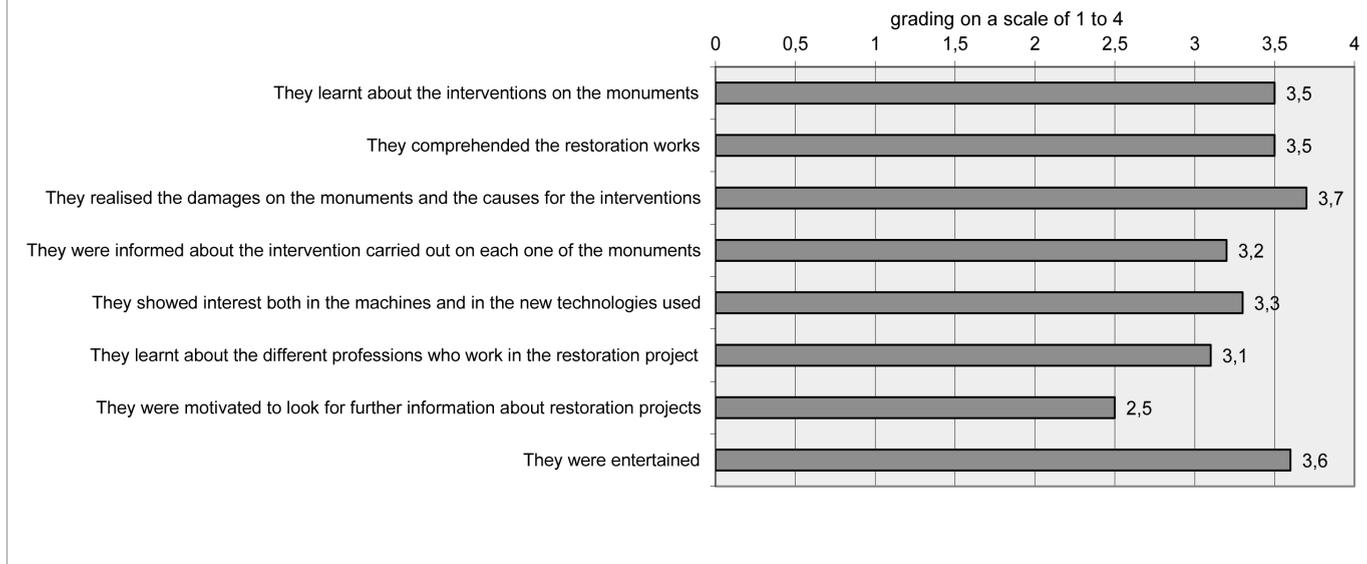
evaluating it, we tried to ascertain if this purpose had been met.

The informative content of the application is evaluated positively, as seen also in the relevant graph above, since 90% of the pupils were in complete agreement that they had learned about the restoration interventions and understood the problems and reasons for the interventions. A slightly smaller number (70%) replied that they understood the specific information about the restoration such as the types of interventions, the works on each monument and the professional specialties of the personnel, while about half (52%) said that they were interested in the machinery and in the new technologies utilised in the restoration. In the statement, "I was motivated to look for further information about restoration process in general" 28% replied affirmatively, 37% negatively and the remaining 35% "PERHAPS". It is worth noting that in a similar question in the evaluation of the educational programme "Acropolis and

Restoration" in March 2012 (see the relevant article in "The Acropolis Restoration News", issue 12), it emerged that the pupils who had visited the workshops on site were more motivated to seek information about restoration projects. The result of this reply is that the experience of the visit cannot be replaced by digital media, but it can be supplemented and extended.

The replies of the teachers were similar. As is evident in the graph of the next page, to the question "What do you think "Glafka" offered to your pupils?", the teachers considered that the pupils had become well informed about the restoration works and that they understood better the theme and process of restoration interventions (average grade 3.5). Their opinion was that the children had become aware of the problems and reasons for the interventions (average grade 3.7). Next, they graded around 3, their interest in the restoration work on each Acropolis monument, in the new technologies employed, and in the

What do you think "Glafka" offered to your pupils?



The teachers grade on a scale of 1 to 4, with 4 being the best, the impact of the "Glafka project" on the students.

professions of the personnel. Finally the teachers graded 2.5 the possibility to spur the pupils to seek information about other restoration programmes for monuments.

Conclusions

This first evaluation offered valuable results both for the application itself and for similar activities in the future.

A general observation about the application that emerges from a question of the pupils' questionnaire, is that the majority (58%) found the application to be entertaining and that for 78% it was different from the usual. Moreover, despite the complexity of the subject, the pupils understood the content, since around 88% replied that they had learned about the restorations and understood the problems and reasons for the interventions. Based on a grouping of the pupils' proposals, the following improvements could be made:

- enrichment of the presentation of the content with media such as sound, video and photographs,

- creating more interactive games and
- improving the graphics.

From analysis of the questionnaires of the teachers, the pupils evidently had a pleasant experience and were motivated to become more involved with the subject of the restoration project. In a next probable phase of evaluation, it could be investigated whether this experience is shared equally by pupils with learning problems or special needs. It would also be interesting to compare the experiences of pupils playing in groups and individually. It is worth noting as well that 17 teachers report that they will make use of the application in the future research projects of their pupils. This use in turn means that the Information and Education Department should update and make regular additions to the content that will be a reason for the users to return. This involves further funding not included in the budget of the application. Even so, the difficulty of adding content is offset by the regular updating of the content available from

the YSMA website and from the digital Repository of educational content for the Acropolis in the following address: <http://repository.acropolis-education.gr/> where the teachers can find the educational material produced by the Department.

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* The web application "The Glafka Project" is available in the following address: <http://www.ysma.gr/theglafka/project/>



*View of the NW corner of the Parthenon from the E, after completing the intervention.
Photo T. Souvlakis, 2015*



*View of the N entablature of the Propylaea south wing, after completing the intervention.
Photo T. Souvlakis, 2015*

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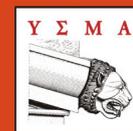
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