Replay Project

D4.3
Final Report on Socio-Organizational, and Ethical Impacts
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1. Executive Summary

This document describes the final phase of Work Package 4 for Project Replay. It provides an explanation of how the methodology for assessment outlined in Deliverable 4.2 has been put into practice and the tools outlined in that same deliverable were constructed and utilized in order to conduct a socio-organisational and ethical assessment into the effectiveness and impact of the Replay technology.

It begins with a description of the process by which the assessment tool was built in the context of the full work package. It then provides a description of how this assessment was carried out and how data sets were gathered from the assessment. The ultimate purpose of the deliverable is to outline a set of findings and recommendations that will serve to inform the next stage of commercial development of the Replay technology and allow us to address any significant socio-organisational and ethical issues that have arisen during the project. These recommendations concern the requirements of secondary users (teachers; experts; social workers etc) and the support environment necessary for effective deployment of the game, rather than those of primary users, young people.

The purpose of these recommendations is to both validate the overall effectiveness of the Replay technology as deployed during the prototype testing performed within Work Package 3 as well as define areas for market-focused improvements both at the national level of the three participating testing centres and EU wide across the three countries and beyond. The ultimate aim, then, is to feed into the preparation of the Replay technology for successful commercial exploitation in these markets.

Particular focus is given here to ethical issues in acknowledgement of the fact that the ethics of using technology with young people in this way are potentially highly sensitive and that any product developed during the project must be built on a sound and recognizable ethical framework.

2. The Operational Assessment Process and Tools

2.1 Development of the Online Assessment Tool

The purpose of the socio-organisational & ethical assessment of the Replay project is to provide a holistic assessment of the effectiveness of the Replay Game as a tool for assessing anti-social behaviour within the context of a pedagogical institution. This means addressing all the contributing factors that have the possibility of negatively impacting on the success of the technology developed. The work of this assessment is very much complimentary to the work completed during WP3 (the relationship between the two work packages is explained in detail in Section 2.5 below). We have worked to ensure open lines of communication between the two work package coordinators to guard against any duplication of effort.

WP4 began with a review of the baseline of the Project, an extensive study of current approaches to the impact assessment of technology, specifically with reference to its use with young people. This study looked both at how the effectiveness of using technology with young people from a secondary users perspective is measured and also how the wider effects of its use on the management of resources, time and people in a educational setting are measured. It also defined areas in which ethical concerns came up around the development of suitable content, capturing and distribution of data on primary users and the involvement of all relevant stakeholders (both primary and secondary) in the conduct and management of gameplay. A full report on this study and the conclusions drawn from it can be found in Deliverable 4.1 of the work package.

Having reviewed a number of proven methodologies for the measure of impact assessment, a methodology was developed which allowed for the controlled creation of data sets, which would facilitate clear evaluation of data gathered from separate sources, while not compromising on the accuracy of results. A multiple choice tool utilising a likert scale for increased accuracy was decided upon. This was built around a set of 'Objectives' which defined the purpose of the assessment for the Project Consortium, within which a set of indicators were created for the purpose of measuring each objective. The set of indicators created were collectively designed to fully measure their associated objective, without compromising on high face validity for the respondent. The gathering of data was centrally controlled (by consortium partner White Loop) to ensure proportionality and avoidance of excessive processing of such data, confidentiality and integrity and avoidance of improper modification of data. The full methodology for the assessment and list of objectives and indicators can be found in Deliverable 4.2 of this work package.

2.2   Conduct of the Online Assessment

As has been mentioned, registration for completing the online socio-organisational & ethical assessment was controlled centrally by the Replay Consortium partner White Loop. Access to the results of this survey were only made available by password protected authorisation and the results pertaining to individual respondents were grouped as a whole within the three participating centres, thus maintaining the anonymity of respondents.

The Objectives and Indicators which constituted the assessment content were translated into the three languages of the participating educational centres in the UK, Spain and Romania. It should be noted however, that every effort was made to ensure that the content of both Objectives and Indicators was consistent across the three countries. The data sets generated during the assessment window were associated with individual language versions with a view to providing both a national context and point of comparison between different institutions/countries.

A fixed time period of time was given to each test partner to allow associated individual participants to independently complete the online assessment. In each centre, a coordinator controlled the number of respondents to the assessment.

2.3   Focussed Qualitative Workshops

In order to complement the online assessment an additional qualitative workshop with the respondents to the online assessment was arranged in the three participating centres in the UK, Spain and Romania.

Although the assessment objectives and indicators were chosen to cover all possible socio-organisational and ethical factors involved in the use of the Replay gaming technology, it was anticipated that the test centres themselves may identify a number of factors not covered in the closed set of indicators produced. As well as providing some in depth qualitative analysis of additional factors relevant to the assessment, these workshops also enabled the Replay consortium to develop a greater understanding of those objectives cited as a priority within the assessment, as discussions were focused on the prioritised indicators from the online assessment.

The objectives highlighted for feedback in each workshop and a common set of guidance questions for participants can be found in Annex 1 of this Deliverable.

The feedback provided at these workshops contributed both to the individual sets of country specific findings and recommendations as well as the overall findings and recommendations produced later in this Deliverable.

2.4   Coordinating data sets resulting from the Assessment

The gathering of data from the assessments has been coordinated in such a way as to allow for a number of distinct but complementary data sets to be produced and subsequently analysed both individually and as a whole, as is explained in the previous section. At a national level of analysis, the country specific data sets allow for separate reports for the three test centre countries of the Replay project. The data is analysed to produce a set of findings on the relative weaknesses and strengths of the Replay technology for commercial exploitation in each country.

To produce an overall report on the findings the data, the three data sets are combined and treated as one. This process has been made possible and efficient, as all three centres have been provided with a common set of Objectives and Indicators, translated from English, to respond to online, coupled with the fact that the structure of the assessment tools is exactly the same in each case. Data sets from the three countries are entirely consistent and can then be displayed alongside one another for easy analysis. The procedure by which the results are obtained then, is common to all three centres.

Consistent with the methodology laid out in Deliverable 4.2 of this work package, the findings gathered from the assessment will separate the data analysis of the indicators prioritised, those that ensure that the basic requirements of deploying the game are in place at all test centres. The remaining indicators are then analysed in a separate section. This level of analysis is measured through the results of all three data sets.

Using the findings as a base, a set of recommendations are then produced at both national and EU wide level which outline the wider necessary actions in areas such as training needs, process organisation etc required to make the Replay technology a viable commercial product.

2.5   Coordinating the findings of WP3 & 4

The recommendations produced in this deliverable are intended as complementary to those produced regarding the usability and effectiveness of the Replay prototype developed during WP3. The two sets of recommendations will serve to inform the necessary improvements to the first version of the Replay technology to ensure that usage of this technology is fully optimized for use by both primary and secondary users and those who support its deployment within application areas (centres; schools etc). In other words, these combined sets of recommendations will define both the functional and technical requirements of the product as well as its required support environment in areas such as training, creating a holistic and coordinated set of improvements.

3. Replay Take-Up Strategies

3.1   Purpose of the Report Recommendations

This deliverable contains a report on the challenges faced in relation to technology take up in the three markets of the UK, Spain and Romania covered by the Replay Project. As such, it allows for the development of a separate uptake strategy for each of these national markets as well as an EU–wide focussed perspective.

The recommendations for technology take up outlined in Section 5 of this deliverable will feed directly into both the functional and technical requirements of the Replay product. The ultimate aim of the Replay project is to produce technology which can be exploited commercially in its target marketplace, represented in this project by the three testing centres in the UK, Spain and Romania.

Understanding the issues emanating from secondary users that could potentially hinder commercial take up of the technology along with those improvements that would make Replay a more valuable product for target consumers will have a clear influence on the second round of development.

The recommendations produced are also aimed at ensuring any concerns in relation to the content, storage of data and logistical processes involved in the deployment and use of the Replay technology in a pedagogical environment are documented and addressed directly both in the improvements made in the second round of development and in any product documentation produced to accompany commercial launch of the product.

Ultimately, the recommendations produced are part of a wider effort, in conjunction with the prototype evaluation in the areas of usability and therapeutic benefits in Work Package 3 to develop a holistic understanding of needed areas of improvement and to create a cohesive approach to addressing any concerns or issues identified.

4. Findings from the Assessments

4.1   Findings from Prioritised Indicators

A total of 27 staff from the three pedagogical institutions participating in the Replay Project, registered to take part and completed the online survey hosted by consortium partner White Loop. The respondents were evenly balanced between the countries with 11 returns from the UK, 9 from Spain and 7 from Romania.

The findings in this section represent those collected from the objectives which relate to the basic requirements for the effective functioning of the Replay technology. The process of prioritising these objectives does not negate the importance of the remaining objectives. The consortium felt that a lack of verification regarding the basic functionality of the game would potentially make it entirely inoperable and thus had to be considered the starting point for any overall evaluation of its potential as a tool.

The following tables represent the data collected in regard of the three priority objectives. In each case, the objective is first outlined followed by the specific indicators for that objective (usually three per objective) then the statements offered representing the optimal, functional, semi–functional and inadequate state in relation to the indicator. Each table shows the number of specific votes, the degree of agreement (as per lickert scale) and then a brief conclusion in relation to that indicator.

The three objectives addressed here are outlined below:

Identify the practical issues relating to the <u>installation of the game</u>
Identify the practical issues relating to the <u>running of the game</u>
Identify the <u>human resource issues</u> pertaining to the effective completion of a game session

Objective 1: Identify the practical issues relating to the <u>installation of the game</u>

1.1 Privacy of physical space available for the installation of REPLAY
OPTIMAL A sound proofed room was reserved for installing the REPLAY game.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**1**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**2**]
FUNCTIONAL Discussions taking place in the room, in which the REPLAY sessions were carried out, cannot be overheard by other students.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**3**]   [**2**]   [**1**]   3. Strongly Agree [**0**]   [**4**]   [**2**]
SEMI-FUNCTIONAL Discussions held during REPLAY session may be overheard by other students.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]
INADEQUATE The space available for installation of the REPLAY game is open to children other than the child user during REPLAY sessions.
1. Neither agree nor disagree [**1**]   [**1**]   [**1**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]
Conclusions = In general, the privacy of the physical space is not an issue as discussions cannot be overheard. However, some respondents were not sure this was the case.

1.2 Level of understanding/training required for set-up
OPTIMAL All staff involved in the deployment of the game have been trained in the gameplay and technical operation of the REPLAY technology.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**1**]   [**1**]   [**3**]   3. Strongly Agree [**0**]   [**4**]   [**1**]
FUNCTIONAL One member of staff in the institution has been trained in the gameplay and technical operation of the REPLAY technology.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**1**]   [**0**]   [**1**]   3. Strongly Agree [**2**]   [**0**]   [**0**]
SEMI-FUNCTIONAL Some members of staff in the institution has been trained in either the gameplay or the technical operation of the REPLAY technology.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]
INADEQUATE No member of staff in the institution has been trained in both the gameplay involved or technical operation of the REPLAY technology.
1. Neither agree nor disagree [**1**]   [**0**]   [**1**]   2. Agree [**0**]   [**1**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]
Conclusions = Staff training has been put in place across the centres, in many cases with more than one person in the institution which means staff are aware of this. However, some staff in the centres still don't feel totally confident using the Replay equipment.

1.3 Technology/hardware needs and set-up
OPTIMAL The institution has access to all the necessary software and hardware required to operate the REPLAY technology in more than one location within the institution.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**2**]   [**1**]
FUNCTIONAL The institution has access to all the necessary software and hardware required to operate the REPLAY technology in

one location within the institution.

1. Neither agree nor disagree	[0]	[0]	[0]	2. Agree	[2]	[1]	[2]	3. Strongly Agree	[0]	[2]	[3]

SEMI-FUNCTIONAL The institution has access to either all the necessary software or hardware required to operate the REPLAY technology.

1. Neither agree nor disagree	[0]	[0]	[0]	2. Agree	[0]	[1]	[0]	3. Strongly Agree	[2]	[0]	[0]

INADEQUATE The institution does not have access to either all the necessary software or hardware required to operate the REPLAY technology.

1. Neither agree nor disagree	[1]	[1]	[0]	2. Agree	[0]	[0]	[0]	3. Strongly Agree	[0]	[0]	[0]

Conclusions = There are some cases where lack of access to necessary software and hardware are an issue. A lack of understanding of these requirements prior to beginning the project.

Objective 4: Identify the practical issues relating to the <u>running of the game</u>

4.1 The ability of the operator to launch and run the game in different modes

OPTIMAL I am confident launching, running and monitoring the gameplay in both Play and Replay modes.

1. Neither agree nor disagree	[0]	[0]	[0]	2. Agree	[1]	[2]	[1]	3. Strongly Agree	[0]	[1]	[0]

FUNCTIONAL I am able to launch, run and monitor the gameplay in both Play and Replay modes.

1. Neither agree nor disagree	[0]	[0]	[0]	2. Agree	[2]	[0]	[3]	3. Strongly Agree	[0]	[1]	[2]

SEMI-FUNCTIONAL I am unable to launch, run and monitor the gameplay in one of either the "Play" or "Replay" modes.

1. Neither agree nor disagree	[0]	[0]	[0]	2. Agree	[0]	[1]	[0]	3. Strongly Agree	[0]	[0]	[0]

INADEQUATE I am unable to launch and run or monitor the gameplay in both Play and Replay modes.

1. Neither agree nor disagree	[1]	[1]	[0]	2. Agree	[0]	[0]	[0]	3. Strongly Agree	[1]	[0]	[0]

Conclusions = The majority of respondents are either confident in or able to launch and run the game. For a small minority this was not the case, with some respondents able but not confident with the functionality of the game.

4.2 The time required to effectively run the game

OPTIMAL Running the REPLAY game sessions takes one hour.

1. Neither agree nor disagree	[1]	[0]	[0]	2. Agree	[3]	[3]	[3]	3. Strongly Agree	[0]	[2]	[0]

FUNCTIONAL Running the REPLAY game sessions takes one and a half hours.

1. Neither agree nor disagree	[0]	[0]	[1]	2. Agree	[0]	[0]	[1]	3. Strongly Agree	[0]	[0]	[0]

SEMI-FUNCTIONAL Running the REPLAY game sessions takes two hours.

1. Neither agree nor disagree	[0]	[0]	[0]	2. Agree	[0]	[0]	[0]	3. Strongly Agree	[0]	[0]	[0]

INADEQUATE Running the REPLAY game sessions takes three hours.

1. Neither agree nor disagree	[1]	[1]	[0]	2. Agree	[0]	[0]	[0]	3. Strongly Agree	[0]	[0]	[0]

Conclusions = Nearly all respondents felt a game session could be run within one or one and a half hours the expected time for the sessions.

4.3 The effectiveness of support materials

OPTIMAL I have been personally consulted on the support material I require.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**2**] [**1**] [**1**]   3. Strongly Agree [**0**] [**0**] [**3**]

FUNCTIONAL I have received adequate support material.
1. Neither agree nor disagree [**0**] [**0**] [**1**]   2. Agree [**1**] [**1**] [**1**]   3. Strongly Agree [**0**] [**4**] [**0**]

SEMI-FUNCTIONAL The support material I have received is insufficient.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**1**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]

INADEQUATE I have not received any support material.
1. Neither agree nor disagree [**1**] [**0**] [**0**]   2. Agree [**0**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]

Conclusions = The support material received is considered adequate or good in terms of the project consortium's consultation with the centres.

Objective 5: Identify the <u>human resource issues</u> pertaining to the effective completion of a game session

5.1 The human resources (in terms of staff time) required to run the game effectively

OPTIMAL Running the REPLAY game sessions required one member of staff.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**1**] [**3**] [**1**]   3. Strongly Agree [**0**] [**2**] [**2**]

FUNCTIONAL Running the REPLAY game sessions required two members of staff.
1. Neither agree nor disagree [**0**] [**0**] [**1**]   2. Agree [**2**] [**0**] [**0**]   3. Strongly Agree [**1**] [**1**] [**2**]

SEMI-FUNCTIONAL Running the REPLAY game sessions required three members of staff.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**0**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]

INADEQUATE Running the REPLAY game sessions required more than three members of staff.
1. Neither agree nor disagree [**1**] [**0**] [**0**]   2. Agree [**0**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]

Conclusions = Running the Replay sessions required very little strain on the human resources of the staff from the centres, with most being able to carry out the sessions with one or two members of staff.

5.2 The human resources (in terms of staff time) required to follow up effectively

OPTIMAL The amount of staff time required to carry out the follow up activities for the REPLAY game sessions is less than that anticipated prior to these activities.
1. Neither agree nor disagree [**0**] [**0**] [**1**]   2. Agree [**0**] [**2**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]

FUNCTIONAL The staff time required to carry out the follow up activities for the REPLAY game sessions is that anticipated prior to these activities.
1. Neither agree nor disagree [**0**] [**0**] [**1**]   2. Agree [**4**] [**1**] [**1**]   3. Strongly Agree [**0**] [**3**] [**1**]

SEMI-FUNCTIONAL The staff time required to carry out the follow up activities for the REPLAY game sessions is more than that anticipated prior to these activities.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**0**] [**0**] [**1**]   3. Strongly Agree [**0**] [**0**] [**0**]

INADEQUATE It has not been possible to carry out the follow up activities required for the REPLAY game sessions due to a lack of

available staff time.									
1. Neither agree nor disagree [**1**]	[**0**]	[**0**]	2. Agree [**0**]	[**0**]	[**0**]	3. Strongly Agree [**0**]	[**0**]	[**0**]	

Conclusions = The amount of staff time required to carry out is less or the anticipated for carrying out follow up activities. There is no additional strain on the human resources of the institution in this regard.

5.3 The ability of the teacher to effectively deal with questions or issues related to the usability of the game

OPTIMAL I am able to deal with questions or issues related to the usability of the REPLAY game.

1. Neither agree nor disagree [**0**] [**0**] [**0**] 2. Agree [**2**] [**1**] [**2**] 3. Strongly Agree [**0**] [**3**] [**2**]

FUNCTIONAL I am able to deal with questions or issues related to the usability of the REPLAY game, but would prefer not to.

1. Neither agree nor disagree [**1**] [**0**] [**1**] 2. Agree [**0**] [**1**] [**0**] 3. Strongly Agree [**0**] [**0**] [**0**]

SEMI-FUNCTIONAL I am able to deal with some questions or issues related to the usability of the REPLAY game.

1. Neither agree nor disagree [**0**] [**0**] [**0**] 2. Agree [**1**] [**1**] [**0**] 3. Strongly Agree [**0**] [**0**] [**0**]

INADEQUATE I am unable to deal with any questions or issues related to the usability of the REPLAY game.

1. Neither agree nor disagree [**1**] [**0**] [**0**] 2. Agree [**0**] [**0**] [**0**] 3. Strongly Agree [**0**] [**0**] [**0**]

Conclusions = The large majority of respondees were either confidently able to deal with questions relating to the usability of the game or were able to do so if asked.

Summary

The overall findings from the prioritised indicators have been very positive. In regards to the privacy of the space used to run the Replay sessions the respondents to the online survey discussions are confident that discussions taking place during the sessions cannot be overheard, with these sessions being run in isolation from other students. This indicates that the issue of privacy – which has both practical and ethical ramifications – is not considered to be significant. Respondents clearly understood that the sensitive nature of the Project – and the dynamics of the Replay discussion session in particular – required discussions should not be overheard.

The majority of respondents are either confident in or able to launch and run the game. Nearly all respondents felt a game session could be run within one or one and a half hours, the expected time for the sessions. Staff training has been put in place across the centres, in many cases with more than one person in the institution. There are some cases where lack of access to necessary software and hardware are an issue. However, the support material received is considered adequate or good in terms of the project consortium's consultation with the centres.

Running the Replay sessions required very little strain on the human resources of the staff from the centres. The amount of staff time required to carry out is less or the anticipated for carrying out follow up activities. The large majority of respondents were either confidently able to deal with questions relating to the usability of the game or were able to do so if asked, while a number would be prepared to do so if reluctantly. However, a minority of respondents expressed an inability to answer some or all questions from primary users on game play.

4.2   Findings from Indicators Addressing Ethical Issues

The following tables present that data gathered in relation to the indicators addressing ethical issues. More analysis of this data can be found, alongside analysis of the workshop feedback, in section 6. The format of the tables below follows the same pattern as in the previous section and the data relates to all participants from across the three countries.

Objectives addressed here are as follows:

Identify issues relating to the <u>communication with parents</u> both before and after the session
Identify issues related to the <u>ethics of the game as a whole</u>
Identify issues around <u>data storage, access to and usage of data</u>

Objective 3: Identify issues relating to the communication with parents both before and after the session

3.1 How the objectives and outcomes of the session are communicated to parents
OPTIMAL The institution has an established protocol for communication with parents/guardians.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**4**]   [**2**]
FUNCTIONAL The institution communicates regularly with parents/guardians.
1. Neither agree nor disagree [**1**]   [**0**]   [**0**]   2. Agree [**1**]   [**1**]   [**1**]   3. Strongly Agree [**0**]   [**0**]   [**2**]
SEMI-FUNCTIONAL The institution rarely communicates with parents/guardians.
1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]
INADEQUATE The institution never communicates with parents/guardians.
1. Neither agree nor disagree [**1**]   [**1**]   [**0**]   2. Agree [**1**]   [**0**]   [**0**]   3. Strongly Agree [**1**]   [**0**]   [**0**]

Conclusions = All institutions maintain contact with parents and guardians and thus appear to appreciate the importance of informing them of their child's role in the project. However some respondents say they have no communication with parents, or are perhaps unaware of any communication which implies that more needs to be done to communicate the importance of this to the Centres in some cases and potentially to provide better information that can be used to communicate with parents.

Objective 7: Identify issues related to the ethics of the game as a whole

7.1 The motivational preparedness of teaching staff

OPTIMAL I enjoy using gaming technology as a teaching tool.

1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**1**]   [**0**]   [**1**]   3. Strongly Agree [**0**]   [**5**]   [**4**]

FUNCTIONAL I have no concerns regarding the use of gaming technology as a teaching tool.

1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**2**]   [**0**]   [**1**]   3. Strongly Agree [**0**]   [**1**]   [**0**]

SEMI-FUNCTIONAL I have a few concerns regarding the use of gaming technology as a teaching tool.

1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**1**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]

INADEQUATE I am opposed to the use of gaming technology as a teaching tool.

1. Neither agree nor disagree [**1**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]

Conclusions = The online survey suggests there were very few issues among secondary users around the effectiveness of technology as a pedagogical tool, with the majority enjoying the experience of using ICT and being broadly very positive about the concept of using gaming within an educational context.

7.2 The level of unreasonable expectation created by the game on children, in terms of their wider education

OPTIMAL The REPLAY sessions have had a positive effect on participating children's attitude to their general education.

1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**0**]   [**2**]   [**3**]   3. Strongly Agree [**0**]   [**4**]   [**2**]

FUNCTIONAL The REPLAY sessions have had no effect on participating childrens' attitude to their overall education.

1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**1**]   [**0**]   [**0**]   3. Strongly Agree [**1**]   [**0**]   [**0**]

SEMI-FUNCTIONAL The use of gaming technology can create unreasonable expectations in young people concerning the regular use of ICT in the classroom.

1. Neither agree nor disagree [**0**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]

INADEQUATE The use of gaming technology definitely creates unreasonable expectations in young people concerning the regular use of ICT in the classroom.

1. Neither agree nor disagree [**1**]   [**0**]   [**0**]   2. Agree [**0**]   [**0**]   [**0**]   3. Strongly Agree [**0**]   [**0**]   [**0**]

Conclusions = Only one respondent suggested that the use of the Replay technology creates unreasonable expectations in children regarding the use of ICT in their general education while

the considerable majority felt it to have a positive effect on children's overall education.

7.3 The appropriacy of content to the diagnosis of anti-social behaviour/behavioural problems

OPTIMAL I consider the content of the Replay game to represent a highly positive environment and beneficial virtual experience for the user.

1. Neither agree nor disagree [0] [0] [0]   2. Agree [1] [1] [2]   3. Strongly Agree [0] [5] [3]

FUNCTIONAL I consider the content of the Replay game to be in no way inappropriate to either myself or children.

1. Neither agree nor disagree [0] [0] [0]   2. Agree [1] [0] [1]   3. Strongly Agree [2] [0] [0]

SEMI-FUNCTIONAL I consider the content of the Replay game to be inappropriate to either myself or children.

1. Neither agree nor disagree [0] [0] [0]   2. Agree [0] [0] [0]   3. Strongly Agree [0] [0] [0]

INADEQUATE I consider the content of the Replay game to be inappropriate to both myself and children.

1. Neither agree nor disagree [1] [0] [0]   2. Agree [0] [0] [0]   3. Strongly Agree [0] [0] [0]

Conclusions = The respondents were in general very positive around the content of the game, with only one respondent unsure as to whether the content could be considered inappropriate to pedagogical staff and participants.

7.4 Inclusion of issues around anti-social behaviour in the content of the Replay game.

OPTIMAL The content of the Replay game covers all issues relevant to addressing anti-social behaviour in young people.

1. Neither agree nor disagree [0] [1] [0]   2. Agree [0] [0] [1]   3. Strongly Agree [0] [1] [1]

FUNCTIONAL The content of the Replay game addresses the major issues around anti-social behaviour in young people.

1. Neither agree nor disagree [0] [1] [0]   2. Agree [1] [3] [2]   3. Strongly Agree [1] [0] [1]

SEMI-FUNCTIONAL A number of the major issues around addressing anti-social behaviour in young people are not covered by the Replay content.

1. Neither agree nor disagree [0] [0] [0]   2. Agree [2] [0] [1]   3. Strongly Agree [0] [0] [0]

INADEQUATE None of the major issues around addressing anti-social behaviour in young people are covered by the content of the Replay game.

1. Neither agree nor disagree [1] [0] [0]   2. Agree [0] [0] [0]   3. Strongly Agree [0] [0] [0]

Conclusions = In terms of its inclusion of issues around anti-social behaviour most respondents were split between a feeling that all relevant issues were addressed and just the major issues. However, a small number of respondents felt that some important issues had been missed.

7.5 The appropriacy of content in relation to the emotional and psychological problems of primary users

OPTIMAL I believe the content of the REPLAY game to be ideal for use with children with emotional and psychological problems.

1. Neither agree nor disagree [0] [0] [0]   2. Agree [2] [2] [4]   3. Strongly Agree [0] [1] [1]

FUNCTIONAL I have no concerns over the appropriacy of the content of the REPLAY game for use with children with emotional and psychological problems.

1. Neither agree nor disagree [0] [0] [0]   2. Agree [1] [3] [1]   3. Strongly Agree [1] [0] [0]

SEMI-FUNCTIONAL I find some of the content of the REPLAY game to be inappropriate for use with children with emotional and psychological problems.

| 1. Neither agree nor disagree | [0] | [0] | [0] | 2. Agree [0] | [0] | [0] | 3. Strongly Agree [0] | [0] | [0] |

INADEQUATE I find all of the content of the REPLAY game to be inappropriate for use with children with emotional and psychological problems.

| 1. Neither agree nor disagree | [1] | [0] | [0] | 2. Agree [0] | [0] | [0] | 3. Strongly Agree [0] | [0] | [0] |

Conclusions = Further to this, only one respondent was concerned over the appropriacy of the content of the game for specific use with children with emotional and psychological problems with respondents split over having no concern in this area and considering the content to be ideal in this respect.

7.6 The ethical impact of using the Replay technology with children.

OPTIMAL The experience of being involved in the Replay sessions, while challenging was very positive for the children involved.

| 1. Neither agree nor disagree | [0] | [0] | [0] | 2. Agree [2] | [1] | [1] | 3. Strongly Agree [0] | [4] | [2] |

FUNCTIONAL Children participating in the Replay sessions displayed no discernable signs of distress or discomfort during the sessions

| 1. Neither agree nor disagree | [0] | [0] | [0] | 2. Agree [1] | [0] | [0] | 3. Strongly Agree [1] | [1] | [1] |

SEMI-FUNCTIONAL Children participating in the Replay sessions displayed some signs of distress or discomfort at certain points during the experience.

| 1. Neither agree nor disagree | [0] | [0] | [0] | 2. Agree [0] | [0] | [1] | 3. Strongly Agree [0] | [0] | [0] |

INADEQUATE Children participating in the Replay sessions displayed significant signs of distress or discomfort during the experience.

| 1. Neither agree nor disagree | [1] | [0] | [0] | 2. Agree [0] | [0] | [0] | 3. Strongly Agree [0] | [0] | [0] |

Conclusions = Two respondents felt that involvement in the Replay sessions presented an overly challenging experience to the state of the children involved with the majority considering the experience, whilst challenging, to be very positive for primary users.

Objective 9: Identify issues around data storage, access to and usage of data

9.1 Policies concerning confidentiality of data related to the Replay project

OPTIMAL Data generated through REPLAY sessions is only submitted for processing through a password protected online database.

| 1. Neither agree nor disagree | [0] | [0] | [1] | 2. Agree [1] | [0] | [0] | 3. Strongly Agree [1] | [2] | [1] |

FUNCTIONAL Data generated through the REPLAY sessions is only submitted for processing to the REPLAY consortium.

| 1. Neither agree nor disagree | [1] | [1] | [1] | 2. Agree [0] | [1] | [2] | 3. Strongly Agree [0] | [2] | [0] |

SEMI-FUNCTIONAL Data generated through the Replay gaming sessions is only submitted for processing to the Replay consortium during the duration of the Project.

| 1. Neither agree nor disagree | [0] | [0] | [1] | 2. Agree [0] | [0] | [0] | 3. Strongly Agree [0] | [0] | [0] |

INADEQUATE Data generated through the Replay gaming sessions is always submitted for processing to organisations/individuals other than the Replay consortium.

1. Neither agree nor disagree [**0**]　[**0**]　[**0**]　2. Agree [**0**]　[**0**]　[**0**]　3. Strongly Agree [**0**]　[**0**]　[**0**]

Conclusions = The data generated during the Replay sessions was only ever submitted to the Project consortium. Centres did not gain access to data in real time and were therefore not concerned about the confidentiality of the data.

9.2 Policies concerning internal confidentiality of data

OPTIMAL Data generated through the REPLAY sessions is only made available to specifically authorized school staff through restricted entry to a password protected database.

1. Neither agree nor disagree [**0**]　[**0**]　[**1**]　2. Agree [**1**]　[**1**]　[**2**]　3. Strongly Agree [**1**]　[**4**]　[**1**]

FUNCTIONAL Distribution of data generated through the REPLAY sessions is supervised to ensure that it is only made available to those specifically authorized to view it.

1. Neither agree nor disagree [**1**]　[**0**]　[**0**]　2. Agree [**0**]　[**0**]　[**1**]　3. Strongly Agree [**0**]　[**1**]　[**1**]

SEMI-FUNCTIONAL Data generated through the REPLAY sessions is intended as only being seen by those specifically authorized to view it, but this process is not supervised.

1. Neither agree nor disagree [**0**]　[**0**]　[**0**]　2. Agree [**0**]　[**0**]　[**0**]　3. Strongly Agree [**0**]　[**0**]　[**0**]

INADEQUATE Data generated through the REPLAY sessions is intentionally made available to staff not specifically authorized to view it.

1. Neither agree nor disagree [**0**]　[**0**]　[**0**]　2. Agree [**0**]　[**0**]　[**0**]　3. Strongly Agree [**0**]　[**0**]　[**0**]

Conclusions = The centres have all ensured that measures for the internal security of data generated through the Replay sessions have been put in place and that only those who have been specifically authorised to do so are able to view this data.

9.3 Policies concerning integrity of data

OPTIMAL Data generated by the Replay sessions is only modified by specifically authorized school staff through restricted entry to a password protected database.

1. Neither agree nor disagree [**0**]　[**0**]　[**1**]　2. Agree [**1**]　[**1**]　[**1**]　3. Strongly Agree [**1**]　[**5**]　[**2**]

FUNCTIONAL Modification of data generated by the Replay sessions is supervised to ensure that it is only modified by those specifically authorized to view it.

1. Neither agree nor disagree [**0**]　[**0**]　[**0**]　2. Agree [**0**]　[**0**]　[**1**]　3. Strongly Agree [**0**]　[**0**]　[**0**]

SEMI-FUNCTIONAL Data generated by the Replay sessions is intended as only being modified by those specifically authorized to access it but this process is not supervised.

1. Neither agree nor disagree [**0**]　[**0**]　[**0**]　2. Agree [**0**]　[**0**]　[**0**]　3. Strongly Agree [**0**]　[**0**]　[**0**]

INADEQUATE Data generated by the Replay sessions is intentionally made available for modification to staff not specifically authorized to access it.

1. Neither agree nor disagree [**0**]　[**0**]　[**0**]　2. Agree [**0**]　[**0**]　[**0**]　3. Strongly Agree [**0**]　[**0**]　[**0**]

Conclusions = These same security procedures also apply to the modification of data with all but one respondent claiming any modification has only been made through access to a password protected database.

9.4 Policies concerning availability of data

OPTIMAL There is a clear procedure in place at the educational centre for granting parents/guardians access to data concerning their child.

1. Neither agree nor disagree [0] [1] [1] 2. Agree [2] [0] [2] 3. Strongly Agree [0] [4] [0]

FUNCTIONAL Data held on children is made available to parents/guardians.

1. Neither agree nor disagree [1] [0] [0] 2. Agree [1] [1] [0] 3. Strongly Agree [0] [0] [0]

SEMI-FUNCTIONAL Data held against children is in some cases made available to parents/guardians.

1. Neither agree nor disagree [0] [0] [0] 2. Agree [0] [0] [1] 3. Strongly Agree [0] [0] [0]

INADEQUATE Data from the REPLAY sessions is never made available to parents/guardians.

1. Neither agree nor disagree [0] [0] [0] 2. Agree [0] [0] [0] 3. Strongly Agree [0] [0] [0]

Conclusions = All centres have a policy of ensuring that data on children is made available to parents and guardians with the considerable majority citing a clear procedure in this respect.

9.5 Nature of data captured

OPTIMAL Data captured from the Replay sessions is not stored under the name of a specific child and is only that agreed upon by the informed consent of particpating children and parents/guardians.

1. Neither agree nor disagree [2] [0] [1] 2. Agree [1] [1] [1] 3. Strongly Agree [0] [3] [2]

FUNCTIONAL Data captured during the Replay sessions is only that agreed upon by the informed consent of particpating childrem and parents/guardians.

1. Neither agree nor disagree [0] [0] [0] 2. Agree [0] [1] [1] 3. Strongly Agree [1] [1] [0]

SEMI-FUNCTIONAL Part of the data captured during the Replay sessions is not that agreed upon by the informed consent of participating children and parents/guardians.

1. Neither agree nor disagree [0] [0] [0] 2. Agree [0] [0] [0] 3. Strongly Agree [0] [0] [0]

INADEQUATE All of the data captured during the Replay sessions is not that agreed upon by the informed consent of particpating children and parents/guardians.

1. Neither agree nor disagree [0] [0] [0] 2. Agree [0] [0] [0] 3. Strongly Agree [0] [0] [0]

Conclusions = All centres maintain the anonymity of data on specific children generated by the Replay sessions. Furthermore, the data stored, in all cases, is only that agreed upon by the informed consent of participating children and their parents, guardians.

Summary

All institutions maintain contact with parents and guardians and thus appear to appreciate the importance of keeping them informed of their child's role in the project. However one respondent (anonymous within the survey) claimed to have no communication with parents, or was perhaps unaware of any communication taking place. This could be due to the fact that coordinators within the centres were primarily responsible for gaining parental consent and this information may not have been made available to all secondary users.

The online survey also suggests that while all institutions communicate regularly with parents there is often not an established protocol for this process. In the case of the Replay game where an innovative, novel form of behavioural analysis is taking place, the importance of fully explaining the implications of the sessions is of great importance, as is the impact of the sessions on future activity.

The respondents have also been very positive around the content of the game with only one respondent unsure as to whether the content could be considered inappropriate to pedagogical staff and participants. In regards to the inclusion within the content of issues around anti-social behaviour most respondent were split between a feeling that on the one hand, all relevant issues were addressed and, on the other, just the major issues had been addressed. A couple of respondents indicated that some major issues around anti-social behaviour in young people are missing from the present content of the game suggesting a need for greater attention around content in future versions.

However, only a small number of respondents felt that some important issues had been missed. Further to this, only one respondent was concerned over the appropriacy of the content of the game for specific use with children with emotional and psychological problems. Generally, respondents were split over having no concern in this area and considering the content to be ideal in this respect. While two respondents felt that involvement in the Replay sessions presented an overly challenging experience given the emotional state of the children involved, the majority considered the experience, whilst challenging, to be very positive for primary users.

The response to the online survey suggests that involvement in the Replay sessions has a positive effect on the overall education of the young people involved.

The data generated during the Replay sessions was only ever distributed internally to the Project consortium. The centres have all ensured that measures for the internal security of data generated through the Replay sessions have been put in place and that only those who have been specifically authorised to do so are able to view this data. The online survey also confirms that these same security procedures also apply to the modification of data with all but one respondent claiming any modification has only been made through access to a password protected database. All centres have a policy of ensuring that data on children is made available to parents and guardians with the considerable majority of individual respondents citing a clear procedure in this respect. Furthermore, the response to the survey shows that all centres have clearly understood the importance of maintaining the anonymity of data on specific children generated by the Replay sessions. In addition, the data stored

from the sessions, in all cases, is only that agreed upon through the informed consent procedure of participating children and their parents/guardians.

4.3 Findings from Remaining Indicators

The following data outlines the results from the online survey in relation to the remaining indicators not previously covered.
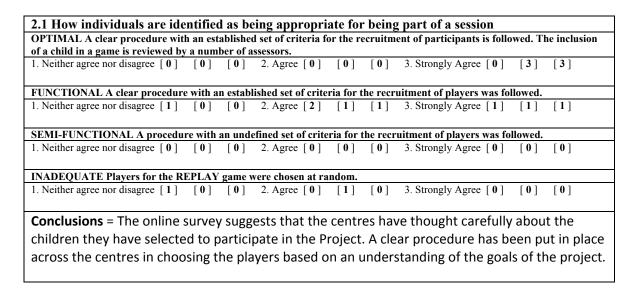
The objectives addressed here are as follows:

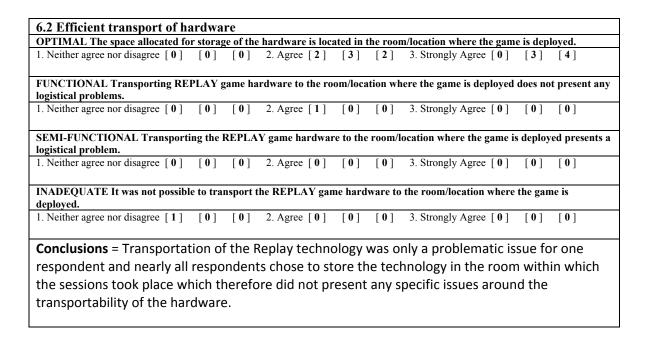| |
|---|
| **Identify issues related to the <u>recruitment of players</u> for the game and the <u>effective communication with those players</u> prior to the game** |
| **Identify issues related to the <u>safe and efficient storage of hardware</u>** |
| **Identify the way in which the game could/should <u>integrate with the current behavioural programmes</u> being run in the school or institution** |

Objective 2: Identify issues related to the recruitment of players for the game and the effective communication with those players prior to the game

2.1 How individuals are identified as being appropriate for being part of a session
OPTIMAL A clear procedure with an established set of criteria for the recruitment of participants is followed. The inclusion of a child in a game is reviewed by a number of assessors.
1. Neither agree nor disagree [**0**] [**0**] [**0**] 2. Agree [**0**] [**0**] [**0**] 3. Strongly Agree [**0**] [**3**] [**3**]
FUNCTIONAL A clear procedure with an established set of criteria for the recruitment of players was followed.
1. Neither agree nor disagree [**1**] [**0**] [**0**] 2. Agree [**2**] [**1**] [**1**] 3. Strongly Agree [**1**] [**1**] [**1**]
SEMI-FUNCTIONAL A procedure with an undefined set of criteria for the recruitment of players was followed.
1. Neither agree nor disagree [**0**] [**0**] [**0**] 2. Agree [**0**] [**0**] [**0**] 3. Strongly Agree [**0**] [**0**] [**0**]
INADEQUATE Players for the REPLAY game were chosen at random.
1. Neither agree nor disagree [**1**] [**0**] [**0**] 2. Agree [**0**] [**1**] [**0**] 3. Strongly Agree [**0**] [**0**] [**0**]
Conclusions = The online survey suggests that the centres have thought carefully about the children they have selected to participate in the Project. A clear procedure has been put in place across the centres in choosing the players based on an understanding of the goals of the project.

2.2 Communication with players
OPTIMAL Participating children had a number of introductory sessions to the Replay technology with staff at the centre.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**0**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**4**]
FUNCTIONAL Participating children have had an introductory session to the Replay technology with staff at the centre.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**2**] [**2**] [**1**]   3. Strongly Agree [**0**] [**3**] [**0**]
SEMI-FUNCTIONAL Some participating children have had an introductory session to the Replay technology with staff at the centre.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**1**] [**0**] [**0**]   3. Strongly Agree [**1**] [**0**] [**0**]
INADEQUATE No participating children have had an introductory session to the Replay technology with staff at the centre.
1. Neither agree nor disagree [**0**] [**1**] [**0**]   2. Agree [**1**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]
Conclusions = All centres were aware of the importance of providing participants with an introduction and orientation of the technology and an understanding of what this implies, with Romania being particularly active inproviding more than one introductory session.

Objective 6: Identify issues related to the safe and efficient storage of hardware

6.1 The degree of security needed
OPTIMAL The room reserved for storing the REPLAY game hardware can only be accessed by a pin code, which is only supplied to authorized personnel.
1. Neither agree nor disagree [**1**] [**0**] [**1**]   2. Agree [**0**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**1**]
FUNCTIONAL Only specifically authorized personnel are given access to any hardware associated with REPLAY.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**3**] [**2**] [**2**]   3. Strongly Agree [**0**] [**4**] [**2**]
SEMI-FUNCTIONAL Some unauthorized personnel have been given access to the REPLAY hardware.
1. Neither agree nor disagree [**0**] [**0**] [**0**]   2. Agree [**0**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]
INADEQUATE The REPLAY hardware is stored in an area with no locking facility.
1. Neither agree nor disagree [**1**] [**0**] [**0**]   2. Agree [**0**] [**0**] [**0**]   3. Strongly Agree [**0**] [**0**] [**0**]
Conclusions =   The centres have taken precautions to ensure that only authorized personnel are given access to the hardware associated with Replay and thus also the information they contain.

6.2 Efficient transport of hardware								
OPTIMAL The space allocated for storage of the hardware is located in the room/location where the game is deployed.								
1. Neither agree nor disagree [0]	[0]	[0]	2. Agree [2]	[3]	[2]	3. Strongly Agree [0]	[3]	[4]
FUNCTIONAL Transporting REPLAY game hardware to the room/location where the game is deployed does not present any logistical problems.								
1. Neither agree nor disagree [0]	[0]	[0]	2. Agree [1]	[0]	[0]	3. Strongly Agree [0]	[0]	[0]
SEMI-FUNCTIONAL Transporting the REPLAY game hardware to the room/location where the game is deployed presents a logistical problem.								
1. Neither agree nor disagree [0]	[0]	[0]	2. Agree [0]	[0]	[0]	3. Strongly Agree [0]	[0]	[0]
INADEQUATE It was not possible to transport the REPLAY game hardware to the room/location where the game is deployed.								
1. Neither agree nor disagree [1]	[0]	[0]	2. Agree [0]	[0]	[0]	3. Strongly Agree [0]	[0]	[0]

Conclusions = Transportation of the Replay technology was only a problematic issue for one respondent and nearly all respondents chose to store the technology in the room within which the sessions took place which therefore did not present any specific issues around the transportability of the hardware.

Objective 8: Identify the way in which the game could/should integrate with the current behavioural programmes being run in the school or institution

8.1 The particular timing of the game sessions in relation to current programmes								
OPTIMAL The REPLAY sessions are entirely complementary to the existing behavioural programme sessions within the institution.								
1. Neither agree nor disagree [0]	[0]	[0]	2. Agree [2]	[0]	[1]	3. Strongly Agree [0]	[3]	[1]
FUNCTIONAL There were no timetable conflicts between the REPLAY and existing behavioural programme sessions within the institution.								
1. Neither agree nor disagree [0]	[0]	[0]	2. Agree [3]	[1]	[3]	3. Strongly Agree [0]	[2]	[0]
SEMI-FUNCTIONAL The REPLAY sessions caused a conflict in the timetabling of existing behavioural programme sessions within the institution.								
1. Neither agree nor disagree [0]	[0]	[0]	2. Agree [0]	[0]	[0]	3. Strongly Agree [0]	[0]	[0]
INADEQUATE The REPLAY sessions have caused multiple conflicts in the timetabling of existing behavioural programmes within the institution.								
1. Neither agree nor disagree [0]	[0]	[0]	2. Agree [0]	[0]	[0]	3. Strongly Agree [0]	[0]	[0]

Conclusions = The online survey suggests that running the Replay sessions caused no conflict to the timetabling of other behavioural programs in the school, with no respondents having encountered this problem. Indeed, a number of respondents felt the sessions to be entirely complementary with existing programs.

8.2 The allocation of human resources within the context of current programmes									
OPTIMAL Allocating staff to the REPLAY Project has not negatively affected the existing behavioural programmes within the institution in any way.									
1. Neither agree nor disagree [**0**]	[**0**]	[**1**]	2. Agree [**4**]	[**1**]	[**1**]	3. Strongly Agree [**0**]	[**5**]	[**3**]	
FUNCTIONAL Allocating staff to the REPLAY Project has caused some minor, inconsequential readjustments to the running of existing behavioural programmes.									
1. Neither agree nor disagree [**1**]	[**0**]	[**0**]	2. Agree [**0**]	[**0**]	[**1**]	3. Strongly Agree [**0**]	[**0**]	[**0**]	
SEMI-FUNCTIONAL Allocating staff to the Replay Project has caused staffing problems for existing behavioural programmes within the institution without causing them to fail to meet objectives.									
1. Neither agree nor disagree [**0**]	[**0**]	[**0**]	2. Agree [**0**]	[**0**]	[**0**]	3. Strongly Agree [**0**]	[**0**]	[**0**]	
INADEQUATE Allocating staff to the Replay Project has caused existing behavioural programmes within the institution to lose key staff and fail to meet objectives.									
1. Neither agree nor disagree [**0**]	[**0**]	[**0**]	2. Agree [**0**]	[**0**]	[**0**]	3. Strongly Agree [**0**]	[**0**]	[**0**]	
Conclusions = None of the centres found allocating staff to the Replay sessions to be the cause of staff shortages in other areas.									

Summary

The online survey suggests that the centres have thought carefully about the children they have selected to participate in the project. A clear procedure has been put in place across the centres in choosing the players based on an understanding of the goals of the project. All centres were aware of the importance of providing participants with an introduction and orientation to the technology and an understanding of what this implies, with Romania being particularly active in providing more than one introductory session.

Transportation of the Replay technology was only a problematic issue for one respondent and nearly all respondents chose to store the technology in the room within which the sessions took place which does not suggest a compromise on security since a separate indicator highlights the fact that the centres have taken precautions to ensure that only authorized personnel are given access to the hardware associated with Replay and thus also the information held therein.

The online survey suggests there were very few issues among teachers around the effectiveness of technology as a pedagogical tool, with the majority enjoying the experience of using ICT. Only one respondent suggested that the use of the Replay technology creates unreasonable expectations in children regarding the use of ICT in their general education while the considerable majority felt it to have a positive effect on children's overall education.

However, a small number of staff have concerns over being asked to use the Replay technology as part of their professional activities.

The survey suggests that running the Replay sessions caused no conflict to the timetabling of other behavioural programs in the school, with no respondents having encountered this problem. Indeed, a number of respondents felt the sessions to be entirely complementary with existing programs. None of the respondents from any of the centres found allocating staff to the Replay sessions to be the cause of staff shortages in other areas.

4.4 Findings from the focus group workshops

As a supplemental activity to the online survey, each user centre conducted a face to face workshop with all secondary users and with others involved in the set up and running of the REPLAY sessions. These workshops provided an opportunity to discuss more fully the issues faced by secondary users and ensured that nothing was missed from the online survey (which was made up entirely of closed questions).

Summary findings are given below by country. These findings have been amalgamated into the general recommendations that follow.

4.4.1 Findings from the United Kingdom

The Focus Group qualitative workshop participants in the UK were all in agreement that participation in the Replay sessions had helped build trust between teacher and student. Involvement in the Replay sessions has lead to more communication outside of the sessions and has been a powerful tool in this regard. Participants in the workshop agreed that longer terms trials looking at the impact on behaviour of extended sessions would be of great value.

While the participants found the Replay technology to be an effective tool, there were some issues with the set up and the logistics of running the sessions. It was felt that the amount of initial preparation time to set up the technology was problematic, with concerns expressed that teachers generally need to be able to plug in the technology and play it: delays in doing due to the complexity of set up might mean that they don't use it. If it were not possible to reduce the initial preparation time, the time required would need to be highlighted clearly for potential customers. In addition to this adequate training and instruction in order to install the game effectively would be required.

In terms of human resource requirements placed upon the testing centre, the participants considered the provision of dedicated technical support vital with one committed member of technical support within the institution needed in order to ensure that the sessions run efficiently. While the centre was provided with the necessary hardware and software, were this not to be the case, there is a real need to be clear about technology requirements; even things like having multiple controllers would be an issue for some schools. The participants also explained that under normal circumstance the hardware available within the school is often transported between different locations within the school making it difficult to ensure access to any specific hardware at any given time. As such ensuring that software can be accessed remotely (via a central server or online) from any computer within the school would be a significant positive. The Focus Group also felt that the provision of an import data function direct into the established user management system would be particularly useful in the case that a lot of users are involved. This would facilitate easy set up of player profiles using existing datasets.

The Group agreed that overall, the project in terms of both content and processes was very ethically sound. There were no ethical concerns about the questions presented to the primary users apart from a question related to a parent dying, which proved inappropriate in one case with a child playing having recently lost a parent. This proved an exception as in general the group felt that the questions could be more challenging and more direct in the way they interacted with young people. The participants suggested that in many cases the questions could have directly addressed the player rather than asking questions in the third person. However, they understood that the gaming format means children are being asked to respond to hypothetical questions and that use of the third person is less accusatory.

The session concluded with all participants broadly in agreement that they would strongly consider purchasing REPLAY if the cost way appropriate to the means of the school and if there were some amendments in terms of functionality and, particularly, content. All participants were confident that the school was well set up to run the game successfully and that any ethical issues could be addressed within existing school policies.

4.4.2 Findings from Spain

The overall findings from the focused qualitative workshop held at the testing centre in Spain are that the Replay game easy to install and use. Feedback on the response from young people who were involved suggests that they have left the session highly motivated and eager to use the technology again. The group described the game as ideal for inclusion in the normal activities that take place in the centre environment, as it made reference to topics

related to the prevention of antisocial behaviours that they have observed in young people at the centre.

When questioned on the efficacy of including content related to anti-social behaviour the focus group felt that such issues should be tackled within the school/centre environment, as young people spend a great deal of their lives in this setting. The workshop participants felt that the content of the game was justified as it offers experiences that are to do with reality, with feelings, disappointments, expectations, frustrations that young people can encounter throughout their lives, and that they have to face on a regular basis. However, while the game was considered a very effective tool for gaining student trust, doubts were expressed over the ability of the game to act as a reliable tool for assessment of anti-social behaviour in young people. This was reflected in the attitudes of parents whose children were asked to take part in the Replay sessions. Parents did not make any objections to their children trying the game. On the contrary, they were interested in this project.

In conclusion, the majority of participants viewed the game as a valuable tool and something that that would consider implementing alongside their current activities. There were no significant issues in relation to the set up and implementation of the game and no major concerns regarding the ethics of playing the game or of the content.

4.4.3 Findings from Romania

The focus group in Romania expressed the belief that the Replay technology could be helpful in developing separate games with activities aimed at children exhibiting the early stages of anti-social behaviour, the target primary user of the Replay game tested at the centres. The group also felt that by playing the game emotional problems could be addressed more easily than using the more direct approach between student and counsellor.

In Romania initial feelings surrounding the appropriacy of the content within the game were a little more sceptical. The focus group attendees found that on first engagement with the content, the task in which participants target and shoot values like family, friends was considered problematic. Participants highlighted the importance of explaining this task fully during the Play session as it might otherwise be considered immoral if the action plan is not described properly during a briefing session with the participant. However, the primary users of the game suggested that if this activity had been eliminated they wouldn't have been so interested in the game.

Another suggestion that was made by the group was the need for more support material to help make the set up and running of the game as easy as possible. Specific recommendations were for a technical manual and/or a tutorial for each component of REPLAY platform: software, hardware etc. Participants explained that initially some time was needed to set up the game, and also some problems with the set up were experienced which required the set up process to be restarted. It was stressed that these problems only occurred for the first few sessions while the correct procedure was being learnt. Participants also requested more written guidance instructions on using the Replay platform to aid the running of Play and Replay sessions. Feedback from the focus group highlighted that while players enjoyed playing the game, they felt they were in competition with themselves but felt frustrated and anxious only when they could not perform some tasks. A further recommendation was for a guide for psychologists/counsellors explaining the protocol involved in carrying out the sessions.

However, participants were quick to stress that the problems described in the previous paragraph did not become the cause of any unwillingness or lack of motivation on the part of experts in regards to the use of the Replay technology. One of the psychologists involved in the sessions explained that he was not familiar with new technologies and they would need support with introducing any technological innovation into his professional activities.

The conclusions from the session were that the game itself worked well with young people and fitted into the dynamics of the school easily. However, greater simplicity in set up would be appreciated and significantly greater documentation/guides provided for all aspects of the process/experience.

5. Recommendations for Replay Take-Up Strategies

5.1   EU Wide Recommendations

The main area for additional development in the project to emerge from the work of the assessment is the need for further training, guidelines and instructions from both a logistical and pedagogical perspective. While the sessions carried out in all three centres were completed effectively, some participants are still not confident in answering questions that come up during the sessions, and set up has proved problematic in some cases. It is clear that there is need for written instructions and pedagogical guidance to allow the completion of sessions to be run in the most efficient and effective manner possible.

Furthermore, a clear protocol is needed in regards to communicating the core objectives of the game to the players (young people) and in selecting the young people who would most benefit from the sessions, through providing a set of universal criteria for this selection.

The support material provided must take the form of both a technical manual for set up and management of gameplay in both Play and Replay modes and a separate guidance document explaining fully the pedagogical aims of the project and providing experts with information that will help with any questions directed by teachers. As a small number of respondents to the online survey expressed concerns over having to answer primary user questions during gameplay, a good solution would be to provide a number of scenarios for the response of primary users to the gameplay that would help prepare experts for cases in which students have not understood the pedagogical aims of the Tasks they are given within the game context and also where they find these tasks frustrating and/or too challenging. A small number of respondents reported that some students became frustrated during sessions. Creating scenarios based on this experience would help prepare experts and give them the tools to deal with these situations. Furthermore, information should be provided for experts on the pedagogical aims of each activity within the game and what they should expect to learn from students.

The importance of communication with parents in the pedagogical centres should be considered in the creation of support material supplied with Replay, with clear guidance on establishing a protocol in this area around the aims and objectives of the project and its full implications. The response to the online survey suggests that involvement in the Replay sessions has a positive effect on the overall education of the young people involved. As such, it would be of great benefit to explain the areas in which this positive impact can be felt within any guidance documents on explaining the Project to parents/guardians. This would also be of commercial benefit as an additional selling point for the game to potential buyers.

Once game sessions have been completed the consortium feels it would be beneficial to devise a set of follow up activities that would capitalize on the obvious enthusiasm many experts experience after being involved in REPLAY sessions. It is also hoped that these activities could help reinforce the pedagogical aims of the technology for those few who may be more skeptical about its use in a professional context. From a commercial point of view this would also make the expense incurred by pedagogical institutions more worthwhile as it would extend the life of the project within these institutions and allow experts to build on the information gathered from sessions.

Response to the online survey suggests that running the Replay sessions in the three centres has had little or no negative impact on the timetabling and effectiveness of other behavioural programmes within these centres. Furthermore, the indicators presented in the survey suggest that the follow up activities run in the centres after Replay sessions have had no negative impact on the management in the school. As part of the provision of material for follow up activities within the institutions, guidance should also be given on how these activities could enhance the existing behavioural programs within the school.

A small number of respondents also suggested that some major issues around anti-social behaviour in young people are missing from the present content of the game. Furthermore, there was some informal but notable interest in the creation of a library of content, offering secondary users the opportunity to configure the activities within the game in accordance with the specific requirements of individual students. It would therefore be advisable to incorporate some flexibility within the content development of the game to allow specific issues to be addressed within the existing activities set out within the game. This would enable the game to adjust to local requirements without requiring the time and expense of additional programming. Furthermore, the development of an extensive library of activities would broaden the appeal of the game to a range of end users and enable the kind of personalised learning that is now commonplace, particularly amongst special needs teaching.

Beyond the creation of a content library, there were also some suggestions that tools enabling secondary users to create their own content/activities would also be useful. However, this idea was not universally accepted as it would inevitably create a significant time pressure on secondary users and involve some complications around implementation. This idea will be further tested amongst the market prior to any further development.

More broadly, it is clear that the overall objectives of Replay, the way in which it might be used and the content that supports these objectives needs to be fully evaluated. In short there was no consensus across all test sites as to the specific use of the technology. Although all secondary users were broadly positive, some were not clear whether Replay was

intended as an assessment tool, a therapy, a relationship tool or something else. This must be clarified before any further developments are made.

5.2 Country Specific Recommendations

5.2.1. Recommendations for the United Kingdom

The appraisal of the overall game in the UK was positive with participants from the Qualitative Focus Group sessions describing the technology as essentially a sound, ethical and practical educational resource, which a school would purchase if the price was competitive – i.e. between €400 and €600 for a whole school license. A higher price could be justified by supplementing the standard question bank with optional extras for experts to select where appropriate.

It is therefore very important for the consortium to be aware of the budget of its customer base and given that there were questions in the UK over the availability of the correct hardware within schools, whether the technical requirements of the game would exceed the budget of schools/institutions. A thorough investigation into the overall costs of running the game is required to ensure that these costs match the budgets of schools and that appropriate technology is available already.

Given the challenges experienced with set up of the technology in the UK, there is an obvious need for technical manuals and written instructions for pedagogical institutions and a clear pre-sale description of the technical requirements for installing and running the game. In addition to this, pre sale, potential purchasers need to be made aware of the needs of the game in terms of training of staff, so that the impact of human resources within the school is properly understood. A brochure outlining all these requirements in the simplest form possible is required.

The consortium must also look at solutions to providing remote access to the Replay software to make sure it is accessible across the school so use of the software required is not tied to one specific piece of hardware. This could be delivered either via a central server or online access. This would make the organisation of sessions within the school much easier to manage and would remove a significant logistical obstacle to effective deployment of the sessions within the school.

5.2.2. Recommendations for Spain

The focus group research from Spain was generally very positive but one of the members, a psychologist, while acknowledging the potential of the Replay game to address anti-social behaviour was unsure as to the effectiveness of the game as a reliable tool for the assessment of anti-social behaviour. The group felt that in order to fully evaluate the game's potential in this regard it would be necessary to carry out further tests or other types of psychological studies. While this comment came from one individual it perhaps necessary for the Consortium to organise a further external evaluation of the Replay game or further explain its potential if the game is to be marketed as a tool for assessing anti-social behaviour in Spain. Alternatively, any guidance instructions included with the game as a product must make it clear that any assessment that takes place during the Play and Replay sessions corresponds to the professional opinion of the expert acting as Secondary user as well as any other relevant support staff.

The Spanish focus group suggested that the scope of the Replay game could be extended beyond the analysis of anti-social behaviour and used as a tool for the teaching of other subject matter within the classroom. They described that the ability to add or choose from alternative content to deal with other subject matters would increase the value of the game to the consumer. It was also felt that including a separate range of activities for a range of age groups would make the game more attractive to educational institutions.

5.2.3 Recommendations for Romania

There is a need in Romania for more consideration of the appropriacy of the content of the Replay game, in particular the activity involving the firing of a weapon. This issue is made more acute as this particular activity was very popular among primary users. Experts in Romania need to be able to explain the reason why primary users are asked 'to shoot at family members and friends', with a view to clearly explaining the pedagogical aim of this activity in terms that young people are able to understand. A clear justification for this activity must be provided for the experts who run the sessions. The concerns around this specific activity in Romania must also be taken into account in the development of any additional content for the game.

A number of observations made during the focus group session in Romania also reinforce the need for a technical manual/tutorial for each component of REPLAY platform: software, hardware etc, as well as a guide for psychologists and/or counsellors containing the protocol of the sessions, with additional guidance on using the platform to facilitate the Play and

Replay sessions. Feedback from the focus group highlighting the frustration felt by certain players during the sessions in completing the tasks reinforce the need for different levels of difficulty for different age groups or ability levels so as not to distract from the positive pedagogical experience of the game for young people.

6. Ethical Conclusions

6.1 Summary conclusions around ethical issues in relation to Replay

The Assessment carried out by the Replay consortium could find no evidence to support concern or indeed inconsistencies regarding the gathering and processing of data generated by the Project, both for primary and secondary users. The indicator results suggest that availability, disclosure and modification of data were strictly controlled by access control policies in all centres. Furthermore, the integrity of data collected through the Assessment was ensured through measures taken to protect against malicious or accidental modification of this data.

Two key areas for improvement in regards to tackling ethical issues in the project have emerged, around communication and content generation:

1. Provision of written guidance on how to consult and inform parents and guardians of the aims of the Replay project and the role their children would play within it, to allow pedagogical institutions to develop a clear protocol for their involvement in the Project.
2. Solutions need to be found to allow pedagogical institutions to adjust or select the content within specific activities to the requirements and context of their student body, or to individual students, in order to avoid any specific ethical dilemmas in relation to content. This would also be a useful functionality in terms of ensuring that the content is sufficiently challenging for primary users.

Beyond these conclusions, there are no other specific recommendations in relation to ethical issues. This is largely due to the fact that, on the one hand, the Replay technology is not built in such as way as to create issues around privacy or security of data. And second that the ethical policies, practices and protocols within the types of end user environments that Replay would be deployed usually cover all such issues.

And further iterations of the Replay software – including updates to content – need to take any potential ethical concerns into account and a part of the support documentation provided with the fully commercialized version of the game should include specific reference to running the game in an ethical way.

7. Conclusions

The assessment carried out within this work package has identified some key areas for improvement to the existing Replay technology:

1. The first requirement for additional development that has been highlighted across the testing centres is the need for more support material to help ensure the effective deployment of the game. Development of an introductory pack that would cover technical requirements, resources and a manual to take first time users through the set up of the technology within the institution running sessions. This pack could be usefully integrated into the technology itself as well as being made available as hard copy.

2. In addition to this, staff within institutions will require more advice and support in how to deal with questions relating to gameplay and understanding the role of secondary users in the Play and Replay modes. As part of this support, practical advice should be included on dealing with primary users becoming frustrated during gameplay.

3. Solutions aimed at improving the accessibility of the Replay technology, through remote access via a central server or online.

4. Developing a content management/selection functionality would also enable pedagogical institutions to tailor the content of specific activities to different age groups, and different individuals, making the sessions applicable to more students within the school.

5. A portfolio of follow up activities should be included as part of a support pack that would enable pedagogical institutions to capitalize on the Play and Replay sessions, providing a legacy for the Project within the school and extending its life.

6. Conduct of further research into the effectiveness of the Replay technology in terms of its potential to address anti-social behaviour is needed to ensure that the pedagogical uses of the technology is clear.

7. Conduct of further research into how the Replay game could be used as a tool to address additional pedagogical areas is also needed.

Beyond the need to make improvements to the technology, the assessment carried out within Work Package 4 has validated the suitability of the Replay technology for use within a pedagogical institution. The ethics of using ICT to address anti-social behaviour in young people, and in particular the Replay technology, has not been questioned, and as a tool for this assessment the technology has received a clear validation from those secondary users who were involved in the testing sessions, even though the full scope of the technology is this regard remains to be verified. The participants in the surveys have described

involvement as a positive experience for both primary and secondary users and have confirmed that the technology would be considered a worthwhile investment if it can be priced to suit the market and budget of pedagogical institutions. Furthermore, very few organizational impediments exist to full deployment of the Replay technology within pedagogical centres.

Annex 1

Questions for REPLAY Socio-Organisational and Ethical Assessment Workshop/Interviews

Identify the practical issues relating to the <u>installation of the game</u>
- How easy is it to set up?
- How confident are you with the technology?
- Would this put you off buying the game?
- What do you need in terms of support to set the game up?

Identify the practical issues relating to the <u>running of the game</u>
- Did you have enough space?
- Did you have access to the appropriate space?
- Was it difficult to get sessions agreed/set up?
- Any issues with parental consent?

Identify the <u>human resource issues</u> pertaining to the effective completion of a game session
- Did you have enough time to run the game?
- Were the sessions the right length?
- Did you need follow-up time that you didn't have?
- Normally, would there be time in the school day to run these sessions?

Identify issues related to the <u>ethics of specific game contents</u>
- Do you consider any of the game contents to be ethically problematic or inappropriate?
- Do you think the game concept as a whole is ethical?
- Are there any ethical issues that arose during the Replay sessions in terms of the experience of the child playing the game (feeling lost/frustrated/angry etc)?
- How did the players feel and did they feel in any way 'cheated'?

Connecting REPLAY to <u>activities currently happening</u> within school
- How best would REPLAY be integrated into current behavioural activities?
- Are there current gaps in the tools/approaches being used currently that REPLAY could fill?

Final questions:
- Do you think that REPLAY is an <u>ethically sound</u> tool for connecting with young people?
- Do you think that the game is <u>practically implementable</u> within your context?
- Do you think you would <u>consider buying</u> REPLAY?