Psychosocial Intervention 23 (2014) 43-55

Psychosocial Intervention

www.elsevier.es/psi

"It's like you're actually playing as yourself": Development and preliminary evaluation of 'Green Acres High', a serious game-based primary intervention to combat adolescent dating violence+

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ARTICLE INFORMATION

Manuscript received: 28/11/2013
Accepted: 6/01/2014

Keywords
Serious games
Primary intervention
Adolescent dating violence

ABSTRACT

This paper provides an overview of the development of 'Green Acres High', a serious game-based primary intervention to raise awareness of and change attitudes towards dating violence in adolescents, and an analysis of how adolescents described their experience of playing this game. Transcripts from focus group data were analysed using thematic analysis. The global theme that was developed, *Assessment of the game*, was represented by two organising themes, *Positive assessment: Pedagogical Underpinnings* and *Negative Assessment: Functionality Limitations and Frustrations.* These represented the fact that overall the learning experience was positive based on the pedagogical principles and content that could be embedded in this digital game but that technical issues with the game needed to be addressed as these could impinge on the learning experience of the adolescents. It was seen that using a serious game was a valid and meaningful way for adolescents to learn about dating violence and that this is a viable alternative or adjunct to traditional teaching methods.

"Es como si realmente actuaras como tú mismo": Desarrollo y evaluación preliminar de "Green Acres High", una intervención que utiliza un juego serio para combatir la violencia en las relaciones sentimentales

Palabras clave
Juegos serios
Intervención primaria
Violencia en las relaciones sentimentales adolescentes

RESUMEN

Este artículo presenta una revisión del desarrollo de "Green Acres High" [la colina de los verdes acres], una intervención primaria de verdad utilizando un juego con la finalidad de despertar la conciencia adolescente acerca de la violencia en las relaciones sentimentales y cambiar sus actitudes, así como un análisis de la descripción de los adolescentes de su experiencia con el juego. Se utilizó el análisis temático para analizar las transcripciones del grupo de discusión. La temática desarrollada, *Evaluación del juego*, fue organizada mediante dos temas, *La evaluación positiva: fundamentos pedagógicos* y *La evaluación negativa: limitaciones y frustraciones de la funcionalidad*. Representaban el hecho de que en general la experiencia de aprendizaje fue positiva en cuanto a los principios pedagógicos y el contenido que podían incorporarse en este juego digital pero necesitaron abordarse los aspectos técnicos del juego, dada su posible influencia en la experiencia de aprendizaje de los adolescentes. Se vio que la utilización de un juego serio era un modo válido y con sentido para que los adolescentes aprendan acerca de la violencia en las relaciones sentimentales y que se trata de una alternativa viable o un complemento a los métodos de entrenamiento tradicionales.

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Doi: http://dx.doi.org/10.5093/in2014a5

Adolescent Dating Violence

Aggression and violence perpetration and victimisation in intimate relationships begins during adolescence (Gómez, 2011; Kury, Obergfell-Fuchs, & Woessner, 2004; Lewis & Fremouw, 2001), and can be precursors to aggression in later adult relationships (Capaldi, Shortt, & Crosby, 2003; Gómez, 2011; Muñoz-Rivas, Graña, O'Leary, & González, 2007; Whitaker, Le, & Niolon, 2010). Verbal, psychological, physical and sexual aggression are common features of adolescent dating relationships (e.g., Banyard & Cross, 2008; Burman & Cartmel, 2005; Danielsson, Blom, Nilses, Heimer, & Högberg, 2009; Krahé & Berger, 2005; Reed, Silverman, Raj, Decker, & Miller, 2011), and for many young people this is deemed as 'normal' within their relationships (Hird, 2000). A comprehensive international (Europe and North America) review of the prevalence of adolescent dating violence (ADV) by Leen at al. (2013) found that rates of physical ADV ranged between 10 and 20% of the general population samples with rates similar for boys and girls. Great variability was reported in rates of sexual ADV (from 1.2% to 75%), although the inclusion of verbal sexual aggression may account for some of the higher rates found. Across studies however, victimisation was reported to be higher for girls than boys. Overall, the authors identified two general trends despite methodological variations: psychological ADV is more prevalent than physical and sexual ADV, and prevalence rates are similar for girls and boys in the majority of the reported studies across all forms of ADV (Leen et al., 2013).

ADV is associated with a range of negative outcomes including lower self-esteem and negative self-concept (Ackard, Croll, & Kearney-Cooke, 2002), anxiety and depressive symptoms (Hanby, Fales, Nangle, Serwik, & Hedrich, 2012; Holt & Espelage, 2005; Kaura & Lohman, 2007), reported suicidal thoughts and attempts (Belshaw, Siddique, Tanner, & Osho, 2012; Coker et al., 2000; Howard, Wang, & Yan, 2008) and alcohol abuse (McNaughton Reyes, Foshee, Bauer, & Ennett, 2012; Temple, Shorey, Fite, Stuart, & Le, 2013). As summarised by Ackard, Eisenberg and Neumark-Sztainer (2007), the long-term impact of ADV on the behavioural and psychological health of male and female youths include smoking cigarettes and suicide attempts for both sexes, binge eating and suicide ideation for males and smoking marijuana and high depressive symptoms in females. This highlights a need to educate adolescents about ADV so that they can recognise potential problems with this in their own relationships and that of their peers and learn how to deal with the situation should it arise. Indeed, school-based programmes have been found to be effective in the prevention of violence within adolescent (Foshee et al., 2004; Foshee et al., 2005; Wolfe et al., 2009) and adult intimate relationships (Foshee, Reyes, & Wyckoff, 2009).

Digital-based Learning

Digital technologies are a ubiquitous feature of Western society and their use is particularly salient during adolescence. This age group is more likely to use the internet, own gaming devices, go online wirelessly (via laptops and phones), use social networking sites and download and use apps on their phones (Zickhur, 2011). The rise in their popularity has raised questions about the potential pedagogical benefits of incorporating digital media in the classroom (Smetana & Bell, 2012). Certainly the use of computer technology has become more and more popular in elementary and secondary school (Li & Ma, 2010). Computers are used to facilitate learning across a range of different subjects and to gain experience in computer technology skills and knowledge. Several meta-analyses identify positive effects for the use of technology-assisted learning in maths (Li & Ma, 2010), science (Bayraktar, 2001), and reading progression (Blok, Oostdam, Otter, & Overmaat, 2002). In addition, positive effects have been found when students participate in distance learning (Cavanaugh, 2001) which is reliant on technology by its very nature. Using technology as a teaching mechanism is also associated with positive cognitive and affective outcomes (Lee, Waxman, Wu, Michko, & Lin, 2013). It has also been suggested using technology to teach can be beneficial for both individual learning as well as group learning, although the most positive results have been found when using computer technology in small groups compared to individuals when measuring amount of knowledge gained (Lou, Abrami, & d'Apollonia, 2001).

Preferred mode of learning, or learning style, varies within student groups (Felder & Brent, 2005; Graf, Viola, Leo, & Kinshuk, 2007). It has therefore been argued that the reliance on print materials that are typically used in classroom teaching may not meet the diverse needs of all the children in a classroom (Shin, Sutherland, Norris, & Soloway, 2012). Therefore, educational material that appeals to multiple modes of learning e.g., text, picture, video, animation and audio, will address the different abilities, needs, and interests of the individual learner in the classroom (Rose, Meyer, & Hitchcock, 2005). It has been suggested that today's students see traditional methods of teaching unacceptable (Kovačević, Minović, Milovanović, de Pablos, & Starčević, 2013), and there is interest in including student's daily activities, e.g., computer games, within educational settings. These 'serious games' can encourage children to explore new ideas (Hoffmann, 2009). By definition, a serious game (SG) is an application developed that uses technologies from computer games that serve purposes other than pure entertainment (Arnab et al., 2013). Modern educational SGs are thought to be effective teaching tools for enhancing learning as they use action, encourage motivation, accommodate multiple learning styles, reinforce skills, and provide an interactive and decision making context (Charles & McAlister, 2004; Holland, Jenkins, & Squire, 2003). In addition, SGs allow students to gather new information and align this with previous knowledge and experience as well as enabling them to be active in the control of their learning in an individualised way (Dempsey, Haynes, Lucassen, & Casey, 2002).

Researchers agree that SGs have all the attributes to be effective learning platforms (Connolly, Boyle, MacArthur, Hainey, & Boyle, 2012; Moreno & Mayer, 2007; Prensky, 2001). There is evidence to suggest that the use of digital games in educational settings is a positive and beneficial experience for students across different subject matters e.g., maths, (Ke, 2013; Kim & Chang, 2010; Shin et al., 2012), science (Sung & Hwang, 2013), and geography (Virvou & Katsionis, 2008). In addition there are reports of games promoting: active learning (Mellecker, Witherspoon, & Watterson, 2013); curiosity, positive learning attitudes and motivation (Kovačević et al., 2013); improvement in learning achievement and self-efficacy (Sung & Hwang, 2013); learning of high level or complex skills (Hainey, Connolly, Stansfield, & Boyle, 2011); and engagement with curriculum content (Walsh, 2010). Several literature reviews have also corroborated that educational games have a positive effect on learning quality in comparison with more formal traditional teaching methods (Hays, 2005; Randel & Morris, 1992; Vogel et al., 2006). However, some studies question this and authors express reservations about the use of digital games as effective educational mediums (e.g., Connolly et al., 2012; Girard, Ecalle, & Magnan, 2013; Kebritchi, Hirumi, & Bai, 2010; Papastergiou, 2009b). As Hays (2005) suggests, it is possible that the observed benefits of using SGs in education may only arise in certain situations. It could therefore be argued that games should therefore not be seen as standalone sessions but perhaps something that can be used as adjuncts (Hays, 2005; Shaffer, 2006).

The consensus view is that SGs have a place in education, particularly for learning traditional (or STEM) topics, e.g., maths (Kim & Chang, 2010), science (Sung & Hwang, 2013), geography (Virvou & Katsionis, 2008), and reading (De Marco, Evain, & Gutierrez, 2013). A small corpus of literature also indicates that SGs are now being used

to teach more sensitive, non-STEM subjects, including healthy eating (Majumdar et al., 2012), illegal substance abuse (Gamberini, Marchetti, Martino, & Spagnolli, 2009), diabetes (Thompson et al., 2010) and, most relevant to the present paper, relationship and sex education (RSE; Arnab et al., 2013). Arnab et al. (2013) reported positive outcomes using a game-based approach intervention designed to teach adolescents how to identify and prevent coercion in their relationships. In a cluster randomized controlled trial, engaging with the game was found to lead to greater self-reported confidence to recognise coercion, knowledge of how to say no to others, and understanding of personal risk. The authors concluded that there is a real advantage for pedagogy-driven game-based approaches to be utilized when delivering RSE in the classroom. This supports the use of SG when dealing with non-STEM subjects, particularly those of a sensitive nature. However, although quantitative outcomes were positive, it was not clear what it was about the game environment that could have led to such outcomes.

The game described herein this paper 'Green Acres High' was developed to facilitate education regarding dating violence and the promotion of healthy relationships for adolescents. This topic area, if discussed and taught, is usually covered within part of the broader Personal, Social, and Health Education (PSHE) curriculum, but this remains a non-statutory element of teaching requirements in the UK (Department for Education, 2012; H.M. Government, 2010). Although most schools do include an element of relationship education in their teaching, this varies from school to school in terms of content, style, and time spent and is very dependent on the skill set, ability, and interest of individual teachers, so using digital resources enables consistency of delivery (Arnab et al., 2013).

At both a European and domestic level, policies focusing on combating violence against women and girls highlight a need for prevention efforts located within school environments. The European Convention on Violence against Women and Domestic Violence (2011) has specified this. In addition, the British coalition government has also highlighted the need for preventative measures, and also the role that teachers can play in reducing violence against women and girls in its Action Plan (2011). Consequently, through these two documents schools are identified as an important avenue through which young people can be educated about the nature of, and factors associated with, violence and abuse in relationships.

Although the policy changes documented are important steps, their assumptions are challenged when the characteristics of adolescent help-seeking are considered. The relationship between adolescent help-seeking and problem severity is unclear; some studies suggest that when encountering serious problems, adolescents are more likely to seek help (Fallon & Bowles, 1999), whereas others report that problems can be perceived as too serious and consequently this perception incapacitates adolescents and prevents them from seeking help (Seiffge-Krenke, 1993). It is also evident that adolescents seek help from individuals and/or agencies that represent the problem domain. Consequently, adolescents go to health professionals for health care advice, family members or parents if the problem is located within the family, teachers for problems with academic work, and peers for problems with peers (Boldero & Fallon, 1995). In relation to dating violence, adolescents generally are unlikely to seek help (Ashley & Foshee, 2005; Barter, McCarry, Berridge, & Evans, 2009; Jackson, Cram, & Seymour, 2000; Molidor & Tolman, 1998), and when they do so, it is most likely to be from their peers, not adults and not teachers (Ashley & Foshee, 2005; Henton, Cate, Koval, Lloyd, & Christopher, 1983; Molidor & Tolman, 1998). In light of the tensions between policy and evidence, a SG was developed to raise awareness of violence in adolescent relationships to be used in schools and specifically targeted at adolescents to tackle ADV by raising awareness of, and challenging attitudes towards, violence in adolescent dating relationships.

Development of the Game

Green Acres High (GAH) is a SG based on Adobe Flash that runs in an internet browser (compatible with Internet Explorer v 8.4 onwards) and comprises five, fully computer-mediated 'lessons', each of which concentrates on a different aspect of learning about dating violence. Decisions about content were taken through two phases of research: (i) a literature review to determine what is known about the prevalence of dating violence in Europe, dynamic risk factors for adolescent dating violence, and effective primary intervention approaches (submitting authors, 2013); and (ii) a focus group study conducted with 86 young people (50 females, 36 males) aged 12-16 years across the four partner countries (submitting authors, 2013); The premise of both aspects of the research was to determine what we know from a European perspective about the nature of dating violence, effective primary intervention approaches, and also attitudes about dating violence held by European adolescents. This latter point was of particular relevance given the findings from the first piece of research that attitudes towards dating violence have been the most widely empirically supported dynamic risk factor for engaging in dating violence behaviours (submitting authors, 2013). The focus group study was a replication of the only other qualitative investigation of adolescent attitudes that had been conducted in Canada (Sears, Byers, Whelan, & Saint-Pierre, 2006).

Our focus group data highlighted that European adolescents share many of the same attitudes towards dating violence that have been reported in North American groups. Specifically, although adolescents generally did not endorse the use of violence, there were several clear contexts in which violence was not only permitted, but also in some instances expected. These included violence as a one-off, violence in retaliation for being cheated on, violence in the context of a joke, violence used by girls. It was also clear that adolescents upheld traditional gender-role stereotypes in relation to violence, with violence by men towards women criticised, but violence by women or girls towards men or boys viewed as not being violence. Help-seeking was also gendered whereby males would not disclose abuse because of stereotypical male identities, and because women's use of violence is less severe and not defined as violence. Decisions to seek help were also related to severity of the violence. There was a hierarchy of violent acts, with more severe acts (punching, kicking) being less acceptable, and less severe acts (pushing, slapping) being more acceptable. In addition, young people reported that if they did seek help, they would be most likely to seek it from their friends rather than adults. The findings from both these studies supported a case for the potential impact of a brief (five-session) classroom-based intervention on attitudes towards dating violence at least in the short term.

A decision was taken therefore to review the content of existing classroom-based interventions as these all focus on raising awareness about the nature of violence, as well as challenging attitudes that support its use and stereotypical gender role attitudes, and providing conflict resolution skills training and help-seeking advice. A number of manuals and toolkits were obtained including Expect Respect (Home Office and Women's Aid, n.d.), Save the Date (Family Violence Project, 2007) and Healthy Relationships (Men for Change, 1994), and descriptions of key tasks were noted with regard to how they could inspire the content of the game. In conjunction with the game developers, a narrative storyline was developed within which the attitude-change and/or behavioural change techniques could be implanted through interactive exercises. To ensure that the techniques employed in the game were evidence-based, a mapping exercise was undertaken through which the key techniques were identified in relation to their theory and utility using the taxonomy identified by Abraham and Michie (2008). An overview of the lesson aims, learning outcomes, and attitude/behaviour change techniques incorporated in the game are presented in Table 1 below.

Table 1
Overview of lesson aims, learning outcomes and behavior/attitude change techniques

Lesson	Aims	Learning outcomes: At the end of the lesson students will…	Techniques	Theory
1	• To determine young people's relationship values • To identify characteristics of healthy relationships • To identify characteristic of unhealthy relationships	• Have a clear understanding of the characteristics of positive and negative relationships • Be able to identify some of the warning signs of potentially abusive relationships. • Have obtained knowledge about the nature of abuse	• Provide information • Provide feedback • Provide contingent rewards	IMB CT OC
2	• To identify warning signs of abuse • To identify the dynamics of abusive relationships	• Be able to correctly identify different forms of abusive behaviour • Be able to identify warning signs of abuse in relationships • Be able to describe the cycle of abuse	• Provide information • Provide feedback • Provide contingent rewards • Provide general encouragement	IMB CT OC SCogT
3	• To educate young people about the role of stereotypes in abuse • To identify risk factors for getting involved in abusive relationships	• Be able to identify risk factors for abuse • Be able to describe how gender stereotypical attitudes can facilitate abusive behaviours	• Provide information • Provide feedback • Provide contingent rewards • Provide general encouragement	IMB CT OC SCogT
4	• To educate young people about the different steps within conflict resolution • To enable young people to practice conflict resolution skills	• Be able to identify the individual steps within the process of conflict resolution	• Provide information • Provide instruction • Provide feedback • Provide contingent rewards • Prompt practice • Provide general encouragement • Provide information on consequences	IMB SCogT CT OC OC SCogT IMB;SCogT
5	• To educate young people about how best to seek help whilst maintaining their own safety • To raise awareness about local services that can offer support to young people in abusive relationships	• Be able to identify sources of help within their schools and communities • Be able to consider appropriate courses of action should a friend be involved in an abusive relationship • Be able to consider appropriate courses of action should they themselves be involved in an abusive relationship	• Provide information • Provide instruction • Provide feedback • Provide contingent rewards • Provide general encouragement	IMB SCogT CT OC SCogT

Note. IMB = information-motivation-behavioural skills model, SCogT = Social-cognitive theory, OC = Operant conditioning, CT = Control theory.

Table 1 shows that the majority of attitude/behaviour change techniques adopted were based on four theories of behaviour change: Socio-cognitive, Information-motivation-behavioural skills model, Control theory, and Operant conditioning. A more detailed example of how each intervention scenario was devised and analysed in terms of behavioural/attitudinal change techniques is presented in Table 2 and a static image of the scenario described taken from the game is presented in Figure 1.

It is clear from Table 2 that within each computerised scenario a number of different behavioural change techniques are drawn upon.

Figure 1. Image taken from a scenario described in table 2.

Evaluation

As reviewed, previous research has identified the quantitative improvement associated with engaging in serious games regarding coercion in relationships (Arnab et al, 2013) and yet little is known about how young people view the experience of engaging with serious games when learning about sensitive topics. Consequently, the aim of the present study was to explore young people's views on

Table 2
Example of the construction of story and behavior change techniques within one game scenario (taken from lesson 1)

Aims	Story	Interactive task	Behaviour change techniques	Theory
To raise awareness about the nature of healthy relationships	You are walking into school and get a text message from your friend asking you to meet them in a specific classroom. You walk into the classroom and find your friend who is looking worried and asks you what a good relationship is	A series of media scenarios are played depicting different things that happened between your friend and their partner. You are asked questions after each one and have to work out which scenarios are problematic. After each answer you are provided with feedback.	Providing encouragement Providing contingent rewards (points for each correct response) Providing knowledge about other good and bad characteristics and how they may impact on a relationship Providing feedback	Social cognitive theory Operant conditioning Information-motivation-behaviour model Control theory

the use of Green Acres High as a method of being taught about adolescent dating violence. Of specific interest was the question: How do adolescents describe their learning experience of playing the "Green Acres High" game?

Method

Design

The data for this paper are drawn from the qualitative phase of a larger study of attitudinal and knowledge change about ADV in an English schools sample. Focus groups were conducted with adolescents who had played the SG on ADV and the transcripts from these were analysed using thematic analysis.

Participants

Participants were recruited from two of the four schools that were participating in a large evaluation of the game. In total 13 young people agreed to take part in focus groups: eight from Year 10 and five from Year 9. Focus group 1 comprised 5 adolescents (3 females and 2 males), focus group 2 also comprised 5 adolescents (4 females and 1 male), and focus group 3 comprised 3 adolescents (2 females and 1 male). The age range of the participants was from 13.75 to 15.60 years (M = 14.91, SD = .59). All participants except 1 were White British.

Procedure

All participants had played "Green Acres High". Three focus groups were recruited from two schools and were run on the school premises. Consent was gained from all of the children and their parents/guardians to participate in the focus groups. All of the focus groups were asked to discuss their experience of playing the game based on a standardised focus group schedule. The questions were formatted to get the adolescents to talk about what they liked about the game, what they did not like about the game and potential ideas for improving the game. The focus groups all lasted approximately 30 minutes. The focus groups were audio recorded and the recordings were then transcribed verbatim.

Methodological Approach

Thematic analysis was used to analyse the data. This is a method of identifying, analysing and reporting patterns within data sets. A variety of methodologies can be aligned with thematic analysis as can a range of ontological and epistemological positions and theoretical frameworks. Braun and Clark (2006) have suggested that thematic analysis can be an essentialist or realist method that reports meaning and the reality of participants or constructionist method, which examines the way events, realities, and experiences are the effects of different discourses that operate within society (p. 81). The current study is ground within a realist method and the themes were identified at a semantic level, i.e., within the explicit or surface meaning of the data where patterns of themes found in the data are organised, summarised, and interpreted in order to theorise the significance of their patterns as well as their broader meaning and implications.

Analysis

The focus groups were analysed using inductive thematic analysis procedure as guided by Hayes (2000) and Braun and Clark (2006). The data were read and re-read carefully in order to identify meaningful units of texts relevant to the focus of the research. Next, units of text were then grouped together if they were dealing with the same issues or were similar in their content. These groups were given provisional names and definitions. Texts could be included in more than one category if it was deemed appropriate. The data were then systematically reviewed and refined and the themes were redefined. The data were then re-examined to ensure that an exhaustive set of data was identified to support each theme identified. The end result of this was that a Global theme was developed, and this was supported in total by 14 associated themes and sub-themes.

When presenting the results, in order to maintain confidentiality no names or identifying information will be given. However, excerpts from the focus groups have been provided so, in order to identify different focus groups and each participant, the following coding has been used. The focus groups have been numbered either 1, 2, and 3 and within each group, each participant has been assigned a letter from A to E. Comments or questions made by the researcher running the focus group have been coded R.

No identifying information is given about any of the participants. All excerpts have been reported verbatim and no amendments have been made to the English or grammar used by individual participants.

Results

From the focus groups and following thematic analysis, a Global Theme *Assessment of the Game* was developed and this was represented by two organising themes, *Positive assessment: Pedagogical Underpinnings* and *Negative Assessment: Functionality Limitations and Frustrations.* These themes and all their associated themes and sub-themes are presented in Table 3.

Assessment of the Game

This global theme is divided in to two organising themes that represent positive and negative aspects of the children's experiences of playing the game. Overall it is fair to argue that the assessment of the game was generally very positive. The common insight that was gained from the focus group discussions was that this positivity about of the game was experienced because of the *Pedagogical Underpinnings* embedded within the game. Therefore the theme *Positive Assessment: Pedagogical Underpinnings* was developed as an organising theme. Different elements of the pedagogy that underpinned the game were then identified as associated themes. These themes in effect encapsulated how the adolescents defined and explained the different elements that they felt contributed to making playing the game a positive and worthwhile experience. Interestingly when negative elements of the game were identified this was not ground in pedagogy or the learning experience, but around *Technical Limitations and Frustrations* that therefore formed the organising theme *Negative Assessment: Functionality Limitations and Frustrations.* The associated themes that were developed to explain this organising theme, therefore present factors that were identified as encapsulating why the game was deemed to be less successful.

Positive assessment: pedagogical underpinnings. This organising theme is represented by themes that symbolise how the game is deemed as positive due to the pedagogy that is embedded within the structure of it. It has been suggested that modern educational computer games are effective as they: (i) use action instead of explanation, (ii) encourage motivation and satisfaction, (iii) accommodate multiple learning styles, and (iv) provide interactive contexts that enable decision making (Charles & McAlister, 2004; Holland et al., 2003). Certainly, the adolescents identified some of these factors and processes were embedded in the game and saw them as positive elements in their assessment of the game. The *Positive Assessment: Pedagogical Underpinnings* is represented in the

Table 3
Global Themes and Associated Themes from Focus Group Analysis

Global Theme	Organising Theme	Themes	Sub-Themes
Assessment of the Game	Positive Assessment: Pedagogical Underpinnings	Experiential Learning	Learning through Doing and Interactive Engagement
			Discovery through Autonomy and Informed Choices
			Transferable Knowledge Gathering
		Experiential Learning Environment	Familiar Everyday Technology
			Age Appropriate
			Feedback
			Merging the Cyber World in to Day to Day Reality
	Negative Assessment: Functionality Limitations and Frustrations	Online Game Education or Traditional Teaching	
		Technological Inefficiencies	
		Inadequate Instructions that Hindered Navigation	

data threefold by the themes *Experiential Learning, Experiential Learning Environment* and by *Online Game Education or Traditional Teaching.*

Experiential learning. This theme corresponds to how the adolescents found that a positive aspect of the game was learning through experience, in that through the online game the adolescents could come into contact with some of the issues, decisions, factors, and processes related to ADV. This made learning more of a hands-on experience. This organising theme portrays how the adolescents acknowledge that learning has actually been achieved and therefore playing the game is positive and worthwhile experience. It has been identified that experiential learning engages individuals in real-life experiences that result due to an interaction between humans and their environment in the form of seeing, feeling, and doing and that this can be done in real life or artificial environments (Kebritchi & Hirumi, 2008). As this computer game has been designed in the context of everyday life it connects the players to everyday life experiences, which has been identified as the heart of experiential learning (Kebritchi & Hirumi, 2008). The themes that represent this experiential learning are *Learning through Doing and Interactive Engagement*, *Discovery through Autonomy and Informed Choices* and *Transferable Knowledge Gathering.*

Learning through doing and interactive engagement. One of the positive features identified was that the adolescents liked the fact that the game was interactive and that they were able to achieve specific learning goals and accomplish specific tasks within the context of a story. This was done by assuming roles and using different resources within different scenarios. Learning by doing is a way of learning factual information in the context of how this information can and will then be used, but must be relevant, meaningful, and interesting to the students (Schank, Berman, & Macpherson, 1999). The adolescents identified that key to the process of learning through 'doing' was the fact that the experiences were interactive.

1A: I think people are more likely to listen more instead of just a teacher telling you stuff; people will actually interact with the game because it's just you and a computer.

2A: I think the game is quite good because it's seen as a game but it's still educational and there's still the sense that it, it's quite fun because it's interactive and you get to pick where you're going and stuff.

This interaction was achieved by getting the adolescents to assume roles or participate in activities through computer generated real-life stories and experiences, and therefore encouraging the adolescents make and take certain decisions. This finding raises an important observation, that it is necessary to differentiate that it is not just the case that the adolescents are using e-learning content (i.e., just being given information but through a digital medium) but that they are *playing a game* (i.e., an interactive and participatory activity). As Squire (2005) proposes, there is an important difference between e-learning and playing a game – in e-learning content is the predominant feature, whilst experience is the most important feature of a game. The adolescents reported that they did experience different situations.

2E: Well because we were in that situation, in the game we were the ones giving the advice.

Part of the process involved the players not only immersing themselves in the different situations but then making decisions based on the information they had been given and were experiencing. This was discussed by two of the game-players.

3B: Erm, I think it was good that they included real scenarios that could happen and it made you deal with them.

3C: I think it was good because it showed, showed the thing from both points of view, like from the male's point of view and the female's point of view and how they're both feeling.

Finally part of the experiential learning included doing tasks that would enable the adolescents to learn through a process that was meaningful to them. For example, one of the activities was identifying different types of abuse (physical, psychological, and sexual) by placing certain behaviours in labeled bins. One of the adolescents commented:

2B: Putting the different, the different actions (physical, psychological, and sexual abuse) into the bins. I think that was quite good because it made you think that actually that is physical abuse and it makes you put a title to it.

Discovery through autonomy and informed choices. Discovery learning has been identified as being where students 'interact with their environment by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments' (Omrod, 1995, p. 442). Based on this it is suggested that if individuals discover things on their own they are then likely to remember the concepts that they are trying to learn (Kebritchi & Hirumi, 2008). In alignment with this, this theme was developed to explain that the adolescents identified that a positive aspect of the game was that

they were autonomous whilst playing and learned through making various choices themselves, as they explored different scenarios, dilemmas, and problems that were offered to them. This discovery through exploration and making decisions themselves is discussed by one of the focus groups.

1A: You're in a classroom, you've got to talk to people, find stuff out.
1C: You become a character then sort of go through their experiences I guess.
R: Yeah, so you get to decide, do you get to decide what happens to them and their choices and things like that?
1A: Yeah because one thing there was a kind of counselling session and people would say this has been happening what should I do and you have different options and then you like click on an option and then it would give you points depending on how good your decisions were.

The adolescents saw the fact that they themselves had various choices in the game, as a positive aspect of the game. As the adolescents were autonomous as they played the game and were offered various choices that they then had to question and decipher meant that they engaged with the game. This process is described by one of the adolescents.

2B: Yeah, it [the game] gives you options. If you're just doing like a lesson of it the teachers the one that does the speaking and you just write stuff down whereas in the game you get to choose what you want to do and you don't, nobody else can input on it it's your choice.

Overall, the benefit of this feature of the game was that the adolescents identified that this was an effective way of learning. This was noted by one of students.

3C: It sort of made us understand it more because you were like put in a situation where you had to try and sort that situation out.

Transferable knowledge gathering. Another element of the experiential learning was that through the interactive games knowledge was gathered by the adolescents that they then felt could be used in practice in real-life and on a day-to-day basis. In effect knowledge is contextualised, which is a better way of learning (i.e., situated learning, Lave & Wenger, 1991) as decontextualised knowledge gathering is not an effective way of learning and understanding things. One of the elements that the adolescents identified as being positive was that they learned how to recognise different types of abusive behaviours and therefore relate that to possible situations that they might find themselves in. Several of the adolescents spoke about this, but the following represent generally what was discussed.

1A: Yeah like I didn't realise like pressuring someone to wear a t-shirt was considered like violence and stuff.
1B: The abusive cycle... That was very clear on like how you'd be able to see in a relationship so you knew all the stages and would know what to do about it.

The theme, therefore, represents how the experiential learning was in effect transferred from the game and online interactions to interactions that might take place face-to-face. This meant that the adolescents could understand when and how the information that they were gathering could be useful in other situations and in effect be a transferable skill that might help them in certain situations associated with ADV.

3A: Err, like information that helps you learn [about abuse] but also it reminds you of what's right and wrong.
3B: Erm, really it's a useful tool, erm, that people that are either in a violent relationship or out of one can use.

Experiential learning environment. This theme and its respective sub-themes refer to the factors and characteristics that were embedded within the game that then enable experiential learning to happen. That is, this relates to the features of the environment within which the game is played that the adolescents identified as necessary for the game to be deemed as worthwhile and therefore effective. As opposed to the previous theme which encapsulated the way or *how* the adolescents learned through experiential learning, this theme has been developed to portray *what* was required within the learning environment to enable the *how* to happen. Four sub-themes, *Familiar Everyday Technology, Age Appropriate, Feedback,* and *Merging the Cyber World into Day to Day Reality,* represent this theme.

Familiar everyday technology. The adolescents discussed that the use of everyday technology was what was required for them to learn and therefore see the game in a positive light. This can be seen in three slightly different although closely linked ways. Firstly, they liked the fact that learning about ADV was named and presented as an online *game* and not an intervention. Blumberg, Blades, and Oates (2013) propose that the digital game play of adolescents is important as it is an integral part of their lives and that such play can in fact contribute to learning and cognitive development. It did seem that this format, i.e., a digital game, was the type of technology that the adolescents preferred, suggesting it would be more appealing to use and perhaps therefore encourage learning.

2A: It was good because most computer games are animated anyway and that's like what kids like to see so it would have appealed to them more.

Secondly, playing the game was also deemed to be a positive experience because it was completed electronically and doing activities on computers seemed to be recognised as the most appropriate and suitable way to receive and process data or information. That is to say using a computer for the adolescents appears to be the 'norm' and the preferred (or possibly expected) way to do things.

3A: It's better because erm, children are more like focused on the media now and it was good that it was like on computers because that's what kids focus on.

Finally the fact that within the game part of playing it involved using familiar technologies meant that this was another factor that the adolescents identified as being positive and a strength of the learning environment that they had participated in.

3C: Erm, probably the fact you had like all the different tools that you could use like you had the GPS, and like the texts and the emails and then, when it done the little videos as well like, instead of just explaining what happened so...

Age appropriate. Another part of the environment for the experiential learning was that the game was deemed as age appropriate for those who played it. This theme portrays that the *'what'* required in the learning environment was a game that was suitable for the age of the audience that it was targeted for. In addressing what was the most appropriate ages the following quotes represents what several participants said.

2D: Yeah it kind of like suits for our age.
3A: Teenagers because they need to get informed of what they're actually getting themselves into.

Some of the students did however see the benefits of using this for younger adolescents, however that was with the caveat that some of the content would need to be modified to ensure that it was then age appropriate for younger adolescents. One of the adolescents felt it was appropriate for younger adolescents and explained why and what would be required.

1B: Yeah like my younger sister [age 11] likes the games where you end up having to talk to people… think maybe not the harder violence [for age 11], but maybe the softer side because

even from a young age you know stuff like peer pressure and I think it's really good to be aware of that.

Feedback. The adolescents identified that feedback was an important part of the learning environment. It has been suggested that with digital learning the system should provide students with encouraging feedback as this increases motivation, that this should be immediate as this helps the student to identify any problematic parts of their learning (Nokelainen, 2006), and that it is an opportunity not just to take stock of the progress they have made, but also to improve their self-regulation (Corbalan, Kester, & Van Merriënboer, 2009; Spinath & Spinath, 2005). Feedback also enables individuals to acquire deep learning (Erhel & Jamet, 2013). Feedback seems to be a feature of the learning environment that was seen as important and useful by those who played the game. In one conversation when discussing why feedback was good, it was decided that it:

2A: Made me understand it, there was lots of different scenarios, lots of options and things you could choose from and then about the abuse you saw, the different things to look at it clearly showed you what to look out for.

2D: Gave you a sense that if you did something good then it would tell you if you did it good, but if you did something bad it would tell you why it was bad not just oh you did it wrong... it was just helpful and it told us how we could do better.

Part of what was deemed as positive by the adolescents was that it included looking at different options, which helped in the process of learning and understanding.

3A: I liked how they had someone there that gave you advice and told you like if you'd got something wrong on the game how, what was the right answer and why it was but also how your answer could link to it as well.

Some of the students however did suggest that the feedback could be a little repetitive. However, that being the case they did still feel this had its value based on the fact that this would serve as reinforcement to what they already had learned or knew.

3 A: It [feedback] was repetitive because we've heard of it before so it was like reinforcing it.

While feedback was seen as a positive aspect, it was also suggested how the feedback that was presented could be improved. An example of this are that the adolescents felt perhaps too much information was given and how this could be modified.

2B: It would tell you if you gave a good answer or bad response but sometimes again there was a lot of text and you didn't really want to read all of it… I think if it [feedback] was arranged in a different way, just like break it up into little bits.

Another suggestion was that although feedback had been useful, being given a final solution and being told what the best options were in each circumstance would improve the feedback mechanism of the game.

1B: I think it would have been better if at the end it told you that this is definitely the best way to do it because it was just kind of you guessing so you could have been wrong and you wouldn't know which of the other ones is the right one.

Merging the cyber world into day to day reality. As Egenfeldt-Nielsen (2005) stated, 'In today's computer games you are part of a living, breathing, simulated universe with very concrete self-sustaining experiences – getting still closer to reality' (p. 125). This sums up well the environment that the adolescents found themselves in and that they enjoyed being in. A really interesting factor that came out from the focus group was the blurred line between this being a game and the adolescents almost talking about what they were doing as being a reality. For example for many of the adolescents they discussed how they have to talk with the characters and take on roles. For example:

1A: You're in a classroom, you've got to talk to people, find stuff out.

1C: That you become a character then sort of go through their experiences I guess.

It seemed to be taking on the role of the characters, and importantly characters that were believable, that was particularly appealing to the adolescents. This fact made it like a reality for them.

1B: And you kind of got into it because you were almost like playing a character you kind of got into it more than if you were just kind of answering questions.

2B: They [the characters] were believable.

Making the situational factors realistic and in line with what the adolescents would in fact experience normally on a day-to-day basis meant that their cyber world was intrinsically link to reality. The key is that the adolescents can relate to the environment and the characters within the cyber world and so can therefore in effect merge this into feeling like their own actual worlds as they got immersed in playing. This was seen in the following excerpts.

2E: It's like you're actually like playing as yourself, like going around a school when you're in a school yourself and it relates to what you are.

2A: They [the characters] were around our age and experiencing the same problems that we would.

Online game education or traditional teaching. This theme represents the findings that using an online game as a form of education was seen as an effective learning experience and was compared to traditional teaching methods which was also seen to have a place in the adolescents' learning. Many researchers agree that digital learning games have everything it takes to become an effective learning medium (e.g., Connolly et al., 2012; Moreno & Mayer, 2007; Prensky, 2001). Conversely, many researchers have also expressed reservations about the use of digital learning games over traditional teaching (e.g., Connolly et al., 2012; Girard et al., 2013; Papastergiou, 2009b). This suggests that the best approach could be a combination of the two. As a rule of thumb, in the current research the use of digital learning tools was generally seen as positive with all 5 participants in focus group 2 saying they would prefer to use a computer game. In focus group one, a participant explained:

1A: I think people are more likely to listen more instead of just a teacher telling you stuff; people will actually interact with the game because it's just you and a computer.

However what was debated was whether this should form the whole of the lesson, or perhaps part of the lesson with traditional teaching methods being delivered alongside the game. Some of the adolescents argued that the digital approach was appropriate for the whole lesson.

2D: It doesn't feel like you're on the computer for an hour because it's like a game but it's the whole lesson that you're going to need to actually play the game.

Others however noted that while they agreed that the game was a welcome addition, this should form part of a lesson, or be used in conjunction, with other traditional teaching approaches.

1A: Possibly people, I don't know but people could feel like it's a bit detached, a bit like this is just a game it isn't going to happen so I think like it should be mixed with a few teacher based lessons to like say this can happen, this is a real thing.

Opinion was divided on the role of the teacher. It was identified that not having a teacher to ask questions was a potential problem. Conversely by just using a computer meant that they felt they were not exposed to being coerced by a teacher to talk to them or the class and that 'talking' to the computer meant they were more willing to speak and more likely to say what they wanted to. The two excerpts below show this.

1B: But with a teacher you can like ask questions and say yeah I don't get that and stuff.

2A: And it's not like, it's quite private as well because you don't have to, whereas teachers encourage you to say stuff in front of everybody else but if it's just you, you're more likely to say something that you'd actually want to say.

Negative assessment: functionality limitations and frustrations. As seen in the previous organising theme the general opinion about the game itself was positive; particularly in relation to the pedagogy and experiential learning experience. However the adolescents did identify that they felt there were some negative aspects of the game, but generally they identified this being down to functionality of the game opposed to content or the learning experience. This organising theme is made up of two themes that represent the issues with functionality, *Technological inefficiencies* and *inadequate instructions that hindered navigation.*

Technological inefficiencies. Adolescents today exist in a world of technology. Their lives are digital with the expectation that they communicate instantly through, to name but a few, messaging, emails, texts, social sites, and that they can gain access immediately to files, games, films, and music (Ahmedani, Harold, Fitton, & Shifflet Gibson, 2011). The ability to do this is second nature and therefore anything that hinders this is likely to cause frustrations and fundamentally go against their expectations. These frustrations came through in this theme in that technological issues were one of the most widely identified negative aspect of the game. One of the issues raised was the efficacy and quality of the games based on technological issues opposed to content matter.

1B: I think the game would be effective if it wasn't so slow… I didn't think the games were very good, just because it was really slow so you were just focused on getting it to work and actually doing it than focusing on what it was teaching you and stuff.

One of the main concerns related to speed and efficiency of technology. A frustration came out in the focus groups, were issues with the speed at which the games were downloading/processing or that the game would freeze and stop working. This seemed to be really problematic for the adolescents and meant that their engagement with the game at times was lost.

1C: Oh yeah when I was trying to load something different parts kept like freezing so like I got bored and had to start the chapter all over again. So I just kept getting bored doing that.

The end result seems to be that for some it meant that they could not always complete the entire chapter or that they got confused at times when playing the game.

1A: But I didn't get to play much of the game because it was very slow and wouldn't load and stuff so.

Inadequate instructions that hindered navigation. The other area of functionality that the adolescents had frustrations with was in relation to the instructions that were given and this let to difficulty navigating around the game and therefore engagement became a problem. The instructions and then navigation appeared to not be as intuitive as was hoped. In some respects this issue is intrinsically linked to the preceding theme in that part of the issue with the instructions may have been due to technological inefficiencies of the game.

1B: On one of mine it said like read the email you got or something and then once I'd read it there wasn't really a next stage, I didn't know what to do.

1D: I think that was because the thing, because it wasn't registering that you'd done it and once you refresh it, it like registered it and I think that was probably just another issue.

Several of the adolescents said that they would have liked clearer instructions and perhaps some prompts along the way. It seemed that at times they were not always sure about what they needed to do which caused confusion.

R: Ok, what about the instructions? Were you always sure what you had to do?

2A: Not really.

R: But you would like clearer instructions.

2A: Yeah.

R: Ok, so how do you think it might be improved? This issue with the instructions and that?

2B: Maybe if you give shorter but simpler questions and like titles to things so people would understand what it is.

The adolescents identified that the instructions could have been improved with more detail. What was also interesting was that a large proportion of the adolescents did not realise there was a help button within the game that could be used for clarifying instructions.

Discussion

The focus group analysis overall revealed some encouraging findings regarding the positive benefits of introducing a serious game (SG) as a way of teaching adolescents about dating violence and the development of healthy relationships. The themes identified clearly illustrate that the learning experience by the adolescents was a positive one. This was specifically captured by the organising theme, *Positive Assessment: Pedagogical Underpinnings,* which was associated with several themes and sub-themes that showed that by using the game students learned, discovered, and understood about ADV through interactive engagement and use of familiar technology (*Experiential Learning*), used the digital environment effectively to learn (*Experiential Learning Environment*), and found this a suitable teaching tool in comparison with other teaching methods (*Online Game Education or Traditional Teaching*). However, the analysis did reveal that the learning experience had some limitations but this related to functionality not to content, i.e., the organising theme *Negative Assessment: Functionality Limitations and Frustrations*. It was clear that the adolescents did not like it when technology did not work quickly and effectively (*Technological Inefficiencies*) or when technology did not enable them to intuitively and easily navigate the game (*Inadequate Instructions that Hinder Navigation*).

Initial findings do suggest that those who played this serious game had a positive learning experience, which led to perceived improvement and development of their understanding about ADV, which would enable them to identify and manage problematic elements of their own and other people's relationships. There is evidence that supports the role of school-based intervention programmes to prevent ADV (Avery-Leaf, Cascardi, O'Leary, & Cano, 1997; Ball, Kerig, & Rosenbluth, 2009; Foshee et al., 2004; Foshee et al., 2005; Wolfe et al., 2009), where classroom activities include didactic presentations, role-playing and skill building. Using these interventions adolescents report learning new skills including improved communications and alternatives to violence as well as increased knowledge about the signs of ADV, awareness of their and others' abusive behaviours and about healthy relationships (Ball et al., 2009). There is also evidence that using technology such as a SG can enhance and benefit students' learning of a range of subject matters (Charles & McAlister, 2004; Ke, 2013; Kickmeier-Rust & Albert, 2010; Prensky, 2001). The current work is therefore in-line with research findings concerning the efficacy of school-based interventions and the use of SG in education. The current work is a preliminary evaluation, and while the focus was not a quantitative measure of learning but an evaluation of the subjective learning experience, a positive aspect of using a SG to educate about ADV was the pedagogy that can be embedded within the structure of a game, i.e., the experiential learning through a digital medium.

The pedagogical learning experience, i.e., experiential learning or active learning (Kolb, 1984), was viewed as a positive feature of the game by all participants. The learning format connected the

adolescents to real life experiences, which is a core and essential feature of experiential learning (Kebritchi & Hirumi, 2008). The adolescents reported that learning was achieved through the interactive element of the game and the fact that they were autonomous in the process. This is a finding similar to the one by Watson, Mong, and Harris (2011), who found that an educational game (for history) meant that the learning experience shifted from being teacher-centred to student-centred, and the students became more active and engaged in the process. In addition, the adolescents when playing Green Acres High seemed to engage with the process of having to make choices and decisions and developed their ability to problem solving. It has been suggested that problem-posing explorations can enhance students' thinking and create several levels of learning opportunities (Chang, Wu, Weng, & Sung, 2012; Silver & Cai, 2005; Whitin, 2004). Researchers suggest that students evidence better problem-solving performance following the use of a SG, when compared to traditional teaching methods (Chang et al., 2012). This highlights a critical observation that a SG is not just e-learning content; the important fact is that the adolescents are *playing* a game. It is the experience of the game and the fact that games structure the whole experience around problem solving (Squire, 2005) that is crucial. The adolescents also revealed that they were motivated to learn, as using a SG they assumed roles and learned by doing, and as they were constantly offered choices and had to make decisions they engaged with the game and therefore their learning experience. It has been noted that SG used in education are an intrinsic motivational factor and they can promote curiosity whilst enabling the individual to be in control of their own learning (Dickey, 2007; Huizenga, Admiraal, Akkerman, & Dam, 2009; Papastergiou, 2009a). Indeed several studies have shown that SG in education can enhance both learning motivation and performance (Dickey, 2011; Sung & Hwang, 2013; Wang & Chen, 2010) and this is represented in the themes that related to the learning experience and pedagogical underpinnings that were found in the current study.

Another theme that was seen in the data related to whether the students preferred to use a SG over traditional teaching. Due to the qualitative nature of the research the numbers of participants that made up the focus group are not adequate enough to make generalisations. However, as an exploratory exercise, it was seen that the majority of the adolescents said they would prefer to use a computer game for learning about AVD. It has been identified by many researchers that SGs have all the requirements to make them an effective learning medium (Connolly et al., 2012; Moreno & Mayer, 2007; Prensky, 2001). It has been suggested that when certain studies have compared traditional teaching with digital teaching, SGs strengthen knowledge skills and attitudes towards what is being taught (Serrano, 2004), they are more motivating and educational (Barab, Warren, & Ingram-Goble, 2009), enable more authenticity (Akpan, 2002), and students find this medium far more enjoyable (Toprac, 2011; Vogel et al., 2006). However, the evidence for this is not conclusive (e.g., Connolly et al., 2012; Girard et al., 2013; Kebritchi et al., 2010; Papastergiou, 2009b), and it has been suggested that games are not always the most effective tool for all subject matters in all situations (Hays, 2005; Ke, 2009). The difficulty is that generally few games have been actually tested against other teaching and learning approaches (Egenfeldt-Nielsen, 2006). It was identified by a couple of adolescents that digital technology could be used alongside traditional teaching as adjuncts and this is worthy or further investigation. Certainly some researches suggest that digital technologies are more effective with support and guidance from the teachers (Mayer & Bekebreda, 2006), when delivered and considered alongside other relevant pedagogies (Hays, 2005; Shaffer, 2006), and actually work best when adjunct with other effective pedagogy (Squire, 2002). It would therefore seem logical to use both SG and traditional teaching together in order to reap the benefits from both types of learning mechanisms.

It was seen however that the adolescents did have some issues with the game and, interestingly, this had more to do with technical functionality and inefficiencies rather than content or format. It is not clear, however, at this stage if part of the issue had to do with the technological capacity of the school and the IT support available. It was discussed by one of the groups that they thought some of the problems were due to the IT infrastructure in the school. It is also not apparent if and how teachers were able to assist the adolescents. It has been found that the success of introducing digital technologies into classroom learning is associated with certain characteristics of the teachers including ICT competence and ICT confidence (Totter, Stütz, & Grote, 2006), so this might have had an impact on some of the functionality issues experienced. The adolescents however did identify that the functionality, e.g., speed of download/processing and freezing of game, and inadequate guidance and instruction around the game was a negative experience associated with playing the game. Adolescents are one of the heaviest users of technology as a group (Subrahmanyam & Greenfield, 2008) and, as the world they grow up in is filled with technology, they have been variously described as 'digital natives' and the 'net generation' (Jones, Ramanau, Cross, & Healing, 2010). It has been suggested that adolescents are growing up in a world that offers them *instant* access to everywhere and all knowledge (Anderson & Rainie, 2012) and this therefore is their expectation – immediate access. The lack of speed/technical issues and inadequate guidance meant instant access to the game was not achieved and therefore this was a frustration to the adolescents. This becomes problematic as it meant the adolescents' attention and motivation to play the game was lost. This therefore needs to be rectified, as it is likely to mean that more children can then engage with and play the SG and reap the positive experiences that are seen by those who have played the whole game.

This study was an initial insight into the children's experience of playing a SG and is limited by the fact that it is based on the experience of only a few children. Although this is acceptable for qualitative exploratory research, it needs to be extended to validate findings further. More focus groups are required across other schools in order to assess for consistencies and contradictions in the children's reported experiences. This initial research is part of a larger project that will measure knowledge and attitude change pre- and post-intervention. This is paramount as although it is of great importance that we understand the adolescents' experience playing the game and if and how they felt that they had learned from this, evidence is required that corroborates with these findings in the form of tangible measures that relate to knowledge and attitude change. This type of research, alongside extended qualitative investigation, will strengthen the evidence that this SG about ADV is an appropriate and required intervention for school children. As it stands currently it is fair to conclude that this SG had valid meaning for learners and is a viable alternative or adjunct to traditional teaching. On the basis that we know that dating violence is a recognised feature in adolescent dating relationships (Gómez, 2011; Kury et al., 2004; Lewis & Fremouw, 2001), and that this may be a precursor to aggression in later adult relationships (Capaldi et al., 2003; Gómez, 2011; Muñoz-Rivas et al., 2007; Whitaker et al., 2010), it makes sense to teach and inform adolescents as part of their education about these problematic behaviours within relationships and how to help themselves and others, if such situations do arise, using the most effective and appropriate teaching formats.

Conflict of Interest

The authors of this article declare no conflicts of interest.

Financial Support

The project was funded through European Commission, Daphne III transnational action grant fund, grant number JUST/2009/DAP3/AG/1068–30-CE-0386806/00-15.

Acknowledgements

We are extremely grateful to all the young people, teachers and schools who supported this project.

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