Building Resilience, Building the Future: Evaluating a School-Based Resilience Building Programme for Second Year Students

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Declaration

I declare that this thesis is entirely my own work, other than the counsel of my supervisors. Any contributions made by other authors have been recognised appropriately. The work herein has not been submitted for any academic award or part thereof at the University of Limerick or any other establishment.

Signed: ______________________

Paul Quinn
15th April 2019
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Abstract

Background: Worldwide, suicide among adolescents is considered a significant public health concern. One key suicide prevention strategy has been the increased implementation of school-based programmes aiming to reduce risk factors associated with suicidality and promote protective factors, specifically, resilience. One such resilience-building programme, recently developed for Irish students, is the Pieta House Resilience Academy (RA). The current study aimed to investigate the effectiveness of the RA. While research examining effectiveness of such programmes has primarily focused on outcome measures using quantitative research methods, less is known about how or why changes in resilience and symptomatology occur.

Method: This research utilised a mixed methods approach to evaluate change in resilience and symptoms of depression and anxiety from beginning to end of the programme (quantitative phase) and examine the processes of change through focus groups (qualitative phase). Four measures were used: Connor-Davidson Resilience Scale (CD-RISC); Resilience Questionnaire (RQ); Beck Depression Inventory – Second Edition (BDI-2); Beck Anxiety Inventory (BAI). Quantitative data \( (n = 86) \) were analysed using parametric and non-parametric tests comparing scores on these measures pre- and post-programme. Thematic Analysis (TA) was used to examine the qualitative findings \( (n = 13) \). The overarching mixed methodology utilised was the embedded design.

Results: Quantitative results showed significant increases in resilience on two measures from pre- to post-programme. No significant reductions in depression and anxiety were evident, however, anxious and depressed students showed increases in resilience similar to their peers. The qualitative phase resulted in the emergence of four main themes relating to students’ experience of the programme; ‘A Positive Experience’, ‘Peer Connection’, ‘Learning How to Cope’, and ‘Student Recommendations (The Student Voice)’. Moreover, the RQ was shown to be a valid and reliable measure of resilience loading on four factors: (1) Perceived Support; (2) School Connection; (3) Coping; (4) Self-Efficacy.

Conclusion: Results suggest that the RA ‘builds’ resilience for Irish students. This research supports preliminary positive findings on the effectiveness of the programme. It also addressed several gaps in the literature in relation to understanding and measuring adolescent resilience and providing insights into students’ experience of resilience-focused programmes.
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Chapter 1: Introduction

1.1 Overview of the current study
The aim of the current study was to, firstly, evaluate the effectiveness of the Pieta House Resilience Academy (RA) programme using quantitative research methods, and secondly, gain a deeper understanding of students’ experience of the programme as it relates to processes of change and future development, using qualitative methods. The RA is a resilience-building programme developed in response to recommendations highlighted in the suicide prevention literature concerning the development and implementation of school-based programmes (Surgenor, Quinn, & Hughes, 2016). To date, it has been implemented in over 200 schools in Ireland and recently received the Social Innovation Growth Fund Ireland’s ‘Engage and Educate Award’ (Social Innovation Fund, 2017), allowing it to be brought to schools nationwide, in both urban and rural areas.

Adolescent suicide has been identified as a predominant area of risk, not only in Ireland, but globally (World Health Organisation, 2015; National Office for Suicide Prevention, 2018). One key strategy in suicide prevention in Europe has been the implementation of school-based programmes designed to reduce risk factors associated with suicidality and increase protective factors, that is, resilience (Zalsman et al., 2017). However, research on resilience has been beset by varying definitions and theoretical models viewing it as a trait, a process, an outcome of the life course, or a combination of all these ideas (Masten, 2018). Consequently, different approaches to measuring resilience across studies have resulted in inconsistencies (Windle, Bennett, & Noyes, 2011).

The current study adopted a multi-dimensional perspective of resilience, and utilised two measures. The first measure, the CD-RISC (Connor & Davidson, 2003), is a psychometrically sound measure of resilience extensively used with adolescent populations in previous research (Windle et al., 2011), loading on several internal factors. The second measure, the Resilience Questionnaire (RQ), recently emerged from the resilience subscale of a screening tool for risk factors and resilience contributing towards suicidality in adolescents and young people in Ireland (Gaffney, 2018). The 20 items of the RQ contain questions pertaining to internal and external factors for students such as school connection and has the potential to be a relevant and convenient measure of adolescent resilience. At present, the RQ is the measurement of choice for the RA programme, however, its reliability, validity, and
factor structure have yet to be determined. Thus, the current study also aimed to address this gap in the literature.

The quantitative phase focussed on students’ change in resilience after participating in the RA programme as well as depression and anxiety symptom reduction. Data was collected from four programme groups encompassing two schools. Seven students from each school were randomly selected to participate in two focus groups. While a pilot study has shown preliminary positive results in relation to the RA (Pieta House, 2017), this research focused on a comprehensive evaluation using mixed methods in an effort to obtain both a breadth and depth of understanding of its effectiveness. Furthermore, there is a notable dearth of qualitative research in the area of suicide-prevention and resilience-building programmes. This research addressed this by shining a qualitative light on the perspectives of students.

A number of key findings emerged. The quantitative results showed significant increases in resilience scores on both measures. No significant differences in programme effects on resilience were shown between genders or programme groups. While no significant reductions in symptoms of depression and anxiety were found, anxious and depressed students showed similar significant increases in resilience to their peers. Additionally, the RQ was shown to have good reliability and validity. Principal component analysis revealed it loaded on four factors: (1) Perceived Support; (2) School Connection; (3) Coping; (4) Self-Efficacy.

When merging results of qualitative and quantitative phases, a number of similarities and differences were evident. The qualitative results expanded and contextualised the quantitative results, adding new and valuable insight into processes of change which had not been captured quantitatively, as well as student recommendations for future programme implementation. Results showed that the process of change appears to involve an interplay of the facilitation, content, and structure of the programme, socio-ecological factors such as positive school experiences and peer connection, and the attainment of strategies and skills related to cognitive and emotional adaptive coping.

1.2 Thesis structure
The literature review is presented in Chapter 2. Relevant literature relating to the prevalence of adolescent suicide and associated risk factors is outlined. The background of school-based suicide prevention programmes is detailed followed by recommendations that have featured in the literature regarding implementation and the use of outcome measures. Theoretical models of resilience, adolescent development, resilience measurement, and the development of the RQ and the RA are also discussed. The chapter closes with research questions and hypotheses of
the current study. Chapter 3 outlines the methodology and a rationale for the use of the embedded design as well as detailed information on measures and the mixed methods design, procedures, data management, and data analyses. Information regarding ethical considerations, consent, and funding and positionality is also given. Chapter 4 presents the quantitative and qualitative findings, which are then merged together. Finally, in Chapter 5, the key findings from both research phases are discussed and integrated, along with recommendations for future RA programme development, methodological considerations, and future research and clinical implications.
Chapter 2: Literature Review

2.1 Literature search strategy
Published articles relevant to the research topic were identified through a comprehensive search of the following databases: PsychInfo, Embase, Web of Science, CINAHL Plus with First Text, Cochrane Database, and Google Scholar. Potentially relevant search items identified from the literature were searched for within these databases to identify relevant published articles. Search terms included various combinations of the following: Suicide-Prevention Programme (or Suicide Programme, Program, Suicide Prevention, Universal Intervention, Mental Health), Resilience (Resilience Building Programme/Program or Resilience Programme/Program), and School Mental Health Intervention (School, School-based, School Resilience, Adolescents, Students). Literature relating to populations outside of the school setting for adolescents were excluded as the current study focused solely on second year secondary school students. From search results, titles and abstracts were reviewed with centrally-relevant articles identified for full reading and critiquing. The reference lists of these papers were reviewed and further papers of central focus to the research questions were identified and reviewed.

2.2 Adolescent mental health and suicide
Worldwide, the reported prevalence of mental health problems in adolescents is typically between 10 and 20% (Kieling et al., 2011). Adolescence, commonly defined as the second decade of life between 10 and 19 years, is a time of extensive physical and social development, during which capabilities vital for successful progression into adulthood are established (Blakemore & Mills, 2014). Moreover, this time of life has been associated with the onset of most mental health disorders that are likely to persist into adulthood (Fergusson, Horwood, Ridder, & Beautrais, 2005; Kessler et al., 2005, Patel, Flisher, Hetrick, & McGorry, 2007). Mental health difficulties negatively impacting young people from adolescence to adulthood include emotional distress, lower educational achievements, higher likelihood of engagement in health risk behaviours, and higher rates of self-harm and suicide (Fergusson & Woodward, 2002). Therefore, improving mental health in adolescents is a recognised health imperative both on national and international levels (Buckley et al., 2011).

2.2.1 Suicide in Ireland
Suicide is the second leading cause of death among 15 - 29 year olds worldwide (World Health Organisation, 2015), while Ireland has the fourth highest rate of death by suicide among
adolescents in Europe (UNICEF, 2017). Suicide in Ireland is intrinsically linked with young men; it is the leading cause of death in young men aged 15 - 34 years (McMahon et al., 2014). However, although over four times more men take their own lives than women, in 2015, Ireland had the highest rate of death by suicide among teenage girls in Europe and the second highest rate among teenage boys (Surgenor et al., 2016). As such, adolescent suicide has been identified as a particularly important area of risk (National Office for Suicide Prevention, 2018). Figures from the Adolescent Brain Development study estimated that 1 in 15 young Irish adolescents aged between 11 and 13 years (6.8%) will have experienced suicidal ideation at some time in their lives (Cannon, Coughlan, Clarke, Harley, & Kelleher, 2013). In Ireland, suicidality is a societal concern that warrants considerable attention.

2.2.2 Suicide prevention
Suicide research generally falls into one of three areas: prevention, intervention, and postvention; although it has been suggested that the three domains feed seamlessly into one another, essentially aiding prevention (Gaffney, 2018). Prevention includes efforts made on various levels, that of the individual, family, school, or community, to reduce the incidence of suicide. Intervention research involves investigating efforts to stop or prevent suicidal individuals from the act of taking their own lives, while postvention, a term coined by Shneidman (1981), refers to efforts made to provide support and assist in the aftermath of a completed suicide.

Effective and evidence-based interventions have been implemented at population, subpopulation, and individual levels to prevent suicide and suicide attempts (Robinson, Hetrick, & Martin, 2011). Targeted prevention strategies attempt to reach populations who are at ‘high risk’ of suicide. Strategies can also be population-oriented or universally-targeted (Horowitz & Ballard, 2009). In relation to screening for suicidality, the research is equivocal. In their review, Pena and Caine (2009) suggested that screening could be a promising intervention, however, they highlighted uncertainty concerning the implementation of screening efforts; whether they should be targeted or universal in nature, in what context if any should they happen, and how should they be carried out and followed up. The general consensus is that such screening should only be undertaken if there is a strong commitment to provide immediate and follow up treatment addressing identified risk factors.
2.2.3 Suicide risk factors and resilience

Traditionally, there has been an abundance of research exploring the epidemiology of suicide and associated risk factors, including but not limited to, prior suicide attempt and self-harm (Reynolds & Mazza, 1999; Posner, Melvin, Stanley, Oquendo, & Gould, 2007; Hawton, Saunders, & O'Connor, 2012), depression (Hawton et al., 2012; Dooley & Fitzgerald, 2012), exposure (O'Connor, Rasmussen, & Hawton, 2009; McMahon, Corcoran, Keeley, Perry, Arensman, 2013), personality disorders (Van Heerigen, 2000; Houston, Hawton, & Shepperd, 2001), hopelessness (Kovacs & Garrison, 1985; Beck, Brown, Berchick, Stewart, & Steer, 2006), anxiety (Sareen et al., 2005; Joe & Bryant, 2007), emotional difficulties (Resnick et al., 1997; Mitrou et al., 2010; Dooley & Fitzgerald, 2012), negative thinking (Miranda, & Nolen-Hoeksema, 2007; Burke et al., 2016), educational context factors (McMahon et al., 2013), impulsivity (Horesh et al., 1997; Dhingra, Boduszek, & O’Connor, 2015), drug and alcohol usage (Dooley & Fitzgerald, 2012; Hawton et al., 2012; Lamis & Malone, 2012), and relational problems (Posner et al., 2007; Mitrou et al., 2010). A marked association between self-harm and puberty has been shown, with the development of self-harming behaviours being common amongst those aged between 12 – 15 years (Hawton et al., 2012). This has been suggested to be related to increased vulnerability with emotional regulation and navigating increased risk-taking behaviour during this developmental stage (Hawton et al., 2012). Masten (2010) contends that children and adolescents who are less likely to effectively manage their emotional reactivity are more at risk.

While research interests have turned to prevention, the large-scale international reviews on suicide prevention suggest that psychiatric paradigms, populations, and terminologies still dominate the literature (Mann, Apter, & Bertolote, 2005; Zalsman et al., 2016), which, understandably, presents limitations regarding data collection for initial onset of suicidal distress. Moreover, the focus has predominantly been on the pathological nature of suicidality (Gaffney, 2018). Even with the emergence of positive psychology (Seligman, 2002), and subsequent focus on coping with adversity, few research studies have explored what this perspective can lend to the study of suicidality and identification of risk.

Interestingly, many contemporary theories of suicidality do not incorporate risk factors such as the construct of depression (Chu et al., 2017), and thus can be seen as a departure from traditional psychiatric classifications. Indeed, Gaffney (2018) pointed out that no current theoretical model on suicide takes a multidimensional approach in a way that incorporates any significant protective factors, such as attachment or resilience. The suicide status seen in the Collaborative Assessment and Management of Suicide (CAMS) theoretical framework (Jobes,
is perhaps the exception in that it includes ‘reasons for living’. It could be argued that contemporary theory on suicidality is merely an evolving fusion of the interplay between risk factors.

Recent growing interest in suicide prevention research has resulted in a call for more theoretically-driven conceptualisations of resilience to suicidality (Johnson, Wood, Gooding, Taylor, & Tarrier, 2011). Organisations within educational and community contexts have been urged to take action to promote and increase the resilience of children and adolescents in an attempt to mitigate risk. Despite this apparent ‘common sense’ approach, relatively little is known about the factors that actually ‘buffer’ suicidality and which moderators serve to give better estimation of risk (Johnson et al., 2011). Thus, copious interventions have been created to reduce risk and/or to increase protective factors such as resilience. Before looking at definitions and theoretical models of resilience, it is useful to look at the suicide-prevention programme landscape in which the resilience programme evaluated in the current study was developed.

2.3 School-based suicide prevention programmes

One key strategy has been the increased implementation of school-based suicide prevention programmes. The school has been identified as the ideal location in which to address adolescent suicide (Brooks, 2006). Schools provide an opportune setting in which interventions to reduce the risk of mental health problems and to promote the resilience of adolescents may take place. Five distinct types of school-based programmes have been identified in literature reviews (Katz et al., 2013; Surgenor et al., 2016). These include: (1) Education and awareness programmes; (2) Gatekeeper training; (3) Peer leadership training; (4) Skills training; (5) Screening or assessment programmes. The five types of school-based suicide prevention programmes are detailed below with reference to their main features and relevant research.

2.3.1 Awareness and education programmes

Education and awareness programmes familiarise students with the signs and symptoms of suicide in themselves and others. These programs are designed to facilitate self-disclosure, especially to other peers (Katz et al., 2013). Mixed results, in terms of effectiveness, have been evident in studies relating to changes in attitude, knowledge, and/or behaviour. One prominent programme, the Youth Aware of Mental Health Programme (YAM), was shown to reduce suicide attempts and suicidal ideation (Wasserman et al., 2015). This programme was specifically developed for the SEYLE (Saving and Empowering Young Lives in Europe)
project, which aimed to investigate the efficacy of three preventative interventions (YAM, QPR, and ProfScreen) for 11,110 students in 168 schools across Europe. It was facilitated in five one-hour sessions across four weeks focusing on raising awareness about the risk and protective factors associated with suicide, including knowledge about depression and anxiety, and skills enhancement for adverse life events, stress, and behaviours.

Other programmes such as the Signs of Suicide (SOS) have been shown to improve students’ knowledge about suicide, depression, and suicide prevention (Aseltine & DeMartino, 2004; Aseltine, James, Schilling, & Glanovsky, 2007; Schilling, Aseltine, & James, 2016). This is a universal programme and includes suicide awareness, education, and screening strategies. Through video and guided classroom discussions over two days, students learn to acknowledge the signs of suicide displayed by others and to take them seriously, to let their peers know that they care, and to tell an adult (‘ACT’ mnemonic). The ‘Surviving the Teens’ programme has also been shown to improve students’ awareness of risk factors, myths and facts, perceived importance of knowing risk factors, and the steps to respond (Strunk, King, Vidourek, & Sorter, 2014). This programme entails four 50-minute sessions over four days focusing on signs of depression and suicide while incorporating observational videos, lectures, interactive activities, role-play, and the use of a mnemonic.

They are generally regarded as feasible when timetable considerations are managed and all school staff are informed (Surgenor et al., 2016). However, they may have some limitations. Although these programmes are designed to discourage suicide and destigmatize the use of mental health services (Freedenthal, 2010; Schmidt, Iachini, George, Koller, & Weist, 2015), knowledge and attitude changes are not necessarily correlated with changes in behaviour (Katz et al., 2013; White, Morris, & Hinbest, 2012). There seems to be an underlying assumption that knowledge about suicide and its prevention is unambiguous and universal. White et al. (2012) highlighted that these programmes treat knowledge as though it is something located within individual minds and are thus limited in their design. Moreover, there is a lack of information provided by studies regarding specific care plans put in place if a student presents with difficulties during a programme. Programme designers need to consider this along with how to manage student resistance and tension around difficult topics that arise during sessions. The design of these programmes usually includes both screening and gatekeeper components.

2.3.2 Gatekeeper training programmes
Gatekeeper programmes essentially train teachers to recognise the signs and symptoms of suicidal ideation and react effectively. The underlying principle is that suicidal youth are under-
identified and by training school staff to recognise the warning signs identification can be enhanced (Gould, Greenberg, Velting, & Shaffer, 2003). In general, these programmes: (1) improve detection of students at high risk for suicide through school staff education; and (2) facilitate referrals for services through connecting students with supportive adults and providing appropriate information (Freedenthal, 2010; Stein et al., 2010; Tompkins, Witt, & Abraibesh, 2010; Wyman et al., 2010; Cross et al., 2011; Nadeem et al., 2011; Johnson & Parsons, 2012; Petrova, Wyman, Schmeelk-Cone, & Pisani, 2015; Schmidt et al., 2015; Wasserman et al., 2012, 2015).

Qualitative studies have aimed to explore the perspectives of school staff on the implementation of a district-wide gatekeeper programme, the Youth Suicide Prevention Program (YSPP), in almost 900 schools with approximately 688,000 students (Stein et al., 2010; Nadeem et al., 2011). Nadeem et al. (2011) focused on the specific roles teachers play at different stages of prevention; detection of students at risk, crisis intervention, and post-crisis response. 45 school staff reported that they lacked practical training in ‘warning signs’, classroom behaviour interventions, and crisis and post-crisis management. A number of suggestions for improvement included annual refresher training, direct training for teachers and frontline staff, and more information regarding in-school and external resources (Nadeem et al., 2011).

A popular gatekeeper programme, Question, Persuade, Refer (QPR) (Cross et al., 2011; Tompkins et al., 2010; Wasserman et al., 2015), was evaluated using a non-equivalent control group design with 100 school personnel (Tompkins et al., 2010). Results showed post-training increases for attitudes, knowledge, and beliefs regarding suicide and suicide prevention in the intervention group. However, further analysis revealed possible moderating effects of age, professional role, prior training, and recent contact with suicidal youth on participants’ general knowledge, questioning, attitudes toward suicide and suicide prevention, and self-efficacy (Tompkins et al., 2010).

Other studies evaluating the effectiveness of QPR have produced mixed results. In the SEYLE project, QPR was not found to be effective in reducing the number of suicide attempts (Wasserman et al., 2015). In QPR, teachers need to be able to identify signs of suicide risk; but because suicidality is mainly an internal process, many adolescents’ warning signs might be well concealed and seldom revealed, even if teachers are adequately trained to recognise them. As is suggested by Nadeem et al. (2011), teachers may benefit from more specific training on risk factors for suicide and related mental health problems, how to respond to distressed students, and when and how to make a referral. Research has shown that friends of students
who completed suicide reportedly have been aware of unique sets of risk factors (Wyman et al., 2010; Petrova et al., 2015). This has surged the development of peer leadership programmes.

### 2.3.3 Peer leadership programmes

These programmes involve an element of student participation, as it is thought that they are more likely to confide in their peers. Peer leadership training puts students in a position to help suicidal peers by training them to respond appropriately and associate with a trusted adult, in addition to helping establish positive coping norms within the school environment (Katz et al., 2013). Several programmes have incorporated this feature into their implementation with positive outcomes (Wyman et al., 2010; Strunk et al., 2014).

The ‘Sources of Strength’ (SOS) programme trains peer leaders who connect with supervisors biweekly for three-to-four months (Wyman et al., 2010). Peer leaders conduct well-defined messaging activities designed to reduce the acceptability of suicide as a response to distress, increase the acceptability of seeking help, improve communication between youth and adults, and develop healthy coping attitudes among students. It has been shown to increase students’ perceptions of adult support and the acceptability of seeking help (Wyman et al., 2010). One potential reason for the success of peer leadership training might be the fact that it is a longer lasting type of programme. For instance, in SOS, peer leaders meet biweekly with supervisors over the course of several months (Wyman et al., 2010).

An element of peer leader training and peer support is also encouraged within the ‘Surviving the Teens’ programme in the recognition of a ‘LAST’ mnemonic for helping others; (a) Listen and look for signs of depression and/or suicide, (b) Ask specific questions about suicide, (c) Show support, and (d) Tell an adult who can help (Strunk et al., 2014). It seems as though encouraging peer support and leader training shows promise for reaching out to potentially suicidal students (Miller, 2014). Additionally, positive peer modelling may be a promising alternative to communications focused on negative consequences and directives (Petrova et al., 2015); Peer modelling provides students with the opportunity to learn appropriate skills from typically developing peers. Other programmes have been developed aiming to specifically teach these skills to students.

### 2.3.4 Skills training programmes

Skills training programmes aim to increase protective factors such as coping skills, problem-solving, decision-making, and cognitive skills. While these programmes do not directly target
suicide, by targeting risk factors and equipping students with important skills, the goal is to prevent the development of suicidal behaviour. Several programmes have used a skills-training approach for reducing risk factors and increasing protective factors (Hooven, Herting, & Snedker, 2010; Wyman et al., 2010; Landgrave & Gomez-Maqueo, 2011; Hooven, Walsh, Pike, & Herting, 2012; Jegannathan, Dahlblom, & Kullgren, 2014; Strunk et al., 2014; Schmidt et al., 2015; Wasserman et al., 2015).

One study showed that teaching life skills focusing on motivation, concentration, improving memory, problem-solving, reacting to peer pressure, coping with stress, self-esteem, sensation-seeking behaviour, self-awareness, and understanding suicide and depression may enhance the overall mental health of students, indirectly influencing suicide (Jegannathan et al., 2014). This intervention was implemented by trained teachers, psychologists, and nurses with weekly 90-100 minute sessions for 6 weeks. Sessions were non-pedagogic and participatory involving discussions, activities, and home assignments (Jegannathan et al., 2014).

Hooven et al. (2010, 2012) found that the Care Assess Respond Empower (CARE) programme, which involves identification of high-risk youth through a computer-assisted suicide assessment interview and counselling intervention, was effective at reducing suicide risk factors and increasing protective factors. Counselling sessions, facilitated by a trained social worker, nurse, or mental health professional, aim to provide students with empathy and support, a safe environment for sharing, and positive coping skills.

Another selective programme, ‘Reframe IT’ (Hetrick et al., 2017), involves a face-to-face assessment and a cognitive behaviour therapy (CBT) computer programme that focuses on engagement and agenda setting, emotional recognition and distress tolerance, identifying negative automatic thinking, help-seeking, problem-solving, managing suicidal ideation, detecting and challenging problematic thinking, and cognitive restructuring. It showed promise in improving negative problem-solving orientation and reducing emotion-focused coping (Robinson et al., 2011; Hetrick et al., 2017). Further research is needed regarding the specific effects of skills training on different risk and protective factors and the long-term retention of skills acquired. Furthermore, the effects of new and creative delivery systems should be assessed in future studies. Several skills training programmes have included a screening or assessment component (Hooven et al., 2010; Landgrave & Gomez-Maqueo, 2011; Hooven et al., 2012; Jegannathan, Dahlblom, & Kullgren, 2014; Schmidt et al., 2015; Hetrick et al., 2017).
2.3.5 Screening (assessment) programmes

Screening, or assessment, involves screening all students, identifying those at risk, and then recommending further treatment. Numerous programmes have incorporated a screening or assessment component into their design with mixed results (Landgrave & Gomez-Maqueo, 2011; Hooven et al., 2012; Wasserman et al., 2015; Schilling et al., 2016; Hetrick et al., 2017). This usually involves screening all students or potentially ‘at-risk’ students, identifying those at increased risk, and then recommending further treatment. A range of risk-factors have been examined in these studies including past suicidal behaviour, suicide attempt, suicidal ideation, depression, anxiety, substance abuse, sexuality, and emotional distress. Furthermore, screening measures have been identified by adolescents and parents as acceptable ways of measuring and supporting those at risk (Robinson et al., 2011), but having appropriate services to refer onto ought to be an essential feature of programmes utilising screening methods.

The use of risk scales for identification and prediction of risk is contentious, primarily because of the difficulties associated with predicting a phenomenon with such a low base rate such as suicide attempt and completion (Quinlivan et al., 2017). Moreover, the benefit of screening is time-dependent and can fail to identify students who are not actively at risk (Katz et al., 2013). As stated previously, research around programmes with an incorporated screening component has yielded varied results, with the ‘SOS’ showing some promising results (Schilling et al., 2016). However, the Screening by Professionals programme (ProfScreen) developed for the SEYLE study did not result in reduced suicide attempts or suicidal ideation at 12-month follow up compared to a control group, whereas the YAM did (Wasserman et al., 2015), suggesting that awareness programmes may be more effective at reducing symptoms of suicidality than screening. Singer, Erbacher, and Rosen (2018) note that the SELYE results, while being very promising, have yet to be replicated to date. Nevertheless, the inclusion of screening in the development of a programme does not seem to be a prerequisite for its effectiveness.

2.4 Programme development

As indicated above, research on school-based suicide prevention programmes has been compromised by a plethora of methodological challenges. Problems include the use of control conditions, defining and establishing suicide related outcomes, and identifying the precise mechanisms for change (Singer et al., 2018). In addition, determining the efficacy and
effectiveness of programmes depends, in part, on the intended outcomes programme developers propose.

2.4.1 Recommendations for effective programme implementation

In a recent review, Surgenor et al. (2016) looked at the numerous suicide prevention programmes implemented globally in recent years in order to provide informed recommendations for future programme development. The study, to which the author contributed, employed a scoping review process to enable the deconstruction of large or complex issues to promote comprehension and ease of interpretation. This review identified research gaps and best practices and provided ten recommendations to inform the development and implementation of future programmes. These ten recommendations are summarised and highlighted in Table 1.
Table 1. Ten Recommendation for effective school-based suicide prevention programmes (Surgenor et al., 2016)

<table>
<thead>
<tr>
<th>Recommendations for programme development</th>
<th>Summary of recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Employ longer-term strategies (minimum of four sessions);</td>
<td>Unless the learner has the opportunity to reflect on the material being presented and to make it applicable to their own experience it is unlikely to have an impact. The context and manner in which a programme is delivered directly impacts on how students share and use training. A one-off brief universal programme led by a non-specialist will differ to a smaller, interactive, group with discussions facilitated by a specialist.</td>
</tr>
<tr>
<td>(2) Be aware of contextual factors:</td>
<td>These allow for the effective evaluation of a programme. Studies with poorly defined outcomes have subsequently struggled to definitively establish the impact of their programme.</td>
</tr>
<tr>
<td>(3) Clearly define learning outcomes:</td>
<td></td>
</tr>
<tr>
<td>(4) A preparatory phase is essential:</td>
<td>This stage is often overlooked. A site visit can be beneficial and help raise awareness, identify barriers, and establish context.</td>
</tr>
<tr>
<td>(5) Design and delivery should be flexible:</td>
<td>Issues should be accommodated as they arise within the specified structure. This requires sensitivity and care, which can foster a more open environment where students can consider multiple meanings that might be available.</td>
</tr>
<tr>
<td>(6) Use external, expert facilitators instead of staff:</td>
<td>Students can be reluctant to accept and engage in teacher-driven interventions. Using expert facilitators can help foster a more open environment that will enable discussion. This is also essential for ethical reasons.</td>
</tr>
<tr>
<td>(7) Don’t be restrictive:</td>
<td>Programmes should move beyond prioritisation and addressing single issues. A broader range of factors should be present. Suggestions included promoting awareness of psychodemographics associated with mental health and suicide, common myths and misconceptions, info on local and national support. Others may include recognising emotions, relationships, the link between thinking/feeling/acting, issues around social media, psychoeducation, assertiveness, coping skills, and self-talk.</td>
</tr>
<tr>
<td>(8) Don’t over-emphasize risk factors (instead, foster a resilience-building approach to topics):</td>
<td>The review highlighted the risk factors associated with suicidal ideation (mental health difficulties, bullying, sexuality, body image, loss, stress, alcohol/drug, victimization, and school problems). However, over-emphasizing single risks may overlook others. Instead, it is widely accepted that within the school setting there should be a focus on building resilience to enable students to cope with various challenges they encounter in adolescence. Multi-component programmes were also found to be more effective.</td>
</tr>
<tr>
<td>(9) Delivery should be varied, interactive, and engaging:</td>
<td>Delivery should include discussions, workshops, group activities, booklets, and home assignments where possible.</td>
</tr>
<tr>
<td>(10) Re-evaluate programme outcomes regularly:</td>
<td>This is essential in order to maintain the optimal standard of delivery.</td>
</tr>
</tbody>
</table>
The evidence regarding the effectiveness of universal resilience-building programmes remains inconsistent (Tak, Kleinjan, Lichtwarck-Aschoff, & Engels, 2014). Therefore, identifying the effective components and mechanisms of effective programmes, that is, the processes they address, the ways in which they engage adolescents, and the way they include the environment, is essential. Interventions often have unclear aims and are potentially being evaluated with measures designed without sufficient consideration given to these aims. In another recent systematic review, Dray et al. (2017) noted that resilience-focused interventions are based on the premise that strengthening resilience protective factors is an effective mechanism for positively influencing mental health in children and adolescents. However, they concluded that the results of this hypothesis are unknown as very few studies actually measure levels of resilience protective factors alongside mental health outcomes (Dray et al., 2017).

2.4.2 Outcome measures (screening, depression, anxiety, and resilience)

While some studies suggest that screening for depression and anxiety should be used and ought to be based upon a reduction in suicide attempts in the population at follow up, other studies question the accuracy of screening tools at identifying risk over other methods such as existing care paths involving teacher identification (Scott et al., 2009). Another way of measuring outcome is to look at service uptake following an intervention (Gould et al., 2009). Other outcomes such as increased awareness of mental health issues or help-seeking behaviour have featured prominently in recent studies. Research like the SELYE study (Wasserman et al., 2015) suggests that help-seeking and mental health awareness should be the primary aim in educational settings, while screening may be a secondary aim but not essential to the dissemination of programmes.

Internationally, screening for depression and suicidal ideation has been prolific in primary care, with both adolescents and adults. A large scale European study focusing on suicidal ideation showed Ireland had the highest level of suicidal ideation of the participating five European countries (Casey et al., 2008), with prevalence rates of 14.6% responding affirmative to some level of suicide ideation, as measured by the Beck Depression Inventory (BDI) (Beck & Steer, 1991; Beck, Steer, & Brown, 1996) risk item (‘I have had suicidal thoughts’).

Other research around programmes that help develop protective factors has focused on the reduction of symptoms of depression and anxiety (Roberts et al., 2010; Rodgers & Dunsmuir, 2015). Universal school programmes incorporating CBT and interpersonal skills
training have been shown to lower depressive symptoms (Horowitz, Garber, Ciesla, Young, & Mufson, 2007) and reduce anxiety (Lock, & Barrett, 2003; Lowry-Webster, Barrett, & Lock, 2003). However, Dray et al. (2017) recommend that to actually test the mechanisms responsible for positive results, school-based programmes should actually measure resilience as part of an evaluation, in addition to testing mental health outcomes.

Connor and Davidson (2003) propose resilience as an important target of treatment for depression and anxiety. Longitudinal studies have shown resilient individuals adapt more effectively to daily stress (Bookwalta, 2014; Guest, Craig, Tran, & Middleton, 2015). Several recent studies have reported on an association between depression and anxiety and resilience among people experiencing major stressors (Beasley, Thompson, & Davidson, 2003; Southwick, Vythilingam, & Charney, 2005; Hoge, Austin, & Pollack, 2007; Min, Lee, & Chae, 2015). Higher resilience can differentiate between groups of suicide attempters and non-attempters and has been shown to correlate highly and negatively with humiliation, interpersonal sensitivity, and depression in samples with a past suicide attempt (Rosetti et al., 2017).

More research in this area is considered optimal in categorically establishing the presence of a relationship between resilience and anxiety and depression (Cosco et al., 2017). Importantly, as anxiety and depression often overlap in terms of symptomatology, they should be examined both separately and combined (Bitsika, Sharples, & Peters, 2010). Thus, research into the effect of resilience-building programmes on students’ mental health and the relationship between resilience and mental health outcomes is imperative. Though, what does ‘resilience’ mean and why should programmes focus on this concept? The following section attempts to answer these questions with reference to prevailing theoretical models, definitions, and measurement methods.

2.5 Resilience
Research suggests that ‘building resilience’ (Minnard, 2002), a term used to describe an approach that strengthens protective factors, may reduce the development of mental health problems in adolescents (Luthar, Cicchetti, & Becker, 2000; Davydov, Stewart, Ritchie, & Chaudieu, 2010; Hjemdahl, Vogel, Solem, Hagen, & Stiles, 2011). Resilience has been defined as a “dynamic process that enables the individual to respond or adapt under adverse situations” (Thornton & Sanchez, 2010, p. 455). The general consensus is that it involves protective factors including both internal factors, such as self-efficacy and effective problem solving, and
external factors within the wider social environment, such as meaningful participation within the home and the community (Cowen et al., 1996; Fergus & Zimmerman, 2005; Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006a; Patel & Goodman, 2007; Sun & Stewart, 2010; Lee & Stewart, 2013). However, as it is a relatively new construct in psychological research, the literature on resilience is afflicted with ambiguity and inconsistencies in relation to its definition and measurement and numerous theoretical models exist. Moreover, there is recurrent confusion throughout the literature regarding hypothesised and elusively defined constructs which are thought to be related to resilience, such as traits of ‘hardiness’ and ‘grit’. Indeed, there is considerable debate about whether resilience is a personality trait, developmental trajectory, or a coping outcome (Liu, Reed, & Girard, 2017).

2.5.1 Traditional theoretical models of resilience
Rutter (1987) initially defined resilience as protective factors which modify a person’s reaction when exposed to an event which carries risk for a pathological outcome. It is frequently referred to as one’s ability to ‘bounce back’ from adversity (Tugade & Fredrickson, 2004; Smith, Tooley, Christopher, & Kay, 2010). Some researchers have indicated resilience is a recovery to previous baseline following a trauma (Bonnano, 2004), while others have suggested that it is a positive adjustment following exposure to stress (Masten, 2010). Luthar et al. (2000) noted that the adversity needs to be significant, however, other researchers contend that the term can be applied to people who successfully deal with any stressor. Similarly, Zautra, Arewasikporn, and Davis (2010) define it as the successful adaptation to adversity, including successful recovery from adverse life events and sustainability in relation to life challenges, on individual and environmental levels. The American Psychological Association (2019) defines resilience as the ability to adapt to stress and adversity; thus, there is significant debate around the extent of adversity that needs to be associated with the said event or risk factor(s) to render someone ‘resilient’ (Gaffney, 2018). A key question regarding the conceptualisation of resilience is whether it is a trait or a state.

2.5.2 Resilience – a ‘trait’
Historically, research around resilience has focused on the construct as a trait consisting of personal qualities (Anthony, 1974; Jacelon, 1997; Connor & Davidson, 2003). Recently, this focus has shifted towards the concept of trait-components such as emotional regulation, competence, resourcefulness, and cognitive flexibility, which may be fostered or taught
(Waugh, Thompson & Gotlib, 2011). However, trait-approach theories of resilience fail to account for interactions between the individual and their environment (Seery & Quinton, 2016). Moreover, by defining resilience as a fixed personality trait, it increases the potential for blame and stigmatisation and may close doors to interventions aiming to build resilience (Luthar et al., 2000; Fergus & Zimmerman, 2005).

Theoretical models of resilience are concerned with positive adaptation and are commonly based on the premise that protective factors act as moderators that reduce the impact of risk factors, leading to the reduction of negative outcomes and promotion of positive outcomes such as positive mental health (Fergus & Zimmerman, 2005, Friedli, 2009). This suggestion is supported by results of previous research, which has found high levels of protective factors to be associated with lower levels of mental health problems such as anxiety and depression in adolescents (Bond, Toumbourou, Thomas, Catalano, & Patton, 2005; Hjemdal et al., 2006b). In a study of 307 Norwegian adolescents aged 14 to 18 years, higher resilience scores were associated with lower scores for levels of depression, anxiety stress, and obsessive–compulsive symptoms (Hjemdal et al., 2011). A similar association was also found in relation to depressive symptoms in a separate sample of 387 Norwegian adolescents aged between 13 - 15 years (Hjemdal, Aune, Reinfjell, Stiles, & Friborg, 2007).

Another prominent theory of resilience involves reduction of the construct of resilience into promotive factors; resources and assets (Fergus & Zimmerman, 2005). From this perspective, assets are positive factors which reside within the person, such as self-efficacy, while resources are positive factors that are external to the person, such as family support. The Growing Up in Ireland research team adopted this perspective, highlighting that resilience research converges on two areas: (1) that resilience is positive development despite adversity; and (2) that it is a result of a combination of internal characteristics and the context the child lives (Greene et al., 2010).

2.5.3 Resilience - a ‘state’

It has been hypothesised that resilience can better be described as a dynamic process, or ‘state-of-mind’ (Kimhi & Eshel, 2015), which occurs in the context of a given situation (Luthar et al., 2000). Eshel, Kimhi, Lahad, and Leykin (2017) emphasised a balance between protective factors and risk factors, or one’s appraisal of strengths and vulnerabilities following adversity. Consideration of the interaction between individuals and their environments may be vital for understanding resilience, however, the mechanisms by which such processes interact,
particularly for adolescent resilience, remains poorly understood (Waller, 2001). As such, research utilising cognitive and behavioural frameworks is warranted in order to explore the teachable skills influential in an individual’s perceived level of resilience and ability to cope, that is, their appraisal of events (how they could potentially cope), and the mechanisms by which they may interact (how they do cope). Research around how best to teach and disseminate these skills is also of paramount importance as it has been suggested that cognitive appraisals, perceived ability to adaptively cope, and emotional regulation is of primary importance to adolescent resilience (Prince-Embey & Courville, 2008).

2.5.4 Adolescent resilience

When one goes through adolescence, one goes through a period of discernible and major change, marked by increased complexity in cognitive function, the development of increased personal agency and skill, and the beginning of the ability to hypothesise one’s own actions. Most adolescents experience increases in executive functioning, with a diversity of abilities varying considerably (Kuhn, 2009). Executive functioning involves development of higher-level cognitive processes that all have to do with managing oneself and one's resources in order to achieve a goal; essential tasks for children as they mature. Adolescents’ executive function is generally improved by increasingly developing skills such as monitoring and managing cognitive properties, engaging in critical thinking, and problem-solving and decision-making. Prince-Embey and Courville (2008) suggest that resultant feelings of competence and optimism through the mastery of these skills expound resilience.

Erikson (1950) highlighted identity exploration, creation, and negotiating the separation and relatedness within familial and other relationships as central characteristics of adolescence. Correspondingly, attachment theory illuminates the child’s use of the caregiver as a secure base from which to explore the world (Ainsworth, 1979; Bowlby, 1982). Masten (2010) emphasises that maintaining attachment and autonomy remains prominent in adolescence. It is evident that there is a subtle balance between maintaining trust and closeness with parents, attaining autonomy, and managing a new-found focus on peer relationships throughout early adolescence.

It has been argued that little has changed over the years with regard to what makes children and adolescents resilient (Masten, 2010). A myriad of factors have been proposed including: positive attachment bonds with caregivers (attachment; family); positive relationships with other nurturing and competent adults (attachment); intellectual skills
(integrated cognitive systems of a human brain in good working order); self-regulation skills (self-control systems and related executive functions of the human brain); positive self-perceptions; self-efficacy (mastery motivation system); faith, hope, and a sense of meaning in life (meaning-making systems of belief); friends or romantic partners who are supportive and prosocial (attachment); bonds to effective schools and other prosocial organizations (sociocultural systems); communities with positive services and supports for families and children (sociocultural); cultures that provide positive standards, rituals, relationships, and supports (sociocultural) (Masten, 2010). These factors reflect a broad range of multidimensional influences on adolescents’ lives.

2.5.5 Multi-System Model of Resilience

As the research highlighted above suggests, resilience is likely complex and multidimensional. In an effort to capture the complexity of the construct, Liu et al. (2017) proposed a multi-system model of resilience (MSMR). This model builds on the strengths of those preceding it and posits that, “resilience should not exist within a vacuum; rather, it is an interactive process between trauma and intra-individual, inter-individual, and socio-ecological factors” (Liu et al. 2017, p. 115). The MSMR offers a new way of conceptualising and measuring resilience in different ways to previous trauma-contingent and time-contingent models. It classifies resilience as a multi-layered construct consisting of core resilience (fundamental and trait-like factors that are less susceptible to changes such as individual biology, health, and health behaviours), internal resilience (personality-associated factors sourced from interpersonal relationships and formed through experience and exposure), and external resilience (socio-ecological factors that help facilitate coping and adaptation, which may include formal or informal institutions, groups, socio-economic status, and access).

This conceptualisation of resilience views it as more than a trait, state, an absolute term, or an event-specific outcome. Resilience is considered across multiple domains. Consider, for instance, a research goal to observe differences in resilience trajectory after a person has experienced trauma. Primarily, strengths within the person, including their health and immunity, may foster healthy coping with the trauma. At an interpersonal level, skills such as emotional regulation and hardiness may facilitate recovery. Lastly, at an external level, access to a support group and social connectedness may facilitate adaptive coping. This differs from the one-dimensional notion of positive or negative resilient outcomes in a single domain. Importantly, the MSMR model can adapt to and identify separate factors that contribute to each
person’s circumstance in understanding and predicting multiple pathways to resilience over time, and further help facilitate resilience in individuals. Figure 1 illustrates the interactive properties within the MSMR model.

Figure 1. The Multi-systems model of resilience (MSRM; Liu et al. 2017). Intra-individual factors consist of characteristics within an individual representative of trait-resilience; interpersonal factors consist of personality correlates developed or acquired over time through social interactions and experiences representative of psychological resilience; socio-ecological factors consist of larger formal and informal institutions that facilitate coping and adjustment representative of community resilience (Liu et al. 2017).

While this model may be problematic for researchers in terms of measurement, it highlights the inherent complexity of resilience. Indeed, it illuminates the potentially multifinal and multifaceted nature of resilience, that is, there may be multiple potential outcomes that signify resiliency and there may be multiple pathways to resilient outcomes under comparable adverse conditions (Luthar et al., 2000; Woods, 2018).

2.5.6 Measuring resilience

As mentioned previously, defining the concept of resilience has been the subject of debate, thus it has resulted in much ambiguity in terms of its measurement. There is a lack of clarity as to how many factors are involved in resilience, or indeed if it is a unidimensional or
multidimensional construct. The expressed concern in the literature about the lack of a clear operational definition and measurement tool for resilience is profound (Windle et al., 2011; Naglieri, LeBuffe, & Ross, 2013; Liu et al., 2017). Different approaches to measuring resilience across studies have led to inconsistencies relating to the nature of potential risk factors and protective processes, and in estimates of prevalence. Subsequent concerns have been voiced about the extent to which resilience researchers are measuring resilience, or an entirely different experience.

It has been suggested that in the research literature on promoting resilience, emergent factors encompass three levels: the individual, family, and external or community (Kelly, Fitzgerald, & Dooley, 2017). However, discursively, there is confusion in the literature about whether resilience is a purely psychological construct. Protective factors have typically been divided into two types, intrapersonal and social support (Min, Lee, & Chae, 2015). Others have suggested that resilience factors are purely psychological and do not include environmental circumstances (Johnson et al., 2011). Fletcher & Sarkar (2013) further differentiate between protective factors (those that shield an individual from a negative event) and promotive factors (those which build psychological capital, such as frequent successful experiences).

Prince-Embury & Courville (2008) explored factor models of resilience through psychometric testing, which resulted in the Child and Adolescent Risk and Resiliency Scales; a battery comprised of three separate subscales adhering to psychological definitions of resilience. Subscales include a sense of mastery, sense of relatedness, and emotional reactivity. von Soest, Mossige, Stefansen, and Hjemdal (2010) fostered a socio-ecological approach suggesting three predominant areas; positive individual factors, family support, and a supportive environment outside the family. The resultant Resilience Scale for Adults (RSA) covers these areas and is based on a content analysis of all resilience factors featured in the literature. The Resilience Scale for Adolescents (READ) (Hjemdal et al., 2006) was adapted from the RSA, suggesting a five-factor structure of personal competence, social competence, structured style (planning and implementing routine), family cohesion, and social resources (von Soest et al., 2010; Kelly, et al. 2017).

Another measure, The Adolescent Resilience Questionnaire (Gartland et al., 2011), a 93-item measure, is based on an ecological-transactional model of resilience that features areas of self, family, peers, school, and community. The ‘7Cs tool’ (Barger, Vitale, Gaughan, & Feldman-Winter, 2017), yet another scale, based on Ginsburg’s model of positive development (Ginsburg & Jablow, 2014), focuses on seven factors that correlate with resilience (competence, confidence, character, connection, caring, coping, and control), and has shown
good internal consistency and validity in a sample of 13 – 21 year olds (Barger et al. 2017). While many of these measures have been reported as showing good psychometric properties, reliability, and validity, they are all based on similar but different definitions of resilience, making comparisons across studies impracticable.

One definition derived from a synthesis of 270 relevant research articles states that resilience is that it is “the process of negotiating, managing, and adapting to significant sources of stress or trauma” (Windle et al., 2011, p. 2). This definition may provide a benchmark for understanding the operationalism of resilience for measurement. Furthermore, it highlights cognitive processes, adaptive-coping components, and individual-specific stress significance. Windle et al. (2011) also reviewed the psychometric rigour of resilience measurement scales developed in general and clinical populations. Nineteen resilience measures were reviewed and all had some missing information regarding psychometric properties. They found no current ‘gold standard’ amongst 15 measures of resilience and stated that most scales were in the early stages of development, all requiring further validation work. They concluded that given increasing interest in resilience from major international funders, key policy makers, and practice, researchers are urged to report relevant validation statistics when using measures. Importantly, for use with adolescents, they found that the Connor-Davidson Resilience Scale (CD-RISC) received the best psychometric ratings overall (2011).

2.5.6.1 CD-RISC

The full version of the CD-RISC includes 25 items loading on five factors (persistence/tenacity, emotional and cognitive control, adaptability, control/meaning, and meaning) and has shown to have good psychometric properties (Connor & Davidson, 2003). There is also a shortened 10-item version and 2-item version. The scale has been tested widely on a broad variety of populations, including adolescents (Campbell-Sills & Stein, 2007). Total scores appear to be influenced by both the location where data was collected and the nature of the sample, that is, scores may vary according to country and are generally lower in psychiatric, young adult, and student populations, as well as in those who experience difficulty coping with stress (Davidson & Connor, 2018). In relation to general populations in different countries, using 577 participants in the United States general population, Connor and Davidson (2003) found a median score of 82 with an interquartile range (IQR) of 18, while results from a general population survey in Hong Kong with 10,997 participants showed a median of 62 (IQR = 19) (Ni et al, 2015).
Numerous studies have used the CD-RISC with children, adolescents, and college students. Table 2 below summarises these studies detailing the number of participants, mean scores and standard deviations, country, and population group used.

Table 2. Summary of studies using the CD-RISC with students

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Number (N)</th>
<th>Mean (Standard Deviation)</th>
<th>Country</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen et al. (2014)</td>
<td>1,334</td>
<td>75.1 (12.8)</td>
<td>England</td>
<td>First year university students</td>
</tr>
<tr>
<td>Benetti and Kambouropoulos (2008)</td>
<td>240</td>
<td>64.3 (12.3)</td>
<td>Australia</td>
<td>Undergraduate students</td>
</tr>
<tr>
<td>Busska et al. (2010)</td>
<td>401</td>
<td>69.1 (13.4)</td>
<td>Australia</td>
<td>University students</td>
</tr>
<tr>
<td>Brown and Tylka (2011)</td>
<td>290</td>
<td>76.0 (13.2)</td>
<td>USA</td>
<td>African American students</td>
</tr>
<tr>
<td>Brauer et al. (2008)</td>
<td>502</td>
<td>65.9 (18.6)</td>
<td>South Africa</td>
<td>Students (mean age of 16.2 years)</td>
</tr>
<tr>
<td>Chen et al. (2014)</td>
<td>32</td>
<td>49.3 (6.5)</td>
<td>China</td>
<td>Adolescent survivors of an earthquake who lost a parent (pre-intervention scores)</td>
</tr>
<tr>
<td>Chen et al. (2018)</td>
<td>310</td>
<td>64.3 (13.2)</td>
<td>China</td>
<td>College students</td>
</tr>
<tr>
<td>Claus-Ehlers and Wibrowski (2007)</td>
<td>95</td>
<td>73.1 (14.1)</td>
<td>USA</td>
<td>High school students</td>
</tr>
<tr>
<td>Cleaverley and Kidd (2011)</td>
<td>47</td>
<td>60.9 (18.9)</td>
<td>Canada</td>
<td>Homeless youth (male)</td>
</tr>
<tr>
<td>Finkham et al. (2009)</td>
<td>787</td>
<td>63.7 (17.9)</td>
<td>South Africa</td>
<td>Secondary school students</td>
</tr>
<tr>
<td>Fu et al. (2013)</td>
<td>2,132</td>
<td>50.5 (19.9)</td>
<td>China</td>
<td>Adolescent and child survivors of an earthquake</td>
</tr>
<tr>
<td></td>
<td>1,988</td>
<td>50.2 (19.5)</td>
<td>USA</td>
<td>Adolescent cricketers</td>
</tr>
<tr>
<td>Guceriardi et al. (2011)</td>
<td>199</td>
<td>73.0 (10.9)</td>
<td>Australia</td>
<td>Undergraduate students</td>
</tr>
<tr>
<td>Harlley (2011)</td>
<td>605</td>
<td>75.7 (11.9)</td>
<td>USA</td>
<td>University students</td>
</tr>
<tr>
<td>Ivanus (2017)</td>
<td>194</td>
<td>65.0 (12.9)</td>
<td>Australia</td>
<td>School-aged adolescents</td>
</tr>
<tr>
<td>Jorgensen and Seszet (2006)</td>
<td>701</td>
<td>64.8 (18.9)</td>
<td>South Africa</td>
<td>College students</td>
</tr>
<tr>
<td>Kang et al. (2013)</td>
<td>321</td>
<td>67.2 (12.7)</td>
<td>Korea</td>
<td>Adolescents aged 12 – 16 years (mean age of 12.8)</td>
</tr>
<tr>
<td>Lim et al. (2011)</td>
<td>190</td>
<td>71.13</td>
<td>Singapore</td>
<td>Students</td>
</tr>
<tr>
<td>Markovits et al. (2014)</td>
<td>254</td>
<td>63.9 (14.1)</td>
<td>Netherlands</td>
<td>Students</td>
</tr>
<tr>
<td>Otto et al. (2010)</td>
<td>856</td>
<td>72.9 (13.5)</td>
<td>USA</td>
<td>College students</td>
</tr>
<tr>
<td>Peng et al. (2012)</td>
<td>1,998</td>
<td>61.7 (10.6)</td>
<td>China</td>
<td>Medical students</td>
</tr>
<tr>
<td>Siddique et al. (2017)</td>
<td>606</td>
<td>61.6 (13.5)</td>
<td>India</td>
<td>Adolescent females with low income (ages 16 – 18)</td>
</tr>
<tr>
<td>Vetter et al. (2010)</td>
<td>94</td>
<td>70.1 (14.0)</td>
<td>Russia</td>
<td>Children aged between 10 – 16 years who survived a terrorist attack</td>
</tr>
<tr>
<td>Wamser-Namey et al. (2017)</td>
<td>429</td>
<td>69.8 (17.6)</td>
<td>USA</td>
<td>Students exposed to trauma (mean age of 19 years)</td>
</tr>
<tr>
<td>Yu et al. (2011)</td>
<td>2,914</td>
<td>69.6 (13.2)</td>
<td>China</td>
<td>Adolescent survivors of an earthquake</td>
</tr>
<tr>
<td>Ziaitan et al. (2012)</td>
<td>170</td>
<td>62.2 (20.4)</td>
<td>Australia</td>
<td>Adolescent refugees</td>
</tr>
</tbody>
</table>

Given the abundance of research supporting its use with adolescents, the CD-RISC was an outcome measure of choice for this study. However, although shown to have good...
psychometric rigour (Windle et al. 2011), the CD-RISC focuses on individual disposition and attitudes and excludes interpersonal factors and other types of social supports and protective factors. In particular, the shortened versions of the CD-RISC are largely consistent with trait theories of resilience and may not represent the myriad of relevant influences. Moreover, there are substantial variations in what may be considered ‘resilient’ across studies and the stringency of criteria used to assess resilience.

Although often measured at a single time point, resilience may not remain static over time (Luthar, Cicchetti, & Becker, 2000). The use of event-specific markers as set-points for measuring resilience may also be inherently problematic as resilience becomes associated with only abnormal markers or events nested within an individual. Yet, how an individual interacts with his or her larger community or environment will largely influence, if not help dictate, outcomes in multiple ways. Researchers have generally failed to combine socio-ecological factors with intra-individual variables, which likely contribute to one's overall resilient profile (Seery et al., 2010). There is a need for research studies to redress this often overlooked aspect of resilience, particularly amongst adolescents. One way of doing this would be the inclusion of a second resilience measure, which includes facets pertaining to multi-dimensional outlook of resilience.

2.5.6.2 Gender differences
Research into the relationship between resilience and gender, for both adults and adolescents, are inconsistent (Conor & Davidson, 2003, 2018; Sun & Stewart 2007; Hjemdal et al., 2011; Stratta et al., 2013; Liu, Fairweather-Schmidt, Burns, & Roberts, 2015). In their study investigating the relationship between resilience and levels of anxiety, depression, and obsessive–compulsive symptoms in adolescents, Hjemdal et al. (2011) found a relationship between subscale differences and mental health outcomes suggesting that girls that do not have healthy social environments may be more vulnerable to developing mental health symptoms than boys, and boys with low levels of intrapersonal resources may be more vulnerable than girls. Other research has highlighted gender differences in stress response and coping styles with females scoring higher on psychological distress and on emotion focused coping styles (Stratta et al., 2013). Protective factors may differ across gender in adolescence. This underscores the necessity to examine differences in resilience scores by gender.
2.6 Developing a measure of adolescent resilience

One adolescent specific model of resilience suggests there are three types of resilience factors: protective, risk, and outcome (Haase, 2004). Another youth specific model suggests that there are two factors: social support and community agency (Brennan, 2008). Yet other researchers claim there are five factors (Hjemdal, 2006) or four factors (Ungar & Leibenberg, 2011). Indeed, numerous measures have been developed in recent decades, each potentially loading on different factors (Wagnild & Young, 1993; Jew, Green & Kroger, 1999; Constantine & Benard, 2001; Hurtes & Allen, 2001; Oshio, Kaneko, Nagamine & Nakaya, 2003; Donnon & Hammond, 2007; Prince-Embry, 2008; Gartland, 2009; DeSimone, Harms, Vanhove, & Herian, 2017). It is evident that there are a range of personality related, environmental, and other factors involved in a multidimensional model of adolescent resilience (Ahern, 2006).

Gaffney (2018) highlighted that, given the extensive debate on whether resilience is a trait, a process, or a behavioural outcome, it may be more pragmatic to consider which explanation adds to the dialogue on suicide prevention and which of these domains gives the most meaningful input to intervention. Therefore, a measurement method emphasising the dynamic, process-oriented, and skills-based aspects of resilience is most prudent to assist with suicide prevention (Gaffney, 2018).

Qualitative research has previously suggested that there are four domains of resilience for adolescents overcoming or “moving away from suicidality”, conceptualised as social processes, emotional processes, cognitive processes, and purposeful action (Everall, Altrows, & Paulson, 2006, p. 467). This is one of the few published studies exploring the subjective experiences of adolescents who had previously been suicidal and overcame the crisis. Fergus and Zimmerman (2005) have suggested that qualitative research may be valuable in investigating resilience for particular risk outcomes.

2.6.1 The Resilience Questionnaire (RQ)

The Resilience Questionnaire (RQ) was adapted from the resilience subscale of a screening tool for risk factors and resilience contributing towards suicidality in adolescents and young people in Ireland, the RISKRES (Gaffney, 2018). It was developed by researchers at Trinity College Dublin and Pieta House, an Irish non-profit organisation providing a specialised treatment for people who have suicidal ideation or who participate in self-harming. Student, teacher, and practitioner focus groups were utilised in its development, which was also borne out of the literature around resilience and suicide, adhering to a multi-dimensional view of
resilience. Recent research has highlighted the “promising” use of the RQ as an outcome measure for programmes that build resilience with a view towards suicide prevention (Gaffney, 2018, p. 210).

Items on the questionnaire address internal assets relating to self-regulation, coping and competence, interpersonal relationship components such as those with friends and family, and other external resources such as social connection with school. The components and psychometric properties of the RQ have yet to be investigated comprehensively, although preliminary findings suggest that it shows good reliability and validity (Pieta House, 2017). The RQ has been the outcome measure of choice for the Pieta House ‘Resilience Academy’, a resilience-building programme implemented in schools at a national level across Ireland. However, as the RQ is still a relatively new measure of resilience, its assessment in terms of its validity, reliability, and factor structure is essential if its usage is to be continued (see Chapter 4 for a detailed analysis of RQ items). The RQ was therefore used in the present study to investigate resilience more comprehensively and, in so doing, extend the reliability and validity data of the measure.

2.7 The Pieta House ‘Resilience Academy’

The Resilience Academy (RA), a school-based resilience programme for second year students, was developed by Pieta House in response to a 163% increase in adolescents attending the service for issues relating to suicide and self-harm between 2011 and 2016 (Pieta House, 2016). The programme’s resilience-focused approach and implementation is in line with recent recommendations from international research literature (Johnson et al., 2011; Cosco et al., 2017). Indeed, its development was in direct response to recommendations provided by one review detailed above (Surgenor et al., 2016). The review process was followed by a series of student focus groups and interviews with school staff to identify issues relevant to this cohort. This is in keeping with research findings that resilience-based interventions must attend to “the unique features of the population of interest and the context in which the approach is employed” (Fergus & Zimmerman, 2005, p. 413). To this end, industry experts in areas such as body image, cyber bullying, occupational stress, and lesbian, gay, bisexual, and transgender (LGBT+) issues contributed to the development of the programme. Evidence-based elements of cognitive-behavioural therapy (CBT) and dialectical behaviour therapy (DBT) are included in its design.

A pilot study involving two schools in Cork and Dublin showed measurable increases in resilience, as measured by the RQ, for students having participated in the programme (Pieta
House, 2017). Students retained specific knowledge acquired through the course in relation to understanding their emotions, adapting their thoughts, and seeking help from appropriate sources when needed. Both teachers and students provided positive feedback relating to the programme and highlighted the unique presentation and structure of the course as a key element of its success. The programme was officially launched in April 2017 by the then Minister for Mental Health, Helen McEntee. At present, it has been implemented in over 200 schools covering approximately 3,000 students.

The programme lasts for six weeks (one hour each week) and is aimed at equipping students with practical information and techniques that will facilitate emotional and cognitive resilience. It is limited to 30 students per class and restricted to second year students, generally aged between 13 and 14 years; this age range is in line with recommendations from international research and those given by the Irish Health Research Board (Dillon, Guiney, Farragher, McCarthy, & Lon, 2015). Prior to the programme commencing in a school, there is a site visit by the team in order to inform and familiarise staff with the process, as recommended by Surgenor et al. (2016). A 90-minute overview of the programme, its development, including the research around resilience and adolescent mental health, and its aims, is given to teachers.

The programme is facilitated by two trained presenters, generally qualified therapists (psychotherapists, counselling psychologists, and mental health professionals). Students initially learn about resilience, mental health, and coping techniques based on CBT and DBT principles in an introductory foundation class. They are then asked to choose from four modules to cover from a menu of topics (see Appendix E). These include: (1) Bullying; (2) Mental Health; (3) Sexuality; (4) Substance Abuse; (5) Families; (6) Friendships; (7) School Stress; (8) Body Image. In the four subsequent weeks, the top four topics selected by each group are covered through discussion and activities. A non-judgemental environment is supported where open dialogue and the asking of questions is encouraged. Handouts, story vignettes, slides, posters, and videos are utilised by the facilitators. The final session summarises the topics, any outstanding issues, and coping mechanisms discussed and practiced in previous sessions, and contact information for relevant support services is given. The structure of the programme is outlined in Table 3.
Table 3. Structure of the Pieta House Resilience Academy programme

<table>
<thead>
<tr>
<th>Week 1</th>
<th>1.5 hour Teacher Support Class</th>
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<tbody>
<tr>
<td></td>
<td><em>This 90-minute session covers:</em></td>
</tr>
<tr>
<td></td>
<td>- An overview of the Resilience Academy programme that students receive.</td>
</tr>
<tr>
<td></td>
<td>- The issues second year students have identified as stressful.</td>
</tr>
<tr>
<td></td>
<td>- Advice on how to talk to parents and students about mental health.</td>
</tr>
<tr>
<td></td>
<td>- Information on resources, referral pathways, and self-care for teachers.</td>
</tr>
<tr>
<td></td>
<td>1 hour Student Foundation Class</td>
</tr>
<tr>
<td></td>
<td><em>This introductory session provides:</em></td>
</tr>
<tr>
<td></td>
<td>- An introduction to resilience and mental health awareness.</td>
</tr>
<tr>
<td></td>
<td>- Interactive methods that engage students in identifying positive solutions.</td>
</tr>
<tr>
<td></td>
<td>- An overview of the weekly modules they can select.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weeks 2-5</th>
<th>Weekly Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Students select four modules (from a choice of eight) which are delivered by programme facilitators.</td>
</tr>
<tr>
<td></td>
<td>- Students engage in discussion and activities that develop positive coping strategies and they receive advice on sources of support.</td>
</tr>
<tr>
<td></td>
<td>- Each session finishes with an opportunity for students to ask questions in a safe and confidential environment (publicly or privately).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 6</th>
<th>Consolidation and Support Session</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>The final session is a consolidation class that:</em></td>
</tr>
<tr>
<td></td>
<td>- Recaps topics and coping mechanisms covered over the past five weeks.</td>
</tr>
<tr>
<td></td>
<td>- Provides contact information for relevant support services.</td>
</tr>
<tr>
<td></td>
<td>- Enables an anonymous Q&amp;A session.</td>
</tr>
</tbody>
</table>

2.8 Current study and gap in the literature

The main aim of this research was to evaluate the effectiveness of the Resilience Academy and to establish aspects of the programme that could be developed and adapted for future students. To this end, the use of resilience-specific outcomes alongside mental health outcomes was
important to programme effects as well as investigating effects specifically for students with different mental health difficulties and whether there were differences between these student groups. Additionally, gaining insight into students’ experiences of participating in the programme and their ensuing processes of change was of equal importance. Investigation into the psychometric properties of the RQ was also warranted as it is a relatively new scale being implemented at a national level. It also includes items pertaining to multi-dimensional aspects of students’ lives, for example, school connection; aspects that other adolescent scales omit (Hjemdal, 2006).

The first normative data for a specific resilience measure on a nationally representative sample of Irish adolescents was only reported on as recently as 2016 using the READ (Kelly et al., 2017). This research supported a five-factor model originally hypothesised by scale authors (Hjemdal, 2006) and the notion that resilience is a multidimensional construct. It is hoped that the current study will add to this literature regarding other salient areas relating to resilience such as school connectedness.

Reach Out (National Office for Suicide Prevention, 2005), Ireland’s previous national strategy for suicide prevention, identified schools as places where suicide prevention and increasing resilience can be targeted. The National Suicide Research Foundation (2017) have since declared that the roll-out of evidence-based mental health programmes in Irish schools should be undertaken as a matter of priority in order to develop mental health literacy, promote positive mental health, and prevent suicide in adolescents. This research is timely considering Ireland published its new national strategy, Connecting for Life (National Office for Suicide Prevention, 2015), which emphasises profiling risk and protective factors. This is one of the national aims for research and strategy for the next few years in the field of suicide prevention and parallels recent European priorities for universal school-based suicide prevention (Zalsman, 2017).

2.8.1 Research questions and hypotheses

The principal research questions that are being addressed by undertaking this study are as follows (where H = Hypothesis):

**Quantitative**

Research questions:

1. Is participation in the Resilience Academy programme associated with increased resilience, as measured by both the CD-RISC and RQ?
**H1:** There is a significant difference between pre- and post-programme CD-RISC scores.

**H2:** There is a significant difference between pre- and post-programme RQ scores.

2. **Is there a difference in the change in resilience between males and females?**

**H3:** There is a significant difference in programme effects on CD-RISC scores between males and females.

**H4:** There is a significant difference in programme effects on RQ scores between males and females.

3. **Is there a difference in the change in resilience between school groups?**

**H5:** There is a significant difference in programme effects on CD-RISC scores between school groups.

**H6:** There is a significant difference in programme effects on RQ scores between school groups.

4. **Is participation in the programme associated with reduced symptoms of depression and anxiety, as measured by the BDI-2 and BAI?**

**H7:** There is a significant difference between pre- and post-programme symptoms of depression for students.

**H8:** There is a significant difference between pre- and post-programme symptoms of anxiety for students.

5. **Does the programme have a different effect on resilience for students based on their mental health?**

**H9:** There is a significant difference between CD-RISC score changes for students with depressive, anxious, depressive and anxious, and no mental health symptoms.

**H10:** There is a significant difference between RQ score changes for students with depressive, anxious, depressive and anxious, and no mental health symptoms.

6. **Are resilience scores for students at risk of suicide different to other students’ and does the programme have an effect for at-risk students?**

**H11:** There is a significant difference between at-risk students’ and other students’ pre-programme resilience scores.

**H12:** There is a significant difference between programme effects on resilience scores for at-risk students and other students.

7. **Is the RQ a valid and reliable measure of resilience?**

8. **What is the factor structure of the RQ?**
Qualitative

Research question:

- What are students’ experiences of the RA and the process of change as it relates to their engagement in the programme?
Chapter 3: Methodology

3.1 Chapter introduction
This chapter outlines the rationale underpinning the adoption of a mixed-methods approach to the current study. The type of mixed method design chosen, the embedded design, is described, along with a visual diagram of how it was applied. It also describes the rationale behind the conceptualisation of study design and analysis of collected data from a quantitative and qualitative (thematic analysis) perspective. Information on participants for both quantitative and qualitative phases of the study is provided. Procedures for data collection, management, and analysis are also explained in detail for both phases. Finally, ethical issues and the management of these is detailed as well as information regarding consent and funding and positionality.

3.2 Research design
This study utilised a mixed method design, that is, the application of both qualitative and quantitative methods of enquiry (Doyle, Brady & Byrne, 2009). While quantitative research allows for the identification and assessment of relationships between objective variables, qualitative research is useful for exploring the nature of unknown phenomena such as individual and group experiences. Essentially, quantitative tells us ‘if’, while qualitative tells us ‘how or why’ (Terrell, 2012). Research suggests that the two approaches are complementary and can be combined effectively to provide a more thorough account of phenomena than one approach might provide independently (Tashakkori & Creswell, 2007).

As outlined previously, the majority of research to date around school-based programmes has largely focused on reducing symptoms of suicidality from the beginning to end of suicide prevention programmes. Quantitative methods of enquiry have featured predominantly in the literature, however, less is known about how or why resilience-building programmes may be effective, or what is accounting for the changes established in studies. Rather than separately presenting quantitative investigations (change in resilience and symptom reduction) and qualitative explorations (programme aspects that contribute to change), the aim was to link both quantitative and qualitative enquiries, given the interconnectivity between the two.

Creswell and Clark (2017) state that research problems best suited to mixed method design include those in which one source of data does not sufficiently answer the research
question, where results require further explanation, and where a primary method needs to be enriched by a second method. In addition to offsetting weaknesses that quantitative and qualitative methods present when used independently (Guével, Pommier, & Jourdan, 2015), a benefit of using a mixed method approach is the provision of a more complete picture of a phenomenon under investigation (Morse, 2003; Creswell & Clark, 2007); in this case, the RA programme and the concept of resilience.

3.3 Mixed methods research
Mixed methods research has been described as ‘methodological eclecticism’ (Teddlie & Tashakkori, 2012), that is, the integration of the most appropriate qualitative and quantitative techniques in order to comprehensively investigate a phenomenon (p. 776). Mixed method research is grounded in the philosophy of pragmatism. Underpinning the philosophy of pragmatism is the notion that the practicalities of research outweigh paradigm debates between qualitative and quantitative schools of thought, providing the best opportunity to thoroughly answer the research question (Onwuegbuzie & Leech, 2005). Doyle et al. (2009) refer to it as the third methodological wave, and although it has been used increasingly in health care research since the turn of the century, there are ongoing debates as to how methods should be mixed (Teddlie & Tashakkori, 2012; Terrell, 2012; Guével et al., 2015).

In order to address concerns regarding consistency and structuring of mixed method research, Creswell and Clark (2017) have proposed six main designs: (1) the convergent parallel design; (2) the explanatory sequential design; (3) the exploratory sequential design; (4) the embedded design; (5) the transformative design; (6) the multiphase design. Determining the most appropriate mixed method design to fit the research question requires a number of key considerations, including the level of interaction between the qualitative and quantitative strands, the level of priority given to each strand, the timing of both strands (whether they are conducted concurrently or sequentially), and the stage at which the methods are mixed (Terrell, 2012; Guével et al., 2015; Creswell & Clark, 2017).

By combining the strengths of both quantitative and qualitative methods, it has been argued that the subsequent integration of epistemological, ontological, and methodological perspectives leads to a more complete analysis, adding value to the study and evaluation of complex interventions (Doyle et al., 2009; Guével et al., 2015). It is proposed that the combination of approaches will help the development of a more effective programme through an in-depth and layered understanding of its complexity, both through establishing linear
relationships between cause and effect and through exploratory investigation of students’ experience.

3.4 The Embedded Design
The embedded design was the mixed method design considered to best address the research questions in this study. The sequential explanatory method, a two phase model in which data are collected sequentially (Ivankova, Creswell, & Stick, 2006), was also considered, however, this was ruled out as it involves the investigation of only one research question, through the use of two methods, as opposed to the examination of multiple research questions addressed separately. The sequential explanatory method also requires a longer time-frame in which to conduct research given the sequential nature of data collection and analysis and this was unattainable given the permitted time frame for this study. The embedded design was chosen since quantitative data were used to answer the primary question in a pre-post design and qualitative data were embedded within this design with the intent of explaining the mechanisms that relate to the outcome variables.

The underlying premise of the embedded design is that one type of data is insufficient in answering questions about an intervention (Creswell & Clark, 2017). It is considered appropriate when researchers have multiple questions that each require different types of data. One data set, usually qualitative, is embedded within a larger quantitative data set, and takes on a secondary role in the study (Doyle et al., 2009). Generally, the datasets are given unequal priority, with one identified as predominant (Creswell & Clark, 2017). A number of factors guided the selection of this design, including time orientation and sample relationship, since participants for the qualitative phase were nested within the overall sample of participants for the quantitative phase. The research also proposed two separate research questions, each requiring different methods of enquiry to be appropriately addressed. The qualitative data in this research is embedded within a quantitative investigation, which is also part of a wider national quantitative framework. Therefore, the quantitative data was predominant. However, it should be noted that this study explored imperative qualitative aspects of the RA programme that have not been previously investigated. Thus, an in-depth analysis of qualitative results will reflect this. A visual framework of the embedded design as it related to this study is provided in Figure 2 below.
Figure 2. A visual framework of the embedded design as it was adopted for this study. Quantitative methods are represented by the large square to the left and given the abbreviated label of QUAN, written in capitals to reflect that it is the predominant method in the study, while qualitative methods, given the abbreviated label Qual, represented by an ellipse, are nested within the square to show that it is embedded within the quantitative dataset. Data collection and analysis of the quantitative and qualitative strands occur independently with the qualitative data being collected after the quantitative data. The findings are then merged at the interpretation stage which is represented by the hexagon on the right.

3.5 Quantitative

3.5.1 Design, participants, and procedure

A within-subjects repeated measures (pre and post) design was utilised for the quantitative phase of this study. This was in keeping with the design of a large-scale, and less-thorough, internal evaluation of the programme at a national level. Pre/post evaluation designs are best used when measuring outcomes (knowledge, attitudes, skills, aspirations, and behaviours) of programmes that are specifically developed to bring them about and when access to participants before and after the programme is available (Sabatelli & Anderson, 2005). Initially, the use of a control condition in a between-subjects design was considered, however, due to limited availability of resources and time, it was deemed unfeasible and perhaps unethical since potential participants in any control condition would not have been able to avail of participation in the programme afterward. Similarly, a three-month follow-up stage was considered,
however, programme facilitators were unavailable for this. A within-subjects design also 
potentially allowed for the monitoring of effects upon individuals and the diminution of 
individual differences that might skew results.

Participants were sourced based on applications from school principals who wanted to 
take part in the Resilience Academy programme. Given the high volume of schools who took 
part in the programme, and the variety of areas represented, it was thought that data would 
appropriately represent the general population. Two schools were randomly selected out of a 
sample that had already been contracted to host the programme. Both schools were in the 
Dublin county area. School 1 was a mixed-sex education setting while School 2 was a single-
sex (female) education setting. Three groups were facilitated in School 1 and one group in 
School 2. In total, data was collected from 91 second year students enrolled in the programme 
(School 1, $n = 64$; School 2, $n = 22$). Two participants were removed due to insufficient data. 
Of the remaining 89, both pre and post data was acquired for 86. This sample comprised 53 
females (61.6%) and 33 males (38.4%). Most participants were aged 13 ($n = 58, 67.4\%$) or 14 
($n = 25, 29.1\%$), while two were aged 15 (3.5%). The median age was 13 years.

Participants were required to complete four questionnaire measures at two separate 
occasions; before the programme began and after the final session of the six-week programme. 
The measures were stapled together in the same order they are outlined below. Two facilitators 
and the author were present to contain and support any queries or questions that students may 
have had whilst completing the questionnaires. Before being given the questionnaires, each 
student was randomly assigned a three-digit number that they were asked to write on the front 
page and to remember by writing in their diary and/or saving on their phones. After the last 
session of the programme, they were asked again to write this number on the front page of their 
questionnaires to promote consistency. No identifying information was requested apart from 
participants’ age, sex (male or female), and programme group.

3.5.2 Measures

3.5.2.1 Connor-Davidson Resilience Scale (CD-RISC):

The CD-RISC (see Appendix G) was originally created to improve on existing measures of 
resilience and has been tested using a variety of populations to increase the generalisability of 
the measure. A recent review of resilience measures suggested that the CD-RISC was the most 
efficient resilience measure for use with adolescents (Windle et al., 2011). It consists of 25 
items, which are evaluated on a five-point Likert scale ranging from 0 (“not true at all”) to 4
(“true nearly all of the time”). There are no reverse items. Ratings result in a total number between 0-100; higher scores indicate higher resilience.

Connor and Davidson (2003) originally derived five factors, the strongest of which captured aspects of persistence/tenacity and strong sense of self-efficacy. Other factors corresponded to emotional and cognitive control under pressure (factor 2), adaptability/ability to bounce back (factor 3), control (factor 4), and meaning (factor 5). Factors 4 and 5 were composed of only 3 and 2 items respectively and may be less robust. In their study using a sample of 2914 adolescents, Yu, Lau, Mak, Zhang, and Lui (2011) replicated these five factors by confirmatory factor analysis and showed a Cronbach’s α coefficient of 0.89 for the full scale, and 0.83, 0.66, 0.66, 0.58 and 0.50 for factors 1 through 5 respectively. Similarly, a recent study using a sample of 310 Chinese students reported a Cronbach’s α of 0.92 (Chen, Chen, & Bonanno, 2018). In addition, CD-RISC scores have demonstrated significant positive correlation with social support ($r = 0.44$) and significant negative correlations with depression ($r = −0.38$) and anxiety ($r = −0.25$) (Chen et al., 2018).

### 3.5.2.2 Resilience Questionnaire (RQ):

The RQ (see Appendix F) is a brief scale designed for adolescents and young adults to measure the interpersonal and intrapersonal dynamic components of resilience. This is a self-report measure consisting of 20 statements, including two reverse score items, which takes approximately five minutes to complete. Participants are invited to score each statement on a five-point Likert scale from 0 (“Not at all true for me”) to 4 (“Very true for me”). The 20 items, including corrected scores for reverse items, can be added for a total resilience score. Higher scores indicate greater resilience.

The scale has shown good internal consistency reliability in a pilot study with an Irish community-based sample of young people of 12-21 years (Cronbach’s $\alpha = .79$) (Pieta House, 2017). A secondary aim of this research was to investigate the reliability and validity of the RQ, specifically through comparison with another resilience measure (CD-RISC). Comparisons were also made with measures of depression (BDI-2) and anxiety (BAI) apropos. In addition, a Principal Component Analysis (PCA) was utilised to further investigate the factor components present within the RQ.
3.5.2.3 Beck Depression Inventory – 2 (BDI-2):
The BDI-2 (see Appendix H) is a 21-item self-report inventory measuring symptoms of depression in adolescents and adults. It is widely used as an indicator of the severity of depression. The response format includes a four-point Likert scale ranging from 0 (“not at all”) to 3 (“extremely”), based on severity of each item. The following guidelines have been suggested for interpretation: “Minimal range” = 0 – 13, “Mild” = 14 – 19, “Moderate” = 20 – 28, and “Severe depression” = 29 – 63 (Beck et al., 1996). One item of the original 21-item scale was omitted for the study as it was not considered appropriate for a young adolescent sample, as per previous research (Balázs et al., 2017).

According to a meta-analysis study, the internal consistency coefficient of BDI-2 ranged from 0.73 to 0.93 with an average of 0.86, while reliability coefficients, in terms of the intervals between test and retest and the type of population, have ranged from 0.48 to 0.86 (Toosi, Rahimi, & Sajjadi, 2017). Previous studies have shown high internal consistency coefficients ranging from 0.89 to 0.94 for different populations (Beck et al., 1996; Steer, Ball, Ranieri, & Beck, 1999). Studies involving adolescents, generally aged between 12-17 years, report good internal consistency; α >.90 for the total scale and >.80 for subscales (Barrera & Garrison-Jones, 1988; Krefetz, Steer, Gulab & Beck, 2002; Kumar, Steer, Teitelman, & Villacis, 2002; Osman, Kopper, Barrios, Gutierrez, & Bagge, 2004).

Although another version of the BDI has been developed specifically for children (originally for children aged 7-14 years) and subsequently standardized for adolescents (Beck Depression Inventory for Youth [BDI-Y]; Beck et al., 2001), the author selected the BDI-2 for this study as it is more established both in clinical practice and in international research (Dolle, Schulte-Körne, O’Leary, von Hofacker, Izat, & Allgaier, 2012). Furthermore, the BDI-2 was the instrument of choice in previous relevant research (Wasserman et al., 2015).

3.5.2.4 Beck Anxiety Inventory (BAI):
The BAI (see Appendix I) is a self-report questionnaire including 21 items that measure the severity of anxiety in children and adults. Although the age range for the measure is from 17 to 80, it has been used in peer-reviewed studies with younger adolescents aged 12 and older (Toosi et al., 2017). Respondents are asked to report the extent to which they have been bothered by each of the 21 symptoms in the past week including the day of their completion of the BAI. Each symptom item has four possible answer choices: 0 (“not at all”); 1 (“mildly, it did not bother me much”); 2 (“moderately, it was very unpleasant, but I could stand it”), and;
3 ("severely, I could barely stand it"). The values are summed to yield an overall score ranging from 0 to 63. Higher scores indicate more severe anxiety. A total score of 0 - 7 is interpreted as a “Minimal”; 8 - 15 as “Mild”; 16 - 25 as “Moderate”, and; 26 - 63 as “Severe”. Reliability and validity of this scale have been assessed rigorously and it has been shown to be psychometrically sound. Internal consistency (Cronbach’s alpha) ranges from .92 to .94 and test-retest (one-week interval) reliability is .75 and correlation with the Hamilton anxiety scale-revised is satisfactory (0.75) (Beck, Epstein, Brown, & Steer, 1988).

While an adolescent-specific anxiety scale exists within the Beck Youth Inventories – Second Edition (BYI-II) (Beck, 2001), the BAI was chosen as it has been highlighted as one of the mostly widely used measures of anxiety for adolescents (Bardhoshi, Duncan, & Erford, 2016). Toosi et al. (2017) recently highlighted the positive dissemination of the scale for young adolescents and across cultures, with it showing good validity (r = 0.72) and reliability (r = 0.83). Furthermore, the use of the BAI along with the BDI-2 in the current study fortified applied research consistency and feasibility.

### 3.5.2.5 Re-categorisation of BDI-2 and BAI severity levels

In order to increase the clinical significance, and thus the practical implications, of depression and anxiety scores, and to explore potential relationships with resilience scores, pre- and post-programme BDI-2 and BAI scores were recoded into two separate categories; depressed/non-depressed and anxious/non-anxious. Specifically, scores indicating minimal and mild levels of depression and anxiety were re-categorised as non-depressed and non-anxious, while scores in the moderate and severe ranges were re-categorised as depressed or anxious, respectively. Students with scores ≥ 20 on the BDI-2 and ≥16 on the BAI were re-categorised as ‘depressed’ and ‘anxious’, respectively. These cut-off scores were selected after careful consideration of previous research with similar populations (Beck, Steer, & Brown, 1996; Wasserman et al., 2014; McMahon et al., 2017)

### 3.5.3 Data management

Data were extracted first to Microsoft Excel and then to IBM Statistical Package for Social Sciences (SPSS) version 25 and scored according to questionnaire guidelines using SPSS syntax. Missing data was planned to be controlled by calculating the mean of the remaining items and substituting that number for the missing item values, however, missing data was not an issue as questionnaires were screened for completion upon collection. Data was stored in an
encrypted and password protected external hard drive as per University of Limerick ethical guidelines.

3.5.4 Power analysis
A priori power analysis was conducted using G*power 3.1 to determine suitable sample size (Faul, Erdfelder, Lang, & Buchner, 2007). Based upon estimation and previous psychometric information regarding the CD-RISC as a main outcome measure (an alpha error probability of .05, a power estimate of .80, a pre and post difference of 3.25, a common variance of approximately 13, and an approximate correlation of .80) (Lim, Broekman, Wong, Wong, & Ng, 2007), sample size (N) was computed to be 50. The current sample was N = 86.

3.5.5 Data analysis
Figure 3 represents the steps involved in the quantitative data analysis. Quantitative data analysis was carried out using SPSS. Firstly, the SPSS file was prepared and relevant data was entered for each variable, pre- and post-intervention. A series of tests were conducted to ascertain whether the data for each total score variable were normally distributed including quantile-quantile plots (Q-Q plots) and the Kolmogorov-Smirnov (K-S) tests. The results of the histograms, graphs, and plots were visually checked and it was confirmed through the K-S test results whether data were normally distributed or not. Subsequent analyses of pre and post data were carried out using a series of t-tests and Wilcoxon signed-rank tests depending on distribution. McNemar tests were used to determine if there were differences on dichotomous dependent variables between pre and post-programme. Kruskal-Wallis H tests and one-way ANOVA tests were also used to determine if there were statistically significant differences between groups. The mean and standard deviations (SD) are reported for normally distributed data analysis and the median and interquartile range (IQR) are reported where the assumption of normality was violated (Bryman & Cramer, 2014). Where possible, effect sizes, or the quantitative magnitude of phenomena, were measured using Cohen’s (1988) criteria as depicted in Table 4. All statistical analyses were performed using an alpha level of < .05 for statistical significance and all tests were two-tailed.
Table 4. Cohen’s (1998) criteria for effect sizes

<table>
<thead>
<tr>
<th></th>
<th>$d$</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>.20</td>
<td>.10</td>
</tr>
<tr>
<td>Medium</td>
<td>.50</td>
<td>.30</td>
</tr>
<tr>
<td>Large</td>
<td>.80</td>
<td>.50</td>
</tr>
</tbody>
</table>

Reliability tests were also conducted to measure internal consistency and test-retest reliability. Internal consistency was measured using Cronbach’s alpha ($\alpha$) (Cronbach, 1951), while a Pearson product-moment correlation coefficient and a Spearman's rank-order correlation were calculated to measure test-retest reliability depending on data distribution. Criterion validity was assessed by direct comparison between resilience measures using a Spearman's rank-order correlation. Principal Components Analysis (PCA) was also used to determine the factor structure of the Resilience Questionnaire. PCA can be used to find meaningful patterns within a large amount of data. It is possible to find that a certain group of questions seem to cluster together and tap into one particular aspect of a construct, while another set of questions tap into a distinct aspect (Field, 2016). This process simplifies data and allows for the development of a more parsimonious presentation in the form of factor structure.

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**Figure 3.** A visual outline of the steps involved in quantitative data analysis (Bryman & Cramer, 2012).
3.6 Qualitative

3.6.1 Design, participants, and procedure

Evaluation researchers are increasingly using both qualitative and quantitative methods in their evaluation efforts (Massey, 2011). A prominent qualitative method of obtaining data is the focus group. Focus groups have been described as a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment (Krueger & Casey, 2014), combining elements of interviewing and participant observation. They provide an opportunity to probe participants’ cognitive and emotional responses while also observing underlying group dynamics and have been shown to be an effective way to obtain a diverse range of information in evaluation research (Massey, 2011).

Seven students from each school were randomly selected to be involved in a focus group facilitated by the author after the last programme session. The purpose of the focus groups was outlined and confidentiality and anonymity highlighted. Students selected were informed that they could discontinue their involvement in the focus groups at any time. Students were also made aware that the focus group would be recorded using an audio recorder, which was already outlined in the study information sheet, and that the author and their supervisor would be the only people with access to it. The two programme facilitators were also present to provide support if needed but were not involved in the discussion.

From School 1, one male and one female student were randomly selected from each of the three programme groups. A third student was selected at random, however, they were subsequently unable to attend the focus group. Thus, six students in total participated in this focus group. Seven students from the programme group in School 2 (all females) were randomly selected to participate in another focus group.

The two focus groups centred on students’ thoughts and experiences of the RA. A set of seven questions were used to guide but not confine the discussion, which allowed participants to influence the direction of the conversation: (1) What was your overall experience of the Resilience Academy?; (2) What was it like to participate in the programme?; (3) What did you like about the programme?; (4) What would you change?; (5) Do you think others would benefit from it?; (6) What has changed for you from participating in the programme?; (7) What does the term ‘resilience’ mean for you? At times, probes such as “Can you tell me a little more about…?” were used to fully understand participants’ comments.

Following the focus groups, participants were offered debriefing and the chance to ask...
questions or to express any pressing thoughts or opinions. All data was recorded using a Zoom H6 audio recorder and the material was transcribed by author.

3.6.2 Data management
After transcription by the author, all potentially identifiable data was removed from the transcripts and audio files were destroyed. Following data analysis, transcripts were stored securely in an encrypted and password protected external hard drive, in accordance with University ethics guidelines.

3.6.3 Data analysis
The analytic approach used for the qualitative data was inductive thematic analysis, guided by the framework provided by Braun and Clarke (2006). Thematic analysis (TA) provides an accessible and flexible method of data analysis and has become quite prominent in recent decades (Hayes, 1997; Boyatzis, 1998; Attride-Stirling, 2001; Fereday & Muir-Cochrane, 2006). TA is a way of systematically identifying, organising, and offering insight into patterns of meaning, that is, themes, across a data set (Braun & Clarke, 2006). Its usage is recommended when aiming to address research questions that go beyond people’s personal experiences or perspectives, for instance, discussion in focus groups (Guest, MacQueen, & Namey, 2012). Through TA, one can identify commonalities about the way a topic is discussed and make sense of those commonalities. In order to increase reliability, codes and themes were reviewed by the author’s research supervisor concurrently.

Audio material from the focus groups was transcribed verbatim and was read and reread to ensure familiarity with the content. Initial ideas about what was in the data were also noted to facilitate coding. Initial line by line coding was performed and cross-validated with the research supervisor, going back to the data again to ensure consistency before moving on to the next phase of analysis. Importantly, a content analysis was not the aim of the data analysis, and, therefore, a single comment was considered as important as those that were repeated or agreed upon by others within the group (Fereday & Muir-Cochrane, 2006). Microsoft excel was used to record and collate codes (see Appendix J for an example focus group transcript, coding, and theme development). The summary for each focus group reflected the initial processing of the information by the author and provided the opportunity to make sense of, and take note of, potential themes in the raw data. The author examined the data for patterns, analysed and coded the data, and sorted codes into potential themes and subthemes using hand-drawn brainstorming graphs (see Appendix K for example). This was an inductive process.
where codes and themes were predominantly data-driven (Maxwell, 2008). Coded data extracts, themes, and subthemes were reviewed and discussed with the research supervisor to ensure that the data formed a coherent pattern, to uphold validity of the themes in relation to the entire data set, and to generate a thematic ‘map’ of the analysis (Braun & Clarke, 2006). Figure 4 below outlines the steps taken during thematic analysis, as recommended by Braun and Clarke (2006).

<table>
<thead>
<tr>
<th>Phase 1:</th>
<th>Familiarising oneself with the data - transcribing data; reading and re-reading; noting down initial codes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2:</td>
<td>Generating initial codes - coding interesting features of data in a systematic fashion across data-set; collating relevant data to codes.</td>
</tr>
<tr>
<td>Phase 3:</td>
<td>Searching for the themes - collating codes into potential themes; gathering all data relevant to each potential theme.</td>
</tr>
<tr>
<td>Phase 4:</td>
<td>Involved reviewing the themes - checking if the themes work in relation to coded extracts and entire data-set; create thematic map</td>
</tr>
<tr>
<td>Phase 5:</td>
<td>Defining and naming themes - ongoing analysis to refine the specifics of each theme; generate clear theme names.</td>
</tr>
<tr>
<td>Phase 6:</td>
<td>Producing the report - final opportunity for analysis selecting appropriate extracts; discussion; relate to research question; report.</td>
</tr>
</tbody>
</table>

Figure 4. Phases and examples of procedure for each step during thematic analysis (Braun & Clarke, 2006).

3.7 Ethical consideration

Ethical approval was granted for this project by the Education and Health Science Research Ethics Committee (EHSREC) in the University of Limerick (see Appendix A). Several ethical issues were considered, including issues of consent and anonymity, which were rectified according to guidelines set out by the University, detailed further below. An additional issue that warranted consideration was the potential for students to become distressed when discussing sensitive topics relating to mental health or suicide arising from questionnaires or focus groups. This risk was minimised by having two trained facilitators present and available at all times throughout data collection. If any immediate risk was identified, the trained facilitators followed appropriate procedures as per the ethical approval from Tallaght University Hospital / St. James's Hospital Joint Research Ethics Committee (REC) in relation
to the Resilience Academy. In accordance to this, if a student required extra support at any point throughout the duration of the programme, the two facilitators would be able to assess the severity of the situation and provide support as per the relevant ethical and legal steps. Moreover, the author was a Psychologist in Clinical Training in their third year and would remain conscious of the risk whilst distributing and collecting quantitative data and conducting focus groups. The author was prepared to halt focus groups if students became distressed. Time was also given following data collection to debrief students and to thank them for their participation.

3.8 Consent

Letters, accompanied by study information sheets (see Appendix B), were distributed to the principals of the two schools. Guardians of students participating in the programme were then provided with a written information sheet and a consent form by school staff (see Appendix B). If guardians agreed to allow their child to attend the Resilience Academy sessions and participate in its evaluation, students were then also provided with verbal information about the study as well as an information sheet highlighting their right to disengage from it at any point. If any participant wished to be removed from the study their wishes were to be acknowledged and respected by all. If students declined to participate in this study, it did not impact upon their involvement in the programme. Students were then given a clear information sheet, and asked to sign a consent form if they wished to take part (see Appendix C). Information sheets highlighted that any participants could be randomly selected to participate in a focus group lasting approximately thirty minutes. As such, both students and guardians provided informed consent.

3.9 Funding and positionality

The Pieta House Resilience Academy was an Awardee of the 2017 Social Innovation Fund. As such, Pieta House provided financial assistance in the purchase of 400 psychometric measures (200 copies of the BDI-2 and BAI) for the purposes of this study. Permission was sought and approved for the usage of both the RQ and the CD-RISC. The author purchased the licensing fee for the CD-RISC. The author previously worked as a research assistant with Pieta House in 2015 and contributed to a peer-reviewed review of suicide prevention programmes. The recommendations made in this review informed the development of the Resilience Academy
programme. Importantly, this study was conducted by the author as an impartial and external evaluation of the Resilience Academy programme.
Chapter 4: Results

4.1 Chapter Introduction
This chapter outlines the results of the quantitative and qualitative analyses. Each phase is presented separately initially and then merged together. Firstly, descriptive and inferential statistical analysis are presented for resilience measures followed by depression and anxiety measures. Relationships between total scores for each measure before and after the programme are outlined in detail. Psychometric properties of both resilience measures are also explored with regard to internal reliability and validity, while principal components analysis was utilised to investigate the factor structure of the RQ. The second phase, results of the qualitative thematic analysis, are presented in terms of main themes and subthemes. An overview of each main theme is provided with descriptions of the subthemes. Themes are supported by contextual examples in the form of quotes from the original focus group transcripts. Quantitative and qualitative findings are then merged using the mixed method analysis strategy ‘side-by-side comparison’ (Guetterman, Fetters, & Creswell, 2015), illuminating the ways in which both datasets relate to each other.

4.2 Quantitative results

4.2.1 Research question 1: Is participation in the Resilience Academy programme associated with increased resilience, as measured by both the CD-RISC and RQ?

4.2.1.1 CD-RISC resilience scores
Hypothesis one stated that there is a significant difference between pre- and post-programme CD-RISC scores. The majority of students, 72 (83.7%), had an increased CD-RISC score after participating in the programme, while the remaining 14 (16.3%) students had a decrease in scores. CD-RISC total difference score distribution appeared normal, skewness and kurtosis were within the acceptable range, and Kolmogorov-Smirnov tests of normality were not significant, suggesting normal distribution. A paired-samples t-test was conducted to compare total mean CD-RISC scores pre-programme ($M = 59.34, SD = 14.35$) and post-programme ($67.94, SD = 14.30$), indicating a statistically significant increase ($t(85) = 7.20, p < .001, d = .78$), with a medium to large effect size. Therefore, the null hypothesis was rejected. There was a significant increase in CD-RISC scores for students after participating in the programme.
4.2.1.2 RQ resilience scores
Hypothesis two stated that there is a significant difference between pre- and post-programme RQ scores. Descriptive statistics showed that 64 (74.4%) students reported higher resilience post-programme, while 19 (22.1%) reported lower resilience and 3 (3.5%) reported no change, as measured by the RQ. Although a histogram of RQ total difference score distribution appeared normal, and skewness and kurtosis were within the acceptable range, Kolmogorov-Smirnov tests of normality were significant, suggesting non-normal distribution. A Wilcoxon signed-ranks test was conducted, which indicated a statistically significant increase from pre-programme ($Mdn = 53.5$, $IQR = 19.25$) to post-programme ($Mdn = 60$, $IQR = 15.25$) RQ total scores ($Z = -5.59$, $p < .001$, $r = .43$), with a medium effect size. Therefore, the null hypothesis was rejected. There was a significant increase in RQ scores for students after participating in the programme.

4.2.2 Research question 2: Is there a difference between resilience scores for males and females?

4.2.2.1 CD-RISC scores by gender
Tests for normality for male and female total difference scores suggested normal distribution. Paired-samples $t$-tests were used to determine whether there was a statistically significant mean difference between pre- and post-programme CD-RISC total scores. Males showed higher post-programme CD-RISC scores ($M = 68.2$, $SD = 11.8$) as opposed to pre-programme CD-RISC scores ($M = 59.1$, $SD = 13.9$), a statistically significant mean increase of 9.1 ($t(32) = -4.73$, $p < .001$). Females showed higher post-programme CD-RISC scores ($M = 67.8$, $SD = 15.8$) as opposed to pre-programme CD-RISC scores ($M = 59.5$, $SD = 14.8$), a statistically significant mean increase of 8.3 ($t(52) = -5.90$, $p < .001$). Pre- and post-programme CD-RISC mean scores for males and females are shown in Table 5.

Hypothesis three stated there is a significant difference between programme effects on CD-RISC scores for males and females. CD-RISC score changes were shown to be normally distributed. An independent-samples $t$-test was carried out to determine if there were differences in improved resilience as measured by the CD-RISC between males and females. There were no outliers in the data, as assessed by inspection of a boxplot. Difference scores for each level of gender were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ($p = .465$). Results indicated no significant difference between CD-RISC score change for
females ($M = 8.25, SD = 10.17$) and males ($M = 9.18, SD = 12.55$), $t(84) = .379, p = .706$. Therefore, the null hypothesis was retained. There was no significant difference between programme effects on CD-RISC scores for males and females.

Table 5. CD-RISC scores pre- and post-programme

<table>
<thead>
<tr>
<th>Population</th>
<th>Pre-programme CD-RISC total mean score (standard deviation)</th>
<th>Post-programme CD-RISC total mean score (standard deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (n = 86)</td>
<td>59.3 (14.4)</td>
<td>67.9 (14.3)***</td>
</tr>
<tr>
<td>Male (n = 33)</td>
<td>59.1 (13.9)</td>
<td>68.2 (11.8)***</td>
</tr>
<tr>
<td>Female (n = 53)</td>
<td>59.5 (14.8)</td>
<td>67.8 (15.8)***</td>
</tr>
</tbody>
</table>

***$p < .001$

4.2.2.2 RQ scores by gender

Tests for normality for male and female RQ total and difference scores suggested non-normal distribution. Wilcoxon signed-ranks tests revealed that both male RQ scores significantly increased from pre-programme ($Mdn = 53, IQR = 22.5$) to post-programme ($Mdn = 58, IQR = 13.5$), $Z = -2.97, p = .002$. Similarly, female students significantly increased from pre-programme ($Mdn = 54, IQR = 18$) to post-programme ($Mdn = 61, IQR = 16$), $Z = -4.81, p < .001$ were significant. Pre- and post-programme RQ median scores are shown in Table 6.

Hypothesis four stated that there is a significant difference between programme effects on RQ scores for males and females. A Mann-Whitney U test was carried out to determine if there were differences in RQ change scores between males and females. The difference in RQ score changes was not statistically significantly different between males ($Mdn = 5, IQR = 12$) and females ($Mdn = 6, IQR = 11$), $U = 835, z = -.347, p = .732$, using an exact sampling distribution for $U$ (Dineen & Blakesley, 1973). Therefore, the null hypothesis was retained. There was no significant difference between programme effects on RQ scores for males and females.
Table 6. *RQ scores pre- and post-programme*

<table>
<thead>
<tr>
<th>Population</th>
<th>Pre-programme RQ score median (interquartile range)</th>
<th>Post-programme RQ total score median (interquartile range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (n = 86)</td>
<td>53.5 (19.3)</td>
<td>60 (15.3)***</td>
</tr>
<tr>
<td>Male (n = 33)</td>
<td>53 (22.5)</td>
<td>58 (13.5)**</td>
</tr>
<tr>
<td>Female (n = 53)</td>
<td>54 (18)</td>
<td>61 (16)***</td>
</tr>
</tbody>
</table>

** p < .05
*** p < .001

4.2.3 Research question 3: Is there a difference in changes in resilience scores between school groups?

4.2.3.1 CD-RISC scores by school group

Hypothesis five stated that there is a significant difference in programme effects on CD-RISC scores between school groups. CD-RISC difference scores were shown to be normally distributed for all groups. A one-way Welch ANOVA was conducted to determine if the CD-RISC scores differences were different between school groups. There were no outliers, as assessed by boxplots; data was normally distributed for each group, as assessed by Shapiro-Wilk test ($p > .05$); but there was heterogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = .040$). Group 1 had a mean CD-RISC difference score of 7.0 ($SD = 9.5$), Group 2 had a mean difference score of 10.2 ($SD = 15.1$), Group 3 had a mean difference score of 9.21 ($SD = 11.8$), and Group 4 had a mean difference score of 8.4 ($SD = 8.3$). Results indicated there was no significant difference for mean changes in total CD-RISC scores between the groups; Welch's $F(3, 42.154) = .245, p = .865$. Therefore, the null hypothesis was retained. There was no significant difference between CD-RISC score changes for school groups.

4.2.3.1 RQ scores by school group

Hypothesis six stated that there is a significant difference in programme effects on RQ scores between school groups. RQ difference scores were similarly non-normally distributed for all groups, as assessed by visual inspection of a boxplot. A Kruskal-Wallis test was conducted to determine if there were differences in RQ difference scores between the four different school groups. All four class groups showed increases in median score; Group 1 had a median RQ difference score of 7 ($IQR = 12.25$), Group 2 had a median difference score of 6 ($IQR = 15$),
Group 3 had a median difference score of 4 \((IQR = 8)\), and Group 4 had a median difference score of 5 \((IQR = 4.25)\). Results indicated there was no significant difference for median RQ change scores between the groups; \(\chi^2(3) = .985, p = .805\). Therefore, the null hypothesis was retained. There was no significant difference between RQ score changes for school groups.

4.2.4 Research question 4: Is participation in the Resilience Academy programme associated with reduced symptoms of depression and anxiety, as measured by the BDI-2 and BAI?

4.2.4.1 Descriptive statistics

Descriptive statistics indicated that before the programme began, as measured by the BDI-2, 52 students (60.5%) reported minimal, 12 students (13.9%) reported mild, 13 students (15.1%) reported moderate, and 9 students (10.5%) reported severe symptoms of depression. As shown in Table 7, after completion of the RA programme: 59 (68.6%) students reported minimal symptoms of depression, an increase of 7 (8.1%) students; 7 (8.1%) students reported mild symptoms, a decrease of 5 (5.8%); students 14 (16.3%) students reported moderate symptoms, an increase in 1 student (1.2%); and 6 (7%) students reported severe levels of depression, a reduction of 3 students (3.5%).

In relation to symptoms of anxiety, before the programme began, 23 students (26.7%) reported minimal symptoms of anxiety, as measured by the BAI. 31 students (36.0%) reported mild, 18 students (20.9%) reported moderate, and 14 students (16.3%) reported severe symptoms. After completion of the RA programme: 38 (44.2%) students reported minimal symptoms of anxiety, an increase of 15 students (17.5%); 18 students reported mild symptoms, a decrease of 13 students (15.1%); 21 (24.4%) students reported moderate symptoms, an increase of 3 students; and 9 students reported severe levels of anxiety, a reduction of 5 students.
Table 7 Severity levels of the BDI-2 and BAI pre- and post-programme

<table>
<thead>
<tr>
<th>Severity level</th>
<th>Pre-programme</th>
<th>Post-programme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students = N (%)</td>
<td>Students = N (%)</td>
</tr>
<tr>
<td><strong>BDI-2:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal</td>
<td>52 (60.5%)</td>
<td>59 (68.6%)</td>
</tr>
<tr>
<td>Mild</td>
<td>12 (13.9%)</td>
<td>7 (8.1%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>13 (15.1%)</td>
<td>14 (16.3%)</td>
</tr>
<tr>
<td>Severe</td>
<td>9 (10.5%)</td>
<td>6 (7.0%)</td>
</tr>
<tr>
<td><strong>BAI:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal</td>
<td>23 (26.7%)</td>
<td>38 (44.2%)</td>
</tr>
<tr>
<td>Mild</td>
<td>31 (36.0%)</td>
<td>18 (20.9%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>18 (20.9%)</td>
<td>21 (24.4%)</td>
</tr>
<tr>
<td>Severe</td>
<td>14 (16.3%)</td>
<td>9 (10.5%)</td>
</tr>
</tbody>
</table>

4.2.4.2 Changes for re-categorised severity symptoms

As previously stated in Chapter 3, students with scores ≥ 20 on the BDI-2 and ≥16 on the BAI were re-categorised as ‘depressed’ and ‘anxious’, respectively. These cut-off scores were selected after careful consideration of previous research with similar populations (Beck, Steer, & Brown, 1996; Wasserman et al., 2014; McMahon et al., 2017). Pre-programme data were used to constitute depressed and anxious students. Descriptive statistics for depressed and anxious students according to gender before and after the programme are shown in Table 8.

Hypothesis seven stated that there is a significant difference between pre- and post-programme symptoms of depression for students. Before the programme began, 22 students (25.6%) reported to be depressed. After participating in the programme, 20 students (23.3%) reported to be depressed with a concomitant increase in the number of non-depressed to 66 students (76.7%). This change was a consequence of 9 depressed students pre-programme becoming non-depressed post-programme, but with 7 students who were initially non-depressed becoming anxious post-programme. An exact McNemar's test determined that the difference in the proportion of non-depressed students pre- and post-intervention was not statistically significant, $p = .804$. Therefore, the null hypothesis was retained. There was no significant change in symptoms of depression for students after participating in the programme.

Hypothesis eight stated that there is a significant difference between pre- and post-programme symptoms of anxiety for students. Before the programme began, 32 students
(37.2%) reported to be anxious. After participating in the programme, 30 students (34.9%) reported to be depressed with a concomitant increase in the number of non-depressed to 56 students (65.1%). This change was a consequence of 9 anxious students pre-programme becoming non-anxious post-programme, but with 7 students who were initially non-anxious becoming anxious post-programme. An exact McNemar's test determined that the difference in the proportion of non-anxious students pre- and post-intervention was not statistically significant, \( p = .804 \). Therefore, the null hypothesis was retained. There was no significant change in symptoms of anxiety for students after participating in the programme.

Table 8 *Number of students depressed/anxious pre- and post-programme*

<table>
<thead>
<tr>
<th></th>
<th>Pre-programme</th>
<th>Post-programme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students = N (%)</td>
<td>Students = N (%)</td>
</tr>
<tr>
<td><strong>Depressed students:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( N ) (% of total)</td>
<td>22 (25.6%)</td>
<td>20 (23.3%)</td>
</tr>
<tr>
<td>( Males ) (% of males)</td>
<td>5 (15.2%)</td>
<td>5 (15.2%)</td>
</tr>
<tr>
<td>( Females ) (% of females)</td>
<td>17 (32.1%)</td>
<td>15 (28.3%)</td>
</tr>
<tr>
<td><strong>Anxious students:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( N ) (% of total)</td>
<td>32 (37.2%)</td>
<td>30 (34.9%)</td>
</tr>
<tr>
<td>( Males ) (% of males)</td>
<td>14 (42.4%)</td>
<td>13 (39.4%)</td>
</tr>
<tr>
<td>( Females ) (% of females)</td>
<td>18 (33.9%)</td>
<td>17 (32.1%)</td>
</tr>
</tbody>
</table>

4.2.5 **Research question 5: Does the programme have a different effect on resilience for students based on their mental health?**

Utilising the re-categorisation of students as depressed \( (n = 7) \), anxious \( (n = 17) \), depressed and anxious \( (n = 15) \), and those with no symptoms \( (n = 47) \), based on pre-programme scores, descriptive statistics indicated increases in both measures of resilience for all four groups; see Table 9. Distributions of resilience change scores for both measures were shown to be non-normal.
Table 9: Pre- and post-programme resilience median scores for students according to mental health symptomatology

<table>
<thead>
<tr>
<th></th>
<th>Depressed students <em>(n = 7)</em></th>
<th>Anxious students <em>(n = 17)</em></th>
<th>Depressed and anxious students <em>(n = 15)</em></th>
<th>Students with no symptoms <em>(n = 47)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-RISC:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-programme</td>
<td>57 (10)</td>
<td>62 (16)</td>
<td>45 (21)</td>
<td>64 (21)</td>
</tr>
<tr>
<td><em>Md</em> (IQR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-programme</td>
<td>65 (26)</td>
<td>66 (9)</td>
<td>54 (15)</td>
<td>75 (18)</td>
</tr>
<tr>
<td><em>Md</em> (IQR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score difference</td>
<td>7 (13)</td>
<td>4 (17)</td>
<td>8 (14)</td>
<td>8 (16)</td>
</tr>
<tr>
<td><em>Md</em> (IQR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RQ:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-programme</td>
<td>59 (22)</td>
<td>53 (11)</td>
<td>39 (8)</td>
<td>59 (15)</td>
</tr>
<tr>
<td><em>Md</em> (IQR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-programme</td>
<td>58 (15)</td>
<td>60 (9)</td>
<td>46 (12)</td>
<td>64 (16)</td>
</tr>
<tr>
<td><em>Md</em> (IQR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score difference</td>
<td>6 (9)</td>
<td>4 (16)</td>
<td>6 (14)</td>
<td>5 (7)</td>
</tr>
<tr>
<td><em>Md</em> (IQR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis nine stated that there is a significant difference between CD-RISC score changes for students with depressive, anxious, depressive and anxious, and no mental health symptoms. CD-RISC difference scores were shown to be non-normally distributed. A Kruskal-Wallis test was conducted to determine if there were differences in CD-RISC score changes between the four groups. Distributions of score changes were similar for all groups, as assessed by visual inspection of a boxplot. Median CD-RISC score changes were not shown to be statistically significantly different between the groups, $\chi^2(3) = 3.177$, $p = .365$. Therefore, the null hypothesis was retained. There was no significant difference between CD-RISC score changes based on students’ mental health.

Hypothesis ten stated that there is a significant difference between RQ score changes for students with depressive, anxious, depressive and anxious, and no mental health symptoms.
A Kruskal-Wallis test was conducted to determine if there were differences in RQ score changes between the four groups. Distributions of score changes were similar for all groups, as assessed by visual inspection of a boxplot. Median RQ score changes were not shown to be statistically significantly different between the groups, $\chi^2(3) = .769, p = .857$. Therefore, the null hypothesis was retained. There was no significant difference between RQ score changes based on students’ mental health.

### 4.2.6 Research question 6: Are resilience scores for students at risk of suicide different to other students’ and does the programme have an effect for at-risk students?

Based on the risk item on the BDI-2 concerning suicidal thoughts, students who scored anything other than a ‘0’ for the ‘suicidal thoughts or wishes’ item on the BDI-2 were also re-categorised into one ‘at-risk’ group as per previous studies (Casey et al., 2008; Fitzpatrick et al., 2013). Descriptive statistics showed that 21 students (24.4%) were shown to be ‘at-risk’ before the programme according to this recoding before the programme. Only two students scored above a ‘1’ on the item (‘I have thoughts of killing myself but I would not carry them out’), with no student scoring ‘3’, the maximum item score (‘I would kill myself if I had the chance’). However, of note, 25 students (29.1%) were shown to be at-risk after the programme, an increase of 4 students. These findings are discussed in more detail in the next chapter.

Hypothesis 11 stated there is a significant difference between at-risk students’ and other students’ pre-programme resilience scores. CD-RISC total and change scores for these students was shown to be normally distributed. An independent samples t-test showed that these ‘at-risk’ students had significantly lower CD-RISC scores ($M = 50.78, SD = 10.61$) than the rest of the students ($M = 62.11, SD = 14.37$) before the programme, $t(84) = 3.33, p = .001$. RQ total and change scores for these students was shown to be non-normally distributed. ‘At-risk’ students also had significantly lower RQ scores ($Mdn = 41, IQR = 15.5$) than those of other students ($Mdn = 56, IQR = 14$) ($U = 282, p < .001$) before the programme. Therefore, the null hypothesis was rejected. At-risk students displayed significantly lower resilience scores than other students before the programme.

Hypothesis 12 stated that there is a significant difference in programme effects on resilience scores between at-risk students and other students. CD-RISC change scores were normally distributed. An independent-samples t-test showed that there was no difference between at-risk students’ resilience CD-RISC change scores ($M = 7.29, SD = 8.95$) and other students’ change scores ($M = 9.03, SD = 11.72$), $t(84) = .625, p = .534$. RQ score changes were
non-normally distributed. A Mann-Whitney U test revealed that at-risk students shared no difference in increases in RQ scores ($Mdn = 6$, $IQR = 13$) to other students ($Mdn = 5$, $IQR = 10$), $U = 669.0$, $z = -.136$, $p = .892$. Therefore, the null hypothesis was retained. At-risk students displayed increased resilience, similar to that of other students’ increases, after participating in the programme.

4.2.7 Research question 7: Is the RQ a reliable and valid measure of resilience?

4.2.7.1 Internal consistency
Cronbach’s alpha was calculated for all on items on the RQ resilience measure and it was shown to have excellent internal consistency ($\alpha = .90$). Cronbach’s alpha was also calculated for the CD-RISC, which showed good internal consistency ($\alpha = .88$).

4.2.7.2 Test-retest reliability
Spearman’s rank-order correlation was carried out to determine the relationship between RQ scores at two points, before and after the programme. Results showed a strong, positive correlation between scores, which was statistically significant ($r_s = .79$, $p < .001$), indicating acceptable reliability. In order to gauge the test-retest reliability of the RQ against another measure of resilience, a Pearson product-moment correlation coefficient was computed to assess the relationship between mean CD-RISC scores before and after the RA programme. Results indicated a statistically significant positive correlation between CD-RISC scores; a test-retest reliability coefficient of 0.70 ($p < .001$), indicating acceptable reliability.

4.2.7.3 Criterion validity
Pre-programme RQ and CD-RISC total scores were used to determine if there was an association between the two resilience measures. A Spearman’s rank-order correlation found a significant correlation coefficient ($r_s = .71$, $p < .001$). This result indicates good validity in terms of the RQ.

4.2.8 Research question 8: What is the factor structure of the RQ?

In order to examine the factor structure of the RQ, a principal components analysis (PCA) was run on the pre-programme Resilience Questionnaire data. The suitability of PCA was assessed prior to analysis. The correlation matrix revealed the presence of multiple correlations.
exceeding 0.3. Sampling adequacy was assessed by examining the Kaiser-Meyer-Olkin (KMO) (Kaiser, 1970), which is suggested when the cases to variable ratio are less than 1:5. This figure ranges from 0 to 1 and figures above 0.5 are considered suitable for factor analysis. The KMO statistic was > 0.5 (KMO = 0.81), indicating the sample was big enough to identify a meaningful structure among the data. Bartlett’s test of sphericity was statistically significant ($p < .001$), indicating there were meaningful correlations sufficient to support each factor analysis. The R Matrix determinant was large enough to signify that multicollinearity was not a problem. Principal components analysis was utilised as it is useful when determining the underlying factors related to a set of items, while a varimax orthogonal rotation was performed as it is the most common form of rotational methods factor analysis and often provides a simple structure and easily interpretable results. Coefficients with a value below 0.45 were suppressed. The rotated solution exhibited 'simple structure' (Thurstone, 1947).

This revealed the presence of five factors with eigenvalues exceeding 1, and a rotated factor matrix with five components. The fifth component only consisted of one item (“I am hopeful about the future”). A visual examination of the Catell’s Scree test plot indicated that four components should be retained (Cattell, 1966). In addition, a four-component solution met the interpretability criterion. As such, four components were retained. Table 10 details the four factor components revealed.
Table 10 Rotated Factor Matrix for the RQ using Principal Components Analysis on pre-programme data.

<table>
<thead>
<tr>
<th>RQ scale item</th>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
<th>Component 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have people I can talk to if I need to</td>
<td>0.782</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have enough support to cope with my problems</td>
<td>0.653</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is someone I feel very close to</td>
<td>0.645</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel loved</td>
<td>0.631</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are people in school who care about me</td>
<td>0.628</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I believe that things usually turn out well</td>
<td>0.453</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel a connection to my school</td>
<td>0.809</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In school, I feel like I belong</td>
<td>0.746</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I usually succeed in the things I do</td>
<td>0.641</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I make efforts to stay fit and healthy</td>
<td>0.597</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel safe in school</td>
<td>0.562</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take a long time to recover when something bad happens</td>
<td>0.680</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I find upsetting feelings are just temporary</td>
<td>0.677</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know how to handle upsetting feelings</td>
<td>0.627</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I recover quickly from setbacks</td>
<td>0.606</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am hopeful about the future</td>
<td>0.456</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am in control of my own actions</td>
<td>0.815</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have the freedom to make my own decisions</td>
<td>0.647</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel disconnected from my family and friends</td>
<td>0.575</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am able to get through a bad experience</td>
<td>0.520</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Common themes of the highly-loading items on each of the four factors were examined and through an inductive, theoretical process, the four subscales were labelled: Perceived Support, School Connection, Coping, and Self-Efficacy. These subscales will be discussed in detail in the next chapter. Before rotation, the Perceived Support subscale accounted for 37.86% of variance in the data with the other three components accounting for approximately 6 – 9% each. Following rotation, the four components explained a total of 51.59% of the
variance, with each respectively accounting for 15.49%, 15.05%, 13.59%, and 7.46%. While Cronbach’s alpha for the RQ total scale was shown to be good (α = .90), two individual factors also showed good internal consistency, Perceived Support α = .83 (six items) and School Connection α = .82 (five items), while the other two showed acceptable levels, Coping α = .78 (five items) and Self-Efficacy α = .73 (four items).

4.3 Qualitative results

Qualitative results are presented in the form of main themes and subthemes. Following comprehensive coding and collating into themes, a total of five main themes emerged from the analysis of the two focus groups. An example of a coded transcript can be seen in Appendix J. The first main theme, ‘A Positive School Experience’ represents students’ account of their overall experience of, and active participation in, the programme and how it was different to didactic classroom environments. The second theme, ‘Peer Connection’, refers to the interactive nature of the programme, a feature that influenced students’ capacity to engage and get the most from sessions (collaborative learning). This theme also encompasses a search for balance between openness and anonymity that students highlighted. ‘Learning How to Cope’, the third main theme, describes students’ reflections of the adaptive coping strategies that were introduced to them and skills they learned in sessions; how and why we think and feel the things we do at times, the acquisition of useful skills, and how to use these skills to cope with negative experiences. The fourth main theme, ‘Student Recommendations (The Student Voice)’ encompasses the numerous suggestions that students made in relation to future programme planning and content. These themes and subthemes are detailed below.

4.3.1 A Positive School Experience

‘A Positive School Experience’ emerged as one main theme from the focus groups. All students spoke of their participation in the RA programme as being positive, describing it as “good”, “fun”, “relaxing”, and “therapeutic”. They highlighted several “features” of the programme that they found beneficial such as the sharing of stories and real-world examples relating to topics, choosing what topics to cover, the use of videos and posters, and how the programme was facilitated (for example, “they [facilitators] presented it well, engaged with everyone, knew how to explain topics... kept on topic, and gave good examples and helpful facts”). To a degree, students connected their positive experience with these features, however, it was principally associated with sessions being a space different to that of the classroom environment, in which
students were afforded an opportunity to reflect and talk. Below, the subthemes ‘different to school’ and ‘opportunity to reflect and discuss’ are discussed in more detail.

4.3.1.1 Different to class
Students identified a juxtaposition between their experience of the group and their typical time spent in class. While the classroom environment was painted negatively by some, in a seemingly flippant manner, a move away from a didactic style of learning was welcomed by students:

“Everyone was allowed to speak, which was great. It wasn't like a teacher-classroom kind of thing where you are just listening.”

“It was good because it wasn't class [laughter]. It's always good when it isn't class.”

“Yeah, it was different to classes because it was a more open discussion...Yeah, we got to talk to each other more than when we're in class...it's not something you do, like, in a normal school class, so not too many people know much about it, or, how to think about this kind of stuff. So, that's why I think it's good. That's why it's useful.”

A key feature of the RA programme is that students are not solely “taught” about topics and resilience, rather, facilitators actively engage with students and encourage them to reflect, voice opinions, and bring up points of discussion. Utilising this aspect of the programme, rather than typical characteristics of classes, was seen as beneficial. Student responses illuminated the importance of using trained facilitators instead of teachers to disseminate and cover informative topics as it seemed that students would associate teacher-facilitated groups with “having to listen” and “not being allowed to talk”, comparable to attending a class.

4.3.1.2 Opportunity to reflect and discuss
Students contributed their positive experience of the programme to it being different to class and to having an opportunity to reflect upon, and discuss, topics not normally acknowledged in school. Students were recurrently given time to engage through different mediums (stated hypothetical questions, stories, vignettes, posters, slides, exercises, and general open discussion) and reflect upon what they learned or found interesting. This was highlighted as
particularly positive since students were “not just being told something and then that was that.” The open discussion and reflective component of the RA was praised by both focus groups:

“I thought it was good because there were enough questions directed towards us to make us think. It helped us talk about the things we were learning about.”

“I was able to actually think more, ‘you know?”

“I feel like there was some good participation when we got the chance.”

“I liked when we shared like the stories about different people. We never do that... I liked the group discussions the most because they were interesting.”

4.3.2 Peer Connection
Focus groups highlighted how the RA programme influenced positive peer connection. The programme allowed for students to interact with their peers in ways that enabled learning and facilitated support. Students expressed a preference for this, with one stating that it was their “favourite part” of the programme and that they did not “get to interact at this level a lot” throughout the school year. The subtheme ‘Collaborative Learning’ discusses this in more detail. A second leitmotif was uncovered by both focus groups in relation to peer connection, that of ‘Openness versus Anonymity’. These subthemes are discussed below.

4.3.2.1 Collaborative learning
The distinctive peer interaction dynamic, inherent within the design of the RA, facilitated a type of “learning experience” for students. By listening to and talking about each other’s past experience and knowledge around chosen topics, students felt they became “more knowledgeable”. Furthermore, students conveyed a willingness, or “want”, to “learn from one another.” Students remarked:

“When the lads talked about their history and experiences, I enjoyed listening to them. I wanted to listen. I learned a lot... Yeah, and then there was a lot of interaction and time to speak to each other about the stuff, or something else.”
“Yeah, I think we were able to learn from each other more... by talking about things we find interesting as a group and learning from other people’s experiences.”

Potential integration with other classes was a stated preference for some students for them to increase their collaborative learning experience. In addition to sharing experiences, thoughts, and opinions regarding topics with different classes to their own, mixing classes was also suggested to be a way of increasing connection with other peers.

“... I think we were never with another class too. Like, we never got to be with the other classes doing the programme, which means we couldn’t share our views of things with new... It would be good to mix with other people, I think, doing the groups... 'Cause we were just with our class and could have learnt more from the other classes too.”

4.3.2.2 Openness versus Anonymity

Students unearthed a pertinent topic relating to peer connection within the programme structure, embodied by the subtheme, ‘Openness versus Anonymity’. While some were of the view that “talking to your peers about things made it easier”, others argued that “people find it hard to share” and that “it’s harder than you think.” It would seem as though having non-specific, open discussion relating to sensitive topics was beneficial for students, yet some argued for the sharing of “more” personal experiences:

“Maybe like, we didn't really talk about our personal experiences too much, we kind of talked about things in general. It might be better if we opened up about, like, how we're feeling, maybe.”

However, others preferred a level of “unpressurised” anonymity. This anonymity also prevents any potential for reluctant “following” of majority viewpoints or popular opinions. Students spoke of the pressure to conform to certain opinions:

“...so like, if we're learning about friendship, or something, I feel like we all try to have the same opinion about something. If you had a different opinion, really, you might be too shy to share that. I feel like there is a pressure to have the same opinion as everybody else.”
“Like, it's easier to tell, like, people you're close to or who you're supposed to tell people, but to say it out to the whole class, it's not always easy.”

“Because people find it hard to share. It's harder to tell people than you think. Maybe make some of it anonymous.”

Anonymity within an open discussion format was highlighted as constructive by students, that is, having the option to “sit back” and “take stuff in” without being required to share all of their opinions. This was illuminated as being particularly helpful for students that may “seem to be okay” but are actually in need of support:

“I think it’s really helpful for people that seem that they're okay but really they're not. So I feel like it’s good for people like that, to know, that, they get to learn about it without having to ask because they don't want to seem like they're not okay.”

The openness of the sessions, it seems, was vital to the learning experience. As one student conveyed, it facilitated an awareness to the fact that “it's okay to feel” certain ways. This also tapped into the next theme, ‘Learning How to Cope’:

“I think it showed, because, like, you, we all learned that it's okay to feel these ways. So, I think it made people kind of like open up more about how they're feeling.”

4.3.3 Learning How to Cope

‘Learning how to cope’ emerged as an important element students gained from their positive experience in the group. Students spoke about featured CBT-informed elements of the programme, in particular, adaptive coping strategies they learned, and their attainment of specific skills, largely drawn from DBT skills covered. Many also outlined exactly how they would use these strategies and skills to manage hypothetical challenging situations. Some described how “knowing what was going on” and having strategies, or “ways to cope” with stress and adverse situations, was a transformative experience directly associated with resilience as a concept. When asked to define resilience, students largely maintained that it was “fighting back”, “knowing how to cope”, and “being strong enough to be able to cope with
problems”. In addition, students made reference to specific skills, which they found personally useful, and ones that may “benefit others”. The subthemes ‘Adaptive Coping’ and ‘Skills Attainment’ are discussed below.

4.3.3.1 Adaptive coping
Prominent reference in the focus groups was made to learned adaptive coping strategies, both emotion-focused and problem-focused strategies with particular emphasis on positive appraisal. The CBT-informed ‘Mind-Body Connection’ aspect of an exercise they undertook during the programme was significant for students. Emphasis was given to “knowing” how and why we sometimes think and feel the things we do:

“That stuff around feelings, thought, and behaviours helped. It kind of just showed where everything is coming from...”

“Yeah, I think it's like you become more aware of the different things that might cause, like, anxiety and stuff like that, so, you kind of knew what was causing it.”

Emphasis was also given to how students “asked” themselves new questions about they’re coping styles leading to potential reappraisals of their ability to cope:

“Like, I've never asked myself the questions that I did when I was in this thing. Like, I never really thought about how, and how much I can, cope with stuff.”

One student suggested how knowledge around the connection between thoughts, feelings, and behaviour, and increased self-reflection and self-appraisal, helped them gain awareness of their physiological and psychological symptoms of anxiety and consequently develop cognitive re-appraisals of their difficulties and their ability to adapt to those difficulties:

“Before this, some classes I used to worry about. But now I don't really mind anymore. I just think ‘it's fine’, as if it's any other class. I worry less. I learned how to think about my worry. The pain in my stomach or sweaty happens or anything might have connected
to my thoughts. And I can deal with my thoughts, you know? Yeah, learning about the body thought connection really helped.”

These were novel concepts for students (“I never thought about the connections between our thoughts”), ones that they “hadn’t thought of before.” Moreover, a realisation of the universality and transient nature of feelings was also illuminated, with one student stating, “everyone goes through this same thing... feelings pass...” Commenting on a video, shown in one session dealing with school stress, depicting an example of a negative thought pattern (catastrophising), one student remarked:

“I think it made you realise that things aren’t as stressful as you think. You just kind of get through it sometimes. I think it made you realise that things aren’t as stressful as you think. You just kind of get through it sometimes. Like do you know the video of the two people if they get an A or B? It was relevant because that was near our exams and it made it a bit better.”

4.3.3.2 Skills attainment

Students directly attributed the attainment of skills to their participation in the programme. ‘Skills attainment’ emerged as an important factor in helping students ‘learn how to cope’. They spoke about skills in a variety of ways. Many of the students reflected on a new capacity for cognitive appraisal and reappraisal of events and experiences and “noticing things more”. Others alluded to the usefulness of specific skills such as the ‘STOP’ skill (Stop, Take a step back, Observe, and Proceed effectively) and how it made them feel “more confident”. Students highlighted how “others would benefit” from learning skills and employing them, even during adverse life events such as the death of a family member. In addition, the capacity to “think differently” about these types of events was also suggested to be a skill.

“It’s also probably good for students who have suffered through stuff like family death or things. They could use some of the exercises and ways of thinking about things to deal with that stuff.”

“Yeah, the STOP skill; I can see how that would help. And for others too.”
“I don't really feel the way I live has changed but just the way I think about things has changed. Like, I haven't changed in everyday life but just say if something happens I think about it differently than I had before.”

Students also highlighted the potential longevity of attained skills and how others might benefit from them. One student suggested that the attainment of skills from participation in the group may have a lasting effect on others, something other students agreed with when brought up.

“Yeah, it's not just for now or in two years’ time, you're able to use those things we learned for life.”

Students also believed that the programme improved their skills in identifying emotional states in themselves and their peers, promoting more positive peer connection. One student discussed how, through the programme, they “noticed” how to identify when other people were experiencing negative emotions:

“I can tell now when someone might be feeling down. I just have to look at them and I’d know they aren’t, like, okay”.

Importantly, students felt that the programme taught them effective help-seeking strategies such as asking for help, talking to people about stressors, “trusting people”, “having someone to talk to”, and not “letting stress build up”, which were conceptualised as skills:

“One thing I will take from it is not being afraid to ask for help if I need it...” - “...Yeah, or talk to people about your stresses.”

4.3.4 Student Recommendations (The Student Voice)
A plethora of suggestions were made by students in relation to the future development of the programme. They demonstrated an insight into what worked and what did not work for them and what might work better in the future for others. While students stated that “every school should have it” and that they “wouldn’t change the way it was run”, they made recommendations in relation to programme length, target population, programme delivery, and
module choice. The main theme of ‘Student Recommendations’ is discussed below with reference to two subthemes, ‘Programme Planning’ and ‘Programme Content’.

4.3.4.1 Programme planning
Several potential amendments to future programme planning and implementation were raised by students. Firstly, they felt that six weeks was too short a time frame to adequately cover topics in great depth:

“It needs to be longer. I feel like we don't have the time to discuss it all. Like when you just get into it, it’s over.”

“Yeah, it needs to be longer. Or maybe stretch it over a 12-week period. Because you can't cover the stuff that you want to. And it gives you more of an option as well.”

“It could have been longer. More time would have helped to open up and talk about things more.”

Secondly, students were in agreement that the programme would be suitable for exam cohorts, while some suggested that younger students might find it beneficial during and before times of significant life changes and stress. However, both focus groups stated that it was appropriate for students their own age (13 and 14 years old) and it would “suit them the best”:

“I’d recommend it to other year groups. Maybe older ones that are doing their Junior Cert and maybe stressed more than us. Or Leaning cert.”

“Yeah, I think you could even go a small bit younger than 14 or 13. Because in first year it can be tough. Or even at the end of sixth class, because that's when you come into secondary school, that's when it changes really.”

Thirdly, some students expressed a desire to have more interaction with each other. While this reflects another main theme (‘Peer Connection’), it was included in this theme as students were explicitly making recommendations about future programme development as opposed to solely making reference to their personal experience. They also suggested using games, more videos, and more scenarios to relay information and promote interaction.
“Yeah more interaction, more time to speak up about something. Because some of the days we were just looking at stories.”

Fourthly, students highlighted some “inconsistency” regarding the roll-out of the programme and expressed a desire for more cohesiveness and consideration in relation to class time tables, school systems, and the academic calendar in order to avoid potentially disrupting the progress made in groups.

“There was some inconsistency with holidays being in the middle of it…”

“Yeah, that broke it up a bit…”

Finally, students proposed that having an opportunity to write down any difficulties they may be experiencing would be beneficial. While this was said in the context of completing measures for the current study, the inclusion of a student response form was viewed to be very apt. The RA already uses student evaluation forms for feedback but these merely concern surface level evaluation of the programme and there is no space for students to express ongoing concerns or difficulties:

“But the thing with the survey was like very general, there was nothing where you could like write what was wrong… It was all like is this a problem, tick the box. So it would be better if there was a part where you could just write.”

4.3.4.2 Programme content

Another subtheme relating to future programme development that emerged was that of the content of the programme. Students particularly emphasised the expansion of topic choice as being potentially beneficial. They appreciated the “good variety” of topics presented and their opportunity to choose topics (“I like how we had to, we got to choose which ones to do, I liked that feature”). However, students suggested that the programme should include additional topics. While body image and bullying are already featured modules of choice in the RA, some suggested more specific areas within these domains, such as eating disorders and “social media in general” in addition to a focus on “how to deal with anxiety”:
“I think a few more topics could have been added... like eating disorders or body positivity, because it is a greater issue now with social media focus. Girls and boys feel pressured to look certain ways and it messes with your mental health.”

“Yeah I would have liked to talk about that. Maybe social media in general as well.”

“I would have liked to talk about how to deal with anxiety more because it is something everyone should know.”

Another potential topic that students proposed was that of suicide. One student stated that while one questionnaire included a suicidality item, suicide was not specifically addressed in the programme.

“I would add more topics... like there was a question on the questionnaire about were there any times that you wanted to commit suicide and there was not a topic about it.”

Students also suggested changing content and the delivery of content to suit different cohorts of students, particularly younger students.

“You might even change the scenarios of like friendship to, like, their age. Like what happens... and maybe, like, less serious ones, like mental health... I don’t think they’re going to really understand it.... Maybe use more games [with younger students].”

4.4 Merging quantitative and qualitative findings

Mixed method analysis requires a process of merging data from both strands of the research. The previous section presented results of data analyses used for quantitative and qualitative results, with the quantitative data representing a predominant phase of this research. The purpose of the qualitative phase was to build on the quantitative data and provide a more in-depth analysis of the phenomenon under study; students’ experience of the RA programme and the underlying processes of change. It is important to note that, given the dearth of qualitative research relating to the resilience programmes, an in-depth and rigorous qualitative investigation was warranted. The next stage of analysis consisted of amalgamating the results
of both phases to determine in which way the secondary (qualitative) data supported or enhanced the primary (quantitative) data (Creswell & Clark, 2017).

The way in which data are merged depends on the particular mixed method design being used. Side by side comparison was utilised in this study. This data analysis strategy for merging data permits the visual representation of how findings from two separate analyses relate to each other (Creswell & Clark, 2017). Figure 5 below gives a side by side comparison of how the qualitative and quantitative data related to each other in this study. All qualitative themes connected with the quantitative results; ‘A Positive School Experience’, ‘Peer Connection’, ‘Learning How to Cope,’ and ‘Student Recommendations.’ A more detailed examination of the implications of integrated results will be presented in the next chapter. The theme ‘Student Recommendations’ inherently informs future research and will also be detailed from this viewpoint in the discussion chapter.

<table>
<thead>
<tr>
<th>Quantitative variable</th>
<th>Qualitative Theme</th>
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<tbody>
<tr>
<td><strong>Resilience (CD-RISC):</strong></td>
<td><strong>Themes:</strong> Learning How to Cope</td>
</tr>
<tr>
<td>Significant increase in CD-RISC scores from before the programme to after the programme.</td>
<td>“I think it made you realise that things aren't as stressful as you think. You just kind of get through it sometimes”</td>
</tr>
<tr>
<td><strong>Resilience (RQ):</strong></td>
<td><strong>Themes:</strong> Learning How to Cope / Positive School Experience / Peer Connection</td>
</tr>
<tr>
<td>Significant increase in RQ scores from before the programme to after the programme.</td>
<td>“I was able to actually think more... I've never asked myself the questions that I did when I was in this thing. Like, I never really thought about how, and how much I can, cope with stuff.”</td>
</tr>
<tr>
<td><strong>Depression (BDI-2):</strong></td>
<td><strong>Theme:</strong> Learning How to Cope</td>
</tr>
<tr>
<td>No significant programme effects on symptoms of depression</td>
<td>N/A</td>
</tr>
<tr>
<td>No difference between resilience change scores for depressed and non-depressed students</td>
<td>“I never thought about the connections between our thoughts”</td>
</tr>
<tr>
<td><strong>Anxiety (BAI):</strong></td>
<td><strong>Theme:</strong> Student Recommendations / Learning How to Cope</td>
</tr>
<tr>
<td>No significant programme effects on symptoms of anxiety</td>
<td>“I would have liked to talk about how to deal with anxiety more because it is something everyone should know.”</td>
</tr>
<tr>
<td>No differences between resilience change scores for anxious and non-anxious students</td>
<td>“I think it's like you become more aware of the different things that might cause, like, anxiety and stuff like that, so, you kind of knew what was causing it.”</td>
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<table>
<thead>
<tr>
<th>RQ Factor Analysis:</th>
<th>Theme (subtheme):</th>
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<tbody>
<tr>
<td>1) Perceived Support</td>
<td>1) Peer Connection / Positive School Experience</td>
</tr>
<tr>
<td>2) School Connection</td>
<td>2) Positive School Experience / Peer Connection</td>
</tr>
<tr>
<td>3) Coping</td>
<td>3) Learning How to Cope (cognitive adaptive coping)</td>
</tr>
<tr>
<td>4) Self-Efficacy</td>
<td>4) Learning How to Cope (Skills attainment) / Positive School Experience</td>
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*Figure 5. A visual illustration of side by side comparison of quantitative and qualitative findings.*
Chapter 5: Discussion

5.1 Chapter introduction
This chapter summaries the findings of the current study and discusses the results in relation to previous research and theories. Throughout this section, recommendations for future research and programme development and implementation are proposed. First, research questions are reiterated together with a brief outline of the purpose that the two different phases of the research served. Second, detailed summaries of main findings pertaining to quantitative, qualitative, and combined results are given. Results are presented with reference to relevant literature. Third, the potential implications of this research on future programme development and implementation, as well as within theoretical, future research, and clinical contexts, is discussed. Lastly, methodological considerations in relation to limitations and strengths of the current study are highlighted and the main conclusions are stated.

5.2 Reviewing the research questions
The Pieta House Resilience Academy is a relatively new school-based resilience-building programme developed in response to recommendations made in the literature concerning the development and implementation of suicide prevention programmes (Surgenor et al., 2016). As such, it has yet to be thoroughly evaluated in terms of its effectiveness. To date, the research on the efficacy of such programmes has predominantly focused on the use of quantitative methods of investigating symptom reduction regarding suicide-related risk factors (Hooven et al., 2012; Hetrick et al., 2017; Wasserman et al., 2015; Schilling et al., 2016). This study sought to combine the strengths of both qualitative and quantitative research methods to gain an in-depth understanding about the effects of the RA programme and the associated processes of change. The quantitative phase aimed to assess whether there were differences in resilience scores in addition to symptom reduction for depression and anxiety from before to after participation in the programme. Moreover, given the prevalent ambiguity concerning the conceptualisation of resilience as a concept, two measures of resilience were used, each appertaining to different theoretical models of resilience. The qualitative phase aimed to explore students’ personal experience of the RA programme and analyse the meaning of change, the processes responsible for change, and any recommendations for future programme development and implementation. Importantly, the qualitative phase of this study gives a voice to students, a feature that is lacking in this research area.
5.3 Summary of research findings

This section will provide a summary of the main quantitative and qualitative research findings. The results from each phase will be presented independently at first and then in an integrative format. These results will also be examined in the context of relevant literature.

5.3.1 Discussion of key quantitative findings

5.3.1.1 Change in resilience

A primary aim of the quantitative phase of this study was to investigate the effect that participation in the programme had on resilience. It was hypothesised that students would report higher total scores on both the RQ and CD-RISC after participation. This hypothesis was supported, with both measures showing increases with medium effect sizes. Both measures indicated similar significant increases, suggesting that they measured the same universal construct, or at least different aspects of resilience. These main findings are consistent with a pilot study investigating the effectiveness of the RA programme (Pieta House, 2017). Pre-programme CD-RISC mean scores suggested that Irish students have slightly lower resilience than international student samples (Lim et al., 2011). Further investigation was carried out to determine if there was a difference in resilience scores according to gender.

Although gender differences are regularly identified in both the prevalence of mental health problems and in the type of resilience protective factors that children and adolescents use, in their systematic review of universal resilience-focused interventions targeting child and adolescent mental health in school settings, Dray et al. (2017) pointed out that less than half of studies provided sufficient data concerning the differential effect of resilience-focused interventions by gender. In the current study, no association was evident between changes in male and female resilience score, as measured by both the RQ and CD-RISC. Moreover, both male and female students showed similar pre-programme scores. While this further supports the hypothesis that the two resilience measures were measuring the same construct, it also shows that the programme affected male and female students equally.

While gender differences in each school group were not looked at given the small sample size, there were no significant differences in both resilience change scores between the school groups. This suggests that the programme has a similar effect on building resilience for students regardless of class or school. It should be noted, however, that there were only two
schools in this sample, with three of the groups being in one school. Caution should be used when generalising these results for other schools. Nevertheless, these findings suggest that the RA is a promising resilience-building programme for Irish students.

Caution should also be used when interpreting gender differences given the small and unbalanced sample of students. Uncertainty remains about whether strategies aimed at specific gender-related protective factors should be included in resilience-focused interventions so as to achieve more optimal increases in resilience and reductions in mental health difficulties for all students (Hjemdal et al., 2011; Dray et al., 2017). Future research involving resilience-focused interventions may inform this issue by including analyses of differential effects of interventions on different factors of resilience by gender.

5.3.1.2 Symptoms of depression and anxiety

A secondary aim of the current study was to investigate if participation in the RA was associated with reduced symptoms of anxiety and depression for students, as measured by the BDI-2 and BAI. This section will detail current trends in the prevalence of depression and anxiety in adolescents, baseline scores from the current study with reference to relevant literature, and the effect the programme had on depression and anxiety scores.

A recent review of mental health disorders in adolescents reported a prevalence rate of 21.8%, with depression estimated at 6.1% and anxiety estimated at 10.7% (Costello, Copeland, & Angold, 2011). There is a dearth of large-scale epidemiological studies on Irish adolescent mental health, however, two studies examining the prevalence of mental health disorders in an Irish sample found comparable results. The ‘Clonmel Project’ estimated the prevalence of at least one disorder in adolescents aged 12–18 years at 21.2% (Martin, Carr, Burke, Carroll, & Byrne, 2006). In the Dublin-based ‘Challenging Times Study’, Lynch, Mills, Daly, and Fitzpatrick (2006) reported the prevalence of psychiatric disorders in 12 to 15-year-olds at 15.6% with the prevalence of anxiety and depression reported as 3.7% and 4.5%, respectively.

Baseline BDI-2 scores indicated that most students had depressive symptoms within the normal range, while just over one quarter of students had moderate to severe depressive symptoms. Depression is relatively common in adolescence and a certain level of symptomatology was expected. However, the current study showed a high prevalence of depression overall. Though these findings are worrying, it is important to note that these were responses to questionnaires and not formal diagnoses of depression. Nevertheless, this is in keeping with rising trends of depression in the UK and Ireland (Patalay, & Fitzsimons, 2017).
Previous research with Irish students showed considerably lower levels of depression (Lynch, et al., 2006). When accounting for gender, the current study showed that girls had higher levels of depression than boys before the programme. This also reflects national and international research previously showing higher prevalence of mood disorders including depression in girls this age (Cummings, Caporino, & Kendall, 2014; McMahon et al., 2017).

The effect of the programme on depression was investigated utilising re-categorised data; non-depressed (no significant or mild depressive symptoms) or depressed (moderate to severe symptoms) (Balázs et al., 2017). Results showed no statistically significant difference in pre- and post-intervention symptoms of depression, suggesting that the programme did not have an effect on reducing depression for students. There is growing evidence that universal school interventions may not be sufficiently effective to reduce or prevent depressive symptoms (Araya et al., 2013).

Baseline BAI scores indicated that just over one quarter of students had symptoms of anxiety within the normal range, while 37.2% of students had moderate to severe symptoms of anxiety. As with symptoms of depression, these findings are considerably higher than those found in previous research (Lynch et al., 2006). The Adolescent Brain Development Study found that, excluding specific phobias, approximately 1 in 12 adolescents (8.1%) in the 11 to 13-year age range was experiencing an anxiety disorder (Cannon et al., 2013). Research has shown that girls have higher prevalence of anxiety disorder compared to boys, and this difference gets accentuated with development, reaching a ratio of 2-3:1 by adolescence (Costello et al., 2011). This was not supported by the current study. In fact, boys reported higher levels of anxiety than girls before the programme.

Investigation into the effect of the programme on symptoms of anxiety revealed no significant difference between pre- and post-intervention presentation, indicating that the programme did not have an effect on reducing anxiety. Differences in anxiety symptoms were more apparent upon visually scanning the data before re-categorisation, suggesting that the programme may have benefited students in the severe and mild ranges of anxiety. Nevertheless, the findings suggest that the programme did not have an effect on reducing anxiety symptoms.

The current study used self-report measures to assess levels of anxiety and depressive symptoms, therefore, findings may not be comparable with those of other studies using diagnostic interviews. The large-scale ‘My World’ survey, which also used self-report measures, reported prevalence of abnormal levels of anxiety similar to these findings (Dooley & Fitzgerald, 2012). Of the second year student sample within the My World study, 30% had abnormal levels of anxiety; slightly less than the current study. The prevalence of significant
depressive symptoms was slightly lower in the current study, with 25.6% students scoring above the pre-determined cut-off, compared with 27% in the My World study (Dooley & Fitzgerald, 2012). Self-report scores from Irish students in the SEYLE study also displayed similar trends (McMahon et al., 2014).

5.3.1.3 Resilience and mental health outcomes

Results showed that students, regardless of mental health symptomatology, displayed increases in resilience after participation in the programme. Increases were not shown to statistically different between students according to mental health symptoms. These findings suggest that participation in the RA programme will increase students’ resilience even if they have symptoms of anxiety, depression, or both. The effects of the programme on resilience may be universal. It also suggests that perceived resilience can increase independently of perceived symptoms of depression or anxiety as the previous findings indicated. These findings provide evidence that it may be fruitful for researchers and clinicians to attend to resilience measures separate to psychological symptoms among young adolescents. However, more research is need into the relationship between these variables.

Higher pre-programme resilience scores were generally associated with lower scores on levels of depression and anxiety. This is in keeping with previous research which showed that higher resilience scores predicted lower levels of depression, anxiety, and obsessive compulsive disorder (Hjemdal et al., 2010). While other studies have investigated this relationship controlling for gender, this was not done in the current study. Although overall resilience was shown to be equally distributed among both males and females, resilience factors may be differently expressed by anxious and/or depressed male and female students. This may also at least partially explain why resilience scores increased while mental health symptoms stayed the same.

Findings in the current study resonate with previous research into the relationship between resilience and depression and anxiety (Beasley et al., 2003; Southwick, Vythilingam, & Charney, 2005; Hoge et al., 2007; Tak et al., 2014; Min et al., 2015). The fact that resilience scores increased while depression and anxiety symptoms did not change suggests that aspects of the programme may be tapping into factors of resilience, or resilience-related constructs, that are independent to depression and anxiety. It also pulls into question the predictive power of resilience regarding change in depressive and anxiety symptoms.
The notion that resilience, or factors associated with resilience, can be considered the converse of risk factors has been raised before (Beasley, et al., 2003). Researchers have even gone so far as to define adolescent resilience as the absence of a clinical diagnosis of a depressive disorder or low levels of depressive and internalizing symptomatology (Silk et al., 2007). However, Rutter (1987) argued that resilience is not merely the ‘flip-side’ of risk factors, rather, it represents qualities encompassing process and mechanisms that confer protection. The key difference between risk factors and resilience is that the former “lead directly to disorder,” whereas the latter “operates indirectly” with its effects “apparent only by virtue of interactions with the risk variable” (p. 319, Rutter, 1987). The implication is that the processes involved in risk factors and resilience likely differ in important respects. The key feature “lies in the process and not in the variable, and the utility of the differentiation from risk lies in the focus on mechanisms involved” (p. 319, 1987). For instance, a positive coping strategy that confers resilience may only become apparent when a stressful event causes it to be revealed. More research in this area is needed to investigate potential intrinsic relationships between different individual factors of resilience and risk factors, particularly those involved in anxiety and depression (Cosco et al., 2017). Additionally, research is needed investigating the effect of the RA on different factors of resilience and mental health.

5.3.1.4 Resilience for ‘at-risk’ students

Previous research has implied that lower resilience, as measured by the CD-RISC, may be one factor leading to a suicide attempt (Roy, Sarchiapone, & Carli, 2007). While suicide attempt was not explicitly included in data collection for this study, the BDI-2 suicide item has been associated with both risk of repeat suicide attempts and death by suicide, and its use in routine clinical care is widely recommended (Green et al., 2015). 21 students were considered ‘at-risk’ before the programme. At-risk students’ pre-programme resilience scores were significantly lower than other students’, suggesting a good predictive power of both resilience measures in the assessment and identification of students at-risk of attempting suicide. At-risk students also showed similar increases in post-programme resilience scores to their peers, suggesting that the programme increases resilience-related protective factors for all students, including those at-risk.

Importantly, there was an increase in the number of students presenting as at-risk after the programme. This finding suggests that there may be a subgroup of students for whom a programme such as this potentially heightens risk. Therefore, these students need a greater
level of monitoring and onward referral if they can be identified before, during, and after the programme through assessment of resilience. Previous research has suggested that resilience per se may not be protective of suicidal ideation (Liu et al., 2014, 2016), despite strong cross-sectional associations (Jakobsen, Larsen, & Horwood, 2017). Resilience and suicidality appear to be unrelated in a longitudinal context once risk/resilience factors are controlled for (Liu et al., 2016). Further examination is required in order to look at the relationship between resilience and suicidality.

Possible reasons for the increase in the number of at-risk students post-programme may be due to the specific phrasing of the suicide item on the BDI-2 (see Appendix H), students learning about and discussing associated risk factors, the diverse content of the programme, or how students may ‘think differently’ about suicide as a result of participating in the programme. Thoughts about suicide can range from a detailed plan to a fleeting consideration; suicidal ideation is quite different to hypothetical thinking arising from novel information or topics. Importantly, no student scored above ‘1’ on this item post-programme. These findings may query the reliance on such items alone as screening tools for suicidal ideation. Nevertheless, the inclusion of clear onward referral protocols and pathways in the future development of the RA is essential.

5.3.1.5 Association between resilience measures
Findings indicated similar increases in resilience scores on the CD-RISC and RQ when accounting for gender, group, symptoms of depression and anxiety, and level of risk. The substantial parallels in resilience scores is highly suggestive of the notion that both measures tap into the same universal construct or, at least, mechanisms of the same construct. Furthermore, the RQ demonstrated good internal consistency, acceptable test-retest reliability, and strongly correlated with the CD-RISC. Principal Components Analysis was deemed appropriate as no pre-existing theory of the RQ factor structure existed in published literature.

5.3.1.6 RQ Factor Structure
A four-factor latent structure within the RQ was revealed. Good to adequate levels of internal reliability were shown for each of the four subscales identified as Perceived Support, School Connection, Coping, and Self-Efficacy. These labels were chosen through inductive reasoning drawing from existing literature, particularly the five factor READ model (von Soest et al., 2010; Kelly et al., 2017) and ‘7 C’s’ model (Barger et al., 2017; Ginsburg & Jablow, 2011).
These models contain some factors that describe similar constructs, albeit, they are weighted differently.

The first component identified was Perceived Support, which included items relating to having people to talk to if needed, having enough support to cope with problems, having a feeling of being close to someone, feeling loved, and having someone who cares in school. Barger et al., (2017) suggest that adolescent resilience can be strengthened by having a meaningful connection with at least one adult who believes in them unconditionally and holds them to a high standard. They identified ‘connection’ that can reinforce confidence and a feeling of worth, even in times of stress (Barger et al., 2017). The READ places greater emphasis on different kinds of support by identifying ‘social resources’, ‘family cohesion’, and ‘social competence’ as three separate components (Kelly et al., 2017). Previous research suggested that perceived support afforded by social resources and by close personal relationships may serve as a buffer or inoculating agent that provides protection from the negative effects of stress, psychological distress, and adverse circumstances (Cohen & Wills, 1985; Martin, Distelberg, Palmer, & Jeste, 2015). As such, perceptions of support, encompassing the feeling of being loved, close to someone, and supported play an integral role in resilience. The inclusion of the last item on this subscale (“I believe that things usually turn out well”) suggests that being and feeling supported is also linked to optimism, which itself has been identified as a key component of resilience (Black & Lobo, 2008).

The second RQ component, School Connection, exemplifies an important and unique feature of both the RQ and the Resilience Academy as a programme. This distinct component of the RQ discerns the especially relevant relationship between students and an immediate environment; school (Fergus & Zimmerman, 2005; Surgenor et al., 2016). It encompasses the extent to which students feel connected to, and safe in, their school. Interestingly, one item concerning school ‘There are people in school who care about me,’ was highly loaded onto the Perceived Support component as opposed to the School Connection, suggesting that the former represents personal relationships while the latter recognises the broader context of the school environment. This would also explain the inclusion of one item pertaining to physical activity (“I make efforts to stay fit and healthy”) since physical education is a part of the broad school life experience. Physical activity itself has been shown to be associated with increased resilience and the outcome of depressive symptoms, particularly for girls (Moljord, Moksnes, Espnes, Hjemdal, & Eriksen, 2014; Hegberg & Tone, 2015). The only other adolescent resilience measure that makes reference to school factors is the Adolescent Resilience
Questionnaire (ARQ), however, it includes 93 items and 12 scales making it less user-friendly (Gartland, Bond, Olsson, Buzwell, & Sawyer, 2011).

The third RQ component, Coping, represents elements associated with the traditional ‘bouncing back’ interpretation of resilience (Smith et al., 2008; Galli & Vealey, 2008). This encompassed items relating to recovery, the acknowledgement of the ephemeral nature of feelings, knowing how to handle upsetting feelings, and hope. As Barger et al. (2017) stated upon recognising this component in the 7 C’s model, “coping effectively is a positive and adaptive strategy to help youth deal with life stressors” (p. 202). Adaptive coping has long been associated with a mitigating relationship between life stress and physical and psychological functioning (Fergus & Zimmerman, 2005; Prince-Embry, 2010; Prince-Embry, Saklofske, & Nordstokke, 2017). Lazarus and Folkman (1984, 1991) indicated that coping styles can affect how we perceive stressful events and how they are managed. There are two distinct adaptive coping processes based on a CBT framework; emotion-focused or behavioural-efforts (e.g. emotion-regulation, mindful-awareness) and problem-focused or cognitive-efforts (e.g. positive reappraisal, problem-solving). Incidentally, the RA programme emphasises aspects of both.

The fourth RQ component, Self-Efficacy, has also long been associated with resilience (Bandura, 1977, Martin et al., 2015). The construct of self-efficacy may contain other aspects of resilience such as optimism, control, and confidence (Schwarzer & Warner, 2013), which is evident when one considers included items pertaining to control in action, freedom of decision-making, connection to family and friends, and the ability to “get through bad experiences.” It reflects the optimistic self-belief that one can execute different or problematic tasks and achieve desired outcomes, that is, having a sense of agency or control over one’s life and one’s ability. The ‘can do’ cognition, synonymous with self-efficacy, reflects a sense of control over one’s environment and a belief of being able to control challenging environmental demands by means of one’s own behaviour (Schwarzer & Warner, 2013). In this manner, it reflects self-confidence in one’s capability to deal with certain stressors in life. People who are resilient tend to maintain a belief in their own ability to succeed despite adverse situations, events, or circumstances. This integrates the competence, confidence, and control factors featured in the 7 C’s model (Barger et al., 2017) and the personal competence and structured style elements of the READ (von Soest et al., 2010; Kelly et al., 2017).

Windle et al. (2011) highlighted the failure of existing resilience scales to capture the complexity of resilience. In order to improve construct representation, the RQ was developed to incorporate perceptions of both internal and external factors, adhering to a multidimensional
theory of resilience. Items addressing adolescents’ connection to school were specifically included in its development. While a number of theoretically appropriate protective factors could and should be considered for inclusion in any new measure of resilience, this research identified four factors that may capture a portion of its complexity. It would be premature to declare that these four components constitute an exhaustive list of the constructs related to resilience, however, the RQ does show promise as a balanced and convenient measure, incorporating essential, often overlooked, socio-ecological aspects of resilience (Sanders et al., 2017).

5.3.2 Discussion of key qualitative findings

5.3.2.1 A Positive School Experience
Students described their experience of the Resilience Academy programme as a positive one, conceptualised within the context of the broader school environment. They associated positive outcomes of the programme with this positive experience. Particular elements of students’ experience of the RA that were conveyed were the fact that it was in contrast to a didactic, routine classroom environment and that it was an opportunity for them to reflect upon, and discuss, interesting and novel topics. This is significant when one considers findings from the ‘My World’ study (Dooley & Fitzgerald, 2012) suggesting that protective factors in the school environment that help to build resilience in young people include providing a positive school climate and ensuring a sense of belonging and connectedness to school.

Positive school experiences may foster increased school connectedness, which has been directly linked to behavioural, emotional, and academic outcomes in adolescence (Monahan, Oesterle, & Hawkins, 2010), with higher school connectedness being associated with positive outcomes and lower school connectedness associated with negative outcomes. Since school connectedness acts as a buffer against risk factors, it is an important goal for any suicide prevention strategy. Building resilience by facilitating positive school experiences may therefore be a commendable pursuit that the RA and schools can and should engage in (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009).

The relationship between positive school experiences and resilience has been raised as far back as the 1980s (Rutter, 1987). Experiences can be academic or non-academic such as participating in sports, drama, and arts and crafts. While the precise mediating mechanism is not known, it may be that the experiences of pleasure, success, and accomplishment at school can help adolescents acquire a sense of their own worth (self-esteem) and of their ability to
control what happened or happens to them (self-efficacy). Research has illuminated the importance of feelings of self-esteem and self-efficacy for adolescents (Schwarzer & Warner, 2013).

Positive experiences in school, like participating in the RA, will likely benefit all students. For students with ample sources of support and reward in the family, positive experiences and success in school may reinforce their self-esteem and self-efficacy, rather than creating it, which may be the case for others. Therefore, the development and preservation of positive experiences within the school, where a sense of belonging and connectedness is fostered, should be a key strategy for the future development of the RA and other resilience-focused interventions in schools. As highlighted by Dooley and Fitzgerald (2012), this may also be achieved by building positive adult-student/teacher-student, and student-student relationships to promote participation, social interaction, pro-social behaviour, and peer connection.

5.3.2.2 Peer Connection

The students expressed a desire to learn from each other, support one another, and mix with other classes, representing a type of peer connection. They alluded to the benefit of collaborative learning amongst peers and made reference to advantages and disadvantages of an open forum in discussing experiences, thoughts, opinions, and emotions related to sensitive topics. The emergence of this as a theme was apt given that by the ages of 13 and 14 (early adolescence) peer connection becomes more salient; the transition from childhood to adolescence engenders changes in the individual, social context, and social norms that serve to amplify the importance of peers (Brown & Larson, 2009). Typically, adolescents this age will give more credence to the opinions and expectations of their peers, while peer relationships themselves become increasingly complex.

The importance of peer support and supportive environments promoting peer interaction for adolescent resilience has been documented in previous research (Werner, 1995; Haase, 2004). Adolescents have been described as resilient in terms of positive peer relationships irrespective of other factors like poor academic ability or performance and conduct difficulties (O’Donnell, Schwab–Stone, & Muyeed, 2002). Moreover, the fostering of healthy relationships between, and with, peers relates to positive experiences of school and cognitive and emotional development (Dooley & Fitzgerald, 2012). This is an essential component for school-based interventions to consider and emulate. However, in general, mental health awareness programmes often miss this point.

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Students reflected on their experience of open discussions about topics and how this facilitated a learning with and from each other; namely, collaborative learning. They also expressed an interest in expanding collaborative learning to include other classes and groups as they felt they could learn more by interacting with unfamiliar peers. Encouraging peer connection in this type of format shows promise for reaching out to potentially at-risk students (Miller, 2014). Similarly, positive peer modelling can also serve as a source of support for these students (Petrova et al., 2015). Adolescents have been shown to gain in maturity and confidence through involvement in peer mentoring, buddy systems, anti-bullying, and transition programmes (Dooley & Fitzgerald, 2012).

Importantly, students pointed out disadvantages of having open discussions in terms of peer pressure, a pressure to confirm to opinions, and issues relating to anonymity. Vulnerable students may not always be heard and risk factors not always noticed. Moreover, given the prominence of status and prestige amongst adolescent peer relations (Brown, Von Bank, & Steinberg, 2008), hierarchies can emerge in groups of students and the risk of unapparent bullying and isolation may increase. The impact of these issues on peer connection should not be neglected by programme developers and researchers. Programme facilitators need to be attuned to these matters when generating open discussions, especially around sensitive topics where there is an increased possibility of student disclosures and secondary and vicarious trauma.

In their meta-analysis of the literature, Roseth, Johnson, and Johnson (2008) emphasised the importance of cooperative goal structures for promoting early adolescents’ achievement and peer connection. Drawing from social interdependence theory (Johnson & Johnson, 2009), they revealed how cooperative goal structures, for instance, a group aiming to build resilience together, will promote positive social relationships. Essentially, promotive interaction patterns containing mutual help, the sharing of experiences and information, and trust will result in higher achievements and greater peer connection than competitive or individualistic goal structures (Roseth et al., 2008). The preliminary evidence in the current research suggests that, by encouraging these promotive interactions between students, the RA facilitates peer support and connection within a safe, non-judgemental space, in which students can ‘build’ resilience and ‘learn how to cope’.
5.3.2.3 Learning How to Cope

Students directly emphasised knowledge about adaptive coping strategies and skills acquisition as generalisable by-products of participation in the programme. Lazarus and Folkman (1984, 1991) indicated that coping styles can affect how we perceive stressful events and how they are managed. There are two distinct adaptive coping processes based on a CBT framework; emotion-focused or behavioural-efforts (emotion-regulation or mindful-awareness) and problem-focused or cognitive-efforts (positive reappraisal or problem-solving). Students made reference to these processes when speaking about the benefits of self-monitoring and managing emotions (emotion regulation), the STOP skill (behavioural effort for distress tolerance), thinking about themselves and aspects in their lives differently (cognitive reappraisal), and knowing what to do and doing it (problem-solving). They also conveyed that they experienced a growing sense of personal control from exposure to coping strategies and skills, learned how to seek help when needed, and alluded to the longevity of cognitive and emotional coping strategies.

Traditionally, coping strategies have been defined as “constantly changing cognitive and behavioral efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of a person” (Lazarus and Folkman, 1984, p. 141). According to this definition, coping strategies present two main functions: problem-solving focus coping strategies (acting on the stressor); and emotion-focus coping strategies (managing emotions provoked by the stressor) (Garnefski, Kraaij, & Spinhoven, 2001). Resilient adolescents generally demonstrate both (Mestre, Núñez-Lozano, Gómez-Molinero, Zayas, & Guil, 2017). Resilience and coping have been conceptualised as distinct constructs in the literature, whereby resilience influences how events are initially appraised (pro-active strategies) and coping refers to the use of reactive strategies (adaptive or maladaptive) following this appraisal (Lazarus & Folkman, 1991; Garnefski et al., 2011; Woods, 2018). Essentially, when a potentially adverse situation arises, we first think, then we act.

Interestingly, when asked to define resilience, students alluded to a synonymous relationship between resilience and coping. Students indirectly referred to the introduction and acquisition of cognitive reappraisal, construing a potentially emotion-eliciting situation in a way that changed its emotional impact (Lazarus & Alfert, 1964). However, our appraisal of stress is influenced by our appraisal of ourselves, others, and the world (Fletcher & Scott, 2010). This further signifies the importance of school and peer connection (adolescents’ immediate environments) in building resilience and learning how to cope. Consideration of the interplay between these factors is crucial for understanding resilience and coping.
5.3.2.4 Student Recommendations (‘The Student Voice’)

Students voiced an abundance of recommendations for future programme development and implementation. In relation to planning, students felt that future programmes should last longer, be consistent with timetables and school structures, and incorporate ways for students to write down their difficulties rather than vocalising them or merely ticking a box on a questionnaire. They also viewed the programme as being potentially beneficial for exam cohorts and younger students, however, they seemed to generally feel that other students their own age would benefit the most.

A core component for the effective implementation and dissemination of any intervention is its contextual fit to the target environment (Fixsen, Blase, Naoom, & Wallace, 2009; Brownson, Colditz, & Proctor, 2017). The voices of students in the current study augment the importance of the RA including a preparatory phase in order to meet the individual needs of schools. While this is already a feature of the RA, facilitators and programme coordinators usually only meet with teachers and principals. A preparatory phase should also provide an opportunity to invite student feedback and input in order to directly identify and address their specified needs. Perhaps liaising with student representatives, in a manner akin to the focus groups in this study, may suffice, as it was evident that students’ opinions regarding programme implementation in their schools were valid and plentiful.

Students also made suggestions regarding the specific content of the programme. There was a prominent recommendation pertaining to more topic, or module, choice. In particular, there was an expressed interest in topics including body image, peer pressure, eating disorder, social media, anxiety, and suicide. Body image is already featured in the RA, as is bullying, which includes aspects of social media use and cyberbullying. Facilitators may need to expand upon the meaning and content of each module in the introductory session so that students fully grasp what it is they are choosing. Students’ desire to talk about suicide is of particular significance as it was consistent with previous anecdotal evidence according to programme facilitators (Pieta House, 2017). This was somewhat unsurprising given the eminence of Pieta House in Ireland.

There has been a longstanding belief that increasing awareness of suicide amongst young people can be dangerous, reflected by guidelines proposed by the National Educational Psychological Service on the promotion of wellbeing in post primary schools, urging schools not to engage in programmes which directly or ‘indirectly’ increase awareness around suicide (Department of Education and Skills, 2013); albeit, these guidelines are somewhat dated.
Anecdotal evidence suggests that programmes might ‘introduce the idea’ of suicidality to students, or cause unwarranted distress for students, staff, or parents. However, research suggests that this is a misconception and that programmes utilising discussion around mental health issues pertaining to suicide do not cause significant distress for the majority of adolescents (Gould et al., 2005). Furthermore, there is a growing body of research on suicide warning signs which suggests that exposure to suicide-related content does not encourage individuals to consider attempting suicide (Joe & Bryant, 2007; Gaffney, 2018).

Programme developers need to consider the inclusion of topics sought after by students and the effects of such inclusion. For instance, increased module choice potentially means that more students will lose out in covering what they want. Information around suicide could be broadly given or addressed within other modules as opposed to developing an entire module around it. Importantly, given the suicide-related status of Pieta House in Ireland, focusing on suicide may take away from an emphasis on resilience that the Resilience Academy embraces. Future qualitative programme evaluation could address these concerns.

5.3.3 Discussion of combined quantitative and qualitative results

5.3.3.1 Evaluation of the Pieta House Resilience Academy

The current evaluation of the Resilience Academy programme found that resilience moderately increased for all students with no statistically significant differences between groups. While symptoms of depression and anxiety did not change, the programme effect on resilience was consistent regardless of perceived depression and anxiety related difficulties. Positive intervention effects that emerged in the quantitative phase were reflected in the qualitative phase. Students perceived the programme as a positive school experience, which allowed for peer connection and was helpful in providing cognitive and emotional insights and skills in learning how to cope and thus develop resilience. The findings suggest that the programme facilitated empathy and better relationships between students and their peers, extending beyond the classroom to the whole school climate, influencing resilience ‘building’. The findings also echo previous research identifying school, peer, individual, and community factors as essential to a range of health and behaviour outcomes during adolescent development (Dray et al, 2017).

5.3.3.2 Socio-ecological resilience factors

The lack of a cogent definition for resilience carries over to research findings. Vagueness in definitions and theoretical models is largely due to the variations in what may be considered
‘resilient’ across studies, the stringency of criteria used to assess resilience, and the outcome measures that may or may not represent resilience. Moreover, while resilience is often measured at a single time point, it is possible that it does not remain static over time (Luthar, Cicchetti, & Becker, 2000). Liu et al. (2017) also noted that the use of event-specific markers as set-points for measuring resilience in a clinical context is inherently problematic as resilience becomes linked with only abnormal markers or events nested within an individual. Yet, how one interacts with one’s larger community or environment largely influences, if not helps dictate, outcomes in multiple ways (Lie et al., 2017). Seery et al. (2010) stated that research has generally failed to combine socio-ecological factors with intra-individual variables.

The current research provides support for the importance of developing and maintaining socio-ecological factors for adolescents, including school connectedness and peer support, which in turn contribute to students ‘building resilience’ (Martin et al., 2015). Perceived support afforded by close personal relationships and other school and social contexts may serve as a buffer that provides protection from the negative effects of adverse events. Importantly, these factors should be viewed alongside internal or personal characteristics relating to resilience, rather than instead of them.

It is clear that a requirement for understanding the process of adolescent resilience is the acknowledgement of its complexity; resilience operates across multiple levels, which interact with each other (Windle, 2011). It would also seem that considering adolescent resilience within a multi-dimensional framework is the most useful and practical stance to take, both by clinicians and researchers, despite its broadness. Students do not exist within a vacuum, rather, they interact with, and are influenced by, their physiological, cognitive, family, interpersonal, school, and community contexts, as well as their perceptions of these. It follows that students’ cognitive appraisals of factors such as school connectedness and peer support are particularly important for their overall appraisal of personal competencies (Ungar, 2008; Werner, 2013). Moreover, individual resilience is also likely to be enhanced by increasing community resilience (Eshel & Kimhi, 2016), or perhaps school resilience.

5.3.3.3 Positive appraisal and adaptive coping

The interaction of the many personal attributes related to resilience, such as tolerance for negative affect, self-efficacy, self-esteem, foundational sense of self, internal locus of control, sense of humour, hopefulness, enduring set of values, sense of meaning, strategies to deal with stress, balanced perspective on experience, malleability and flexibility, tenacity, and resolve
(Olsson, et al., 2003), may be mediated by students’ perceptions of externally available resources, directly influencing their “resilient mind-set” (p. 108, Woods, 2018). This is supported by research regarding the impact of a ‘world-view’ appraisal process on the appraisal of, and reaction to, adverse or stressful events (Lazarus & Folkman, 1984; Rutter, Freedenthal, & Osman, 2008). This is also expounded by research into the mediating effects of hope, self-compassion, and meaning on resilience (Ho et al., 2010; Wong, 2017; Wong & Yeung, 2017; Woods, 2018).

As stated previously, Kimhi and Eshel (2015) argued that resilience is a state of mind that allows people to re-adjust and continue their lives despite adversity. Viewing resilience from this perspective means that it can be evident before, during, and after adversity. It is one’s appraisal of one’s own strengths and vulnerabilities in relation to adversity; a balance between protective factors and risk factors (Eshel et al., 2017). In turn, positive outcomes are merely behavioural or psychological consequences enhanced by higher levels of resilience; they are distinct, just like fear is distinct from running away from danger. Thus, building resilience involves building protective factors that will aid in this appraisal. However, students may need to learn how to make appraisals and given help to facilitate reappraisals, that is, to learn how to cope.

The coping strategies and skills addressed in the RA seem to have aided in positive student appraisals of themselves, others, and the world. The attainment of skills, enhanced by relational supports and positive school experiences, may have increased the perception of themselves as capable and in control. In their qualitative study, Everall et al. (2006) noted that participants who had experienced suicidality during adolescence found cognitive processes such as these as important for later resilience, especially having a perceived sense of control and an internal locus of control. Students in the current study alluded to recognising the transient nature of emotions and distress, which also seemed to be linked to a sense of capability and self-efficacy.

Perceived self-efficacy makes a difference in how people feel, think, and act (Bandura, 1997; 2010). A student with higher self-efficacy will trust their own abilities during adversity and, perhaps, perceive problems as challenges instead of threats or uncontrollable events. By activating affective, motivational, and behavioural mechanisms during adversity, self-efficacy beliefs can promote resilience (Schwarzer & Werner, 2013). Similarly, emotion regulation, the practice of manipulating one’s own emotions in order to manage stress or influence one’s own affective experiences, another aim of skills featured in the RA, can promote resilience (Gross & Thompson, 2007; Troy & Mauss, 2011). Students’ ability to regulate emotion could play a
key role in the appraisal of situations and adapting to adversity. Further research is needed to
determine to what extent the RA taps into concepts such as positive appraisal of adversity, self-
efficacy, control, and emotion regulation in addition to prevalent resilience-related factors such
as hope, self-compassion, humour, and meaning.

5.3.3.4 Future RA development
The combined findings in the current study suggested that the RA is effective at building resilence by facilitating a positive school experience, promoting connection with peers, and illuminating strategies and skills that may increase cognitive and emotional abilities. It was clear the non-intrusive approach taken by facilitators, together with the relevance of module-
related material covered, appealed to students. Many students voiced their enjoyment and
stated they would recommend the programme to others. As previously highlighted, students
had several suggestions in relation to future programme development. Developers should
consider these views and how best practice guidelines relate to them, particularly in the context
of target populations, increasing topic choice, involving students in a preparatory phase, the
contextual fit of individual schools, the scheduling of sessions, session and programme length,
the facilitation of open forum discussion, acknowledging topics that were not discussed
(perhaps in the consolidation session), and improving disclosure and help-seeking components.

While the RA already includes the promotion of awareness of local and national mental
health services, as well as the option for students to talk to facilitators about difficulties at any
time, the absence of explicit screening methods accentuates the need for concise protocols in
relation to opportunities for disclosure and help-seeking. Indeed, future programme
development should consider the incorporation of clear and efficient care pathways in order to
increase access to services when needed. Future research should address this by investigating
how best to promote disclosure and help-seeking behaviour within the structure of the RA.

Findings also suggested that the continued use of the RQ as a measure of resilience in
conjunction with the RA is warranted, however, further research is needed regarding its factor
structure (Perceived Support, School Connection, Coping, and Self-Efficacy) and the
relationship between factors. Confirmatory factor analysis could be used to test whether the
factors are consistent with a socio-ecological conceptualisation of resilience. Larger samples
are also needed in order to determine the generalisability of the RQ and its factors and whether
there are any connected gender differences.
Overall, the RA is uniquely positioned to promote adolescent resilience in their own environment. The school can be a refuge for students who do not have sufficient parent-family connectedness to protect against suicidal behaviour (Resnick et al., 1997; Johnson et al., 2011). Therefore, developers need to nurture the relational aspect of the programme. This is particularly succinct when one considers ‘one good adult’ in a young person’s life may be enough to improve mental health outcomes overall (Dooley & Fitzgerald, 2012). Additional mixed methods research, including qualitative phases exploring students’, teachers’, facilitators’ and stakeholders’ perspectives concerning the interpersonal connectedness of the programme, may contribute to development as well as future programme evaluations exploring the relationship between protective and risk factors.

5.4 Implications for research and clinical practice

Implications for future development and evaluation of the RA programme were addressed specifically in the previous section. The main implication for future research in general is in the understanding and measurement of resilience. The combined findings illuminate the idea that resilience is a complex and dynamic system comprised of personal, relational, and skill-based variables which reciprocally interacts with one’s experiences and environment. While taking this stance may be troublesome regarding an operational definition, there is usefulness in emplacing a multidimensional model of resilience as an overarching theoretical paradigm as it will likely help synthesise information about various domains, which may increase wellbeing and are responsive to interventions, and interpret future intervention outcomes. Consideration of socio-ecological factors can aid in the measurement of resilience. This study also included the validation of a new measure of resilience, the RQ, demonstrating potential utility and convenience in future adolescent resilience studies. Future research should look at the relationship between the RQ factor structure and that of other resilience and mental health measures to determine its predictive power.

The main clinical implication of this research is that interventions aimed at developing knowledge of novel, thought-provoking, and student-chosen topics, cognitive and emotional coping strategies and skills, and awareness of local and national mental health services, are likely to increase adolescent resilience. However, the facilitation and delivery of interventions, whilst promoting perceived support (school and peer connection), is likely paramount to intervention effects. Effects may be seen for all students including those with symptoms of depression and anxiety. Moreover, resilience may change while mental health symptoms do
not, representative of potentially separate mechanisms of change. Findings also add to research suggesting that resilient adolescents engage in effective cognitive and emotional strategies, in particular, positive-appraisals of themselves, others, and their environment, and emotion-oriented coping (Min et al., 2013; Mestre et al., 2017).

5.5 Methodological considerations

There are several important limitations to the current research. In relation to the quantitative phase, the sample size was small compared to that of similar programme evaluation studies (Wasserman, et al. 2015, Pluess, Boniwell, Hefferon, & Tunariu, 2017). There was also no control group used for this study. Due to funding and timetabling constraints the use of a control group was not feasible. In addition, there was an unbalanced design when accounting for gender. A number of originally intended statistical analyses, including an analysis of covariance (ANCOVA), were not possible due to multiple assumptions being violated. The subsequent use of multiple t-tests led to an increase in Type I error rate. The non-normal distribution of data was another limitation, as this necessitated the use of non-parametric tests, which are less statistically powerful. In addition, for a principal components analysis to produce a reliable result, a large sample size is needed. Many different rules-of-thumb have been proposed that differ mostly by either using absolute sample size numbers or a multiple of the number of variables in your sample, however, in general, a minimum of 5 to 10 cases per variable is recommended.

The evaluation did not control for several important factors relating to a multidimensional theory of resilience. For instance, no information regarding familial information was sought. It was felt that, given the school-based nature of the RA, asking students about their family history and cohesion, attachment style, or communication patterns would be too invasive. However, this information could have shed light on the relationship between resilience and family processes and connectedness (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003). In addition, students’ experience of adversity could also inform future studies looking at potential moderators in the association between resilience and mental health.

While the inclusion of socio-ecological items on the RQ was considered a strength, the measure undoubtedly has its weaknesses. Self-report measures are limited in that they are only capable of measuring individual perceptions of factors. Future RQ studies should incorporate larger, more gender-balanced samples that will provide more statistically powerful results. Moreover, there were no analyses of gender differences of RQ factors. Males and females may
score differently on different factors, for instance, research has shown that boys on average score higher than girls on constructs such as self-efficacy (Feingold, 1994). Future research investigating the RQ factor structure should consider gender differences.

Importantly, findings in the current study are based on a single programme implemented in two different schools by different facilitators and may not generalise to other schools or students. It is possible that students who assented and who received parental consent to participate in the programme are different from students who did not. For instance, programme students may be more motivated to learn and actively take part. Similarly, schools were chosen from a pool of schools already signed up for the RA programme, which may represent schools with psychologically-minded systems, structures, and/or staff.

Another limitation of this study is that, given the module choice feature, the delivery of the programme inevitably differed in content and focus between class groups. In addition, one focus group was made up of students from three class groups. Future roll-outs and evaluations of the RA may benefit from direct comparison of what modules are chosen and which ones are more effective and popular with students. Only three male students in total participated in focus groups, which, if one considers how adolescent experiences are partially shaped by physiological factors, may have skewed themes toward a more female-orientated outlook. Furthermore, facilitators were present during focus groups in accordance with risk management guidelines generated prior to ethical approval. This may have affected students’ responses regarding the facilitation and effect of the programme. Students may have felt a need to speak positively about the programme or its facilitators.

The absence of a follow-up phase was excluded from the current study due to lack of facilitator availability. Future studies would benefit from multiple qualitative assessments that extend beyond immediate post-intervention to evaluate the extent to which skills and learning points are retained, sustained, and further developed over time. Similarly, follow-up quantitative assessments could tell us additional ways in which the RA influences students over time. The perspective of teachers was also omitted from the current study. As the RA includes a teacher information session, it may be helpful to gain their experience of this in addition to whether they noticed differences in students’ behaviour and well-being during and the after the programme.

Limitations were counteracted by several strengths of the study. Firstly, it offered the opportunity for students’ voices to be heard amongst the ongoing debates in relation to programme development and adolescent resilience research in general. Within the resilience literature, remarkably little attention has been given to adolescents’ perspective of the processes
that influence change in risk and protective factors. Moreover, random samples of students who participated in the programme were selected for focus groups, potentially decreasing sampling bias. Results were therefore considered representative of Irish students aged 13 - 14 years in the general population. While the findings are relevant to the Irish context, they may have a wider application for programme evaluation, the operationalisation of resilience, and mixed methods research and practice in other jurisdictions.

Another strength of the study was the inclusion of several different measures. The use of two resilience measures increased the likelihood that the construct was measured with good validity, while a depression and anxiety measure permitted further analysis of programme effects. Moreover, Dray (2017) emphasised the need to provide measures of resilience along with measures of mental health as evidence that resilience is indeed the mechanism of change in resilience-based interventions. In addition to these strengths, a mixed methods approach was utilised with both quantitative and qualitative phases addressing gaps in the literature. The results will also inform future research and programme design.

5.6 Conclusion
The current study provides the first evidence for the effectiveness of the Pieta House Resilience Academy, a school-based resilience-building programme for second year students. Findings showed that all students’ resilience significantly increased after participating in the programme, regardless of gender or group. No programme effects were evident for symptoms of depression and anxiety, however, both anxious and depressed students, including those at-risk of suicide, had significant increases in resilience similar to those of their peers. Students associated their increased resilience with the programme being a positive school experience, which fostered a comfortable environment allowing for peer connection, collaborative learning, and the attainment of knowledge of how to adaptively cope, both cognitively and emotionally. Students also made several recommendations for the future development of the programme.

A new measure, the RQ, was shown to be a reliable and valid measure of resilience, loading on four factors, two of which explicitly reflect socio-ecological factors; perceived support, school connection, coping, and self-efficacy. This measure is apt given that the contexts in which students live (life experience, connection to school, relationships, beliefs and attitudes, health, support, etc.) will inevitably impact their ability to engage in, and benefit from, programmes targeting internal and external processes. The reasons some students might potentially obtain a reasonable benefit from the RA when others might not may have to do with
these contextual factors rather than the programme itself. The important role of school in developing, and indeed measuring, resilience was highlighted in this study. Positive school experiences and peer connection may be powerful predictors of resilience. Future research should build on these results to compile additional evidence in relation to RQ factor analysis, its utility, and its ability to predict objective behavioural outcomes.

In conclusion, resilience as a construct accentuates the strengthening effects of adversity. In essence, adolescents are not just resilient despite of adversity, rather, they are resilient precisely because of adversity. With sufficient emotion regulation and positive appraisal, they may obtain self-efficacy, control, and power to overcome adversity. The use of cognitive and emotional strategies to adapt may also promote a sense of meaning and hope, in a reciprocal-type relationship. However, this is not accomplished in a vacuum. As Aristotle once stated, humans are social animals; an aphorism underpinned by the emerging neuroscience of social connectedness establishing links between adolescent brain development and the broader social environment (Lamblin, Murawski, Whittle, & Fornito, 2017). The structure of students’ social networks exerts complex yet profound influences on behaviour and mental health, and conversely, individual differences in social ability, partly determined by brain function, impact the quality and quantity of social ties (Lamblin et al., 2017). The brain and the social environment sculpt one another throughout this critical developmental stage of life.

In order to comprehensively understand resilience, we need to look at it ‘from neurons to neighbourhoods’ (Phillips & Shonkoff, 2000). As Masten (2018) states, a deep and profound change is occurring in resilience theory and research. Perhaps this is due to escalating and extensive global vicissitudes in technological, political, economic, developmental, and natural spheres. Attention to resilience has considerably increased in an attempt to address some of these challenges across multiple systems and sciences (Masten, 2018). By recognising and integrating multi-dimensional models, evidence, and strategies, we can elucidate resilience together and translate results into real-world action to the benefit of children, adolescents, families, communities, and the world itself.
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Appendices

Appendix A - UL Ethical Clearance

Dear Sharon

Thank you for your amended Research Ethics application which was recently reviewed by the Education and Health Sciences Research Ethics Committee. The recommendation of the Committee is outlined below:

Project Title: 2018_05_16_EHS_Building Resilience, Building the Future: Evaluating a school-based resilience building programme for second year students
Principal Investigator: Sharon Houghton
Other Investigators: Paul Quinn
Recommendation: Approved until April 2019.

Please note that as Principal Investigator of this project you are required to submit a Research Completion Report Form (attached) on completion of this research study.

Yours Sincerely

Anne O'Brien

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Appendix B – Guardian Information Sheet

Dear Guardians,

My name is Paul Quinn. I contributed to the development of the Resilience Academy school programme and am conducting research as part of a doctoral thesis in Clinical Psychology with University of Limerick. The aim of my research is to evaluate the effectiveness of the programme and explore the concept of resilience.

As you will be aware from the information sheet given by Pieta House, the Resilience Academy will take place over 5 weeks. As part of my research, students are asked to fill out four brief questionnaires before the programme starts and when it ends. This will help give insight into how students are affected by the programme. All of the responses will be completely anonymous.

In addition to this, on the last day of the programme, seven students will be randomly selected to participate in a brief discussion in order to gauge students’ perception of what should be changed or added to the programme. This discussion will be recorded using an audio recorder however no identifying information will be used and data will be anonymised and secured.

Involvement in this study is entirely voluntary. Non-participation will not affect participation in the programme. This research will help better understand the concept of resilience and in the future development of the programme. All views will remain completely confidential and all data collected from participants will be anonymised.

If you wish to have your child involved, please complete the attached consent form and return it to the school.

If you would like any more information on the research or your child’s potential participation, feel free to contact me by email (___________).

Yours sincerely,
Paul Quinn,
Psychologist in Clinical Training
Appendix C – Consent Form

Consent Form

This study and this consent form have been explained to me. The information sheet has provided sufficient information. I understand what will happen if I agree to be part of this study:

- I will be asked to fill out four questionnaires, before the Resilience Academy begins, when it ends, and one month after it has finished. These will let the researcher see how my ability to cope has changed.
- I may also be randomly selected to participate in a focus group discussion lasting approximately 30 minutes to see what I would like to change about the programme and what it was like to participate in it.
- My responses will be anonymous.
- I can quit the study at any time.
- I can contact support staff at Pieta House if I feel any distress as a result of taking part in the study.

Do you consent to participate in this research? □ Yes □ No

Participant’s Name: ____________________________ Signature: ____________________________

As the participant is under the age of the signature of parent or guardian must be obtained:

Parent/Guardian’s Name: ____________________________ Relationship to participant: ____________________________ Signature: ____________________________

Date: ____________________________

Thanks for your support

University of Limerick
Appendix D – Student Information Sheet

Resilience Academy | Evaluation – Student Information Sheet
---|---
**Background**
This research will help to evaluate the Resilience Academy, the programme for 2nd year students.

**Procedures**
You are invited to take a questionnaire before and after you take part in the programme. This will help us to tell if the programme has helped you. Seven students will also be randomly selected to participate in a brief discussion about your experience of the programme.

**Benefits**
The information gathered during this study will help us to make sure that the Resilience Academy works, and is as interesting as possible to young people.

**Risks**
There are no risks to participating in the research though if you have concerns at any stage you can address these with the therapists running the programme or the researcher, Paul Quinn.

**Confidentiality**
Information gained from the questionnaires is totally anonymous. Your name is not recorded anywhere and individual responses cannot be traced back to you. The anonymous data will be used for internal review.

**Participation**
Participation in this study is entirely voluntary and you may quit at any time. If you decide not to participate or if you quit you will not be penalised in any way.

**Exclusions**
This study is open to 2nd year students from the participating schools.

**Ethics**
This research has received approval from the Education and Health Science Research Committee in University of Limerick (EHREC).

**Further Info**
For any questions or concerns related to this research feel free to contact the researcher, Paul Quinn.

If you would like to discuss any issues raised in the programme or issues related to suicide or self-harm you can do so with:

- The researcher, Paul Quinn
- The Research Manager at Pieta House
- Therapists at Pieta House

*Thank you for your support*
Appendix E – Resilience Academy module selection form

<table>
<thead>
<tr>
<th>Pieta House</th>
<th>Module Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of birth:</td>
<td>Gender:</td>
</tr>
</tbody>
</table>

To make these sessions as relevant and interesting as possible, we’re letting you choose what we cover.

Have a look at the eight module options below and rank the four that you’d like to cover over the next few weeks. Your choice is confidential. When you’ve chosen 4, just fold the sheet over and hand it up.

<table>
<thead>
<tr>
<th>Module</th>
<th>What it covers how to:</th>
<th>Preference (rank 1-4)</th>
</tr>
</thead>
</table>
| Managing School Stress | - Help you manage your stress  
- Communicate better with teachers  
- Manage your school day so you can make the most of it |                       |
| Bullying             | - Understand the difference between banter and bullying  
- Respond to bullying and seek support  
- Use coping strategies to deal with bullying |                       |
| Families             | - Communicate more effectively with your family  
- Better understand how your family members are thinking  
- Manage conflict in a healthy way  
- Feel more connected to your family |                       |
| Friendships          | - What makes a good friend  
- How to deal with friendship challenges and rejection  
- How to help a friend in need |                       |
| Sexuality            | - Identify and respond to challenges associated with sexuality  
- Respond to peer-pressure to be in a relationship  
- Discuss the positives and negatives of relationships  
- Seek help if you need it |                       |
| Mental Health        | - Understand what good mental health is  
- Use healthy coping strategies  
- Better cope with family members dealing with mental health challenges  
- Seek the appropriate sources of help |                       |
| Body Image           | - What a healthy body is  
- Skills that can be used to cope with pressure to look a certain way  
- How to help friends who have issues with body image  
- Where to seek help if you need it |                       |
| Substance use        | - Better manage peer-pressure  
- Understand why someone might misuse drugs or alcohol  
- Understand the impact of addiction  
- Seek help if needed |                       |
# Resilience Questionnaire

Have a look at the statements below and for each one identify how it applies to you. The response for each range from **0 (not at all true for me)** to **4 (very true for me)**. Circle the number that best fits for you for each statement.

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Occasionally true for me</th>
<th>Somewhat true for me</th>
<th>Pretty much true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

- I believe that things usually turn out well
  - 0, 1, 2, 3, 4

- I am in control of my own actions
  - 0, 1, 2, 3, 4

- I have enough support to cope with my problems
  - 0, 1, 2, 3, 4

- I recover quickly from setbacks
  - 0, 1, 2, 3, 4

- I feel loved
  - 0, 1, 2, 3, 4

- There are people in school who care about me
  - 0, 1, 2, 3, 4

- I take a long time to recover when something bad happens
  - 0, 1, 2, 3, 4

- I know how to handle upsetting feelings
  - 0, 1, 2, 3, 4

- I make efforts to stay fit and healthy
  - 0, 1, 2, 3, 4

- There is someone I feel very close to
  - 0, 1, 2, 3, 4

- I am hopeful about the future
  - 0, 1, 2, 3, 4

- I find upsetting feelings are just temporary
  - 0, 1, 2, 3, 4

- I have a connection to my school
  - 0, 1, 2, 3, 4

- I have the freedom to make my own decisions
  - 0, 1, 2, 3, 4

- I feel safe in school
  - 0, 1, 2, 3, 4

- I am able to get through a bad experience
  - 0, 1, 2, 3, 4

- In school, I feel like I belong
  - 0, 1, 2, 3, 4

- I feel disconnected from my family and friends
  - 0, 1, 2, 3, 4
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>not true at all (0)</th>
<th>rarely true (1)</th>
<th>sometimes true (2)</th>
<th>often true (3)</th>
<th>true nearly all the time (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am able to adapt when changes occur.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I have at least one close and secure relationship that helps me when I am stressed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>When there are no clear solutions to my problems, sometimes fate or God can help.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I can deal with whatever comes my way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Past successes give me confidence in dealing with new challenges and difficulties.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I try to see the humorous side of things when I am faced with problems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Having to cope with stress can make me stronger.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8</td>
<td>I tend to bounce back after illness, injury, or other hardships.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Good or bad, I believe that most things happen for a reason.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I give my best effort no matter what the outcome may be.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I believe I can achieve my goals, even if there are obstacles.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Even when things look hopeless, I don't give up.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>During times of stress/crisis, I know where to turn for help.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Under pressure, I stay focused and think clearly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I prefer to take the lead in solving problems rather than letting others make all the decisions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I am not easily discouraged by failure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>I think of myself as a strong person when dealing with life’s challenges and difficulties.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I can make unpopular or difficult decisions that affect other people, if it is necessary.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I am able to handle unpleasant or painful feelings like sadness, fear, and anger.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>In dealing with life’s problems, sometimes you have to act on a hunch without knowing why.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I have a strong sense of purpose in life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>I feel in control of my life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>I like challenges.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>I work to attain my goals no matter what roadblocks I encounter along the way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>I take pride in my achievements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Add up your score for each column**

**Add each of the column totals to obtain CD-RISC score**

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Appendix H – Beck Depression Inventory – 2 (BDI-2)

Name: ___________________________ Marital Status: _________ Age: _______ Sex: _______

Occupation: ______________________ Education: ____________________

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness
   0 I do not feel sad.
   1 I feel sad much of the time.
   2 I am sad all the time.
   3 I am so sad or unhappy that I can’t stand it.

2. Pessimism
   0 I am not discouraged about my future.
   1 I feel more discouraged about my future than I used to be.
   2 I do not expect things to work out for me.
   3 I feel my future is hopeless and will only get worse.

3. Past Failure
   0 I do not feel like a failure.
   1 I have failed more than I should have.
   2 As I look back, I see a lot of failures.
   3 I feel I am a total failure as a person.

4. Loss of Pleasure
   0 I get as much pleasure as I ever did from the things I enjoy.
   1 I don’t enjoy things as much as I used to.
   2 I get very little pleasure from the things I used to enjoy.
   3 I can’t get any pleasure from the things I used to enjoy.

5. Guilty Feelings
   0 I don’t feel particularly guilty.
   1 I feel guilty over many things I have done or should have done.
   2 I feel quite guilty most of the time.
   3 I feel guilty all of the time.

6. Punishment Feelings
   0 I don’t feel I am being punished.
   1 I feel I may be punished.
   2 I expect to be punished.
   3 I feel I am being punished.

7. Self-Dislike
   0 I feel the same about myself as ever.
   1 I have lost confidence in myself.
   2 I am disappointed in myself.
   3 I dislike myself.

8. Self-Criticalness
   0 I don’t criticize or blame myself more than usual.
   1 I am more critical of myself than I used to be.
   2 I criticize myself for all of my faults.
   3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes
   0 I don’t have any thoughts of killing myself.
   1 I have thoughts of killing myself, but I would not carry them out.
   2 I would like to kill myself.
   3 I would kill myself if I had the chance.

10. Crying
    0 I don’t cry any more than I used to.
    1 I cry more than I used to.
    2 I cry over every little thing.
    3 I feel like crying, but I can’t.
11. Agitation
0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it’s hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest
0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It’s hard to get interested in anything.

13. Indecisiveness
0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness
0 I do not feel I am worthless.
1 I don’t consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy
0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don’t have enough energy to do very much.
3 I don’t have enough energy to do anything.

16. Changes in Sleeping Pattern
0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1–2 hours early and can’t get back to sleep.

17. Irritability
0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in Appetite
0 I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty
0 I can concentrate as well as ever.
1 I can’t concentrate as well as usual.
2 It’s hard to keep my mind on anything for very long.
3 I find I can’t concentrate on anything.

20. Tiredness or Fatigue
0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex
0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.
Appendix I – Beck Anxiety Inventory (BAI)

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY, by placing an X in the corresponding space in the column next to each symptom.

<table>
<thead>
<tr>
<th></th>
<th>NOT AT ALL</th>
<th>MILDLY</th>
<th>MODERATELY</th>
<th>SEVERELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Numbness or tingling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Feeling hot.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Wobbliness in legs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unable to relax.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Fear of the worst happening.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Dizzy or lightheaded.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Heart pounding or racing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Unsteady.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Feelings of choking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Fear of losing control.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Difficulty breathing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Scared.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Indigestion or discomfort in abdomen.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Faint.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Face flushed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Sweating (not due to heat).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix J – Focus group transcript, codes, and themes example

<table>
<thead>
<tr>
<th>Responses</th>
<th>Code</th>
<th>Re-code</th>
<th>Subtheme</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>What was your overall experience of the RA?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1: I enjoyed it. I don’t know what was my favourite part though. I</td>
<td>Enjoyment /</td>
<td>Opportunity to interact</td>
<td>Collaborative learning</td>
<td>Peer Connection</td>
</tr>
<tr>
<td>suppose I liked the fact that I got interact with people.</td>
<td>Opportunity to interact with others /</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>more interaction than class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2: Yeah we got to talk to each other more than when we’re in class.</td>
<td>Interaction / different to class</td>
<td></td>
<td>different to class</td>
<td>Positive School Experience</td>
</tr>
<tr>
<td>P3: Yeah I agree.</td>
<td>Agreement re: interaction and discussion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4: Yeah it was different to classes because it was a more open</td>
<td>different to class / interaction / open</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>discussion.</td>
<td>dialogue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P5: Yeah</td>
<td>Agreement re: differences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P3: I don’t really mind the whole interacting with people part of it. I</td>
<td>Open dialogue /</td>
<td>Open dialogue /</td>
<td>Opportunity to reflect and discuss</td>
<td>Positive School Experience</td>
</tr>
<tr>
<td>just like talking about things I find interesting.</td>
<td>Topic interest /</td>
<td>Topic interest /</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Novelty &amp; Interest</td>
<td>Novelty &amp; Interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1: I was able to actually think more, ’ya know?</td>
<td>Thinking more than in school</td>
<td>Opportunity to reflect and discuss</td>
<td>Opportunity to reflect and discuss</td>
<td>Positive School Experience</td>
</tr>
<tr>
<td>P4: I think that I’ve learned a lot. Like, I've never asked myself the</td>
<td>Learning experience /</td>
<td>Learning experience /</td>
<td>Collaborative learning</td>
<td>Learning How to Cope</td>
</tr>
<tr>
<td>questions that I did when I was in the thing. Like, I never really</td>
<td>Thinking about things differently /</td>
<td>Thinking about things differently /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>thought about how, and how much I can, cope with stuff:</td>
<td>Assessing adaptive-coping potential</td>
<td>Assessing adaptive-coping potential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2: Oh yeah and the questionnaires...</td>
<td>Choice from questionnaires</td>
<td></td>
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<tr>
<td>P3: The multi-choice answers...</td>
<td>Having choice helpful</td>
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<tr>
<td>P2: Yeah it was helpful</td>
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<tr>
<td>(Silence)</td>
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<tr>
<td>PQ: Any more thoughts about your overall experience?</td>
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<tr>
<td>(Silence)</td>
<td></td>
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<tr>
<td>P1: It was good...yeah...</td>
<td>Good / Positive Experience</td>
<td>Positive Experience</td>
<td>Positive School Experience</td>
<td></td>
</tr>
<tr>
<td>P2: It was kind of relaxing...</td>
<td>Positive (relaxing) experience /</td>
<td>Students found the RA relaxing</td>
<td>different to class</td>
<td>Positive School Experience</td>
</tr>
<tr>
<td></td>
<td>Different to class</td>
<td></td>
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<tr>
<td>P4: Yeah... for a change</td>
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<tr>
<td>P3: Because it wasn’t class. (laughter) It’s always good when it really</td>
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<tr>
<td>isn’t class.</td>
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<tr>
<td>PQ: Do people agree with P3?</td>
<td></td>
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<tr>
<td>P1: Yup. (nodding indicating agreement) ... (silence)</td>
<td>Agreement that it was different to class in a positive way</td>
<td>different to class</td>
<td>Positive School Experience</td>
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<tr>
<td>PQ: It was &quot;good and relaxing&quot;, anything else about your overall experience of the group?</td>
<td>Students experienced the RA as fun</td>
<td>different to class</td>
<td>Positive School Experience</td>
<td></td>
</tr>
<tr>
<td>P7: It was fun... Come on guys... (laughter)</td>
<td>Playful experience</td>
<td>More games / Games as positive</td>
<td>Programme planning</td>
<td>Student recommendations</td>
</tr>
<tr>
<td>P4: I feel more games would make it even more fun...</td>
<td></td>
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<tr>
<td>P6: I think like there was a lot, um, of us just listening to others. There was a lot of just sitting and listening at times. So it was kind of hard to concentrate on sometimes.</td>
<td>Desire for more sharing / more opportunity to discuss / Hard to attend when just listening</td>
<td>More peer connection / hard to attend when just listening</td>
<td>Collaborative learning</td>
<td>Peer Connection</td>
</tr>
<tr>
<td>P5: Yeah maybe more interaction.</td>
<td>peer connection wanted</td>
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<tr>
<td>P6: Yeah more interaction, more time to speak up about something. Because some of the days we were just looking stories.</td>
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<tr>
<td>P2: But when the lads talked about their history and experiences, I enjoyed listening to them. I wanted to listen. I learned a lot... Yeah, and then there was a lot of interaction and time to speak to each other about the stuff, or something else.</td>
<td>Learning from each other / interaction / other students' experience</td>
<td>Learning from each other</td>
<td>Collaborative learning</td>
<td>Peer Connection</td>
</tr>
<tr>
<td>P3: Yeah, I think we were able to learn from each other more... by talking about things we find interesting as a group and learning from other people's experiences</td>
<td>Learning from other students' experiences / Interesting topics</td>
<td>Learning from each other</td>
<td>Collaborative learning</td>
<td>Peer Connection</td>
</tr>
<tr>
<td>PQ: Anything else about your overall experience of the group?</td>
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<tr>
<td>P3: It was like therapeutic... (others nodding in agreement)</td>
<td>Cathartic experience</td>
<td>Therapeutic effect of RA</td>
<td>different to class</td>
<td>Positive School Experience</td>
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<tr>
<td>P2: you're not just being told something and then that was that</td>
<td>not just told somethings</td>
<td>more than listen</td>
<td></td>
<td>Positive School Experience</td>
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<td>(Noise from outside) (laughter)</td>
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<tr>
<td>What was it like to participate in the programme?</td>
<td>Participation...</td>
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<td>P4: I thought it was good. There were enough questions directed towards us to make us think.</td>
<td>Thinking differently / Opportunity</td>
<td>Cog Appraisal</td>
<td>Adaptive Coping</td>
<td>Learning How to Cope</td>
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<td><strong>P3:</strong> Everyone was allowed to speak, which was great. It wasn't like a teacher-classroom kind of thing where you are just listening.</td>
<td>Different to class / Open dialogue</td>
<td>Different to class</td>
<td><strong>Positive School Experience</strong></td>
<td></td>
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<tr>
<td><strong>P5:</strong> It helped us talk about the things we were learning about, like the mind-body connection.</td>
<td>opportunity / retention of information (CBT) / mind-body connection / Novelty</td>
<td>Mind-body connection / coping</td>
<td><strong>Learning How to Cope</strong></td>
<td></td>
</tr>
<tr>
<td><strong>P2:</strong> Yeah I hadn't thought about that before; connections between our thoughts and feelings.</td>
<td>Novel coping strategies</td>
<td>Adaptive Coping</td>
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<td><strong>P7:</strong> I feel like there was some good participation when we got the chance to participate.</td>
<td>Opportunity to participate</td>
<td>Opportunity to participate</td>
<td><strong>Positive School Experience</strong></td>
<td></td>
</tr>
<tr>
<td><strong>P6:</strong> A lot of people got distracted when we went off topic... Yeah, some people found it a bit boring then.</td>
<td>Distraction / Off Topic discussions</td>
<td>Distraction during open discussions / balance</td>
<td><strong>Peer Connection</strong></td>
<td></td>
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<tr>
<td><strong>P1:</strong> I think some took participation in it as an advantage to get out of class. So they could... yeah...</td>
<td>Opportunity to get out of class</td>
<td>different to class</td>
<td><strong>Positive School Experience</strong></td>
<td></td>
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<tr>
<td><strong>PQ:</strong> Can you tell me a bit more about that?</td>
<td></td>
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<tr>
<td><strong>P1:</strong> I don’t know, like some might have found it boring. Some bits were really good though.</td>
<td>Some aspects boring / Some aspects engaging</td>
<td>Engagement versus loss of interest</td>
<td>Programme content</td>
<td><strong>Student recommendations</strong></td>
</tr>
<tr>
<td><strong>P3:</strong> Maybe if we all didn't split into groups and we did it together and like they were like speaking directly to you.</td>
<td>Suggestion not to be split into groups / doing it together / student-made suggestions</td>
<td>Suggestion not to be split into groups</td>
<td>programme planning</td>
<td></td>
</tr>
<tr>
<td><strong>P4:</strong> Games!...(laughter)</td>
<td>Playful experience / suggestion for more games</td>
<td>suggestion for more games</td>
<td>programme planning</td>
<td></td>
</tr>
<tr>
<td><strong>P2:</strong> Yeah...</td>
<td>Agreement re suggesting games</td>
<td>Agreement re suggesting games</td>
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</tbody>
</table>
Appendix K – Example of Brainstorming Graph