Creative Emotional Reasoning Computational Tools Fostering Co-Creativity in Learning Processes

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C²LEARN USER EVALUATION PLAN

C²LEARN PROJECT DELIVERABLE NO. D5.2.1

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2.0	01/11/2013	EA	Final version

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Abbreviations used

A) Abbreviated names of the project consortium partners

Abbreviation	Explanation
EA	Ellinogermaniki Agogi, Greece (coordinator)
UEDIN	The University Of Edinburgh, UK
OU	The Open University, UK
NCSR-D	National Center For Scientific Research "Demokritos", Greece
UoM	Universita ta Malta, Malta
SGI	Serious Games Interactive, Denmark
BMUKK	Bundesministerium Für Unterricht, Kunst Und Kultur, Austria

B) Other abbreviations in alphabetical order

Abbreviation	Explanation
C²Learn	Acronym of the project (full title: Creative Emotional Reasoning Computational Tools Fostering Co-Creativity in Learning Processes)
DoW	Description of Work (Annex I of the Grant agreement no. 318480)
EC	European Commission
FP7	The Seventh Framework Programme for Research and Technological Development (2007-2013)
ICT	Information and Communications Technologies
M#	#th month of the project (M1=November 2012)

Abbreviation	Explanation
TEL	Technology-Enhanced Learning
UEP	User Evaluation Plan

Executive summary

C²Learn at a glance

C²Learn (www.c2learn.eu) is a three-year research project supported by the European Commission through the Seventh Framework Programme (FP7), in the theme of Information and Communications Technologies (ICT) and particularly in the area of Technology-Enhanced Learning (TEL) (FP7 grant agreement no 318480). The project started on 1st November 2012 with the aim to shed new light on, and propose and test concrete ways in which our current understanding of creativity in education and creative thinking, on the one hand, and technology-enhanced learning tools and digital games, on the other hand, can be fruitfully combined to provide young learners and their teachers with innovative opportunities for creative learning. The project designs an innovative digital gaming and social networking environment incorporating diverse computational tools, the use of which can foster co-creativity in learning processes in the context of both formal and informal educational settings. The C²Learn environment is envisioned as an open-world 'sandbox' (non-linear) virtual space enabling learners to freely explore ideas, concepts, and the shared knowledge available on the semantic web and the communities that they are part of. This innovation is co-designed, implemented and tested in systematic interaction and exchange with stakeholders following participatory design and participative evaluation principles. This happens in and around school communities covering a learner age spectrum from 10 to 18+ years.

About this document

The present deliverable, D5.2.1 'C2Learn User Evaluation Plan', constitutes the 'translation' of provisions of the Co-Creativity Assessment Methodology (D2.3.1) into a practice plan that will inform the implementation of the pilot activities in the three countries involved, i.e. Austria, Greece and the UK. It describes the conditions and characteristics of the user pilots that will be implemented, defining the case studies, the way school communities will be involved, and the relevant action and time plan for the realization of the evaluation in the pilot locations.

From the very early stages of the project, the research teams of EA (Greece), OU (UK), and BMUKK (Austria) have invested effort in building communities of educators and students around the project. Utilizing these communities and in close collaboration with schools and teachers the research teams have started negotiating and planning the introduction of the proposed C2Learn innovation in real-life educational settings for the purposes of piloting and evaluation. This process is developing in parallel with developments in the rest of the project: as more details of the intervention to be piloted become available, the research teams inform the collaborating school communities about the needs of the project for specific access to learning environments, take into account the actual conditions, possibilities and restrictions shaped by the realities of the schools, and gradually negotiate and agree concrete piloting actions. In this context, rather than a final document, the User Evaluation Plan (UEP) is an ongoing dialogic process between the methodological needs of the project and the real-life conditions in already identified, as well as in additional potential, pilot locations. In its present first iteration, the UEP takes into account the project aspects which have been shaped up to the end of the first project year, and reports on plans made in the three countries on the road towards the first main cycle of pilots in schools in spring 2014. In the second iteration of this document in April 2014 (D5.2.2), we will aim at a detailed planning for all pilot activities up to the end of the project. Nevertheless, given the dynamic nature of developments in both sides, project and schools, we will revisit the UEP whenever a need for adjustment becomes evident.

1 Introduction

The present deliverable, D5.2.1 'C²Learn User Evaluation Plan', constitutes the 'translation' of provisions of the co-creativity assessment methodology (D2.3.1) into a practice plan that will inform the implementation of the pilot activities in the three countries involved, i.e. Austria, Greece and the UK. It describes the conditions and characteristics of the user pilots that will be implemented, defining the case studies, the way school communities will be involved, and the relevant action and time plan for the realization of the evaluation in the pilot locations.

From the very early stages of the project, the research teams of EA (Greece), OU (UK), and BMUKK (Austria) have invested effort in building communities of educators and students around the project. This has become particularly evident in the first project year, through the outcomes of both iterations of scenario development and user requirement elicitation (D5.1.1 and D5.1.2), in the development of the learning design (D2.2.1), and in the first introductory round of user pilots (D5.3.1).

Utilizing these communities and in close collaboration with schools and teachers the research teams have started negotiating and planning the introduction of the proposed C²Learn innovation in real-life educational settings for the purposes of piloting and evaluation. This process is developing in parallel with developments in the rest of the project: as more details of the intervention to be piloted become available, the research teams inform the collaborating school communities about the needs of the project for specific access to learning environments, take into account the actual conditions, possibilities and restrictions shaped by the interests and realities of the schools, and gradually negotiate and agree concrete piloting actions. This dialogue with the school communities informs the scenarios which are gradually turning into more concrete use cases (D5.1.2), and eventually the User Evaluation Plan (UEP) (Figure 1).

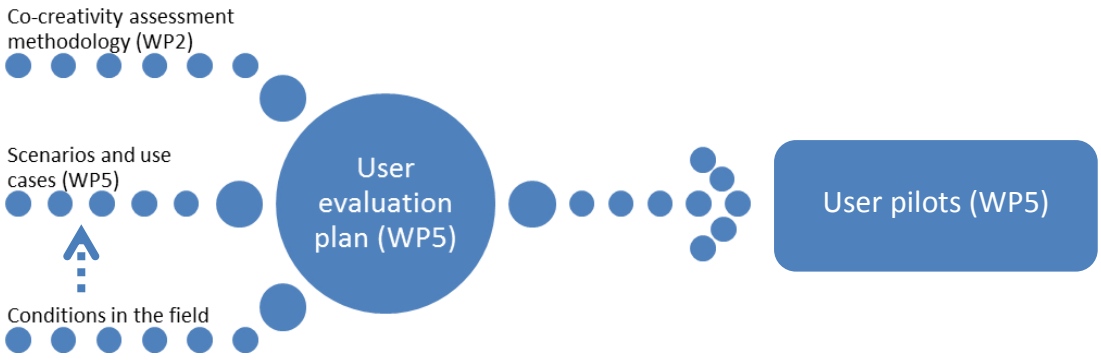

Figure 1: Position of the user evaluation plan in C2Learn processes

In this context, rather than a final document, the User Evaluation Plan (UEP) is an ongoing dialogic process between the methodological needs of the project and the real-life conditions in the already identified, as well as in additional potential, pilot locations.

In its present first iteration, which has been developing and is being completed in parallel with the definition of the co-creativity assessment methodology (D2.3.1) and the elaboration of scenarios and use cases (D5.1.2), the UEP takes into account the project aspects which have been shaped up to the

end of the first project year, and reports on plans made in the three countries on the road towards the first main cycle of pilots in schools in spring 2014. Information included in the present document has been gathered through the rich interaction of the research teams with the school communities, and monitored and organized using the internal project questionnaire presented in Annex I. This information reflects what at the present stage (October 2013) appears to be possible and desirable from the viewpoint of those who will be involved in the actual pilot activities. This planning remains dynamically open, however. It will be provisionally finalized by the end of January 2014, so that the main pilots can start in February 2013 as foreseen, while adjustments and fine-tuning will continue during the pilot phase to address any changes in circumstances arising.

In the second iteration of UEP in April 2014 (D5.2.2, C2Learn User Evaluation Plan), we will aim at a detailed planning for all pilot activities up to the end of the project. Nevertheless, given the dynamic nature of developments in both sides, project and schools, we will revisit the UEP whenever it becomes evident that it will require adjustments.

2 Overview of concepts, processes and conditions

This section summarizes the concepts, processes and conditions relating to evaluation and piloting in the C2Learn project, and serves as the framework, defined in accordance with the provisions of the Description of Work (DoW) of the project, for all decisions relating to user evaluation.

A useful schematic overview is provided by the diagram in Figure 2 on the following page. On the subsequent pages, this is accompanied by a detailed discussion and framing of the pilot countries, case studies, pilot cycles, use cases and scenarios in the wider context of evaluation.

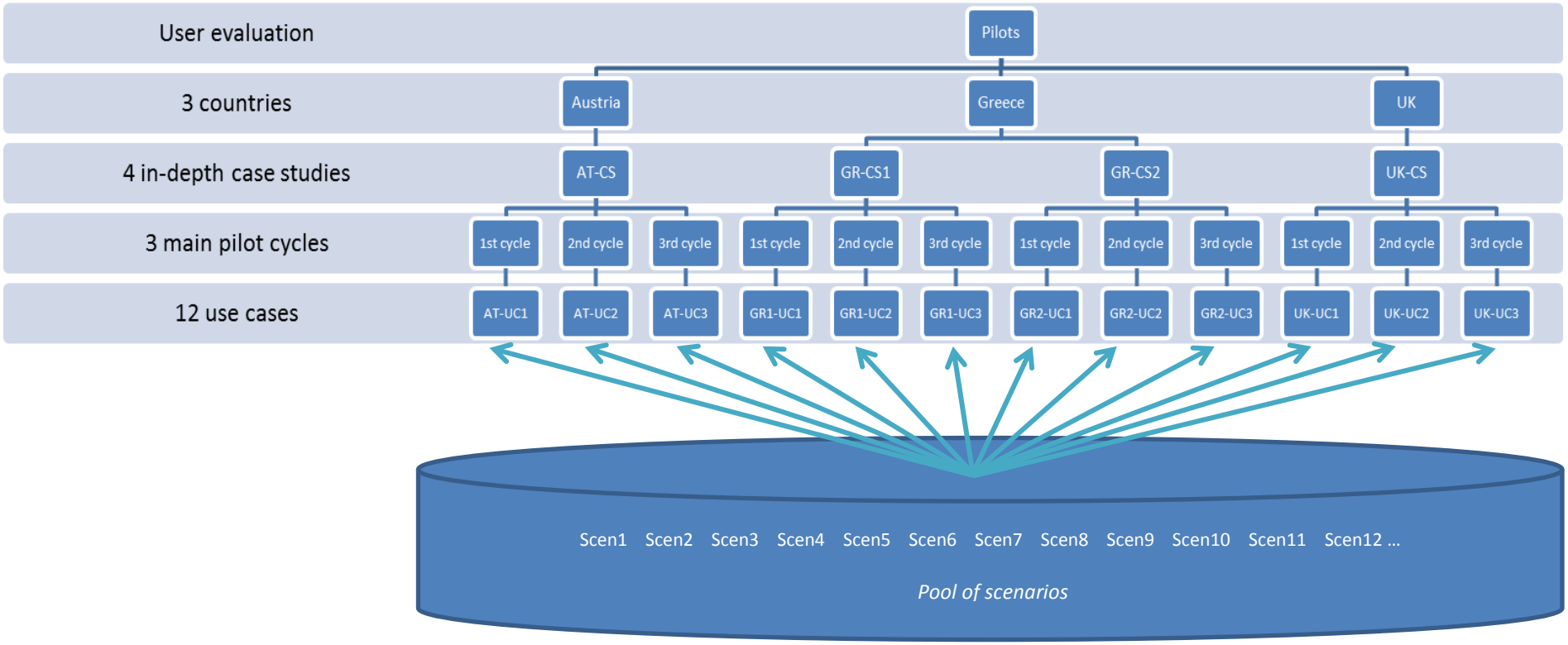

Figure 2: Diagrammatic overview of the evaluation and piloting process and its elements

2.1 RELATION TO ASSESSMENT METHODOLOGY AND EVALUATION ANALYSIS

The aim of the pilots is to test and evaluate with users the innovation proposed by C2Learn, i.e. innovative pedagogical practices including the use of the technological tools that are being designed and developed. Thus, the pilots will consist in the implementation, in iterative cycles, of concrete creative learning activities, as designed by the project in the form of scenarios and use cases (deliverables D5.1) and using the technologies developed in WP3 and WP4, for the purposes of user evaluation. The definition of the co-creativity assessment methodology (deliverables D2.3) logically lies before the user pilots. In the pilots this methodology is applied in the fieldwork with the purpose to collect data, which are then analyzed to lead to evaluative conclusions (deliverables D5.4) (Figure 3).

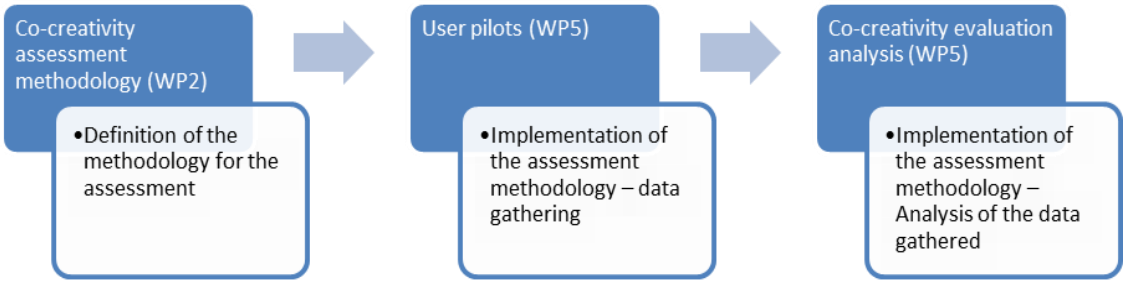

Figure 3: From methodology through implementation to analysis and conclusions

The co-creativity assessment methodology, in its first edition, is being reported in parallel (D2.3.1) to the present User Evaluation Plan (UEP). Thus the project currently lies at the first stage of this process, for the first of totally three main cycles of user evaluation, as described further below. Thus, the current state in relation to the aims, procedures and tools of user evaluation are defined in deliverable D2.3.1 'Co-Creativity Assessment Methodology'.

2.2 THE THREE PILOT COUNTRIES

The pilots of the project are realized in three European countries: Austria, Greece, and the United Kingdom. The three countries have been selected from the conception of the project to represent a wide spectrum of educational, economic, social and cultural contexts, as well as a wide spectrum of practices regarding education in general and creativity in education in particular.

User pilots and generally all field-based research in the project are organized and carried out in each of the three countries by the local consortium partner who acts as the 'national node' for that country. The national node for Austria is BMUKK; the national node for Greece is EA; and the UK national node is OU, supported by UEDIN. In addition, EA coordinates all field research at the project level.

2.3 THE FOUR LEARNER AGE GROUPS

The project addresses three main learner age groups:

a) 10-12 year-old school students

b) 13-15 year-old school students

c) 16-18 year-old school students.

While the focus of the project is on school education, an additional (though less central) fourth group is defined, as an extension to the third main group above, including:

d) Young (18+) people in transition from school to adult life (e.g. university students).

The rationale behind this wide coverage of the student age spectrum is based on the fact that creativity and creative thinking, on the one hand, and digital gaming behaviors and experiences, on the other hand, are manifested differently in the different stages covered by school education, changing dramatically with student age. In this context, the project has a strong interest in investigating the use of the proposed pedagogical and technological approach with children who have acquired the level of basic skills needed for involvement in the foreseen activities, pupils in the transition to, and early years of, adolescence, as well as teenagers who are either approaching the end of schooling, or find themselves in varying degrees of transition from school to tertiary education, work, and more generally, adult life.

While in the context of further refining the co-creativity assessment methodology there is ongoing discussion on how exactly the four age groups should better be covered and distributed in the pilots, the present plan already includes some provisional information based on local availability and preferences expressed (see section 3).

2.4 THE FOUR PILOT CYCLES

User piloting of the innovation is realized in four (actually, 1+3) pilot cycles. The input to each one of these cycles consists in project developments and achievements up to that point, while its output is feedback to the rest of the project so as to inform adjustments and further development.

Of the four pilot cycles, the first one is of an introductory nature. This first **introductory pilot cycle** was completed towards the end of the first project year. Its content and outcomes are currently being reported in detail in deliverable D5.3.1 'C2Learn User Pilots', and are not repeated here. In overview, the aim of that first introductory pilot cycle was to expose user communities, and in particular teachers, to the first outcomes of the project, and gather their reactions which are now informing next steps in design and development. This has provided the project with valuable, exploratory input and insights relating to learning design, Creative Emotional Reasoning (CER) techniques, scenarios, computational tools, game design, as well as research tools for the purposes of co-creativity assessment methodology.

Following the introductory phase of the first year, the project is now entering its main phase of piloting with end users. In this, there are **three main pilot cycles** taking place in years 2 and 3 of the project.

The **1st main pilot cycle** is planned to take place in the period M16-M21 (February 2014 – July 2014), with a total duration of six months. The purpose of this pilot cycle is to expose, for the first time, the technologies and pedagogical interventions developed by the project up to that time, as well as the co-creativity assessment methodology, to real use in educational settings. User feedback from this will mainly inform adaptations in the designs and further development, while this pilot cycle will also provide first indications of the impact of the innovation in terms of co-creativity assessment. It should be noted that due to the timing of the 1st min pilot cycle in relation to the academic year, and given the fact that from May onwards in several cases schools are immersed in end-of-year examinations before they close for summer in mid-June (e.g. secondary schools in Greece), a shorter actual period

of implementation is unavoidable. As design and development work in the project is developing throughout winter 2013-2014, the research teams are making every effort to secure the longest possible availability of schools for trials that will start as soon as possible – in reality however no sooner than late January 2014 at the very earliest.

Following a period of intensive work across the project on the outcomes of the 1st main pilot cycle, researchers will return to field trials in the **2nd main pilot cycle**, in the six-month period of M25-M30 (November 2015 – April 2015). As the outcomes of the project will have considerably matured by that time, and since the timing of this pilot cycle provides a very convenient time window within a school year, pilots at this stage will aim to provide both rich feedback for the validation of the integrated prototype as available by then and pedagogical interventions, as well as rich insights relating to co-creativity evaluation.

Finally, as soon as the whole solution produced by the project is available, the **3rd main pilot cycle** will serve as the last interaction opportunity of the design and development teams with the end user communities, so that the project products are finely adjusted, finally shaped and delivered. This last pilot cycle will be shorter, lasting three months (the last three months of the project: M34-M36; August – October 2015). This final validation of the project products will be accompanied by the final conclusions of co-creativity evaluation, and evidence to use for the exploitation of the results of the project. The short nature of the last pilot cycle, which cannot be altered due to overall restrictions of the time plan of the project as well as due to the short distance between summer school holidays 2015 and the end of the project, requires careful planning and inventive solutions that will allow effective exposure of a number of users to the almost final C²Learn solution in the little available time.

2.5 THE FOUR CASE STUDIES

User pilots are methodologically shape into four in-depth case studies, which are distributed among the countries as follows:

- One in Austria
- Two in Greece
- One in the UK.

The concept of 'case study' in this frame is flexible to adapt to the needs and interests of the project as they arise. At minimum, it suggests that the amount of piloting effort in Greece will be twice as much as that in each of the other countries. However, the distribution of the case studies and more generally of the pilot activities in the three countries constantly and dynamically aims at a comprehensive coverage of learner age groups, learning focus points, and variety of formal and informal learning contexts.

2.6 SCENARIOS AND USE CASES

Closely linked to the configuration of the user pilots in each country are the scenarios and use cases defined in deliverables D5.1.

Schematically, as the project progresses, the scenarios, which are open and generic 'scenario ideas', are gradually transformed into concrete experience designs, the 'use cases' (Figure 4).

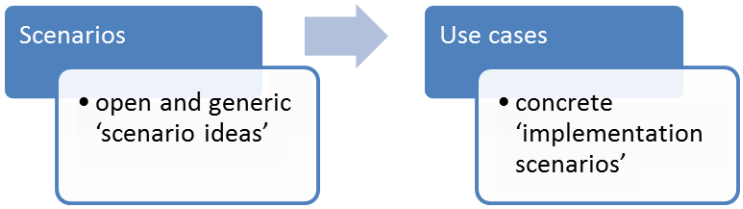

Figure 4: From scenarios to use cases

Thus, while 'scenarios' aim at illustrating a range of possibilities without being prescriptive, 'use cases' reflect concrete cases of pilot implementation, thus being the 'implementation scenarios' for the pilots.

Each of the cyclical iterations of a case study corresponds to (at least) one use case (cf. Figure 2). Thus, the three iterative main pilot cycles in each one of the case studies lead to (at least) 12 discrete use cases overall: 3 main pilot cycles x 4 case studies = 12 use cases.

These 12 use cases correspond to the requirement of the DoW for at least 12 'scenarios' which should be '*developed so that in each of the four in-depth case studies during the pilots at least three of them will be implemented, corresponding to the three iterative cycles of pilots*'. As the content of each use case is defined through the selection of one or more scenarios from those which the project has been developing, the requirement of the DoW is wholly covered: local research teams and school communities have the opportunity to shape a variety of use cases by selecting from a large pool of scenarios.

The 12 use cases overall in the three years of the project should provide a comprehensive distribution of pilot activities across learner age groups, learning focus points, and formal and informal learning contexts. Annex II includes the matrix used to monitor the distribution of pilot activities across learner age groups, learning focus points, and formal and informal learning contexts, reflecting the relevant provisions of the DoW.

In particular regarding user group coverage, the research teams will make efforts to create conditions in one of the use cases that will allow exploring the nature and consequences of having more than one of the age groups collaborate, so as to investigate the potential for 'capital transfers' with older and younger gamers playing together. This will probably be possible in the 2nd or 3rd main pilot cycle.

For each use case, the local research team, in collaboration with the local school communities, selects from the large pool of scenarios developed in the project. As foreseen in the DoW, overall in each case study at least two (potentially more) of the available scenarios will be tried, provided the local circumstances allow this.

2.7 NUMBERS OF PARTICIPANTS

The co-creativity assessment methodology (D2.3.1) requires that in each pilot cycle, each case study should consist of a group of about 20 students (30 maximum-20 minimum), which will be further divided into smaller subgroups. More detailed age-group and classroom distribution is still to be decided. The research teams in the three countries are making arrangements so that this minimum number of students can be secured and that flexibility regarding distribution will be maintained until specific methodological requirements arise. In particular, researchers in the three countries, where possible, aim at numbers larger than the minimum required in order to be able to counterbalance attrition.

In addition, the three research teams are aware of the potential need for a distinction between a smaller core group of participants to be followed more closely, and a wider group of participants who would be monitored less intensively, as initially foreseen, and will be flexible to address this need if and when it arises. It should be noted that the current requirements of the co-creativity assessment methodology by far surpass the relevant provisions of the DoW, securing a much larger group of participants in rich qualitative research (the DoW defines a core group of 25 selected individuals and a wider group of at least 100 additional individuals totally in the project; current requirements of the methodology can lead to up to 360 participations). In any case, if the numbers of participants defined in the DoW needed to be targeted as an absolute minimum, the present plan foresees the following:

Towards the narrow group of 25 selected participants, and to counterbalance attrition, we can aim at 8 core participants on average per case study, i.e. 8 core participants x 4 case studies = 32 core participants overall in the project.

Towards the wider group of at least 100 additional participants, and to counterbalance attrition, we can aim at 35 wider circle participants on average per case study, i.e. 35 wider circle participants x 4 case studies= 140 wider circle participants overall in the project.

2.8 DURATION OF PARTICIPANTS' EXPOSURE AND DATA COLLECTION

The present plan takes into account based the expressed aim of the co-creativity assessment methodology for students having around 18-24 hours of exposure in total to the C²Learn educational interventions, spread throughout the 6-month periods of the 1st and 2nd main pilot cycles. Given the circumstances explained above (section 2.4), the research teams in the three countries are making efforts to achieve the best possible solution for the 1st cycle proactively moving as close to the target as possible, and aim at securing the full of the required exposure time in the 2nd main cycle. In all cases, it is acknowledged that local restrictions and pilot site and project logistics may in practice influence the attainment of these targets. Every effort is made to limit this effect to the absolutely unavoidable. Regarding the 3rd, shorter, main pilot cycle, the present plan will integrate any relevant decisions made at the level of methodology, when they become available. At the moment it is foreseen that the 3rd cycle will most likely be much more focused, subsidiary or complementary to the second one.

Data collection in the 1st and 2nd cycles will be performed as defined in the co-creativity assessment methodology (D2.3.1). In school environments this will generally happen in classrooms in two phases, towards the beginning and the end of each pilot cycle, while the 18+ age group will be addressed through smaller focus groups.

2.9 TRAINING

Teachers involved in the pilots are responsible for administering the C²Learn interventions and collecting evaluation data, supported by the researcher teams. To prepare them for these roles, the project will provide training prior to the implementation of the first cycle. It is planned that these will be organized in January 2014, most probably in conjunction with the relevant data collection and analysis training for the key researchers involved, as foreseen in the methodology. Following the training workshop, the research instruments will be finalized, and researchers will then train teachers with whom they are to work on how to use the instruments requiring teacher leadership, as well as informing them about the use of the rest of the research instruments.

2.10 ETHICS

All pilot implementation activities will be underpinned by a clear set of ethical principles, identical with those described in the co-creativity assessment methodology (D2.3.1).

3 The current state of pilot planning

In the context of the requirements and conditions described above, each research team has been making initial plans for the implementation of pilot activities in each of the three countries starting approximately in February 2014 (start of the 1st main pilot cycle). The current state of these plans, as of October 2013, is outlined in the present section. These plans are in constant elaboration, in the light of all new developments within the project and any changing or arising circumstances on the side of the school communities.

3.1 THE CASE STUDY IN AUSTRIA

Austria hosts one of the four C²Learn case studies. The code name for this is: **AT-CS**

BMUKK has been building a community of teachers around C²Learn since the first stages of the project. The results of work with this community are reflected in the work relating to scenario development (D5.1.1 and D5.1.2) as well as in the report on the first introductory pilot cycle (D5.3.1).

In the visionary workshops organised in Austria in the first year, the teachers involved teach different age groups, including all targeted age groups of the project, and various subject areas (English, Italian, Music, Craft-Design-Technology, Biology & Ecology, Arts, International Development, Teaching & Learning, Accounting). The core group of teachers which has been formed since then secures project access to different school environments, and through various curriculum areas.

While this allows for considerable flexibility to address the needs of the project as they will become clearer closer to the start of the pilots, in Austria there is an initial plan to focus on the age group of 13-15 year-olds in the 1st main pilot cycle, while the 2nd and 3rd cycles may focus more on 16-18 year old students. The age group of 10-12 year olds will most probably not be addressed in Austria, while there is possibility to attempt trials with the 18+ age group in any of the three cycles, involving teacher students. It is noted that the distribution of the target groups in eh pilot cycles may need to be changed depending on availability and curriculum planning in the pilot schools, however all groups will have been covered by the end of the project.

From the curricular areas listed in the DoW as possible starting points for cross-curricular work, the Austrian pilots may relate more to Language in the 1st main pilot cycle and to Science/Mathematics/Technology in the 2nd and 3rd cycles. Social/personal/civic education may be peripherally touched upon in all three cycles. The curriculum area of History will not be used as a starting point in Austria. In addition, in all three cycles there is the possibility to relate pilots to both formal and informal learning contexts.

From the scenarios available, use cases in Austria will be based at least on those proposed by the Austrian teachers, mainly 'Teleporter' and 'Amusement Park' at the beginning, and probably also 'Food Chain', while the 'Playful Creative Inquiry' scenario will be focused on in any trials with the 18+ student group.

Regarding the numbers of participants and the duration of their exposure to C2Learn, beside what has been described above (sections 2.7 and 2.8), it is noted that in Austria it is estimated that there is

the possibility to form a wider community in schools and/or around them, of about 30 individuals, who could contribute information and reactions to the project, through non-intensive means (e.g. discussions, small surveys, etc.). Finally, in Austria is does not appear feasible to involve the same students in more than one pilot cycle in order to follow their 'progression' through C2Learn, as most of them will change or leave school during the overall two-year period.

3.2 THE CASE STUDIES IN GREECE

Greece hosts two of the four C²Learn case studies. The code names for these are: **GR-CS1** and **GR-CS2**.

EA has been building a community of teachers around C²Learn since the first stages of the project. The results of work with this community are reflected in scenario development (D5.1.1 and D5.1.2) as well as in the report on the first introductory pilot cycle (D5.3.1). This initial core community in Greece is formed within Ellinogermaniki Agogi (EA). EA is a large private school in the suburbs of Athens covering all levels of schooling from pre-school to upper secondary, which enrols students from all over Athens and the surrounding areas including parts of the greater city with very different socio-economical characteristics.

Twelve teachers have been closely following C²Learn from the very early stages engaged in visionary co-design and early piloting activities. They are working in two independent groups, one in the primary school, and one in the secondary school. The groups were formed in consultation with school principals after an initial meeting explaining the goals of the project and reviewing how it fits into the school needs and priorities. Teacher expertise includes primary school teaching, as well as secondary school specialists in home economics, biology, mathematics, humanities and language, astronomy, and drama education. The emphasis of all work with the groups is on strongly cross-curricular approaches. These are also the teachers who will be involved in (at least) the first pilots starting in February 2014. The division between primary and secondary education is at the moment the provisional working definition of the two case studies, whose teacher groups are working independently from each other (GR-CS1: primary school; GR-CS2: secondary school). A different interpretation of the distinction between the two Greek case studies remains always possible, to address any relevant methodological need of the project.

The fact that EA is directly participating in C²Learn as consortium leader and coordinator of the project makes access to a variety of classrooms an immediate possibility which is very helpful to the project. Besides offering members of its staff and several classrooms for the pilots, EA is interested in exploring the involvement of more teachers and schools in the pilot activities, if that were of benefit to the project, drawing from a wide network of education professionals and schools collaborating with its Research and Development Department.

The context in EA allows for considerable flexibility to address the needs of the project in terms of pilots in Greece, as these needs may be emerging closer to the start of the pilots. The overall plan and intention is to cover the whole age range falling within schooling in each of the pilot cycles, as follows:

- 10-12 year-olds: mainly year 5 and year 6 in primary school, and possibly year 7 (1st grade of lower secondary school)
- 13-15 year-olds: mainly year 8 or year 9 (2nd and 3rd grades of lower secondary schools), and possibly year 10 (1st grade of upper secondary school)

- 16-18 year-olds: year 11 (2nd grade of upper secondary school). It is noted that due to the pressure of the final university entry examinations, it does not appear feasible to involved year 12 (3rd grade of upper secondary school) students at all.

To help cover the 18+ age group, EA could investigate the possibility of collaborating with a university, e.g. a teacher training department, if necessary. The length and timing of the 2nd main pilot cycle appears to be convenient for this. However, such a pilot would have to be less extensive than school-based pilots. In addition, if any collaboration with other teachers and schools were to be utilised as described above, the corresponding pilot activities would be less extensive than pilots within EA.

EA pilots can relate to all curricular areas listed in the DoW as possible starting points for cross-curricular work. In addition, in all three cycles there is the possibility to relate pilots to both formal and informal learning contexts, mainly utilizing school activities in informal contexts (e.g. school trips and other out-of- classroom activities).

From the scenarios available, use cases in Greece will be based at least on the scenarios proposed by the teachers in EA. These include 'Rescue Mission', 'What Life? What Europe? What World?', 'Being A Genetic Engineer', 'Space Mission', 'Evolution', 'An Alternate Reality Game Played On School Grounds', 'Geography Of Civilization', 'From Myth To Game', 'What If (1)', 'What If (2)', 'Icons Of Discord-1' and 'Icons Of Discord-2'.

Regarding the numbers of participants and the duration of their exposure to C²Learn, besides what has been described above (sections 2.7 and 2.8), it is noted that in EA there is the possibility to go for student numbers significantly higher than those required. In the primary school case study, the estimation is that in the 1st main pilot cycle (as well as in the subsequent ones) most likely whole school grades (i.e. 300 children in years 5 and 6) will be exposed to 'C2-Learn compatible' pedagogy, while the evaluation focus will be on 1-2 classrooms per grade (i.e. approximately 25-50 children in each one of the years 5 and 6, counting for the 10-12 target age group). In the secondary school case study, current plans for the 1st main pilot cycle include at least one classroom in year 8 (about 25 students falling in the 13-15 target age group) and three student project groups in year 11 (about 45 students in the 16-18 target age groups). The length of exposure to C²Learn appearing feasible for the 1st pilot cycle, given the limitations discussed, is estimated for EA at 10-12 weeks between February and early May 2014, with one teaching session per week devoted to C²Learn.

What is more, in Greece there is the possibility to form a wider community of at least 20 individuals who will be contributing information and reactions to the project, through non-intensive means (e.g. discussions, small surveys, etc.). EA has begun the process of building this broader community of interest around C²Learn. Already in the first year, such a workshop contributing to requirements elicitation, scenario development and early piloting was organized, which included educators and a range of professional and academic experts in the areas of learning, games, youth and creativity, from beyond EA.

Finally, in EA it is generally possible to involve the same students in more than one pilot cycle in order to follow their 'progression' through C²Learn, if that were required by the methodology.

3.3 THE CASE STUDY IN UK

UK hosts one of the four C²Learn case studies. The code name for this is: **UK-CS**

OU has been building a community of students and teachers around C²Learn since the first stages of the project. The results of work with this community are reflected in the work relating to scenario

development (D5.1.1 and D5.1.2) and learning design (D2.2.1), as well as in the report on the first introductory pilot cycle (D5.3.1). It should be noted that the OU researcher team has prioritised working with young people alongside their teachers from the initial project stages, as it brings a special interest in learner voice and participation alongside its expertise in creativity in education.

In the first project year, the OU team has recruited four community (i.e. state funded) schools in England, which are known to the team for their interest in both creativity and digital media. Two schools are located in the South West of England and two in the South East of England, in a variety of city, suburban and rural contexts. Two are primary schools and two are secondary, and the age span of pupils involved so far in project activity (workshops) is 10-17. It should be noted that it has been impossible to involve 18 year olds, who are in their final year of school and under heavy pressure with assessments and examinations. Each of these sites is keen to continue to work with the project, which provides potential project access to a range of UK school environments.

It is probably desirable to cover all age groups in all three pilot cycles in the UK, if that were methodologically relevant. Decisions will be made closer to the start of the pilots so as to cover the relevant needs of the project as these will emerge, taking into account the possibilities offered in the collaborating school communities. The curricular areas to be used as possible starting or reference points for cross-curricular work will be defined closer to the start of the pilots, after the schools and particularly the teachers within them are recruited. The same applies to the coverage of both formal and informal learning activities and contexts, although, if that was required or useful, OU would aim for a mix of the two across the three pilot cycles.

From the scenarios available, the UK use cases will possibly be based on some of the scenarios developed so far by the UK school communities, but will not necessarily be limited to those. These scenarios so far are 'Surviving Global Warming', 'Girls' Rights March!', 'Dance Game!', 'Removing Racism', 'Stop Crime!', and 'Eradicating Poverty'. It is stressed that the selection of scenarios for the UK use cases will be based on the ongoing discussion and work on scenario development (D5.1.2), as well as depending on which parts of the game/environment are ready to pilot first and which scenarios might house those best. In addition, scenarios are likely to develop across the piloting period and new ones may emerge.

Regarding the numbers of participants and the duration of their exposure to C²Learn, beside what has been described above (sections 2.7 and 2.8), it is noted that in the UK it is estimated that there is the possibility to form a wider community who could contribute information and reactions to the project, through non-intensive means (e.g. discussions, small surveys, etc.). For example, in such cases data collection tools (e.g. questionnaires) can be distributed to the parents of the pupils involved in the activities, as well as to teachers and children around the game players in the school age ranges. Finally, in the UK it is desirable to involve the same students and teachers in more than one pilot cycle, where and when possible.

4 Reporting pilot activities

Detailed reporting of the pilot activities will be provided in deliverables D5.3.2, D5.3.3 and D5.3.4, at the end of each piloting cycle, in project months 21, 30 and 36 respectively. These will focus more on the procedures and conditions of the pilot activities, while the 'content' outcomes and user feedback will inform all relevant processes and deliverables of the project (and among them, predominantly D5.4.1 and D5.4.2, 'Co-creativity Evaluation Analysis').

Annex I: User Evaluation Plan questionnaire

Administered by EA, July-September 2013

Country: _____. Questionnaire to be filled in by _____.

Introduction

In deliverable D5.2.x 'C2Learn User Evaluation Plan' our aim is to 'translate' the Co-Creativity Assessment Methodology which is being developed in WP2 (D2.3.1) into a concrete practical evaluation plan. This plan will describe in detail the conditions and characteristics of the user pilots that will be implemented in each country (Austria, Greece, UK). It will define the focus points for each of the case studies, the school communities to be involved, and the detailed action and time plan for the realization of the evaluation in each pilot location. In short, at this stage we are deciding precisely how the pilots are to take place in each pilot location. This task of ours is interrelated with the Scenarios and Use Cases developed so far (D5.1.1) in WP5, as well as with their refinement which is currently in progress (towards delivering D5.1.2). Especially the 'use cases' in D5.1.2 are being shaped in the light of the real-life conditions in the pilot locations; they are therefore very relevant to our present of defining the user evaluation practicalities in these locations.

With this questionnaire, we are seeking your input regarding the practical details that will define the mode of pilot implementation in your country.

Participants in the main pilot cycles

	Core element			**Wider element**		
	Project target (average)	**Feasible numbers (realistic estimation)**		**Project target (average)**	**Feasible number (realistic estimation)**	
1st main cycle (Feb2014 – Jul2014)	8 game players		10-12 yrs	35 game players		10-12 yrs
			13-15 yrs			13-15 yrs
			16-18 yrs			16-18 yrs
			18+ yrs			18+ yrs
2nd main cycle (Nov2015 – Apr2015)	8 game players		10-12 yrs	35 game players		10-12 yrs
			13-15 yrs			13-15 yrs
			16-18 yrs			16-18 yrs
			18+ yrs			18+ yrs
3rd main cycle (Aug2015 – Oct2015)	8 game players		10-12 yrs	35 game players		10-12 yrs
			13-15 yrs			13-15 yrs
			16-18 yrs			16-18 yrs
			18+ yrs			18+ yrs

Other information or comments:

'Long-term' participants

Would it be possible to involve the same individuals in more than one pilot cycle, and thus maybe follow their 'progression' through C2Learn?

- ❑ Yes, this is what we plan to do
- ❑ Maybe, but we are not sure yet
- ❑ Maybe, but we would prefer not to
- ❑ No, this is not possible

Please explain:

If 'yes' or 'maybe', in which cycles and how many participants?

	Core element		Wider element	
	Feasible number of 'long-term' participants (realistic estimation)		Feasible number of 'long-term' participants (realistic estimation)	
In the 1st and 2nd cycles		10-12 yrs		10-12 yrs
		13-15 yrs		13-15 yrs
		16-18 yrs		16-18 yrs
		18+ yrs		18+ yrs
In the 2nd and 3rd cycles		10-12 yrs		10-12 yrs
		13-15 yrs		13-15 yrs
		16-18 yrs		16-18 yrs
		18+ yrs		18+ yrs
In all three cycles		10-12 yrs		10-12 yrs
		13-15 yrs		13-15 yrs
		16-18 yrs		16-18 yrs
		18+ yrs		18+ yrs

Other information or comments:

Distribution of pilot activities across learner age groups, learning focus points, and formal and informal learning contexts

Use cases:	**AT-UC1**	**AT-UC2**	**AT-UC3**
Learner age group			
10-12 year-olds			
13-15 year-olds			
16-18 year-olds			
18+ year-olds			
Learning focus			
Language			
Science, mathematics and technology			
History			
Social, personal and civic education			
Competences			
Learning to learn	☑	☑	☑
Civic competence	☑	☑	☑
Initiative and entrepreneurship	☑	☑	☑
Cultural awareness and expression	☑	☑	☑
Formality of learning activities			
Formal			
Informal			

Annex II: Matrix used to monitor the distribution of pilot activities

Use cases:	AT-UC1	AT-UC2	AT-UC3	GR1-UC1	GR1-UC2	GR1-UC3	GR2-UC1	GR2-UC2	GR2-UC3	UK-UC1	UK-UC2	UK-UC3
Learner age group												
10-12 year-olds				☑	☑	☑				☑	☑	☑
13-15 year-olds	☑	(☑)	(☑)				☑	☑	☑	☑	☑	☑
16-18 year-olds	(☑)	☑	☑				☑	☑	☑	☑	☑	☑
18+ year-olds	(☑)	(☑)	(☑)					(☑)		☑	☑	☑
Curricular focus												
Language	☑	(☑)	(☑)	☑	☑	☑	☑	☑	☑			
Science, mathematics and technology	(☑)	☑	☑	☑	☑	☑	☑	☑	☑			
History				☑	☑	☑	☑	☑	☑			
Social, personal and civic education	(☑)	(☑)	(☑)	☑	☑	☑	☑	☑	☑			
Competences												
Learning to learn	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Civic competence	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Initiative and entrepreneurship	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Cultural awareness and expression	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Formality of learning activities												
Formal	☑	☑	☑	☑	☑	☑	☑	☑	☑			
Informal	☑	☑	☑	☑	☑	☑	☑	☑	☑			