THE EFFECTS OF A PROBLEM-SOLVING TRAINING PROGRAM ON ADOLESCENTS’ PROBLEM-SOLVING SKILLS
The effects of a problem-solving training program on adolescents' problem-solving skills.

Neil Blick

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Department of Human Movement

University of Ballarat

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The purpose of the study was to examine the effect of a group training program, based on cognitive behavioural theory and techniques, on the problem-solving skills of adolescents. Evidence of a link between suicidal ideation (engaging in suicidal thinking) and reported deficits in social problem-solving or coping competence levels in adolescents is an area of investigation that offers some hope for suicide primary prevention programs. The study tried to determine if teaching social problem solving skills in a school would better equip adolescents with ways of coping with problematic situations. The work of Hawton (1997) Hawton and Kirk (1989), Lerner and Clum (1990) and McLeavey, Daly, Ludgate and Murray (1994) formed the basis of the training program design. The emphasis was on general problem-solving skills rather than on a participant's specific current problems. Included was training in listening skills, assistance in developing appropriate problem-solving behaviours and role simulation through the use of structured video case scenarios. Seventy four male and female Year 10 secondary school students were subjects in the study. They were randomly divided into two, approximately equal, groups. Thirty six subjects established the control group and the remaining thirty eight constituted the experimental group. The findings indicated that students exposed to the problem solving training program did not have significantly higher problem-solving ability, as measured by the Problem Solving Inventory (PSI) than those who were not exposed to the training. However, females in the experimental group were significantly more likely to make conscious decisions about when they would approach or avoid a problem when compared to control group females. It is suggested that the adaptation
of training programs, designed for suicidal clients, needs to be explored further for application to Year 10 students in the general population. More research is needed into ways to provide school based preventative training programs that will assist in the development of coping skills.
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Adolescent suicide.

Adolescence is widely considered as a transitional developmental period between childhood and adulthood that starts with puberty. It is also a time when physical, psychosocial and personality changes evolve towards maturity. Berman and Jobes (1995) consider that adolescence is an important phase of life to understand, as it is the period during which suicidal behaviours emerge. Efforts to understand the process through which adolescents become suicidal have taken a number of approaches.

The pattern of suicide prevalence in Australia has changed dramatically during the past 100 years. From the 1890s, when Australian suicide statistics were recorded, until the mid 1960s, suicide per capita remained essentially the same. One clear pattern at this time was differences between males and females in incidence. Suicide was more likely to be seen as an act carried out more by men, especially in the middle to older aged group, than women in any age group. During this same time span, males in the 15 to 24 age group were approximately four times less likely to suicide than older men (Morell, 1994). By the early 1970s a new trend emerged (Australian Bureau of Statistics [ABS], 1994) and has continued to this day, a reversal of the age related pattern with younger men emerging as the most prominent group within Australian society to suicide. According to information released in January this year (ABS, 1999) 2,723 suicides in 1997 was the highest ever recorded and represented a
14% increase compared to the corresponding 1996 figures. Suicide death rates are highest for people aged 25-44 years. Deaths by suicide accounted for 2% of all deaths registered in 1997. However, in the 15-24 age group, where overall death rates are low, suicide represents 26% of deaths. In 1997, suicide using firearms and explosives decreased by almost 14%, while suicide by hanging, strangulation and suffocation rose by almost 25%.

In response to the continuing rise in suicide, the Victorian Government established a task force in January 1997. The Victorian Suicide Prevention Taskforce established three objectives which were to gain the best available information on the incidence and nature of suicide in Victoria, identify strengths and weaknesses of existing suicide prevention responses including the setting out of practical ways to strengthen responses from all sectors of the service system and the broader community and, lastly, to present an approach that can optimise the collective response of the service system, and the broader community, within an integrated suicide prevention framework. The subsequent Suicide Prevention, Victorian Task Force Report was presented in July 1997. Key findings in the report illustrated the groups in Australian society most at risk of suicidal ideation to be men in the two age brackets, 29 to 34 years and men 19 to 24 years who continue to be highest suicidal group. In an analysis of 1991 to 1996 statistics on suicide, the Victorian Task Force Report recounted that; "Suicide rates are particularly high in rural areas especially for rural towns with populations of less than 20,000. Attempted and successful suicide is increasing for young women, yet the prevalence remains significantly lower than for males". (p. 44.).
Apart from social trend analyses, there are a range of common elements in suicidal ideators. Berman and Jobes (1995) examined the range of research and theory relating to suicidal adolescents identifying the following common elements to be depression, anger, aggression, loneliness, lack of competency in critical assessment of information, poor help seeking behaviours, lack of access to and understanding of information and, notably, poor social and interpersonal problem-solving skills.

Vannatta (1997) explored gender variations in suicidal behaviours and proposed a way of understanding the differences by which males and female express depression and suicidality through a variety of risk-taking and self-destructive behaviours. Following a study with 3,461 adolescents in the U.S.A., Vannatta suggested male adolescents are likely to seek more lethal means for committing suicide. The researcher suggested this to be due to a greater social emphasis on males being independent, successful, and strong whilst at the same developmental time, there is a lack of encouragement for males to ask for help or to express dependence on relationships. Hence, it seems that males use more aggressive means to commit suicide in order to avoid the humiliation of failure. On the other hand, female adolescents are encouraged to develop greater emotional attachments, use help seeking behaviours and be less aggressive; therefore, they are more likely to choose suicide methods that may fail and be seen as a cry for connection. This is consistent with Rotheram-Borus, Trautmam, Dopkins, and Shrout (1990) who also found female suicide attempters to be more focused on their own problems.

Roberts (1999) explored the risk factors of depression in children and adolescents and identified pessimistic cognitive perceptions, often drawn from negative experiences,
were contributors to negative self-concept. Low personal competence including social inadequacy, low peer acceptance anxiety, poor social problem solving skills and low quality of effective or alternative solutions to problems involving peer conflict were also seen as contributors. Negative life events such as poverty and family factors such as parent's marital discord and parental despondency have also been identified. Rudd, Rajab and Dahm (1994) recognised chronic stress, alcohol and drug misuse as contributory agents and noted that the precise relationships between them are complex. They suggested possible variations in the degree of interplay between the factors are numerous and may increase or decrease the likelihood of a suicide attempt depending on which factors are present, how high or low they are perceived to be and how many are existing.

Studies of the suicidal individual often include emotional depression and/or the presence of a psychiatric disorder (Roberts, 1999). Immediate environmental issues that impact on a suicidal individual include relationships with family and friends and the wider social condition of the period. Impulsivity and level of self confidence have also been seen as important contributing factors to suicidal ideation (Mraz & Runco, 1994). It may follow that when a person with a limitation in ability to estimate their own potential contribution to a stressful situation, possibly due to depression and/or a psychiatric condition, is further limited by their inferior problem solving skills. If present, such skill might generate possible alternatives to suicide and reduce suicide risk.
This study will focus on one specific area that offers some hope of early intervention and prevention. Primary prevention of suicide is concerned with preventing the predisposing problems (risk factors) that could place some people at greater risk of suicide or suicidal behaviours than others. Primary prevention involves intervening at a universal level with whole populations or selectively with sub-populations that have a higher than average chance of developing the risk factors that are being targeted (Mitchell, 1999). The specific relationship between adolescents' level of suicidal ideation and poor social and interpersonal problem solving skills has been the subject of a range of studies over the past two decades.

Initial general work on cognitive intermediaries between stress and behavioural outcomes is attributed to social learning theory (Bandura, 1977) which focuses attention on the importance of their own belief in an individual's ability to influence the outcome of a presenting problem. The theories of Bandura (1986) indicate that personal self effectiveness in managing life issues is based on the cumulative effect of countless personal experiences within the world through which individuals develop general beliefs about themselves and their abilities to deal with presenting personal problems. The extent to which their own personal resources are available is dependent on a person's perception of what are resources. Personal resources may include an individual's actual skills, or perceived coping abilities, as well as social support and past knowledge of particular problems (Heppner, 1988).

Of specific interest to this review is the association between particular factors that
influence an individual's perception of a presenting problem. The topic gained a high level of attention through the work of Patsiokas, Clum and Luscomb (1979) who developed a model of suicidal behaviour. This model predicts that suicide risk increases for a person with either poor problem solving skills and/or cognitive rigidity experiences negative life stresses. These deficiencies in coping abilities in the presence of high life stresses are postulated by Patsiokas et al. (1979) to lead to feelings of depression, hopelessness and, eventually suicidal behaviours. The model suggests that when individuals who are deficient in the capacity for flexible divergent thinking are placed under conditions of high life stress, they are unable to cope effectively, become hopeless, are unable to generate solutions necessary for adaptive coping and are, consequently, at a higher risk of suicidal behaviour. Schotte and Clum (1987) documented the importance of problem solving as a mediating variable that could be applied when suicidal ideators are confronted by stressful life situations prior to suicidal behaviours. D'Zurilla and Nezu (1990) defined problem solving as a series of self-generated cognitive affective behavioural processes by which a person attempts to discover ways of coping with problematic situations as they occur in the real world.

Schotte and Clum (1987) indicated that people with poor problem solving skills and possibly poor interpersonal skills lacked an important protective element of cognitive ability to deal with suicidal ideation and that such a framework of dealing with life events has some degree of stability over time as a prominent trait. The different components of problem-solving were identified by D'Zurilla and Nezu (1990) to be problem orientation, problem definition, generation of alternatives, decision making and solution implementation, and verification.
Schotte, Cools and Payvar (1990) proposed that people with a deficit in interpersonal problem solving skills are more vulnerable to depression, hopelessness and suicidal behaviour; these researchers demonstrated, in a study of hospitalised suicide ideators, that through the teaching of interpersonal problem solving skills, changes in mood and suicide intent was associated with an improvement in interpersonal problem solving skills. Rudd, et al. (1994) contend that whilst individuals with poor problem-solving skills are more likely to become overwhelmed as external stressors mount; conversely, individuals with adequate or better problem-solving skills are more able to generate productive alternatives, and thus minimise the chance of a negative spiral towards hopelessness.

However, questions have been raised (Hawton, 1997) as to the degree to which findings can, or should, be generalised to the wider population that are drawn from studies and research of clients already identified as clinically depressed and/or suicidal. Hawton stated that the question has not been fully clarified as to whether problem-solving deficits are state or trait phenomena, or if poor problem solving skills are only manifest for people at times of low mood and /or crisis. Hawton suggested the area requires further investigation. The body of research available from such studies does provided a weight of information and knowledge to be learnt from, in an area of identified need.

A study of non clinically depressed young adolescents was conducted by Perkins, Meyer, and Cohen (1988). The participants were attending regular school and were not diagnosed by professionals as depressed or with any other psychiatric condition
but were identified as being depressed by their age level peers. A non-depressed group was identified in the same way. Following a series of tasks that required the two groups to carry out a range of problem-solving tasks, some of which were more ambiguous than others. The two groups were compared. The results demonstrated the depressed participants to be deficient in problem solving skills and to have more difficulty understanding and responding to ambiguous situations than the non-depressed participants.

Endeavours have been made to determine the relationship of problem solving to different presenting issues. In 1994, Fydenberg and Lewis conducted a survey 178 senior students in Melbourne schools and found significant differences in the way students cope with different concerns. The researchers reported the students to have a hierarchy of preferred coping strategies and that they tended to distinguish between the type of presenting problems. Students considered social issues and personal concerns to be more removed from their direct control and therefore managed these in different ways to school achievement and relationship. Fydenberg and Lewis (1994) found two styles of coping, one that is general but not problem specific, as well as a component that is problem specific.

**Problem-solving and suicidal ideators.**

The types of strategies people tend to use when dealing with suicidal thinking, and behaviours, are referred to as coping skills. Problem solving is one coping skill and is sometimes referred to as interpersonal or social problem solving. It is a procedure that can be learnt and, as a result, individuals' problem solving competence levels is an
area of investigation that offers some hope for suicide primary prevention programs.

Research into the many variables of suicidal ideation include the work of Patsiokas, Clum and Luscomb (1979) who have proposed an interactive model that aims to predict the increase of suicide risk that takes place when negative life stresses are experienced by people with either poor problem solving skills and/or cognitive rigidity. Sadowski and Kelley (1993) investigated the relationship between poor problem-solving skills in two groups, suicide attempters and a control group of "non-distressed" peers. They defined problem solving as "a multifaceted, cognitive-affective-behavioural process used to identify ways of coping with real life problems" (p.124). They found that suicide attempters did have poorer skills especially in the area of problem orientation, (identification) the initial step in the problem solving process. The researchers concluded that training in problem solving skills may be an effective intervention for suicide attempters and would be a useful treatment.

Dixon, Heppner and Anderson (1991) completed a study of 1,277 subjects aged 18 to 19 years old in the general population, and found the same result as Kelly (1992). The investigators found that deficient coping is a function of both life stress and poor problem-solving skills. The researcher's used the Problem Solving Inventory (Heppner, 1988) to provide further evidence of a link between poor problem-solving ability and the resources that an individual brings to presenting stressors. Dixon, Heppner and Rudd (1994) found empirical evidence to support Schotte and Clum's 1987 theory that predicts a deficit in problem solving abilities will lead to suicidal behaviours in already suicidal people as they are more at risk when exposed to naturally occurring conditions of high negative stress. Dixon et al. (1994) also
provided supportive evidence that problem-solving skills can act as a mediator between stress and suicidal behaviour.

In a study of 217 young adult suicidal ideators, Dixon et al. (1994) also found that a sense of hopelessness restricted individuals ability to apply problem solving-skills to immediate dilemmas. The growing body of research was added to by Adams and Adams (1996) by showing a link between individuals with diagnosed psychiatric conditions as having less constructive problem solving skills when confronted with negative life events, especially depression.

Yang and Clum (1994) pursued the field of restricted problem solving skills existing in clinical groups and questioned the validity of generalisation to the wider population. They conducted a study designed to test the 'generalizability' of the stress-social support problem-solving model to a sample of Asian students. The researchers were interested in the issue of cultural difference and generalisation to a population of subjects not presenting with suicidal ideation or depression. The results indicated a relationship between suicidal ideation, loneliness and problem-solving deficits. The writers stated that the subjects with poor problem solving skills were less able to generate alternatives when faced with life stressors. Yang and Clum also found that negative life stress and the tendency to perceive more negative than positive consequences for problem-solving alternatives are independent predictors for suicidal ideation.

Mraz and Runco (1994) provided support for the view that suicide ideators are more rigid in their thinking and, as a result, less likely to apply creative problem solving
skills when confronted by stressful life events or problems than the general population. The writers state: "Problems are not in the environment: they may be triggered by certain situations, but situations are only problematic when an individual interprets them as such" (p.45). The writers share the view of others in the field that poor problem solvers may become depressed, experience hopelessness and think about suicide when they are faced with high levels of stress. They suggest that problem identification is an extremely important part of problem solving that needs to be known in a comprehensive way if problem solving is to be effective. Wilson, Stelzer, Bergman and James (1995) investigated the relationship between problem solving, rigid thinking and suicidal ideation. They suggested the link between showing signs of rigid thinking and suicidal ideation is not as clear as earlier research had indicated. Wilson et al. (1995) found that subjects were less able to appraise stressful events in life and, used fewer adaptive strategies to manage them. The researchers submit that suicidal adolescents may have difficulty in estimating their personal contribution to the onset or exacerbation of stressful situations and therefore do not apply appropriate coping skills, including problem solving, to presenting situations.

Hawton and Kirk (1989) designed a sequential, cognitive-behavioural method of training to be delivered to people who present with suicidal ideation. The training program started with patients being taught to recognise when a problem exists for them, then to identify available resources, assets, and supports and to obtain information from other sources. Following the first information gathering stage, the next step was to decide on appropriate problem solving strategies to be used, then determine practical arrangements such as who will be involved, duration, timing, and
so on. The last step was to establish a therapeutic contract with those involved which would include each party’s responsibilities in the problem solving process. The writers emphasised the importance of the first step of helping the patient to recognise a problem as being one of collaboration, clarification and encouragement to enable the patient to break the problem down before it can be acted upon.

Applying a similar model but to a wider audience, Rotheram-Borus, Piancintini, Sutherland, Flemming and Castro-Blanco (1994) reported the experiences of an ongoing treatment using a cognitive-behavioural approach of training through the 'Successful Negotiation Acting Positively' (SNAP) treatment. The aim of SNAP was to teach problem-solving to families through a series of steps that included (a) defining the problem (b) generating and assessing alternative solutions and (c) evaluating the effect of the chosen solution. Content of the program included the use of a Feelings Thermometer which is a self-rating scale ranging from 0 (most comfortable) to 100 (most discomfort imaginable). Role-playing through the use of both structured and unstructured case scenarios during which participants were required to understand a social situation following a few lines of given dialogue, describe the situation, clarify and then indicate the desired behaviour. Finally participants were taught about Reframing which required the redefining of an interpersonal interaction towards an alternative explanation that also fits the same given information. The SNAP treatment is, as yet, not evaluated. However, the writers report their initial experiences to indicate that such an intervention can be delivered, in a reliable manner and is well accepted by participants.
There have been some successful preventative programs developed and evaluated. The 'Interpersonal Problem-Solving Skills Training' (IPSST) program was developed by McLeavey and others (1994) to respond to the needs of hospitalised patients, including adolescents, at risk of suicide. The program had a focus on general problem-solving skills rather than patients' specific current problems. It used a cognitive-behavioural approach and consisted of six sessions delivered for one hour over six weeks and included discussions, reflective listening, modelling of desired problem-solving behaviours, role playing, sentence completion and prompting to encourage participants. Evaluation of the program, one year later, using a self-rated checklist of personal problem-solving ability and self-reports of perceived ability to cope with ongoing problems, indicated that participants had greater problem-solving skills than a control group. Also, they were more able to generate possible means of overcoming hypothetical interpersonal problems.

The area of preventative interventions, aimed at improvement of adolescent mental health, has attracted a high level of interest and research, as it is one area that provides the hope of preventive education on a broad scale. Rudd et al, state that 'development of a predictive and explanatory model of practical utility and one that could be generalised across both clinical and non-clinical populations is of paramount importance' (p.139).

Discussion as to the most appropriate target of suicide prevention programs was explored by Silverman and Maris (1995) who comment that 'treatments for identified groups are often expensive, time intensive and not always effective' (Silverman & Maris, 1995, p. 12). The writers suggest community mental health programs should be
presented to individuals and families in schools and workplaces, as such locations are appropriate for prevention training that is linked to target populations at risk of developing specific disorders.

School Programs.

Kalafat and Elias (1995) presented a range of reasons why suicide prevention programs should be presented in schools. The authors’ argued that since the inception of such programs in the early 1980’s, 'schools are where youth are at, until they drop out' and, therefore, provide a base for the broadest application of programs to youth. Also a program in a school has status, provides for linkages to health services and may be included as part of educational achievement. In an earlier evaluation of a school-based suicide awareness program, Kalafat and Elias (1994) reported several positive elements that had strengthened students likelihood of making responsible actions for themselves and others. One was that 64% of the students involved in an evaluated suicide prevention program reported that they found it easier to deal with their friends' problems, the researchers suggested this to be a secondary effect with potentially positive outcomes.

The careful placement of suicide prevention training programs into a school curriculum needs to be considered. A useful tool to assist in the determination of appropriate intervention points is an adaptation of the Haddon injury control strategies. Haddon (1980) developed a public health model that identified multiple causes of injury and proposed intervention points for primary prevention (pre-injury phase), secondary prevention (injury phase) and tertiary postvention (post injury phase).
phase). Haddon (1980) recommended a variety of intervention strategies be developed, for each phase that is appropriate to the injury or issues under study. The Haddon model allows for multiple causes of injury and is an adjustable model designed to be adapted to a presenting hazard. In 1995, Silverman and Maris adapted Haddon's model to suicide prevention. The paper, "Haddon's injury control strategies: Application to suicide prevention", placed problem-solving training in the phases of both primary (training in conflict resolution/anger management) and secondary prevention (health promotion and wellness programs in schools and the community). The model has similar elements to that proposed by Johns (1997), primary prevention is defined as information giving and awareness promoting to a broad student population. Secondary intervention is defined as working with a defined group on a general issue such as harassment or other social, classroom issues and tertiary intervention is defined as providing ongoing support and treatment for individual or small groups of students. Suicide prevention may fit into all three levels of John's model. Johns also identifies other ways of conceptualising mental health services in schools including models based on continua which allow for programs to be placed on a wider scope from primary prevention, early age intervention, early (after onset) programs and treatment of chronic issues. Aside from the issues that may relate to the type of conceptual model used to place a program in a school curriculum, Johns suggested the emphasis needs to be placed on determining the aims of a program and establishing whether it is effective in achieving them.

Orbach and Bar-Joseph (1993) developed a school-based program for adolescents in a general school population. The aims were to reduce suicidal tendencies, feelings of hopelessness and increase ego identity and ability to cope with problems. The
program was run in six schools and included cognitive strategies such as role playing, guided discussions and sentence completion tasks with the aim of developing student's skills and attending to a range of coping mechanisms, including problem-solving. All areas improved following the intervention; the researchers suggested that immunisation against suicide maybe possible through the application of such programs. The writers attributed that success of the program to its length of seven weeks, suggesting that this may have allowed for more inner development for the participants and also reducing defensive approaches to the topic (p.125). The researchers noted a minor trend in three schools where girls had responded more favourably to the program content than boys.

Berman and Jobes (1995) recommended the range of approaches to be included in primary prevention programs for adolescents should include the following. Depression management skills that cover cognitive-behavioural approaches to control depression and teaching of substantive skills such as self-reinforcement and assertiveness, interpersonal problem-solving skills together with training that challenges impulsivity and includes cause and effect reasoning. Training should also contain help seeking behaviour, including identification of community resources, use of peer referral skills and ways of seeking help; gaining and providing clear and current information; and preventative measures including environmental factors and early intervention programs for communities and schools.

Ciffone (1993) recommended similar content in suicide prevention programs as well as the use of film characterisations to gain student's responses through structured group discussion following viewing of the film. The researcher suggested discussion
should cover a range of topics including: exposure of erroneous messages, the
differences between normal and abnormal adolescent feelings and stress, self image,
more adaptive ways of coping with loneliness, rejection and other loss related stresses
and listening skills. The program was evaluated using a positive self-esteem checklist
given to each student prior to and then after the presentation which was done by
someone who knew the student well (possibly a parent) within the next few days. The
checklist included questions related to attitudes and behaviours used by students to
attend to their own needs. Ciffone concluded that overall the program had a positive
impact on students, although less so with students who had already considered
suicide. The author commented that he found the use of the film "to be an excellent
medium that is neither overly clinical nor too elementary" (p.203). Ciffone also
suggests an area for improvement could be material that prepares adolescents for
'emergency emotional situations'.

The above approaches are consistent with the work of Zenere and Lazarus (1997) in
Dade County Public Schools (DCPS) in Florida. Following a 5-year longitudinal
study of suicidal behaviours of students attending the DCPS, a district wide suicide
prevention and school crisis management program was established in 1994. The
program included a critique of eight prevention and early intervention programs
operating in North American school systems and found the following common
components as important to be included. A formal policy for addressing student
behaviours including prevention, intervention and postvention standards; procedures
for assisting students demonstrating suicidal behaviours including problem-solving
training; district, regional, and/or area mental health crisis response teams; suicide
prevention presentations to school administrators, faculty, staff members, parents and
students including resource materials for dissemination; mental health personnel on
campus to assess suicide risk, communication with parent/guardians, and make
recommendations for community mental health services. Training for school-based
mental health personnel in formal and informal assessment for determining level of
suicide risk was also included as well as a means for evaluation.

Zenere and colleagues (1997) introduced into the school curriculum a greater
importance on the development of communication abilities, coping skills and
problem-solving behaviours from kindergarten through to Grade 5. A related follow-
on curriculum during high school placed an emphasis on the needs of students moving
through the many multi-level changes of adolescence. The researchers evaluated the
number of reports of suicide and/or suicidal ideation made to the Youth Crisis
Hotline. The results indicated that from beginning intervention in 1989 and until 1994
the rate of suicidal ideation among young people remained stable while the rate of
suicide attempts and completions had dropped dramatically. There was a further
emphasis on the early identification of students who experience suicidal ideation or
suicide attempts with the aim of providing immediate intervention and further support
including training.

Conclusion.

The relationship between problem solving skills, suicidal ideation and reported
deficits in social problem solving competence levels in adolescents reported here offer
an opportunity to provide a preventative model of education through the teaching of
appropriate skills to young people prior to the time when suicidal ideation is likely to
emerge as a mental health issue. The balance of evidence suggests that the 
enhancement of practical problem-solving skills is a useful approach in order to 
increase the options people consider available to them during times of emotional 
stress.

The teaching of such skills should include cognitive behavioural aspects consistent 
with the research findings of Hawton (1997) and should be delivered to students in the 
early years of secondary schooling as recommended by the State Government of 

Thus, this study aimed to determine if teaching personal problem solving skills, 
through a school based preventative program using cognitive behavioural principles, 
would better equip adolescents to apply problem solving skills and generate ways of 
coping with problematic situations.

It was therefore hypothesised that, students exposed to a short problem solving 
training course would show a significantly higher level of problem solving skill than a 
control group not exposed to the program.
Methodology

Participants.

On hundred Year 10 students attending a Victorian, Department of Education Secondary College in Ballarat were approached to be participants. Seventy four students indicated a willingness to participate following the distribution of information about the study, which included parent/guardian signed consent forms for return to the researcher. Twenty six students did not return the forms, and so did not participate. The mean age of participants was 15.4 years (SD = 0.25 years) and of these 33 were males and 41 were females. The experimental group consisted of 21 females and 17 males. The control group consisted of 20 females and 16 males. Four existing class forms were randomly assigned, two to the experimental group and the other two made up the control group.

Materials.

The Problem-Solving Inventory Form B (Heppner, 1988) is a 35 item instrument which measures individuals perception of their problem solving skills when applied to real life situations. Heppner (1988) states that the Problem-Solving Inventory (PSI) has been used primarily as a research tool in the investigation of the relationship between problem solving appraisal and a range of cognitive,
affective and behavioural variables related to coping. The PSI consists of three sub scales and was developed using factor analytic procedure. The Problem-Solving Inventory (PSI) form B, was developed from the original Problem Solving Inventory (PSI) form A, through rewording 18 of the original 35 items to make the questions easier to understand. The three sub scales of the PSI form B are Problem Solving Confidence, Approach-Avoidance Style and Personal Control. An example question: *I am usually able to think of creative and effective alternatives to my problems*, is read by the respondent who then self scores their response to the statement on a 6 point Likert scale. The sum of the three sub scales combine to provide a total PSI score, which is used as a single, general index of problem solving appraisal. The first factor *Problem Solving Confidence* is defined as self-assurance while engaged in problem solving activities. The scale indicates the degree to which an individual believes and trusts their own problem solving abilities. The second sub scale, *Approach-Avoidance* is defined as the behaviour or general tendency of individuals to approach or avoid problem solving activities. The third factor is *Personal Control* and indicates the extent to which the individuals believe they are in control of their emotions and behaviours when solving problems. Low scores on all subscales and for the total PSI score represent positive appraisals of problem solving abilities.

The training program delivered to the experimental group and the testing of both the experimental and control groups was conducted in regular school classrooms. The rooms were equipped with tables, chairs, black board, chalk, television set and attached video player. Pens and paper were provided.
Procedure.

Four months before data collection the researcher gained ethics approval from the Human Research Ethics Committee of the Department of Education and the University of Ballarat (see Appendix A). Meetings were then held with the Principals of the identified Department of Education Secondary College in Ballarat and with the four "home group" teachers, who had pastoral care and curriculum program planning responsibility for the four Year 10 classes, in order to organise a meeting with students to request their participation in the study by having their parent's complete informed consent forms (see Appendix B). It was made clear to the Principal and teachers that the focus of the study was on problem solving training not suicide and that at no time before, during or after the training program would issues of suicide be raised directly with participants. All teachers agreed to participate and to assist. Social education classes were identified as the most appropriate lessons through which the training program could be delivered. Arrangements were made to send information letters to participant's parents and to seek consent. The letters explained the study, informed that ethics permission has been gained and detailed the confidentiality procedures (see Appendix C).

One week before the training program was due to start, meetings with the experimental group was held. Information stated on the letters sent home to participants' parents was repeated. Participants were informed of the proposed timeline. Confidentiality was assured. The researcher asked if participants had any questions or comments. Several questions were asked seeking clarity as to where the
training program would take place. Participants were told they could withdraw from the study at any time.

The training program was constructed in the form of a lesson plan by the researcher. The design was based on the recommendations of Bergman and Jobes (1995) and Ciffone (1993) including use of video characterisations. It was presented in two parts to each of the two experimental groups during their routine timetabled social science lessons. The program consisted of a one hour session one week (part one) for both groups and then, the following week, a second one hour session (part two) for both groups. The planned training program was shown to the regular teachers who endorsed its design prior to delivery. Teachers were present, but did not participate or make contributions to the training program. The program was delivered by the researcher who is a Psychologist and trained teacher. The program was completed within a two week time frame. At the start of each of the training sessions students in the classroom who were not to be participants left the classroom with a supervising teacher to fulfil their ongoing subject studies.

The first session (part one) started with a short game through which participants and the researcher were able to learn each other's names and build rapport. A five-minute overview of the program was given. Participants were asked not to discuss the training program with other students in their school. It was explained that the training program was for identified experimental group participants only and that some other students in the school had a different role in the study.
The formal part of the training program started with the concept of problem orientation so that participants were able to learn the ways in which they could gain an understanding of social situations. The goal was to train participants to appraise the ways in which people present interpersonal issues and the identification of problems as they emerge. Participants were asked to listen as the researcher explained the model and watch while he drew on a chalkboard the model of problem solving intended for them to learn. The model presented four steps. The first step was problem identification or sorting out the problem from other issues. The second step required participants to develop three to four possible responses, or actions they could take. The third step was the selection of one of the developed responses participants considered would achieve a desirable outcome; this step included the method by which it may be achieved. The fourth step was to develop a possible means to evaluate the outcome, such as feedback from friends. The group briefly discussed the model.

Participants then watched the first 2 minutes video vignette of a role simulation, performed by adolescent characters confronted by a life problem. It was part of a 10-minute video called 'Get a Life' by Andrew Fuller, developed as a classroom tool to help promote coping skills in young people.

Small working groups (4 to 5) were formed by participants to apply the four steps of the problem solving model to the problem presented in the video vignette. Prompting and encouragement was given by the researcher to support the development of the desired problem-solving skills. The process was then repeated three times so that participants were able to further develop their understanding of the model. At the end
of the session participants were reminded that the training program would continue for one more session the following week.

The following week the second part of the program (part 2) was delivered. The format followed a similar process to the first session. Vignettes 5, 6, 7 and 8 of 'Get a Life' were shown. Participants were again required to work in small groups to apply the four steps of the problem solving model.

At the end the second session the researcher facilitated a brief group discussion. The aim was to emphasise desired problem solving outcomes generated by small groups to solve the problems of the video characters. General comments and clarification questions about the problem solving model were sought. Both training sessions averaged about 50 minutes and at the end of each, participants were thanked for their involvement.

Following the training program the Experimental group and the Control group were administered the Problem-Solving Inventory form B (Heppner, 1988) (see Appendix D). The administration took place in the regular classroom, in the presence of the researcher, during the week immediately following the conclusion of the training sessions. The administration was held at four different times with the each of the experimental and control groups due to the impracticability involved in getting all 4 classes together at the one time.

Participants were seated separately and asked not to talk or refer to each other during the allocated 20 minutes for filling out the PSI. Participants were told that they would
be able to ask the researcher for assistance with any general directions or language
they did not understand. The administration of the PSI was conducted in a procedure
consistent with the requirements for administration set out in the PSI manual by
Heppner (1988).

Following completion of the PSI, participants were instructed to place their completed
PSI forms in a sealed, unmarked envelope, which they gave to the researcher. At the
end of the administration of the PSI participants were asked if they had any questions
or comments about the study and were thanked for their participation. All PSI forms
were scored after the training program was completed. Descriptive statistics were
computed for experimental and control group male and females for each of the PSI
subscales and the total PSI.

Analyses of Data

In order to determine possible differences between experimental and control groups
and males and females in both groups, two way analysis of variance (ANOVAs) using
SPSS statistical package were conducted.

All analyses in the study used a significance level of 0.05.
Results

The hypothesis tested was that adolescents exposed to a short problem solving training course would show a significantly higher level of problem solving skill than the control group.

Overall, this hypothesis was not supported, as participants in the experimental group did not score significantly lower on the total PSI than participants in the control group. However, on one subtest, Approach Avoidance, female participants in the experimental group did better by achieving significantly lower scores than females in the control group.

Table 1 presents totals, means and standard deviations for all participants in experimental and control conditions for PSI sub scales and total PSI scores.

Table 2 presents means and standard deviations for male and female experimental and control group participants on PSI sub-scale scores Problem Solving Confidence scale, Approach-Avoidance (Behaviour) scale and Personal Control scale. No significant difference was found between experimental or control groups on any of the subscales (Problem Solving Confidence F = 2.6, p<.05, Approach Avoidance F = 4.2, p<.05, Personal Control F = .82, p<.05) or total PSI (F = .06, p>.05). Thus, overall male and female participants exposed to the Problem Solving training program did not show a significantly higher level of problem solving skills than those who did not participate in the training.
However, there was found to be a significant interaction by gender and condition for one of the subscales, that of Approach-Avoidance, as depicted in Figure 1 (F=4.2, p <.05).
Table 1

Descriptive statistics for all participants in experimental and control conditions for PSI sub scales and total PSI scores

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th></th>
<th>Control Group</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S D</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Problem solving confidence sub scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29.71</td>
<td>9.28</td>
<td>38</td>
<td>31.67</td>
</tr>
<tr>
<td>Avoidance-Approach sub scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>53.42</td>
<td>13.25</td>
<td>38</td>
<td>56.72</td>
</tr>
<tr>
<td>Personal Control sub scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19.34</td>
<td>5.37</td>
<td>38</td>
<td>19.89</td>
</tr>
<tr>
<td>Participants Total PSI</td>
<td>105.42</td>
<td>20.64</td>
<td>74</td>
<td></td>
</tr>
</tbody>
</table>

No significant difference was found between experimental or control groups on any of the subscales (problem Solving Confidence $F = .711$, $p < .05$, Avoidance Approach $F = .714$, $p < .05$, Personal Control $F = .059$, $p < .05$) or total PSI ($F = .0622$, $p > .05$). Thus students exposed to the Problem Solving training program did not show a significantly higher level of problem solving skills than those who did not participant in the training.
Table 2

Descriptive statistics for Male and Female participants in experimental and control conditions for PSI subscale and total PSI scores

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D</td>
</tr>
<tr>
<td>Problem Solving Confidence sub scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>29.95</td>
<td>9.04</td>
</tr>
<tr>
<td>Female</td>
<td>29.41</td>
<td>9.84</td>
</tr>
<tr>
<td>Avoidance-Approach Style sub scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>54.52</td>
<td>13.31</td>
</tr>
<tr>
<td>Female</td>
<td>52.06</td>
<td>13.46</td>
</tr>
<tr>
<td>Personal Control sub scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>17.86</td>
<td>5.13</td>
</tr>
<tr>
<td>Female</td>
<td>21.18</td>
<td>5.22</td>
</tr>
</tbody>
</table>

No significant difference was found between experimental or control groups on any of the subscales (Problem Solving Confidence F = 2.6, p < .05, Approach Avoidance F = 4.2, p < .05, Personal Control F = .82, p < .05) or total PSI (F = .06, p > .05). Thus, overall male and female participants exposed to the Problem Solving training program did not show a significantly higher level of problem solving skills than those who did not participate in the training. However, there was found to be a significant interaction by gender and condition for one of the subscales, that of Approach-Avoidance, as depicted in Figure 1 below (F = 4.2, p < .05).
Therefore, the hypothesis that adolescents exposed to a short problem solving training course would show a significantly higher level of problem solving skill than the control group has not been fully supported. Participants in the experimental group did not score better on the PSI than those in the control group. However, there was some evidence that females in the experimental group were better at one aspect of problem solving, after the training program, by demonstrating that were more aware of their possible influence on problems than females in the control group.
Discussion

The present study was designed to evaluate the impact of a short problem solving training course on a group of adolescent students. Specifically the aim was to determine if there was a significantly higher level of problem solving skill gained by program participants when compared to a control group not exposed to the program. Problem solving is one of the coping strategies that may be drawn on by people, especially when they are depressed and possibly suicidal, to assist in the management of real life problems.

Overall, the results indicated no significant difference in problem solving ability between participants who undertook the problem solving training and those who did not participate. However, there was some evidence to indicate that female participants, who received the training, were more aware of their possible influence on problems than females in the control group. The extent to which people knowingly choose to confront or avoid a problem is an important skill in problem solving as it indicates an ability to decide if working on a problem will or will not be likely to change the outcome. If a person believes there is little or no chance of changing the outcome then they may decide to avoid the problem, but if they anticipate their active involvement may have some positive influence, they are more likely to approach, or confront, the problem. This may be measured by the PSI sub-scale of Approach-Avoidance. On the Approach-Avoidance subscale, females in the experimental group demonstrated more awareness of the potential of their actions to have an influence on the outcome of a given situation when compared to females in the control group. The
trend was not present for male participants when measured on the PSI Approach-Avoidance subscale.

The tendency for experimental group females, in the present study, to be more consciously aware of their potential impact on problems they are confronted with, has some similarities to research by Rotheram-Borus et al. (1990) who found that female suicide attempters were more aware of their problems and focused on attending to them. Vannatta (1997) indicated that females are more likely to use increased help seeking behaviours. The extent to which the sub parts of problem solving skills are state or trait for male or females remains uncertain, and identifying which parts of the current training program may have influenced the female experimental group skills is speculative.

It is interesting to note the work of Orbach and Bar-Joseph (1993) who commented that following interventions presented to male and female students, via a school based preventative training program, females responded more favourably to the program than boys. The researchers suggested that females and in general to be more sensitive and open to interpersonal issues of behaviour and thus may react more strongly to discussions on personal feelings, consequently benefiting from the program.

The interaction observed in this study may indicate a willingness by the females in the experimental group to be receptive to learning about problem solving. Although tentative, the present study provides some evidence that behaviours can be changed through provision of training in ways to approach interpersonal problems. Future research may also pursue possible gender differences in response to such programs.
Limitations

There are a range of reasons why the overall result may not have been significant.

Examination of the training program effects on participants was measured by the Problem Solving Inventory (PSI). It may be questioned as to the extent to which it is a valid measure of the group under study. The purpose of the PSI is to measure individual's perceptions of his or her own problem solving behaviours and attitudes, however, it does not have age related norms. The PSI was developed in America with estimates of internal consistency and validity of questions computed for each of the three sub scales and the total scale score drawn from three groups; a sample of undergraduate students; a sample of the elderly population, people with a mean age of 70, and a group of French-Canadian adults. It is uncertain how valid scores obtained on the PSI by Australian students, with a mean age of 15.4 years, in 1999 may be. The younger age of participants in the current study, their educational level and cultural mix are different. This may have placed stress on the validity of the PSI as an appropriate measurement tool. It is also possible that problems of cultural bias existed. Although the questions on the PSI are at an appropriate reading level for year ten students, it is possible that use of American language current in the 1980s may have placed a different emphasis on some questions and thus could have been less meaningful to the participants.

The PSI was administered as soon as practicable, one week, after the completion of the training program. Although experimental group participants were asked not to discuss the program content with other participants, the opportunity for participants in control and experimental groups to exchange information about content, and other features of the program was high. Although increased discussion about problem
solving among students may be seen as a desirable by-product of a training program, it may have affected PSI results due to exchange of information about the training program between the experimental and control groups, during other classes or break times, when students are able to freely talk with each other.

During the training program delivery and the administration of the PSI, participants' regular classroom teachers were present. Although there was no observable interaction between teachers and participants, the presence of teachers may have had an effect on the way in which participants approached the required tasks and completion of the PSI. Participants' level of comfort, ease with program content and awareness that, as a group, they were being watched by teachers, could have influenced their responses.

One aspect of the training program was the use of short video role play vignettes from Get a Life (Fuller, 1996). The segments were performed by Australian students of similar age to the participants. Although some participants made comments that indicated their understanding of the problems under study, the extent to which the role play scenarios were consistent with problems understood or experienced by the participants is not known. More familiar problems or participants own problems may have enabled them to better learn the desired problem solving skills. Ethical issues of participants confidentiality and amount of time available were among considerations for not using participants real problems.

The issue of time availability for an experimental program to be introduced into a school curriculum is of relevance to the outcome. In 1995, Kalafat and Elias
reviewed the needs and conceptual bases of school-based youth suicide programs. Kalafat and Elias (1995) commented that although schools see prevention programs as important, there is a limited amount of time and resources that can be allocated to specific issues. Although the present study was not presented as suicide prevention program, the issue of introducing new classroom content is pertinent. Although willing to allow the research-training program to take place, and although the regular classroom teachers had made space for it by setting aside their pre-planned curriculum, they were keen to ensure that their regular classroom curriculum was not postponed for too long.

The amount of time allocated to the training program may not have been sufficient to bring about attitude and behaviour change. It ran for only two sessions, which meant that each of the two experimental groups received two hours of training. This can be compared to the 'Interpersonal Problem-Solving Skills Training' (IPSST) program developed by McLeavey et al. (1994) which constituted six one hour sessions presented over six weeks. The problem solving training may have been limited in its potential to impact on participant's problem solving skills. The content of the McLeavey and colleagues, work was greater than the present study due to the inclusion of more time for group discussions, training in reflective listening, and role playing by participants and sentence completion tasks. The complexities of introducing an adaptation of an intervention program into a school curriculum as a prevention program presents challenges of timing, appropriateness to existing curriculum and evaluation (Haddon 1980, Johns 1997).
It is of interest to note that responses to the Problem Solving Inventory did not measure how participants might use acquired learning when interacting with their peers who have problems. It is possible that the training program may have had long term, but unmeasured, effects in this area. The work of Kalafat and Elias (1994), when evaluating school based preventative programs, indicated that after attending such classes, students found it easier to deal with their friends' problems. It would have been of interest to investigate possible incidental outcomes from the current study.

Implications

This study attempted to adapt successful cognitive behavioural treatment programs for identified suicide attempters (Hawton, 1994: Hawton, 1997, McLeavey, 1994 and others) into a preventive training program for adolescents in a school population. As stated in the introduction, the extent to which research findings drawn from already diagnosed suicidal people can, or should, be applied to a normal adolescent population is unclear (Hawton, 1997). There are probably many reasons why groups of depressed and/or suicidal people might be more receptive to intervention programs aimed at increasing coping skills. It is possible that people who are actively grappling with issues of suicide are more focussed in their application to learning new ways to solve problems than would be a group in the general population.

The current study involved a sample of 74 participants. Of the 100 students approached, 26 did not return permission forms. The reasons for not participating are not known. However, students forgetting to give forms to their parents and/or return
them to the researcher is highly feasible. Nonetheless, it is also possible that some students made an active decision not to continue. Although speculative, it maybe an indicator of independence in decision making. Thus, the sample may not have been truly random or representative. As a consequence of the 26 students not participating in the current study, it cannot be considered as a truly representative sample of Year 10 students attending the school selected for the study. The extent to which behavioural changes, following the training program, can be attributed to the general adolescent population is limited.

Students were not aware that the study was indirectly connected to suicide prevention. For those who chose not to be participants, there may have been issues relating to the influences made on potential participants by their parents, family, friends, or other school students. Possible concerns about missing time from their regular class curriculum content may also have been influential. Johns (1997) commented that mental health services and programs are, at times, confronted with participants who are not willing or allowed to be involved.

While a single school based program is not, in itself, sufficient to achieve the goals of suicide prevention, it is important for ongoing and evaluated research to continue so that factors that might influence suicidal behaviour can be better understood. Schools have been, and will continue to be, identified as appropriate places to deliver a wide range of preventive programs to young people. The State Government of Victoria 'Suicide Prevention, Victorian Task Force Report' (1997) recommendations support the place of researched and evaluated preventive programs in the education curriculum. It is therefore important for measured examination of programs, including
the current research, to take place in order to gain a better understanding of what does or does not influence young people to adopt well informed coping skills. Roberts (1999) suggested a body of researched information does exist about preventative programs that can be presented to young people, it includes the sub-set of problem solving skills. Roberts proposed that intervention can be successfully offered to a school-based group. He stated "this offers cost effective means of delivering programs to young people by making use of resources that already exist such as, school psychologists, teachers and nurses. However, further research is needed to investigate facilitator selection and effectiveness" (p.55). The work of Fydenberg and Lewis (1994) identified two styles of coping, one is a general style of coping that is not problem specific the second is problem specific. The features of each styles and potential interplay between the two is an area that offers more scope for research and application via preventative training programs.

An informed combination of a range of approaches that are designed to meet the needs of identified groups, as well as and the general population, is required. Utilisation of Haddon's "Injury Control Strategies: Application to Suicide Prevention" (Silverman & Maris, 1995), in conjunction with other evaluated models, should continue to be seen as effective approaches in program design. They also show understanding of multiple factors in learning as well as objective development and identification of cost effective interventions. It is possible that the current study could have made use of such a concepts in its design rather than adapting existing training programs that were designed for suicide attempters. However, as stated in the introduction, the weight of information from evaluated intervention programs has come from research with groups of already identified suicide attempters. In contrast,
the body of evaluated research into school-based and general population preventative programs is poor.

Conclusion.
The need for appropriately targeted, well designed suicide prevention programs, that provide training problem solving and other coping skills, continues to be of importance. As efforts progress in the design, implementation and evaluation of suicide prevention training programs, a greater body of research will accumulate. This could have the effect of helping to create a climate in which different approaches can be discussed, explored and developed towards being an ongoing part of the wider spectrum of prevention and, therefore, have a positive cumulative effect. It is hoped that the current research may contribute to such a body of inquiry through raising awareness of design aspects, including length of program and age of participants involved when teaching problem solving skills.

Recommendations for future research.
The need to conduct more rigorous evaluation of programs delivered to the general population and the possible transferability of programs between different population groups continues to be important. The area provides opportunity for future research as to the degree to which females do or do not make more conscious decisions before confronting problems, and the extent to which such decisions are beneficial to the outcome of a presenting problem. The extent to which training programs may be successful as preventative interventions in the general population and thus reduce suicide and suicidal ideation requires ongoing research. Of further importance to
research is evaluation of the possible effect that training programs attended during adolescence may have on participants later in life when they are confronted by real problems that require them to resort to knowledge they may have gained but not used until needed by friends, family or self.
References


Dear Mr Blick,

Thank you for your letter of 5 January 1999, in which you request permission to conduct a research study in government schools entitled 'The Effects of a Problem-solving Training Program on Adolescents Problem-Solving Skills.'

I am pleased to advise that your research proposal is approved in principle subject to the conditions detailed below:

1. You obtain approval for the research to be conducted in each school directly from the principal. Details of your research, copies of this letter of approval and the letter of approval from the relevant ethics committee are to be provided to the principal. However, should your institution’s ethics committee require significant changes, these changes must be submitted to the Department of Education for its consideration before you proceed. The final decision as to whether or not your research can proceed in a school rests with the principal.

2. No student is to participate in this research study unless they are willing to do so and parental permission is received. Sufficient information must be provided to enable parents to make an informed decision.
3. As a matter of courtesy, a list of the schools which you intend to approach for your research should be provided to the General Manager (Schools) of the region(s) in which these schools are located. An outline of your research and a copy of this letter of approval should also be enclosed.

4. Any extensions to the research proposal, additional research involving use of the data collected, or publication of the data beyond that normally associated with academic studies will require a further research approval submission.

5. At the conclusion of your study, a copy or summary of the research findings should be forwarded to me at the above address.

I wish you well with your research study. Should you have further enquiries on this matter, please contact Dr Kevin Kee, School Community Support Branch, on 9628 4808.

Yours sincerely,

AVIS GRAHAME
Acting Assistant General Manager
School Community Support Branch

encl.
UNIVERSITY OF BALLARAT
HUMAN RESEARCH ETHICS COMMITTEE
APPLICATION FOR ETHICS APPROVAL

You are reminded that projects should not commence without prior written approval from the University of Ballarat Human Research Ethics Committee (HREC). All applications must be signed by a School Research Higher Degree and Ethics Co-ordinator. (RHDE co-ordinator.)

To avoid delays in the process of approving your application, please ensure that:

- it is typed and all signatures required are provided (RHDE Co-ordinator and researchers);
- lay language is used;
- all relevant questions are answered;
- details of all that will be required of the participants in your project are fully described.
- copies of relevant supporting documents (e.g. surveys, questionnaires, letters to participants, etc.) are provided with your application.

FORM OF DISCLOSURE (plain language statement) AND INFORMED CONSENT

You are required, in general, to prepare a written statement describing the project so that potential participants may make an informed choice as to whether or not to participate. A copy of the statement must be given to all participants. See Appendix A for the format and information required.

ATTACHMENTS

Please ensure that the following attachments are enclosed with your completed application.

- Form of Disclosure and Informed Consent (see Appendix A - where possible, the plain language statement should be attached to the Consent Form. It must also be signed by the participant.)
- Evidence of permission to use public or private places off-campus.
- Evidence of approval by other Ethics Committee(s).
- Copy of any ethical approval form requiring signature if you are seeking external funding for your project.

Please return the completed form, signed by the School Research Higher Degrees and Ethics Co-ordinator, with relevant attachments to:

Executive Officer, HREC, Office of Research, Policy and Scholarship Unit, University of Ballarat

NUMBER OF COPIES REQUIRED:

Please check the meeting date at which your application will be considered so that you submit the correct number of copies:

Full meeting: an original and 13 copies will be required; (Cat. A. must go to full HREC meeting)
Executive meeting: an original and 3 copies will be required.

(Copies must be lodged with the Executive Officer, HREC, by MONDAY 12 noon of week prior to meeting at which application will be considered. School RHDE co-ordinators and School Administrative Officers have a calendar of meeting dates. Further information is also contained on the University home page on the WWW. Access through Branch of Academic Services.)

OFFICE USE ONLY:

Date received: ..............................................
UNIVERSITY OF BALLARAT
HUMAN RESEARCH ETHICS COMMITTEE
CATEGORY B APPLICATION: RESEARCH PROJECT

The original plus THREE copies (for an Executive Meeting) or the original plus THIRTEEN copies (for a full
HREC meeting) of your typewritten submission should be lodged with the Office of Research no less than two weeks
before the research project is due to commence. The project must not commence until ethical approval is given.
Full sets of applications must be in the Office of Research by Monday 12 noon one week prior to meeting at which
application will be considered. (Meeting dates can be obtained from RHDE Coordinator, School offices or the
Office of Research). Where the research is being undertaken by an undergraduate or postgraduate student, the
application for ethical approval must be made by the student's supervisor(s).

(A) TITLE DETAILS

Application Date: 20th January 1999

Proposed Commencement Date: 1st February 1999

Proposed Completion Date: 12th February 1999

Title of Research Project: The effects of a problem-solving training program on adolescents' problem-solving
skills

Person(s) Making Submission: Vicki Plaisted  Telephone: 5327 9676

This application is made for:
[ ] Research by a member of academic staff
[x] Research by a postgraduate student  (name: Neil Blick)
[ ] Research by an undergraduate student  (name: )

(B) APPROVALS

Declaration/s:
I/WE, the undersigned, accept responsibility for the conduct of the research outlined in this application in accordance
with the ethical principles specified by the Human Research Ethics Committee of the University of Ballarat and the
information provided in this application.

Student Applicant(s):  Telephone: 533344  Staff Applicant  
{please sign here}  83  

Staff Supervisor:  Telephone: 532790
{please sign here}  00

RHDE Co-ordinator to sign:
The research outlined in this application is soundly based, and the academic staff responsible for undertaking or
supervising the research are appropriately qualified.

School: Human Movement  Date: 

Signed:  Print Name: Dr Michael Reynolds

1/11/99
1. **Aims/research question/s, of the project.**

To examine the effect of a group training program, based on cognitive behavioural problem solving theory and techniques, on the problem-solving skills of adolescents.

2. **Participants.** Provide a brief description of the participants, the sample size, the source of participants, and the means by which they will be recruited.

Participants: Approximately 100 male and female Year 10 students enrolled in a Department of Education Secondary College in Ballarat will be asked to participate.

Both groups will be administered the Problem-Solving Inventory (PSI) form B (P. Paul. Heppner, 1988). Two classes of approximately 25 will be randomly selected to be the control group, total 50. The other students 50, also in classes of 25, will serve as the experimental group through their participation in the training program.

The participants will volunteer following an information session in which they will be given a general outline of the study. They will be able to ask clarifying questions and be given a consent form to be read and signed by their parents.

Following the return of the signed consents forms, selected participants, in the experimental group, will be presented with a two x 1 hour problem-solving sessions during their regular Social Science class time.

For students who choose not to participate and those assigned to the control group, regular class activities will be available. Student who do not participate will not be replaced.

3. **Procedure.** Provide a description of what participants will be asked to do, materials or equipment that will be used, who will collect the data, and where data collection will take place. If a questionnaire will be used, attach a copy to your application.

**Program Plan.**

The training program will follow basic principal of a cognitive-behavioural problem solving model drawing on the work of Hawton (1994, 1997) Hawton and Kirk (1987), Lerner and Clum (1990) and McLeavey (1994) with a focus on general problem-solving skills rather than on a participant's specific current problems. Included in the program will be; training in listening skills and assistance in developing appropriate problem-solving behaviours. This will take place following the watching of video role plays which are performed by adolescent characters, of similar age to participants, who are confronted by eight life problems. Prompting will take place to encourage participants as they develop their own problem-solving skills.
solving skills. Discussions in the training program will be about the problems confronting the video characters (not participants own problems).

The experimental group will complete the PSI immediately after the completion of the training program. The control group will also complete the PSI at this time in their regular classroom. Participants will be seated separately and asked not to talk or refer to each other during the allocated 20 minutes for filling out the PSI. Following completion of the PSI, participants will be instructed to place their form in an unmarked envelope, which will be sealed and then given to the researcher.

The researcher will collect the sealed envelopes, after there completion, and store them together in a safe location (locked filing cabinet in a Department of Education office strong room) prior to being opened for scoring the following day.

The training program.

Role simulation through the use of structured case scenarios presented on a 10 minute video 'Get a Life' by Andrew Fuller developed as a classroom tool to help promote coping skills in young people through the stimulation of facilitated group discussions. The video presents everyday problems and does not include any sensitive material such as child abuse, death, sexual issues or any other emotionally concerning topics. During each of the two training session participant will be required to watch four short video vignettes lasting from one to two minutes during which a small group of adolescents (characters) are confronting representative social situations that presents fictitious characters with a problem. Vignettes 1, 2, 3 and 4 will be used during this session following which participant will be required to work in small groups of 4 to

- Define the problem/s confronting the characters,
- Generate alternative actions that may lead to a positive outcome,
- Make decisions for the character as to what the participants would consider the best course of action that could be taken.

A group discussion with full group of participant (25) to assess different responses generated by small groups that would assist the video characters to solve problems that confront them.

Session 1.

The first session will start with a simple name game through which participants and the researcher all learn each others name and build rapport. The researcher will then give an overview of program so that participants will know what is to take place, the order in which it will happen and the learning outcomes expected. There will an opportunity for participants to ask questions or to seek clarity.

The first part of the program will focus on problem orientation so that participants are able to learn the ways in which they can listen and look at a social situations in order to appraise the ways in which people present interpersonal issues and the identification of problems as they emerge or where the potential for problems may be. The first of the 'Get a Life' video vignettes will be shown to participants, after which a list of issues that participants observed as present in the vignette will be generated through discussion led by the researcher and recorded on a white board for ready reference by participants, through out the training
Sally

I have received an email version of the additional material requested with regard to the application from V Plaisted / N Blick. I recommend that the application now be approved. I'll send a hard copy of the emailed material.

Richard
(D) FORM OF DISCLOSURE/INFORMED CONSENT (See Appendix A)

4. (a) Form of Disclosure: This is a plain language statement for participants and a description of the project for the layperson. This statement should be attached to, or backed on to the consent form. It must also be signed by the participant.

(b) Informed consent: From whom will you obtain consent, and how will this be done? Attach relevant consent forms with your application. (NOTE: If subjects are to be obtained from institutions that have their own procedures for granting ethical approval, BOTH this form and that required by the institution must be completed and approval obtained from BOTH sources before the project can commence).

Consent will be gained from both the experimental and control group participants, participants' parents, the Department of Education (DoE) ethics group and the school Principal of the school in which the research is to be conducted.

'Application to Conduct Research' the Victorian Department of Education ethics board has been made and approved in a letter dated January 11, 1999 from Avis Grahame, Acting Assistant General manager, School Community Support Branch.

The school in which the research is to be conducted has been approached and verbal permission gained.

The parent permission letter will be sent to the homes of participants 7 days prior to the start of the research.
Parent and Participant Consent Form.

Participant

1. I, ........................................
   hereby consent to participate as a subject in the Problem-solving research study as detailed above.

2. The research program in which I am being asked to participate has been explained to me and any matters on which I have sought information have been answered to my satisfaction.

3. I understand my son’s/daughter’s name will not be required.

   Information I provide (including questionnaires) will be stored separately and will not identify my son/daughter in any way.

   Results will be used for research purposes and may be reported in scientific and academic journals.

   I am free to withdraw my consent at any time during the study in which event my participation in the research study will immediately cease and any information obtained from it will not be used.

   All information will be confidential.

   PARTICIPANT (Student) SIGNATURE: ................................... DATE: ................

   CONSENT FORM TO BE SIGNED BY PARENT/GUARDIAN OF STUDENT INVOLVED.

   I am aware of the Problem-solving study to be conducted during February 1999.

   I understand that it is voluntary and that alternative classes are available should (Write name of Student here)..............................................................choose not to participate.

   PARENT/GUARDIAN SIGNATURE........................................ DATE....................

(E) CONFIDENTIALITY

5. EITHER outline the procedures you will follow to ensure the confidentiality of the information participants provide OR provide a justification for not protecting the confidentiality of the information participants provide. If you anticipate any secondary use for the data, please provide details. If any person with access to the data has another relationship with any of the participants (eg., family member,
Consent for participation in research study.

Dear Parents,

During February 1999, as part of a thesis for a Masters of Applied Science (Health Promotion) through the School of Human Movement at University of Ballarat, a research thesis is to take place. It will be conducted with students in Year 10 at your son/daughters school. The aim of the study is:

To examine the effect on adolescents of a group training program in problem solving skills

The research study may require your son/daughter to participate in two training sessions that will take part during regular classes. Each session will take the same time as would a regular one hour class. Alternate classes will be available if you or your son/daughter chooses not to be involved.

During the sessions students will participate in a course that will develop their problem solving skills thought the use of general classroom instruction methods, watching and analysing brief (2 to 4 minute) video role plays that depict adolescents confronting typical adolescents problems, group discussions and the use of problem solving techniques. Students will be required to complete a short self-assessment questionnaire about of their problem solving skills.

Please complete the following permission form and return it to the school office for collection by myself.

If you would like more information or talk about the research project please telephone me on 53 358202.

Thank you

Neil Blick
The Problem Solving Inventory

FORM B

P. Paul Heppner, Ph.D.

Name ____________________________________________ Date __________________

Age ___________ Grade or class (if you are a student) ______________________________________

Instructions

People respond to personal problems in different ways. The statements on this inventory deal with how people act to personal difficulties and problems in their day-to-day life. The term "problems" refers to personal problems that everyone experiences at times, such as depression, inability to get along with friends, choosing a career, or deciding whether to get a divorce. Please respond to the items as honestly as possible so as to most accurately portray how you handle such personal problems. Your responses should reflect what you actually do solve problems, not how you think you should solve them. When you read an item, ask yourself: Do I ever have this way? Please answer every item.

Read each statement and indicate the extent to which you agree or disagree with that statement, using the scale provided. Mark your responses by circling the number to the right of each statement.

<table>
<thead>
<tr>
<th></th>
<th>1 Strongly Agree</th>
<th>2 Moderately Agree</th>
<th>3 Slightly Agree</th>
<th>4 Slightly Disagree</th>
<th>5 Moderately Disagree</th>
<th>6 Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When a solution to a problem has failed, I do not examine why it didn't work</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>When I am confronted with a complex problem, I don't take the time to develop a strategy for collecting information that will help define the nature of the problem</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>When my first efforts to solve a problem fail, I become uneasy about my ability to handle the situation</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>After I solve a problem, I do not analyze what went right and what went wrong</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I am usually able to think of creative and effective alternatives to my problems</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>After following a course of action to solve a problem, I compare the actual outcome with the one I had anticipated</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>When I have a problem, I think of as many possible ways to handle it as I can until I can't come up with any more ideas</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>When confronted with a problem, I consistently examine my feelings to find out what is going on in a problem situation</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>When confused about a problem, I don't clarify vague ideas or feelings by thinking of them in concrete terms</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I have the ability to solve most problems even though initially no solution is immediately apparent</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Many of the problems I face are too complex for me to solve</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>When solving a problem, I make decisions that I am happy with later</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Read each statement and indicate the extent to which you agree or disagree with that statement, using the scale provided. Mark your responses by circling the number to the right of each statement.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Moderately Agree</th>
<th>Slightly Agree</th>
<th>Slightly Disagree</th>
<th>Moderately Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When confronted with a problem, I tend to do the first thing that I can think of to solve it.</td>
<td>2. Sometimes I do not stop and take time to deal with my problems, but just kind of muddle ahead.</td>
<td>3. When considering solutions to a problem, I do not take the time to assess the potential success of each alternative.</td>
<td>4. When confronted with a problem, I stop and think about it before deciding on a next step.</td>
<td>5. I generally act on the first idea that comes to mind in solving a problem.</td>
<td>6. When making a decision, I compare alternatives and weigh the consequences of one against the other.</td>
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<thead>
<tr>
<th>Page 1 Subtotal</th>
<th>CON</th>
<th>AA</th>
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<tbody>
<tr>
<td>Page 2 Subtotal</td>
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Score: ___________ ___________ ___________ ———— Total