CAN HAPPINESS BE TAUGHT?

THE EFFECTS ON SUBJECTIVE WELLBEING OF ATTENDING A COURSE IN POSITIVE PSYCHOLOGY THAT INCLUDES THE PRACTICE OF MULTIPLE INTERVENTIONS.

A thesis submitted in partial fulfilment

of the requirements for the Degree of

Master of Science in Psychology

in the University of Canterbury

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University of Canterbury

2007

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Abstract

Previous research has shown that humankind is not becoming happier, and that in fact symptoms of depression continue to rise, despite the belief of many that happiness is the ultimate purpose of human life. The purpose of this study was to investigate whether happiness can be taught through an intervention programme aimed at increasing levels of subjective wellbeing as measured by scales of self-reported happiness and depression. Participants attending a course based on research into Positive Psychology that included the practice of multiple validated interventions made up the experimental group (N=33), and participants in other community education courses made up the control group (N=41). A pre-intervention, post-intervention and follow-up design was used, with participants completing sets of questionnaires designed to test levels of happiness and depression, and additional questionnaires capturing demographic information and signature character strengths. The results of this study suggested that the intervention had a positive effect on increasing happiness and reducing symptoms of depression. The non-randomised groups resulted in a more depressed experimental than control group prior to the intervention. Generally speaking, it was not true that any subgroup benefited more from the intervention than others, nor were happier or more depressed than others. This study appears to support earlier research that found that subjective wellbeing could be increased through education and volitional behaviour. Implications for the findings are discussed in relation to group education and therapeutic intervention both for increasing happiness as well as reducing symptoms of depression.

1. Introduction

I believe that happiness can be achieved through training the mind.
- His Holiness the Dalai Lama (Lama & Cutler, 1998, p. 14)

At least since Aristotle (384 BC - 322 BC) (Aristotle & Irwin, 2000) argued that happiness is the ultimate purpose of human life, a mountain of literature on happiness and discussions on methods to achieve it has been raised. Despite the apparent interest in pursuing happiness, statistics in the western world show that levels of happiness have remained relatively stable at least since the 1950s (Easterbrook, 2003), and in fact depression continues to escalate as a major psychological problem (Seligman, 1992), with ten times more people believed to suffer from major depression now than in 1945 (Buie, 1988). Researchers are investigating whether people can be taught to be more happy and less depressed (Fordyce, 1983; Lyubomirsky, 2007; Seligman, 2004). The present study evaluates the results of an intervention that is designed to increase reported levels of happiness and decrease reported symptoms of depression.

There have been many definitions of happiness proposed over the decades through common use and research enquiry. Various dictionary definitions of happiness include "a state of well-being and contentment" (Merriam-Webster, 2005), "the condition of feeling or showing pleasure or contentment" (Oxford University, 2007) and the WordNet lexical database's definitions of a "state of well-being characterized by emotions ranging from contentment to intense joy" and "emotions experienced when in a state of well-being" (Princeton University, 2006). Happiness may mean different things to different people and a semantic discussion may be extensive and will only briefly be undertaken here. Hedonists consider happiness to be an experience of greater pleasure than pain, which can be assessed in different periods of time, such as over a year, or in a fleeting moment. The World Database of Happiness describes happiness as having three variants: 'overall happiness', which is a general judgement of how good life is, 'hedonic level of affect', which is how much pleasurable affect is experienced, and 'contentment', which is the perception of how well 'wants' are being met (Veenhoven, 2006). A term often used interchangeably with 'happiness' is 'subjective well-being', which is described as "the sum of life satisfaction plus positive affect minus negative affect" (Linley & Joseph, 2004, p. 5). Peterson (2006) concurs with this description by suggesting that subjective wellbeing is characterized by "relatively high levels of positive affect, relatively low levels of negative affect, and the overall judgement that one's life is a good one" (p. 84), the three constructs of which have been found to be highly correlated (Sheldon & Lyubomirsky, 2004). This present study uses a generalised definition of happiness, of "a positive emotional state that is subjectively

defined by each person." (C. R. Snyder & Lopez, 2007, p. 128).

The distant past provides evidence for the roots of many of today's notions on happiness. In Aristotle's great work on moral philosophy, *Nicomachean Ethics* (Aristotle & Irwin, 2000), he claimed that happiness is complete, self-sufficient and intrinsically valuable, and that human motivation is to pursue happiness as an end in itself. Epicurus (341 BC - 270 BC), another influential Greek philosopher added to the discourse on happiness in *Principle Doctrines* (Feldman, 2004) and has received popular credit for the favouring of maximising happiness through the uninhibited pursuit of pleasure (hedonism), although in fact he counselled the pursuit of mental peace, restraint and moderation (Woolf, 2004). Over centuries, leaders in many religions such as Buddhism, Christianity, Hinduism, and Islam have contributed substantially to discussions on the sense of meaning in life that is required to achieve true happiness. The philosophies of Confucius (estimated 551 BC - 479 BC) greatly influenced the traditional culture of China, and continue to provide guidelines for many throughout the world today. Confucius believed that humankind should cultivate its virtues through learning, and by doing so, take responsibility for creating its own happiness (Confucius, Legge, & Mencius, 1930).

Somewhat more recently, the United States of America's founders proved their belief in the fundamental right of people to pursue happiness. The United States Declaration of Independence, adopted on 4 July 1776 stated that "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness" (Jefferson, p. 1).

It seems that a large portion of the human population over the centuries has agreed on the desire for, and the right to pursue, happiness, and yet the population does not appear to have become happier. A focussed endeavour by a body of positive psychology researchers to build a robust database of knowledge is attempting to address the issue. This developing database, to which the present study is designed to contribute, has become known as 'positive psychology'.

1.1 Positive Psychology

A leader in the field, Csikszentmihalyi, describes positive psychology as "the study of positive aspects of human experience" (2003, p. 113), and he suggests that psychology should not just be about reducing pathology, but understanding qualities that make life worth living. Generally, researchers are using the term 'positive psychology' to refer to any aspect of psychology that primarily concerns itself with mental health, including the prevention of mental illness, and the promotion of psychological wellbeing. "These researchers are studying optimal human functioning in order to discover and promote the factors that allow individuals and communities

to thrive" (Sheldon et al., 2000, p. 114). In *Positive Psychology: An Introduction* (Seligman & Csikszentmihalyi, 2000), the authors describe positive psychology as "a science of positive subjective experience, positive individual traits, and positive institutions" (p. 5).

In 1998, Positive Psychology was named as a movement by the newly elected president of the American Psychological Society, Martin Seligman in his inaugural speech to the organisation, and was followed by a special issue of the American Psychologist (2000) on the subject. In an article in this issue, Seligman and Csikszentmihalyi caused some controversy at the implication that positive psychology was a new concept, making statements such as "the time has arrived for a positive psychology" (p. 7), and "a new science of strength and resilience" (p. 8).

It was certainly true that since World War II there had been a minimal amount of scientific research undertaken into the more positive aspects of the human experience. The historical focus of clinical psychology on mental illness and on alleviating the suffering and distress caused by debilitating mental conditions had understandably been necessary due to the urgency of addressing those conditions that had caused individual and social problems. These were particularly apparent during the period following World War II when soldiers, their families and societies were most visibly suffering under the impact of extraordinary stresses. Resources were required to understand and relieve psychological and emotional damage, and funding agencies were prioritising research into mental illness (Seligman, 2002b).

Those of the Humanist tradition particularly took some offence at the comments made about a 'new' positive psychology (Seligman & Csikszentmihalyi, 2000) and replied to the article with a reminder that "Carl Rogers has often been called the father of psychotherapy research. His research conceptions always emphasized growth toward more optimal functioning" (Bohart & Greening, 2000, p. 82). In his book *Motivation and Personality* (1954), Abraham Maslow entitled the last chapter *Toward a Positive Psychology* and described his emphasis on creativity and self-actualisation as 'positive psychology' (p. 353). It was understandable that Humanists felt their tradition deserved more recognition and credit for early contributions to the study of aspects of a positive psychology. In 1902, William James (1842-1910) had written about 'healthy mindedness' of which a part was the focussing on positive aspects of life, and viewing the world in a similarly positive manner.

In Seligman's speech at the first Positive Psychology summit in Lincoln, Nebraska in September 1999, he made another statement that many felt was unfairly critical of the scientific research tradition of decades of work particularly within the Humanist realm. Seligman stated that the eminent predecessors of positive psychology were recognised but that they had "somehow failed

to attract a cumulative, empirical body of research to ground their ideas" (1999). Taylor (2001) responded to this apparent criticism by pointing out the extensive research based on the science of the day by many esteemed psychologists. These included the psychologist and philosopher William James (1842-1910), Émile Coué (1857-1926) with the psychotherapy of 'optimistic autosuggestion', Henry A. Murray's (1893-1988) 'personology', Gordon W. Allport (1897-1967) who is frequently referred to as the 'father of personality psychology', Carl R. Rogers (1902-1987) with his person-centred approach to psychotherapy, the 'father of humanistic psychology' Abraham H. Maslow (1908–1970), Rollo May's (1909-1994) existentialism, and others too numerous to mention. In 2006, Peterson corrected the Positive Psychology movement's view of an historical lack of empirical research by stating that "there are many good examples of psychological research, past and present, that can be claimed as positive psychology" (p. 5).

The Positive Psychology movement was initially presented as new and separate from mainstream psychology. A firm differentiation was made between the perceived 'negative' nature of the existing knowledge database resulting from the study of pathology and mental problems, and that of the 'positive' approach of the study of what is good in the human mental experience. Extensive research over the years has been undertaken into the so-called 'negative' emotions that include fear, anger, and anxiety, as well as the explanations of their adaptive purposes for survival (De Terte, 2002; Gower, 2004; Levitt, 1968). Less well understood are the emotions that have been identified as 'positive', such as joy, surprise, curiosity, interest, contentment, love, and amusement (Fredrickson 2004, Watson 2002). Recent research by Fredrickson (1998, 2000, 2001, 2004) has shown that the experience of these 'positive' emotions leads individuals to engage in activities that develop them. A more integrated view of the complexity of human nature and experience is required, encompassing the interaction of both 'positive' and 'negative' emotions as inherently part of the human condition. This interaction includes some aspects of human experience that work well and others that may be dysfunctional.

If the study of positive psychology is effective in its stated aims of redressing the apparent imbalance in the psychological database that has been caused by the historical focus of clinical psychology on mental illness, then this should lead to a more balanced psychology without distinction between 'negative' and 'positive' psychology. Seligman originally proposed positive psychology be used to fulfil the lives of 'normal' people, stating that it could be used for "making normal people stronger and more productive" (Seligman & Csikszentmihalyi, 2000, p. 8). This view potentially excludes those people who suffer from a mental illness but who could benefit from interventions based on positive psychology.

A benefit of these various discussions on the historical precedents of positive psychology, existing research, and negative and positive emotions, was that they drew attention to the significant database of knowledge of positive human experience that had already been amassed, as well as the need for scientifically robust research grounded in "tough-minded, grown-up science" (Wylie, 2003, p. 3). Positive psychology as a concept was clearly not new, but the focussed attention and the explicit organisation of the movement gave momentum to the revisiting of old ideas and exploring of new ones, stimulating discussion, and attracting new researchers and funding.

The current and growing academic demand for information on positive psychology is apparent from the increase in the number of articles on the subject in scholarly journals. Several special journal issues have been published including the American Psychologist (American Psychological Association, 2000), Psychological Inquiry (2000), The Journal of Humanistic Psychology (Association for Humanistic Psychology, 2000) and the Review of General Psychology (American Psychological Association, 2005). The specialised Journal of Happiness Studies began publication in 2000. In January 2006, the inaugural issue of The Journal of Positive Psychology was published with the stated aim being "devoted to basic research and professional application on states of optimal human functioning and fulfillment, and the facilitation and promotion of well-being" (Emmons, p. 3).

The more popular press has also paid attention to the Positive Psychology movement and its researchers in recent years, including the US News and World Report ("How happy are you? Find out." 2001), Newsweek (Cowley & Underwood, 2002), USA Weekend (McCafferty, 2003), Time magazine (Wallis, 2005), and Psychology Today (Doskoch, 2005), amongst many others.

This present study takes into account the existing database of knowledge in the realm of positive psychology, as well as the requirement to use a robust scientific method of research. Participants are included regardless of whether any may have been diagnosed with mental illnesses, such as depression. The study takes into account both 'negative' and 'positive' perspectives by considering levels of happiness and subjective wellbeing, along with symptoms of depression.

1.2   Benefits of Happiness

Other than as an end in itself, what benefits can humankind reap from being happy, and hence from the attempt to find greater happiness?

Frederickson's Broaden-and-Build theory (1998) proposes that "positive emotions serve to broaden an individual's momentary thought–action repertoire, which in turn has the effect of building that individual's physical, intellectual, and social resources" (p. 300), leading to greater

resilience, adaptation and coping, and a broader array of behavioural options. Isen (1987) demonstrated an association between the experience of greater positive affect and more efficient and creative thought patterns. A further study concluded that the experience of positive affect leads to more integrated and flexible thought processes with greater identification of interconnections among thoughts and ideas (Isen & Daubman, 1984). Derryberry & Tucker (1994) proposed that the experience of 'positive' emotions leads to an expansion of attentional focus, allowing individuals to consider the greater context of a problem while processing the details, and that the experience of 'negative' emotions results in a narrowing focus. Many other studies have shown the benefits of experiencing and expressing positive emotions. Masters, Barden, and Ford (1979) provided support for the claim that positive emotions build intellectual resources through enhanced learning and performance, and an increased interest in learning. If direct personal benefits were not enough of a justification for the study of increasing happiness, a study by Isen et al. (1991) concluded that physicians experiencing positive emotion tend to make more accurate medical diagnoses.

The positive effects of greater happiness on physical health and longevity have been well documented, and include the following examples. A well-known study showed that nuns who expressed more positive emotion in autobiographical sketches lived longer and were healthier over the following seventy years than those nuns that did not (Danner & Snowdon, 2001). Ostir et al. (2000) found that greater subjective wellbeing may be a protective factor against physical illness in older adults and increase longevity. A team at the University College London tested the happiness levels of middle-aged civil servants in a study of risk factors for coronary heart disease, and found that people who had the greatest number of happy moments per day had the lowest levels of cortisol (a hormone that can be harmful if produced excessively), and plasma fibrinogen (a predictor of heart disease) (Stansfeld, Fuhrerb, Shipley, & Marmot, 2002).

Other studies have found correlations between more frequent positive mood and higher immune system functioning (Dillon, Minchoff, & Baker, 1985; Stone, Cox, Valdimarsdottir, & Jandorf, 1987; Stone, Neale, Cox, & Napoli, 1994). Moskowitz (2003) found that the experience of greater positive affect is associated with a lower risk of AIDS mortality.

Employers also have good reason to pay attention to the happiness of employees, as Keyes and Magyar-Moe (2003) found that "businesses with more employees who have high levels of employee well-being also tend to report greater customer satisfaction and loyalty, greater profitability, more productivity, and lower rates of turnover" (p. 420).

As may be expected, the experience of greater subjective wellbeing has shown associations with

fewer symptoms of psychopathology, particularly in terms of depression, suicide and paranoia (Diener & Seligman, 2002; Koivumaa-Honkanen et al., 2001). "Happy people are healthier, more successful, and more socially engaged, and the causal direction runs both ways" (Lyubomirsky, King, & Diener, 2005).

These reasons that include broadened personal resources and attentional focus, enhanced learning and decision-making, improved physical health and a reduction in psychopathological symptoms are among many good reasons for further research into whether it is possible to increase happiness, such as is undertaken by this present study.

1.3   Teaching Happiness

> Those who have thought about the inculcation of good habits, from
> Aristotle to the present, agree that doing so requires both theory and
> practice (Peterson, 2006, p. 21).

This present study seeks to address the question of whether it is possible to teach people to be happier through a combination of education and the practice of multiple interventions.

Twin and adoption studies have presented a case for a genetically determined set-point of happiness that may be as high as 80% (Lykken & Tellegen, 1996). Results of these kinds of studies have shown that there is a tendency to return to baseline happiness over time (Lucas, 2007; Suh, Diener, & Fujita, 1996) through adaptation to both positive and negative events and changes (Kahneman, 1999), suggesting that it may not be possible to maintain a higher level of happiness. A more commonly accepted model of happiness levels (Sheldon & Lyubomirsky, 2004) suggests a 50% happiness set-point, with 10% of happiness attributable to circumstances, and 40% to intentional activity. This research suggests that the intentional activities can "create a self-sustaining cycle of positive change" (p. 135). Further longitudinal studies are required to establish whether happiness levels can be maintained.

Learning about the psychological 'good life' may result in positive long-term outcomes for academic motivation and self-efficacy (Berkowitz & Bier, 2004). Since 1998, when Seligman taught the first reported academic course in positive psychology at the University of Pennsylvania, USA, similar courses for undergraduates and graduates have increased in number to more than two hundred universities and colleges around the world. No documented studies on the effects on attendees of these classes can be found.

School curriculum courses are being developed, with several implemented in the USA (High Tech High School, Philadelphia) and the UK (Berkshire, Oxford, Manchester). The classes include education and practice with optimism, hope, flow and strengths (Fineburg, 2007).

Planning is underway to evaluate the effect on the adolescent students' academic achievement.

Book formats have been used for teaching happiness, including *Authentic Happiness* (Seligman, 2002a), that includes suggestions for the practice of interventions. Decades of self-help books far too numerous to mention specifically, have had the obvious goal of enhancing subjective wellbeing. Data on the effectiveness of increasing happiness using a book format is not available.

Various researchers have made websites available to provide and monitor happiness programmes, for example www.authentichappiness.com and www.reflectivehappiness.com. Results of the web interventions have been the subject of study, and several specific interventions have been found to be effective at producing higher long-term levels of happiness (Seligman, Steen, Park, & Peterson, 2005). These are 'counting your blessings', and 'using your strengths regularly', while 'expressing gratitude' showed shorter-term positive effects. The subjects in the web-study were voluntary community participants with access to computers, and each subject participated in a single intervention.

Another format for teaching happiness has been through using electronic newsletters to administer a six-month, twice-a-week course (Dean, 2006) in which participants learn about the measurement, theory and interventions in positive psychology, and undertake one exercise per week. An uncontrolled retrospective analysis was conducted on those participants who completed life satisfaction and depression tests before and after the course, and it was noted that life satisfaction scores increased and depressive symptoms decreased (Seligman, 2004).

Research is underway to test whether sustainable increases in happiness are possible through the practice of intentional and effortful activities (Lyubomirsky, 2007). The research uses seven longitudinal studies with activities designed to enhance happiness, including expressing gratitude, practising optimism and kindness, and savouring the present. In addition, the researchers will test the programme's effect on clinically depressed individuals.

This present study uses a course to teach happiness through multiple interventions in a managed classroom environment, specifically, a positive psychology course held by UC Opportunity continuing education at the University of Canterbury. The course aims to balance the study of positive psychology with the practice of happiness interventions, and assess the effects of participation on levels of happiness and depression.

1.4   What Makes Us Happy?

> Fifty years of working in a medical model on personal weakness and on the damaged brain has left the mental health professions ill equipped to do effective prevention. We need massive research on human strength and virtue (Seligman, 1998, p. 2).

A substantial information database is available for understanding mental pathologies, and the psychological profession is well-equipped to deal with mental illness. The most commonly used and widely accepted diagnostic tool for clinical psychology in the United States of America and many other countries, including New Zealand, is the Diagnostic and Statistical Manual of Mental Disorders (DSM) (American Psychiatric Association, 2000), which documents recognised mental disorders for the understanding, treatment and prevention of mental illness. In the DSM, each of the mental disorders is conceptualized as a clinically significant behavioural or psychological syndrome. The prevalent use of this manual has resulted in the perception of a disease model of human functioning through categorising and pathologising human experience.

The emotional and psychological experience of being human is much more than disorder and dysfunction. In order to understand and build on the positive psychological aspects of human experience, a descriptive reference system to identify positive psychological traits has been developed to complement the DSM and create a more complete view of the human mental condition. The publication of 'Character strengths and virtues: a handbook and classification' (Peterson & Seligman, 2004) (CSV) was the result of research that was initially aimed at identifying virtues that were commonly valued across time and culture. Six 'core' virtues were identified, along with twenty-four measurable character strengths that express these virtues, and are listed in Table 1, below.

Table 1: Classification of Virtues and Strengths

Virtue	Strengths
1. Wisdom/Knowledge	creativity, curiosity, open-mindedness, love of learning, perspective
2. Courage	bravery, persistence, integrity, vitality
3. Humanity	love, kindness, social intelligence
4. Justice	citizenship, fairness, leadership
5. Temperance	forgiveness, humility, prudence, self-regulation
6. Transcendence	appreciation of beauty, gratitude, hope, humour, spirituality

A study into the relationship between character strengths and satisfaction with life (Park, Peterson, & Seligman, 2004) found that the strengths of zest, gratitude, hope and love were

consistently more strongly associated with life satisfaction than other strengths, and this specific finding is tested in the present study. A different study that identified the most and least endorsed strengths in many countries (Park, Peterson, & Seligman, 2006) is also assessed within this present study.

1.4.1.1 Material Goods

In a materialistic society, many believe that money can buy happiness. The humorist, Spike Milligan (1918-2002) is credited with saying "All I ask is a chance to prove that money can't make me happy". In Seligman's Authentic Happiness (Seligman, 2002a) the author reports on an often referenced study (that is subject to some methodological criticism by Doherty, Gerber, and Green (2006)) that was undertaken measuring the happiness of major lottery winners, paraplegics and a control group (Brickman, Coates, & Janoff-Bulman, 1978). It was found that the level of happiness of the lottery winners increased in the short term, but after a year, had reverted to a level that was similar to that of the control group. The level of happiness of the paraplegic group was perceived to decrease in the short term, and after a year had also reverted to a level that was very similar to that of the control group and the lottery winners. One significant difference found was that the lottery winners reported experiencing less joy in daily life events after the year. Other studies have reached a similar conclusion that, after basic needs of food and shelter are met, the connection between money and happiness is at most, slight, for example Myers (1996), Diener, Suh, Lucas, and Smith (1999), and Argyle (2001). The majority of people consider themselves to be rather happier than unhappy, above the neutral midpoint on happiness scales, regardless of their material wealth or where they live (Diener & Diener, 1996).

Frederick and Loewenstein (1999) maintain that people adapt to both positive and negative conditions, and that both good and bad events tend to lose the power to make people happy and less happy over time. Exceptions to this adaptation over time have been found for people who get divorced (Lucas, 2005) or experience unemployment (Lucas, Clark, Georgellis, & Diener, 2004), and these show signs of a much longer term of reduced subjective wellbeing. These adaptation studies did not account for individuals' efforts to improve their subjective wellbeing, such as through participation in a course or therapy.

According to Easterbrook in *The Progress Paradox*, (2003), most of the western world has material goods in abundance and a higher quality of life than at any other time in history, and yet self-reported happiness has not increased at the same pace, and in fact depression continues to grow as a mental health issue.

Although many may believe that a higher income would make a person happier and less

depressed, and the above-mentioned research argues against this view, the present study will consider the effect of participants' income levels on levels of happiness and depression.

1.4.1.2 Social Relationships

In Bradburn's classical work on wellbeing (1969), the author found that social relationships were one of the strongest correlates of positive emotions. Many research studies since then have strongly supported the relationship between social relationships and happiness, such as Myers (1999) study showing that more intimate relationships are associated with a higher quality of life, and Diener and Seligman (2002) found that the most happy people were also those who were highly social and had strong social relationships. In general, social support is thought to affect mental and physical health through its influence on emotions, cognitions, and behaviours (Cohen, 1988).

1.4.1.3 Marriage

Research into happiness has generated several studies on marriage. Data on subjective wellbeing after marriage has shown that the average person adapts within one to two years (Lucas, Diener, & Larsen, 2003), however the large standard deviation found in this study suggests that many gain a great deal of happiness in marriage, and many become much less happy. Mastekaasa (1994) found that married people are happier than those who are single, divorced, or widowed. Peterson (2006) established a consensus from multiple studies that 'being married' has a moderate correlation with happiness. This present study will explore whether those participants who are living with a partner are happier or less happy than those who are not.

1.4.1.4 Children and Pets

In *Stumbling on Happiness* (2006), Gilbert points out that the little research into the effect on happiness of having children suggests that children do not make parents any happier, and if anything, having children has a negative effect on parents' happiness, particularly during toddler and adolescent stages. Peterson (2006) summarised the results from multiple studies and determined that 'having children' has a 'zero to small' positive correlation with happiness. This present study will explore whether those participants who have children are happier or less happy than those who do not.

Pet ownership and interaction with animals, however, have been found to enhance mental and physical health (Allen, Blascovich, Tomaka, & Kelsey, 1991; Beck & Meyers, 1996; Roth, 2000) and decrease symptoms of depression (Johnson, 2003).

1.4.1.5 Religion and Meaning

Snyder and Omoto (2001) found that the devotion of effort to meaningful causes through

volunteering is a positive predictor of happiness. Many individuals find meaning through religion, and this too has been found to be a positive predictor of happiness (Condor, 1998). Findings revealed that people who were committed to a religion (that provides meaning) are relatively more likely to rate themselves as 'very happy' (Gallup Organization, 1985) and present a lower risk of depression, and report greater satisfaction with life (Smith, McCullough, & Poll, 2003).

1.5   Happiness Interventions

Deliberate interventions can encourage lasting happiness
(Peterson, 2006, p. 12).

The database of knowledge as to what makes us happy, and happier, continues to expand. Fordyce, an early researcher in the field, found that intentional activity could successfully increase happiness. He conducted several happiness intervention studies in which he taught 14 happiness-relevant strategies to students as part of their coursework, and found that happiness levels were increased by the practice of the set of exercises (Fordyce, 1977, 1983). The exercises were based on behavioural, cognitive and volitional activities. Many positive psychology studies since then have implemented and tested specific interventions in isolation. This present study combines multiple validated interventions to test the efficacy of a positive psychology intervention set on happiness and symptoms of depression.

Most happiness research into the efficacy of interventions has been conducted in the USA, the UK and Japan, by using large-scale lectures with college students, or via the internet. This present study is conducted in a small-group community education setting in New Zealand.

How to gain, how to keep, how to recover happiness is in fact
for most men at all times the secret motive for all they do.
- William James (1902, p. 76)

With the amount of effort that many give to the pursuit of happiness, it is worth noting what research tells us about which efforts are likely to meet with success. The interventions that positive psychology has found successfully to increase happiness are discussed, following, and many of these are included in the intervention set that is used in this present study.

1.5.1.1   Strengths
For the purpose of this study, 'strengths' refers to the 24 character strengths making up the 6 virtues as defined by the CSV (previous section 1.4). These strengths can be described as characteristics that define what is best about people, for example curiosity, bravery, and

kindness. Aristotle (2000) is credited with saying that true happiness can only be attained through the cultivation of human virtues through action. Seligman (2002b) suggests "the possibility that building strength is the most potent weapon in the arsenal of therapy" (p. 3) and that developing these strengths may provide buffers against mental illness, promote personal wellbeing and social good, and increase life satisfaction. In a study by Haidt (2002), it was found that undertaking activities that focus on an individual's strengths resulted in a relatively more enjoyable experience for the individual than non-strength based activities. In an internet study (Seligman, Steen, Park, & Peterson, 2005), researchers found that an intervention referred to as 'Using signature strengths in a new way', in which participants identified their own signature strengths and then applied them in a new and different way every day for a week, lastingly increased happiness and decreased depressive symptoms for at least six months. It was also found that those participants that used the intervention for more than a week, benefited from longer-lasting increases in happiness.

1.5.1.2 *Flow*

Csikszentmihalyi (1991) describes 'flow' as an optimal experience in which an individual has total control over, and is totally engaged in an activity, resulting in a loss of the sense of time and self. Some benefits of experiencing flow are described as building psychological capital and experiencing positive emotions (Peterson, 2006), and fostering persistence (Nakamura & Csikszentmihalyi, 2002). A flow activity demonstrates an optimal balance between challenge and skill (Moneta & Csikszentmihalyi, 1996), where the challenge is neither so far beyond the available skill level that it causes frustration, nor so far below the skill level that it is experienced as boring. Csikszentmihalyi (1998) suggests that the identification of flow activities should include clear goal-setting and balancing the perceived challenge and skill of activities, and that the activities are more likely to be engaging if they call on inherent strengths. Massimini & Delle Fave (2000) suggest a therapeutic intervention of restructuring daily life to include more flow experiences.

1.5.1.3 *Gratitude*

Gratitude is defined as a deeply felt sense of thankfulness (Emmons & McCullough, 2003). The Roman author and politician, Cicero (106 BC - 43 BC) believed that "gratitude is not only the greatest of virtues, but the parent of all the others" (Cicero & Grant, 1971, p. 78). At least as far back as 1924, Chesterton claimed that gratitude was the key to happiness. This assertion has been tested over the years with researchers finding that the habitual practice of gratitude tends to be associated with happier people. For example, Emmons and Crumpler (2000) found that the practice of gratitude resulted in experimental groups having a relatively higher satisfaction with

life and more optimistic expectations for the future. In another study, people who practised gratitude scored higher on scales of positive affect and psychological wellbeing (Emmons & McCullough, 2003). More recently, long-term benefits were found in an internet-based gratitude intervention (Seligman, Steen, Park, & Peterson, 2005), where those who made a daily note of three good things that happened to them every day for a week, still showed increased happiness and decreased depression six months later.

1.5.1.4 *Forgiveness*

Forgiveness is seen as a voluntary mental and emotional process wherein a person gives up feeling resentment against another for a perceived offence (Enright, 2001). Empirical studies on forgiveness number in the several hundred, and validated forgiveness interventions number more than twenty. Research has consistently shown that forgiveness can be taught, for example in Worthington (1998). Harris & Thoresen (2006) describe the success of the Stanford Forgiveness Project (2001) as evidence that "simply providing education about what forgiveness is, and is not, is a potentially powerful and brief intervention" (p. 31). Worthington et al (2000) added to the set of effective forgiveness interventions with the R.E.A.C.H. (Recall, Empathise, Altruism, Commit, Hold) programme, which is based on an empathy-humility-commitment model designed to promote forgiveness, and which was found to result in a high level of reconciliation and hope, and an increase in subjective wellbeing. Data linking forgiveness with health and wellbeing include the finding that higher levels of forgiveness were associated with higher levels of self-esteem and lower levels of anxiety and depression (Hebl & Enright, 1993). Other studies showed long-term benefits of group forgiveness interventions for increasing forgiveness and hope, and decreasing anxiety and depression (Freedman & Enright, 1996).

1.5.1.5 *Hope*

Early authors such as Menninger (1959) defined hope as a positive expectancy of goal attainment, and theorized that the process of treatment for mental illness requires the restoration of hope in an individual, from a state of hopelessness. Research with school and college students has found that hope has a significant relationship to academic achievement, and high hope is related to higher scores and a lower drop-out rate (C. R. Snyder, Michael, & Cheavens, 1999), significantly greater academic satisfaction (Chang, 1998), and elevated creativity (Onwuegbuzie, 1999). Much of the research into hope interventions has been made through group therapy. Participants in Klausner, Snyder and Cheavens' (2000) hope-based group therapy research, reported reduced hopelessness and anxiety, and a decrease in depressive symptoms as a result of practicing hope-building interventions.

Hope research has found that positive and challenging life goals were more adaptive than less positive and ambivalent ones (C. R. Snyder, Irving, & Anderson, 1991). This study provided suggestions for ways of setting challenging and achievable goals through documenting pathways to the goals and agencies for achieving them. It was found that goals are more likely to be achieved where they are concordant with the interests, motives, and values of an individual (Brunstein, Schultheiss, & Grassman, 1998; Sheldon & Elliot, 1999) and internally consistent (Sheldon & Kasser, 1995). Research has indicated positive effects on wellbeing resulting from striving for important personal goals (Sheldon & Houser-Marko, 2001) and practising the 'virtue' of hope (C. R. Snyder, Ilardi, Michael, & Cheavens, 2000).

1.5.1.6   *Optimism*

Optimism is experienced as a tendency to expect the best possible outcome (Seligman, 1992). Seligman presented evidence in The Optimistic Child (1996) that teaching ten year old children the skills of optimistic thinking and action can cut the rate of depression in half by the time of puberty. It has also been shown that building optimism lowers symptoms of depression (Seligman, Schulman, DeRubeis, & Hollon, 1999). According to Peterson (2000), people who are high in optimism tend to experience better physical health and have better moods. Taylor et al. (2000) present a case that demonstrates that by holding optimistic beliefs about the future, even unrealistic ones, can protect against illness. In Learned Optimism (1992), Seligman provides an 'A-B-C' (Adversity, Beliefs, Consequences) diary exercise designed and tested to increase optimism. He further develops this exercise in Authentic Happiness (Seligman, 2002a), adding 'D-E' (Disputation and Energization) which are the disputing of negative beliefs and the collecting of evidence, and energization to describe resulting actions.

1.5.1.7   *Mindfulness & Meaning*

> True happiness is not attained through self-gratification, but through fidelity to a worthy purpose.
> - Credited to Helen Keller (1880 – 1968)

Mindfulness is characterised by a flexible state of mind and an openness to novelty (C. R. Snyder & Lopez, 2007). Viktor Frankl (1905 – 1997) believed that finding meaning and purpose in life is the central tenet of effective therapy (1988), and he developed this belief into a form of psychotherapy known as Logotherapy (1963). In a randomised and controlled study, the practice of mindfulness resulted in an increase in levels of empathy and a decrease in levels of stress and depression (S. L. Shapiro, Schwartz, & Bonner, 1998). A 2003 study of cancer patients who were encouraged to practise meditation found a decline in mood disturbances and stress (Brown & Ryan). Franz Kafka suggested a 'Sit and Wait' meditation (Janouch, 1971), and Snyder and

Lopez (2007) proposed an intervention which actively increases awareness through meditation.

1.5.1.8   Altruism

'Altruism' is a term often used interchangeably with 'kindness', and implies a concern for, and action taken towards the welfare of another (Madsen et al., 2007). Philanthropy and altruism have shown an association with long-term subjective wellbeing and satisfaction with life. In one study, college students participated in activities of either fun or kindness to another, and it was found that the good feelings from the kind activities lasted far longer than those of the fun activities (Peterson, 2006). One of the results of an experiment at a Japanese college showed a significant increase in subjective wellbeing after students were asked to count their acts of kindness every day for a week (Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006).

1.5.1.9   Humour

Many of the strengths (Peterson & Seligman, 2004) are the subjects of ongoing happiness research, such as the study of humour in the context of wellbeing (Ruch, 2004). The APA Dictionary of Psychology (VandenBos, 2007) defines humour as "the capacity to perceive or express the amusing aspects of a situation". Lefcourt (1986) has undertaken an extensive series of studies into humour, and demonstrated the positive psychological impact of humour and laughter. One of the studies showed the positive effects of humour on the emotional response to stress, buffering the mood disturbances that result from experiencing negative life events (Lefcourt, 1990). Other studies have shown that humour is an effective coping strategy, with those individuals scoring high on measures of humour experiencing fewer symptoms of stress, and that the use of humour may improve immune system functioning and aid recovery from illness (Lefcourt, 2001, 2002). Another study found that the experience of humour may foster hope by competitively inhibiting negative thoughts with positive ones, which may also relieve stress and improve subjective wellbeing (Vilaythong, Arnau, Rosen, & Mascaro, 2003).

1.7   Measuring Happiness and Depression

> Happiness is primarily a subjective phenomenon 'for which the final judge should be whoever lives inside a person's skin' (Myers & Diener, 1995, p. 11).

The desired outcome of positive psychology research is to enhance happiness and wellbeing. In order to assess whether these outcomes are being achieved, it is necessary to be able to measure them. At least since Flugel (1925) used self-recording of emotional events and measurement of emotional reactions to study moods, researchers have been using questionnaires based on scales to measure subjective wellbeing. Veenhoven (2003) believes that happiness is a conscious state

of mind that can be measured by asking single questions and documenting the subjective responses. The high correlation of positive emotions has meant that short questionnaires usually display strong reliability (Lucas, Diener, & Larsen, 2003). For example the 5-item Satisfaction with Life Scale (included in this present study) estimates internal reliability over 0.80 (Diener, Emmons, Larsen, & Griffin, 1985). Reliability studies have found that reported subjective wellbeing is moderately stable and sensitive to changing life circumstances (Ehrhardt, Saris, & Veenhoven, 2000). Several questionnaires are in common use in the study of positive psychology, and of these, this study uses five that have been well validated.

It has been demonstrated that 'pleasant' (positive) and 'unpleasant' (negative) affects have different correlates (Barrett & Russell, 1998; Bradburn & Noll, 1969), and a separate study showed that these have a weak negative correlation (Watson, 2002). These studies showed that positive and negative affect are not at opposite ends of the same scale, and that levels of both may be experienced at the same time. For the purpose of this present study positive and negative affect were measured and assessed separately. The combined use of multiple and diverse scales for measurement allows for a multi-dimensional capture of emotional experience. For this present study, scales were used that measure happiness, unhappiness, satisfaction, positive and negative affect, and depression. The diversity of scales includes the utilisation of different time frames for the emotional appraisal, for example general feelings about life, emotional experiences in the previous week or previous 24 hours, and current emotional state.

Self-report measures will always be open to criticism due to the very nature of the subjectivity of responses. It was noted in the USA that due to the high social value of happiness, respondents may exaggerate their wellbeing in order to attain higher happiness scores in surveys (Veenhoven, 2000a). That apparent value component of self-selected happiness scores was also noted in this present study, which found that several respondents provided a written justification for scores that were entered on the lower end of happiness scales or the higher end of depression scales, although no explanation was provided for very high happiness scores.

This study tested the course attendees using multiple positive and negative scales, which used different time frames for assessment to investigate the effects of course attendance on self-reported levels of subjective happiness (including positive affect and satisfaction with life) and depression (including negative affect and unhappiness).

1.8   *Aims of the present study*

The science of positive psychology continues to build a database of information about what contributes to the subjective wellbeing of humankind. This present study uses what the Positive

Psychology movement has learned so far, to educate participants through attendance at a course that also provides a set of validated interventions for practice. The study aims to test whether happiness can be taught using this format, by assessing changes to levels of happiness and depression, with the expectation that happiness will increase and depression will decrease as a result of course attendance.

The design of the positive psychology course that was the context for this study, took into account the database of knowledge about what seems to make us happier and less depressed. A number of topics and validated interventions were assembled into an optimal set, with the intention of producing the greatest positive effect of increasing happiness and decreasing depression. These interventions had previously been validated in isolation (Seligman, Schulman, DeRubeis, & Hollon, 1999; Seligman, Steen, Park, & Peterson, 2005; S. L. Shapiro, Schwartz, & Bonner, 1998; Worthington Jr et al., 2000). Earlier research that showed a positive effect of the practice of a set of interventions on levels of happiness used interventions that had mostly not been individually validated (Fordyce, 1977, 1983).

Additionally, this study aimed to examine whether some participants were happier than others, and whether some benefited more from attendance at the positive psychology course than others. Previous research had found little effect on happiness of differences in age (Peterson, 2006), gender (Andrews & Withey, 1976; Inglehart, 1990; Myers & Diener, 1995), income level (Argyle, 2001; Diener, Suh, Lucas, & Smith, 1999; Myers & Diener, 1996), and whether participants have children (Gilbert, 2006; Peterson, 2006), and these variables are explored. Other variables examined for possible differences or moderating effects are level of education, living arrangements, employment status, and previous attendance at community courses.

Finally, this study aimed to explore the possible impact on levels of happiness and depression of participants having any particular character strengths.

2. Method

2.1 Participants

This study consisted of 74 participants attending courses held by UC Opportunity continuing education at the University of Canterbury. 33 participants attending courses in positive psychology formed the experimental group, and 41 participants forming the control group were attending courses in other subjects. All these participants completed a set of questionnaires at time 1/pre-course (T1) and time 2/post-course (T2). 65 of these participants (29 experimental group and 36 control group) agreed to complete a further set of questionnaires at time 3/follow-up (T3).

2.1.1 Experimental Group

Participants for the experimental group were recruited from two seven-week positive psychology courses that were held on the same day once a week for two hours, one from 1pm to 3pm, and the other from 4pm to 6pm. The courses were designed with the same structure and content, and presented by a UC Opportunity tutor.

The course participant numbers are presented in Table 2, below. A total of 45 attendees enrolled in the two courses, and all of these were approached for participation in the study, with a resulting 33 participants.

Table 2: Experimental Group Courses

Course	Total in Course (Approached)	Number of Participants
Science of Happiness (1pm-3pm)	20	15
Science of Happiness (4pm-6pm)	25	18
Total	*45*	*33*

2.1.2 Control Group

Participants for the control group were recruited from other community education courses, not including positive psychology courses. The courses were chosen for having a similar structure to the positive psychology courses, by being held in approximately the same timeframe, having a similar seven-week duration, and with participant attendance at one, two-hour session per week. Course selection also took into account the similarity of the amount of likely social interaction, in order to control for possible effects of the interaction on the wellbeing of all participants in similar types of community group courses. The courses from which control group participants were recruited were three History courses, an Italian course, and a course on the 'Nightsky'.

The course participant numbers are presented in Table 3, below. A total of 108 attendees enrolled in the five courses, and all of these were approached for participation in the study, with a resulting 41 participants.

Table 3: Control Group Courses

Course	Length of Course (Weeks)	Total in Course (Approached)	Number of Participants
History: George I	8	26	11
History: Medieval Machinations	8	26	5
History: Thistle, Rose & Fleur-De-Lys	8	26	10
Italian for Beginners	8	15	6
Nightsky	7	15	9
Total		*108*	*41*

2.1.3   Demographics

Each participant was asked to provide demographic information, consisting of age, gender, educational level reached, current living arrangement, employment status, income level, whether they were living in a town or rurally, number of community education courses previously attended at the University of Canterbury, and whether they had children.

The demographics (Table 4, below) include all participants that completed questionnaire sets at T1 and T2, regardless of whether they completed the third set of questionnaires at T3.

The mean age of all participants was 55.69, with an age range of 23 to 82 years. 56 (76%) of all participants were female and 18 (24%) participants were male. In the experimental group of 33 participants, 29 (88%) of whom were female and 4 (12%) of whom were male, the age range was 23 to 73, and the mean age was 50.48. In the control group of 41 participants, 27 (66%) of whom were female and 14 (34%) of whom were male, the age range was 40 to 82, and the mean age was 59.88.

Table 4: Demographic Information

Demographic Variable		Experimental Group	Control Group	All Participants
N		33	41	74
Age	Average	50.48	59.88	55.69
	Range	23 - 73	40 - 82	23 - 82
	Standard Deviation	11.05	10.85	11.84
		No. (%)	No. (%)	No. (%)
Gender	Female	29 (88%)	27 (66%)	56 (76%)
	Male	4 (12%)	14 (34%)	18 (24%)
Education	Uni: Post-Graduate	10 (30%)	9 (22%)	19 (26%)
	Uni: Degree/Diploma	20 (61%)	22 (54%)	42 (57%)
	School: School Cert	3 (9%)	6 (15%)	9 (12%)
	School: Some Schooling	0 (0%)	4 (10%)	4 (5%)
Living	Living Alone	10 (30%)	10 (24%)	20 (27%)
	Married	22 (67%)	30 (73%)	52 (70%)
	Flatting/Boarding	1 (3%)	1 (2%)	2 (3%)
Employment	Employed: Fulltime	6 (18%)	12 (29%)	18 (24%)
	Employed: Parttime	17 (52%)	6 (15%)	23 (31%)
	Retired	6 (18%)	20 (49%)	26 (35%)
	Other: Student	1 (3%)	0 (0%)	1 (1%)
	Other: Homemaker	2 (6%)	3 (7%)	5 (7%)
	Other: Unemployed	1 (3%)	0 (0%)	1 (1%)
Income	Less than $20,000 p.a.	5 (15%)	8 (20%)	13 (18%)
	$20,000 p.a. or more	13 (39%)	17 (41%)	30 (41%)
	$40,000 p.a. or more	8 (24%)	9 (22%)	17 (23%)
	$60,000 p.a. or more	7 (21%)	7 (17%)	14 (19%)
Town/Rural	Town	25 (76%)	35 (85%)	60 (81%)
	Rural	8 (24%)	6 (15%)	14 (19%)
Courses	0	20 (61%)	8 (20%)	28 (38%)
	1	7 (21%)	9 (22%)	16 (22%)
	2	4 (12%)	6 (15%)	10 (14%)
	3	0 (0%)	5 (12%)	5 (7%)
	4	2 (6%)	2 (5%)	4 (5%)
	4 +	0 (0%)	11 (26%)	11 (15%)
Children	none (n)	3 (9%)	6 (15%)	9 (12%)
	1 or more (y)	22 (67%)	29 (71%)	51 (69%)
	Unknown	8 (24%)	6 (15%)	14 (19%)

2.2 Procedure

This project, including procedures and questionnaires, was reviewed and approved by the University of Canterbury Human Ethics Committee.

Permission to conduct the questionnaires was obtained from UC Opportunity continuing education at the University of Canterbury. Potential experimental group members were identified as the participants in the positive psychology-based 'Science of Happiness' courses. Control group members were recruited from other community education courses that were operating in a similar timeframe.

All 45 attendees of the 'Science of Happiness' courses, being potential experimental group participants, were sent a Consent Form (0), a Research Project Information Sheet (Appendix B), an Instruction sheet (Appendix D) that included a form for the collection of demographic data, and a Pre-course (Time 1) Questionnaire Set (Appendix E). These course attendees were asked to return the completed questionnaire set, demographic information and signed consent form. 41 completed questionnaires were received.

108 potential control group participants in the other selected community courses were sent a Consent Form (0) and a Research Project Information Sheet (Appendix C). The Research Project Information Sheet was different from the one received by the potential experimental group, as for the control group it was deemed necessary for the Consent Form to be completed and returned prior to the dispatch of any unexpected questionnaires. On the return of 48 signed Consent Forms, the potential participants were then sent the Instruction sheet (Appendix D), which included demographic data collection, and a Pre-course (Time 1) Questionnaire Set (Appendix E) for completion and return. 43 completed questionnaires were returned.

The returned signed consent forms that held identifying information were coded to match the completed questionnaires, and filed separately from the questionnaires to ensure anonymity.

An incentive was offered to all prospective research participants for a chance of winning one of two $50 shopping vouchers. All letters and questionnaires that required returning, included stamped, return-addressed envelopes.

After completion of the courses, all participants were sent a Post-course (Time 2) Cover Letter (Appendix F) and a Post-course (Time 2) Questionnaire set (the same as the Pre-course Questionnaire set). Participants were given two weeks to return the Post-course (Time 2) questionnaire, after which time those who had not returned the questionnaire were contacted by phone or email requesting an update on the status of the return.

Table 5, below, documents the numbers and percentages of respondents at each time.

In the experimental group, 3 participants requested a new copy of the questionnaire, and those and several others were returned within 1 week of contact. 33 participants returned completed questionnaires. Of the 8 experimental group participants that dropped out at T2, 3 were not able to be contacted, 2 had left the country, 2 declined to complete the questionnaire due to being otherwise occupied, and 1 was too physically ill to complete it. In the control group, 2 participants could not be contacted and dropped out, and 41 completed questionnaires were returned.

A Follow-up (T3) Cover Letter (Appendix G) and a Follow-up Questionnaire (Appendix H) was sent approximately 3 months after course completion, to all participants who completed both the Pre-course (T1) and Post-course (T2) Questionnaires. Participants who did not return the questionnaire within 2 weeks were phoned or emailed. Of these, in the experimental group, 4 dropped out, with 2 having left the country and 2 not able to be contacted. 29 completed questionnaires were returned. In the control group, 5 could not be contacted and dropped out, and 36 completed questionnaires were returned.

Table 5: Participant Numbers

	Experimental Group	Control Group	All Respondents
Approached	45	108	153
T1/pre-course	41 (91% of Approached)	43 (40% of Approached)	84
T2/post-course (T1-T2 participants)	33 (80% of T1, 20% dropout)	41 (95% of T1, 5% dropout)	74
T3/follow-up (T1-T3 respondents)	29 (88% of T2, 12% dropout)	36 (88% of T2, 12% dropout)	65

2.3   *Questionnaires*

In order to test the effectiveness of attendance at the positive psychology course and the practice of the associated interventions, all participants were asked to complete a set of questionnaires at T1, T2, and T3. The T1 and T2 set (Appendix E) consisted of six questionnaires, being the Subjective Happiness Scale, Fordyce Emotions Questionnaire, Satisfaction with Life Scale, Authentic Happiness Inventory, Positive and Negative Affect schedule, and Center for Epidemiologic Studies Depression scale. These questionnaires provided nine dependent variable scores; six of these measuring positive affect, and three measuring negative affect. The T3 questionnaire set provided two positive affect dependent variable scores (Appendix H). These were measured using the Subjective Happiness Scale, and the first question of the Fordyce Emotions Questionnaire. An evaluation of the reliability of the scales used was made by calculating Cronbach's alpha coefficients on the data from the T1 Questionnaire. An alpha of > .70 is considered to be satisfactory. In addition, all experimental group participants completed a Brief Strengths Test (Appendix I). The scales used are described below.

2.3.1   *Subjective Happiness Scale*

The *Subjective Happiness Scale* (Lyubomirsky & Lepper, 1999) is a self-report questionnaire designed to assess long-term subjective happiness (Appendix E Section 1). This questionnaire provided one positive affect dependent variable score. Results of 14 studies including 2,732 participants indicated that the scale has high internal consistency, is stable across samples, and good to excellent reliability was shown through test-retest correlations. "Construct validation studies of convergent and discriminant validity have confirmed the use of this scale to measure the construct of subjective happiness" (Lyubomirsky & Lepper, 1999, p. 137). The questionnaire consists of 4 items, each using a 7-point Likert scale, with the fourth item reverse coded. A single score is arrived at by summing the scores for each item and dividing the total by 4. The internal consistency of the four items of this measure was calculated with an acceptable alpha level of .85 at T1.

An example of an item from this scale is:

1.   In General I consider myself:
       Not a very happy person - 1   2   3   4   5   6   7 - A very happy person

The full questionnaire can be seen in Appendix E section 1.

2.3.2   *Fordyce Emotions Questionnaire*

The *Fordyce Emotions Questionnaire* (Fordyce, 1977) is a self-report measure of a person's current level of happiness (Appendix E Section 2). It consists of two questions, the first being a

question of general happiness on a 10-point Likert scale, and the second requiring a percentage calculation for the amount of time feeling happy, unhappy and neutral, with the three percentages totalling 100. This scale has been commonly used in research into happiness over 30 years, and has been shown to have significant validity coefficients with other commonly used happiness indicators. Completion of this questionnaire results in four scores, the first between 1 and 10, and the other three being part percentages of 100. Reliability analysis was not performed on the Fordyce Emotions Questionnaire scale due to the scale's construct.

Examples of questions from this scale are:

How happy or unhappy do you usually feel?

10   Extremely happy
9   Very happy
8   Pretty happy
7   Mildly happy
6   Slightly happy
5   Neutral
4   Slightly unhappy
3   Mildly unhappy
2   Pretty unhappy
1   Very unhappy

On the average, what percent of the time do you feel happy?   ____%

The full questionnaire can be seen in Appendix E section 2.

2.3.3   Satisfaction With Life Scale

The *Satisfaction with Life Scale* (Diener, Emmons, Larsen, & Griffin, 1985) was designed to measure life satisfaction using a 5 item questionnaire with 7-point Likert scales (Appendix E Section 3). Responses are aggregated to yield an overall score for each participant. Research has demonstrated acceptable psychometric properties for the scale (Diener, 1994). The alpha reliability test for the Satisfaction With Life Scale showed that the scale is internally consistent with an acceptable alpha level of .80 at T1.

An example of an item from this scale is:

1.   In most ways, my life is close to ideal
       Strongly disagree - 1   2   3   4   5   6   7 - Strongly agree

The full questionnaire can be seen in Appendix E section 3.

2.3.4   Authentic Happiness Inventory

The *Authentic Happiness Inventory* (Peterson, 2005) was selected for inclusion in this study as it

is a relatively new measure and the study provided an opportunity to correlate results with existing, previously more extensively validated questionnaires (Appendix E Section 4). The inventory was designed to measure overall happiness based on feelings in the previous week, using 24 items, where participants had to select 1 of 5 statements about the item. The 24 items scores from 'A' to 'E' were assigned values from '1' to '5', aggregated, and divided by 24, resulting in an overall score for each participant. The reliability analysis for the Authentic Happiness Inventory calculated an acceptable alpha of .92 at T1.

An example of an item from this scale is:

    1. A   I have felt like a failure.
        B   I have not felt like a winner.
        C   I have felt like I have succeeded more than most people.
        D   As I look back on my life, all I see are victories.
        E   I have felt I am extraordinarily successful.

The full questionnaire can be seen in Appendix E section 4.

2.3.5   Positive and Negative Affect Schedule

The *Positive and Negative Affect Schedule* (Watson, Clark, & Tellegen, 1988) is designed to measure positive and negative affect in order to appraise emotional state (Appendix E Section 5). The scale consists of 20 words that describe different feelings and emotions that may have been experienced in the previous 24 hours. 10 of the words make up a subscale for positive affect, and 10 make up a subscale for negative affect. Participants select on a 5-point scale from 'Very slightly or not at all' to 'Extremely'. Each participant has two overall scores for this measure, one for negative affect and one for positive, which are aggregated from the relevant 10 item scores for each. The 10 items in the Positive subscale had a calculated reliability alpha of .91 and the 10 items in the Negative subscale calculated .78 reliability, at T1.

An example of a positive and negative affect from this scale is, respectively:

	very slightly or not at all	a little	moderately	quite a bit	extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5

The full questionnaire can be seen in Appendix E section 5.

2.3.6   Center for Epidemiologic Studies - Depression scale

The *Center for Epidemiologic Studies - Depression scale* (Radloff, 1977) was designed to assess depressive symptomatology within the previous week in general population groups, and uses a 20

item, 4-point scale (Appendix E Section 6). This scale consists of 20 statements about the way a participant may have felt over the previous week, from 'A", 'Rarely or none of the time (less than 1 day)' through 'D", 'Most or all of the time (5-7 days)'. An overall score was calculated by assigning scores of 0 (zero) through 3 respectively to the participants' selections of 'A' through 'D', and summing these. The possible range of scores is 0 (zero) to 60, with higher scores indicating the presence of more depressive symptomatology. The alpha reliability was calculated at 0.89 for the 20 items at T1.

An example of an item from this scale is:

	Rarely	Some of the time	Occasionally	Most of the time
I was bothered by things that usually don't bother me	A	B	C	D

The full questionnaire can be seen in Appendix E section 6.

2.3.7   Brief Strengths Test

The *Brief Strengths Test* (Appendix I) designed by Petersen (2004), is an additional self-report questionnaire administered only to the experimental group participants. This test was used to determine the top three strengths of each of these participants from the CSV list of 24 strengths (section 1.4, Table 1), which includes for example creativity, kindness, and gratitude. Using a 5-point scale to measure the degree to which respondents favoured any of the 24 strengths, the 3 strengths scoring the highest were identified as the 'top strengths'. Where more than 3 strengths scored equally high, the participants made a choice of 3 of these that they believed were the strongest in their characters. The *Brief Strengths Test* used was derived from the much longer 240-item *VIA Signature Strengths* inventory (Peterson & Seligman, 2004) which was developed by these same authors of the CSV. The 240-item test was validated against self-nominated character strengths and correlated with commonly used measures of subjective wellbeing, and was found to have satisfactory alphas ($> .70$) and substantial test- retest correlations ($> .70$). Due to the time required to administer this lengthy 240-item test to participants in this study, the 24-item *Brief Strengths Test* was used. Scores from this shorter test had been found to converge with scores derived from the longer test at approximately $r = .5$, which was considered strong enough to provide data for an exploratory analysis of the moderating effects of strengths.

An example of an item from the *Brief Strengths Test* is:

		Never/ rarely	Occas- ionally	Half the time	Usually	Always
1	Think of actual situations in which you had the opportunity to do something that was novel or innovative. How frequently did you show CREATIVITY or INGENUITY in these situations?	1	2	3	4	5

The full questionnaire can be seen in Appendix I.

2.4   Positive Psychology Course and Interventions

All experimental group participants attended a course in positive psychology. At each of the weekly sessions over seven weeks, a topic of positive psychology was presented, and an intervention associated with that topic discussed and assigned for practice during the week, for discussion at the following session. The empirically validated interventions for happiness were selected from those presented in Section 1.5. Table 6, below, provides a brief description of the topics presented and discussed in each of the seven sessions, along with the associated interventions for that week.

Table 6: Course Content and Interventions

Session 1 Topic: Introduction to Positive Psychology and Positive Emotion

Content:	Definitions and benefits of happiness: The history and development of the positive psychology movement with particular reference to texts including: *The benefits of frequent positive affect* (Lyubomirsky, King, & Diener, 2005)*, Positive Psychology Manifesto* (Sheldon et al., 2000), *The broaden-and-build theory of positive emotions* (Fredrickson, 2001), and *Authentic Happiness (Seligman, 2002a).*
	Results of Intervention studies as presented in *Positive Psychology Progress: Empirical Validation of Interventions* (Seligman, Steen, Park, & Peterson, 2005) were reviewed.
	Discussion on the practice of gratitude.
Intervention:	Empirical evidence for Gratitude intervention presented in section 1.5.1.3.
	'Three Good Things In Life'
	Instruction: Every night for a week, write down three things that went well during the day and consider your part in the causal explanation.

Session 2 Topic: Strengths and Virtues

Content:	The history and development of Character Strengths and Virtues (Peterson & Seligman, 2004).
	Completion of Brief Strengths Test (Peterson, 2004) (Appendix I) to identify and discuss personal Signature Strengths, with reference to Haidt (2002).
Intervention:	Evidence for the use of this intervention is presented in section 1.5.1.1.
	'Using Signature Strengths in a New Way'
	Instruction: Use one of your identified signature strengths in a new and different way every day for one week.

Session 3 Topic: Hope

Content:	Overview of Hope Theory, and specifically The Will and the Way (C. R. Snyder, 2000; C. R. Snyder, Irving, & Anderson, 1991). Includes presentation and discussion of Goals, Hope versus Optimism, and the benefits and wellbeing associated with high hope.
	Results of intervention studies including those of Klausner, Snyder and Cheavens (2000), Snyder, Ilardi, Michael and Cheavens (2000), Chang (1998), and Onwuegbuzie (1999).
Intervention:	Empirical evidence for Hope intervention is presented in section 1.5.1.5.
	'Goal Checking: pathways and agency'
	Set aside five minutes a day for the first two days thinking about major goals (clear, attainable and prioritised). Set aside five minutes a day for the following two days thinking about a major goal and multiple pathways to that goal. Set aside five minutes a day for the last two days thinking about a major goal and your agency (strengths and motivation).

Session 4 Topic: Learned Optimism

Content:	Discussion of attribution styles, and the use of the CBT (Cognitive Behavioral Therapy) method of ABCDE (Adversity, Beliefs, Consequences, Disputing and Evidence, Energising) (Seligman, 2002a), Optimism theory (Peterson, 2000; Seligman, 1992, 1996) and optimism research (Maruta, Colligan, Malinchoc, & Offord, 2000).
Intervention:	Empirical evidence for Optimism intervention is presented in section 1.5.1.6.
	'Optimism A-B-C-D-E Diary'
	Keep an A-B-C-D-E diary of challenging experiences throughout the week.

Session 5 Topic: Forgiveness and Gratitude

Content:	Forgiveness and gratitude theory (Berry, Worthington Jr, Parrott, O'Conner, & Wade, 2001), REACH (Recall, Empathise, Altruism, Commitment, Holding) intervention studies and research (Freedman & Enright, 1996; Hebl & Enright, 1993; Thompson, Snyder, Hoffman, & et al, 2005; Thoresen et al., 2001; Worthington Jr, 1998; Worthington Jr et al., 2000; Worthington Jr & Wade, 1999), forgiveness process (Enright, 2001) and the strength of gratitude (Emmons & Crumpler, 2000; Emmons & McCullough, 2003).
Intervention:	Empirical evidence for Forgiveness intervention is presented in section 1.5.1.4.
	'5-step REACH process'
	Choose a person and situation that you would like to start the process of forgiveness with, and follow the REACH process.

Session 6 Topic: Flow

Content:	Presentation and discussion of flow characteristics, engagement, challenges and skills, flow theory (Csikszentmihalyi, 1991), and flow interventions (Csikszentmihalyi, 1998).
	Further literature review including Moneta and Csikszentmihalyi (1996) and Nakamura and Csikszentmihalyi (2002).
Intervention:	Discussion of flow interventions is presented in section 1.5.1.2.
	'Flow Diary and Practice'
	Instruction: At the end of each day take five minutes to record times of flow during the day, including the time of day, activity, and any other contributing factors. Identify the activities that result in flow and actively engage in these more frequently.

Session 7 Topic: Mindfulness, Meaning and Calling

Content:	Discussion on finding meaning, purpose and fulfilment in life, and the benefits to subjective wellbeing. Review of the mythopoetic tradition of Campbell (1993), Kafka's philosophy (Janouch, 1971) and Frankl's Logotherapy (1963).
	Literature review including *The pursuit of meaningfulness in life* (Baumeister & Vohs, 2002).
Intervention:	Empirical evidence for Mindfulness intervention is presented in section 1.5.1.7
	'Sit and Wait'
	Every day for a week, set aside ten minutes at night or in the morning, and sit and be. Listen to your thoughts without worrying, and write notes at the end of your meditation.

2.5 *Data Analyses*

Quantitative hypothesis testing methods were used to analyse data by employing the statistical program Statistica (Version 7).

Firstly, dropout groups at T2 and T3, and non-dropout groups were analysed to identify whether there were any significant demographic difference between dropout and non-dropout groups.

Thereafter, demographic variables were analysed to identify any significant differences between the experimental and control groups. Data for all 74 participants at T1/pre-course and T2/post-course was included, regardless of whether T3/follow-up questionnaire was completed. Independent t-tests by group were performed on the continuous demographic variables of Age and Previous Number of Courses. Chi-square tests were performed on the categorical demographic variables of Gender, Education, Employment, Income level, Living arrangement, Town/Rural and Children. The demographic variables with significant differences were then examined for correlations, in order to identify which, if any, demographic variables should be controlled for in subsequent analyses.

All questionnaires (except the Fordyce Emotions Questionnaire, due to the construct of the questionnaire) were tested for reliability at T1. Correlations were performed on the positive and negative questionnaires to verify that results were in the expected direction. Additional correlations were performed for each questionnaire across time (T1, T2 and T3), in order to verify that results were consistent across time.

MANOVA was selected for data analysis due to the multiple scores (9) collected from the same participants, and to reduce the probability of Type 1 errors and capitalising on chance, which may occur through the use of multiple ANOVAs. Advantage was taken of MANOVA's greater power in using combined dependent variables. Data was tested for compliance with assumptions for Multivariate Analysis. All 9 dependent variables provided scores at 2 times: T1 and T2. 2 of the positive affect dependent variables provided additional scores at T3. The nine dependent variables were grouped into six positive affect variables and three negative affect variables for two separate MANOVAs. The primary analysis was conducted using repeated measures MANOVAs for the six positive affect dependent variables, and the three negative affect dependent variables, by group (experimental and control) for T1 and T2. A secondary analysis was conducted on the results that included all of T1, T2 and T3 measures using a repeated measures MANOVA for the two positive dependent variables that provided T3 results. Independent t-tests by group (experimental and control) were calculated at T1 for each questionnaire to test for significant baseline differences, and univariate main and interaction

effects were inspected, with means, standard deviations and graphs. In addition, MANOVAs were conducted to explore the moderating effects of demographic variables and strengths.

3. Results

This chapter presents the results of the analyses of participant responses to the questionnaires. It also contains results of the analyses for dropout participants, demographic baseline tests, questionnaire correlations, and effects of additional demographic factors.

3.1 Dropouts

At each of T2 and T3, some participants in each group dropped out of the research project by not responding to the questionnaires provided at that time. At T2, the experimental group had a 20% dropout and the control group had a 5% dropout. At T3, both the experimental group and the control group had a 12% dropout (from T2) (details of dropout numbers presented in section 2.2, Table 5).

Tests were performed to identify any significant differences in demographic variables between the dropout group at each of T2 and T3, and those participants that did not drop out. As the primary analysis of this present study is for time 1/pre-course (T1) and time 2/post-course (T2) data, separate tests were conducted on dropout differences at T2, and those at T3. Independent t-tests by group were performed on the continuous demographic variables of Age and Previous Number of Courses. Chi-square tests were performed on the categorical demographic variables of Gender, Education, Employment, Income, Living arrangement, Town/Rural and Children. Results of the tests of demographic differences between the experimental and control groups at each time, can be seen in Table 7 and Table 8, below. No significant demographic differences were found between dropout and non-dropout groups at either of T2 (Table 7) or T3 (Table 8). At T2, Age was found to be approaching significance, with the dropouts more likely to be younger than those that remained. Also at T2, Employment was found to be approaching significance, with the dropouts more likely to be in the 'Other' category (student, homemaker, unemployed) and less likely to be retired.

In summary, those participants that did not drop out did not differ significantly on demographic variables from those that did drop out. No particular demographic group was significantly more likely to drop out than any other.

Table 7: Dropout Differences all participants T1-T2 (pre- to post-course)

Variable	Value	Dropout Participants N=10		Remaining Participants N=74		Test Results
Age	Mean (SD)	48.50 (16.03)		55.69 (11.84)		t(82)=-1.73, ns (p=0.09)
Courses	Mean (SD)	1.00 (1.05)		2.04 (2.80)		t(82)=-1.16, ns
Gender	Female	7	70%	56	76%	χ^2(1,84)=0.15, ns
	Male	3	30%	18	24%	
Education	Uni (Post-grad, Degree)	9	90%	61	82%	χ^2(1,84)=0.36, ns
	School (School C, Some School)	1	10%	13	18%	
Employment	Employed (Fulltime, Parttime)	6	60%	41	55%	χ^2(2,84)=4.89, ns
	Other (Stud., Homemkr, Unemp)	3	30%	7	9%	(p=0.09)
	Retired	1	10%	26	35%	
Income	Less than $20,000 p.a.	1	10%	13	18%	χ^2(3,84)=3.74, ns
	$20,000 p.a. or more	2	20%	30	41%	
	$40,000 p.a. or more	5	50%	17	23%	
	$60,000 p.a. or more	2	20%	14	19%	
Living	Living Alone	5	50%	20	27%	χ^2(1,84)=2.22, ns
	Married, Flatting	5	50%	54	73%	
Town/Rural	Town	10	100%	60	81%	χ^2(1,84)=2.27, ns
	Rural	0	0%	14	19%	
Children	(T1 data not available)					

ns=not significant

Table 8: Dropout Differences all participants T2-T3 (post-course to follow-up)

Variable	Value	Dropout Participants N=9		Remaining Participants N=65		Test Results
Age	Mean (SD)	56.78 (12.16)		55.54 (11.88)		t(72)=-0.29, ns
Courses	Mean (SD)	1.67 (1.80)		2.09 (2.92)		t(72)=0.42, ns
Gender	Female	5	56%	51	78%	χ^2(1,74)=2.25, ns
	Male	4	44%	14	22%	
Education	Uni (Post-grad, Degree)	8	89%	53	82%	χ^2(1,74)=0.29, ns
	School (School C, Some School)	1	11%	12	18%	
Employment	Employed (Fulltime, Parttime)	5	56%	35	54%	χ^2(2,74)=0.15, ns
	Other (Stud., Homemkr, Unemp)	1	11%	7	11%	
	Retired	3	33%	23	35%	
Income	Less than $20,000 p.a.	1	11%	12	18%	χ^2(3,74)=3.21, ns
	$20,000 p.a. or more	2	22%	28	43%	
	$40,000 p.a. or more	4	44%	13	20%	
	$60,000 p.a. or more	2	22%	12	18%	
Living	Living Alone	3	33%	17	26%	χ^2(1,74)=0.21, ns
	Married, Flatting	6	67%	48	74%	
Town/Rural	Town	8	89%	52	80%	χ^2(1,74)=0.41, ns
	Rural	1	11%	13	20%	
Children	None	2	22%	7	11%	χ^2(1,74)=1.14, ns
	Some	5	56%	46	71%	
	Unknown	2	22%	12	18%	

ns=not significant

3.2   Demographic Differences and Correlations

In order to ascertain whether any of the demographic variables should be controlled for, tests were conducted firstly to identify any significant differences between the experimental and control groups, and then these demographic variables were examined for correlations. Results of the t-tests and chi-square tests for demographic differences are presented in Table 9, below.

Both Age and Previous Number of Courses were identified as having significant group differences with $p<0.001$. The mean age of the experimental group (50.48) was lower than that of the control group (59.88), and the experimental group participants had attended fewer courses previously (0.70) than the control group (3.12). Participants in the experimental group were therefore more likely to be younger and have attended fewer courses than those in the control group. Gender and Employment were identified as having significant group differences with $p<0.05$. In terms of Gender, the experimental group included fewer males (N=4, 12%) than the control group (N=14, 34%). In terms of Employment, the experimental group included fewer retired participants (N=6, 18%) and more employed participants (N=23, 70%) than the control group (retired N=20, 49%, employed N=18, 44%). Participants in the experimental group were more likely to be female, and employed.

In summary, the experimental group was younger, had attended fewer courses previously, included fewer males and fewer retirees. The control group was older, had attended more courses previously, included more males and had more retirees.

Table 9: Demographic Differences

Variable	Value	EG (N=33)		CG (N=41)		Test Results
		N	%	N	%	
Age	Mean (SD)	50.48 (11.05)		59.88 (10.85)		t(72)=-3.67, p<0.001
Previous Courses	Mean (SD)	0.70 (1.10)		3.12 (3.26)		t(72)=-4.08, p<0.001
Gender	Female	29	88%	27	66%	χ^2(1,74)=4.82, p<0.05
	Male	4	12%	14	34%	
Education	Uni (Post-grad, Degree)	30	91%	31	76%	χ^2(1,74)=2.95, ns
	School (School C, Some School)	3	9%	10	24%	
Employment	Employed (Fulltime, Parttime)	23	70%	18	44%	χ^2(2,74)=7.51, p<0.05
	Other (Stud, Homemk, Unemp)	4	12%	3	7%	
	Retired	6	18%	20	49%	
Income	Less than $20,000 p.a.	5	15%	8	20%	χ^2(3,74)=.42, ns
	$20,000 p.a. or more	13	39%	17	41%	
	$40,000 p.a. or more	8	24%	9	22%	
	$60,000 p.a. or more	7	21%	7	17%	
Living	Living Alone	10	30%	10	24%	χ^2(1,74)=.32, ns
	Married, Flatting	23	70%	31	76%	
Town/Rural	Town	25	76%	35	85%	χ^2(1,74)=1.10, ns
	Rural	8	24%	6	15%	
Children	None	3	9%	6	15%	χ^2(1,74)=.30, ns
	1 or more	22	67%	29	71%	
	Unknown	8	24%	6	15%	

ns=not significant

Those demographic variables that were found to have significant differences between the experimental and control groups (Age, Previous Courses attended, Gender, and Employment) were then tested for correlations with each other.

Age and Previous Courses attended were found to have a small but significant correlation of r=.28, p<0.05, with the control group participants having a higher mean age and having attended more courses previously. For further analyses, it was decided not to control for Previous Courses due to the correlation with Age. Age and Employment were confounded, with all participants over the age of 60, except for 2, having a 'retired' employment value. The control group's greater number of 'retired' employment values is consistent with the higher mean age, and it was decided not to control for Employment in further analyses.

Therefore Age and Gender were considered for controlling effects in subsequent analyses.

3.3 *Dependent Variables: Correlations and Differences*

3.3.1 *All Dependent Variables at Time 1/Pre-course*

In order to verify that the set of positive and negative questionnaires were responded to as designed, all dependent variables (DVs) were correlated at T1 to verify the direction of correlations (i.e. positive DVs correlate positively with each other, negative DVs correlate positively with each other, and positive and negative DVs correlate negatively). All correlations were found to be significant to at least $p<.05$ in the expected direction. DV correlation results at T1 are presented in Table 10, below.

All six positive affect DVs correlated positively with each other, with $p<0.001$. These consisted of the three positive questionnaires of Subjective Happiness Scale, Satisfaction with Life Scale and Authentic Happiness Inventory, and the three positive subscales of two questionnaires, Fordyce Emotions Questionnaire Question 1, Fordyce Emotions Questionnaire Question 2a and Positive and Negative Affect Schedule-Positive. All three negative affect DVs correlated positively with each other, with $p<0.001$. These consisted of the questionnaire Center for Epidemiologic Studies–Depression, and the two negative subscales of two questionnaires, Fordyce Emotions Questionnaire Question 2b and Positive and Negative Affect Schedule–Negative.

All positive affect DVs correlated negatively with all negative affect DVs, with 13 of the 18 correlations having $p<0.001$, three correlations having $p<0.01$, and two correlations having $p<0.05$. The two lowest correlation scores ($p<0.05$) were between Positive and Negative Affect Schedule-Positive and Fordyce Emotions Questionnaire Question 2b-Negative ($r=-0.26$, $p<0.05$), and between Positive and Negative Affect Schedule-Positive and Positive and Negative Affect Schedule–Negative ($r=-0.24$, $p<0.05$). All DVs correlated in the direction expected by the positive and negative designs.

Table 10: Dependent Variable Correlations at T1/Pre-course

N=84 Dependent Variable at T1	1	2	3	4	5	6	7	8
1. Subjective Happiness Scale (Pos)								
2. Fordyce Emotions Questionnaire Q1 (Pos)	.78***							
3. Fordyce Emotions Questionnaire Q2a (Pos)	.63***	.69***						
4. Fordyce Emotions Questionnaire Q2b (Neg)	-.49***	-.55***	-.45***					
5. Satisfaction with Life Scale (Pos)	.56***	.49***	.40***	-.31**				
6. Authentic Happiness Inventory (Pos)	.63***	.57***	.47***	-.43***	.67***			
7. Positive and Negative Affect Schedule-Pos (Pos)	.52***	.46***	.44***	-.26*	.39***	.70***		
8. Positive and Negative Affect Schedule-Neg (Neg)	-.35**	-.44***	-.43***	.51***	-.34**	-.38***	-.24*	
9. Center for Epid. Studies-Depression (Neg)	-.46***	-.51***	-.55***	.46***	-.35***	-.47***	-.38***	.54***

*Note: * = p<.05, ** = p<.01, *** = p<.001*

3.3.2   Each Dependent Variable at all available times

In order to verify that the responses to each questionnaire correlated consistently across the times, DVs were each correlated at T1 and T2. The two DVs with T3 scores were also correlated at T3. Results of DV correlations across times are presented in Table 11, below. All correlations were found to be positive and significant to at least p<.001 for each DV at all times.

Table 11: Dependent Variable Correlations across Time

N=74 Dependent Variable			T1-T2 (r)
Subjective Happiness Scale (Pos)			0.75 ***
Fordyce Emotions Questionnaire (Pos)			0.70 ***
Fordyce Emotions Questionnaire (Pos)			0.64 ***
Fordyce Emotions Questionnaire (Neg)			0.53 ***
Satisfaction with Life Scale (Pos)			0.59 ***
Authentic Happiness Inventory (Pos)			0.64 ***
Positive and Negative Affect Schedule (Pos)			0.57 ***
Positive and Negative Affect Schedule (Neg)			0.42 ***
Center for Epidemiologic Studies–Depression (Neg)			0.42 ***

N=65 Dependent Variable	T1-T2 (r)	T1-T3 (r)	T2-T3 (r)
Subjective Happiness Scale (Pos)	0.76 ***	0.71 ***	0.45 ***
Fordyce Emotions Questionnaire (Pos)	0.68 ***	0.56 ***	0.54 ***

Note: * = p<.05, ** = p<.01, *** = p<.001

3.3.3   *Dependent Variable Differences by Group*

In order to ascertain whether the experimental group or control group participants were significantly happier or less happy than the other group before the courses began, baseline tests were computed.

Independent t-tests by group (experimental and control) were calculated for each DV to ascertain whether there were significant differences in responses to the questionnaires between the experimental and control groups at T1. Data for all 74 participants that completed questionnaires at T1 and T2 were included, even if T3 data was not completed (9 of 74 dropped out at T3). Results of the T1/pre-course/baseline t-tests with means, are presented in Table 12, below.

The t-values computed for all six positive affect DVs were found not to be significant. These were reported by the three questionnaires Subjective Happiness Scale, Satisfaction with Life Scale and Authentic Happiness Inventory, and the three subscales of Fordyce Emotions Questionnaire Q1, Fordyce Emotions Questionnaire Q2a and Positive and Negative Affect Schedule-Positive. Therefore there was no significant difference in positive affect scores

(happiness) between participants in the experimental and control groups before the courses began. The t-values computed for all three negative affect DVs were found to be significant with p<0.05. These were reported by questionnaire Center for Epidemiologic Studies-Depression and the two subscales of Fordyce Emotions Questionnaire and Positive and Negative Affect Schedule-Neg. An inspection of the means showed that the experimental group had higher levels of negative affect and depression at T1, so were less happy than the control group prior to attendance at the courses.

Both experimental and control groups appeared to be similarly happy when measuring happiness before the courses began, but the experimental group appeared to be more unhappy than the control group when measuring depression at that same time.

Table 12: Dependent Variables at Time 1/Pre-course - t-tests by Group

Dependent Variable at T1	EG N=33 Mean (SD)	CG N=41 Mean (SD)	t-test result
Subjective Happiness Scale (Pos)	4.86 (1.16)	5.13 (0.87)	$t(72) = -1.15$, ns
Fordyce Emotions Questionnaire (Pos)	7.09 (1.07)	7.37 (1.13)	$t(72) = -1.06$, ns
Fordyce Emotions Questionnaire (Pos)	54.85 (25.60)	58.20 (22.20)	$t(72) = -0.60$, ns
Fordyce Emotions Questionnaire (Neg)	17.03 (10.21)	11.07 (8.84)	$t(72) = 2.69$, $p<0.05$
Satisfaction with Life Scale (Pos)	24.03 (5.16)	23.71 (4.87)	$t(72) = 0.28$, ns
Authentic Happiness Inventory (Pos)	3.13 (0.50)	3.17 (0.44)	$t(72) = -0.39$, ns
Pos. and Neg. Affect Schedule (Pos)	34.18 (7.72)	32.76 (6.93)	$t(72) = 0.84$, ns
Pos. and Neg. Affect Schedule (Neg)	15.97 (4.97)	13.88 (3.57)	$t(72) = 2.11$, $p<0.05$
Center for Epid. Studies–Depressn (Neg)	8.24 (7.95)	5.05 (4.66)	$t(72) = 2.15$, $p<0.05$

ns=not significant

3.4 Assumptions for MANOVA

Consideration was given to the assumptions of normality, homogeneity of covariance variance, and independence of observation for multivariate analysis. The Shapiro-Wilks W test (S. S.

Shapiro & Francia, 1972) was used to assess normality and the Levene's test (Levene, 1960) was used to assess homogeneity of covariance variance. Results of assumptions tests can be seen in Appendix J Assumptions Testing, along with means, standard deviations, skew and kurtosis.

Of the six positive affect DVs, two violated the assumption of normality (Wilks $p<0.001$), and one approached violation of the assumption of homogeneity of covariance variance (Levene's $p>0.01$). All six of these variables had a negative skew of less than two, two variables had up to two outliers, one of which showed a ceiling effect. Of the three negative affect DVs, all three violated the assumption of normality (Wilks $p<0.001$), and one approached violation of the assumption of homogeneity of covariance variance (Levene's $p>0.01$). All three of these variables had a positive skew of less than two, and between one and three outliers.

According to Stevens (1995) the assumption of normal distribution in multivariate analysis is robust with respect to Type I error. Hill and Lewicki (2006) report on an extensive use of Monte-Carlo studies with normal distribution-based tests to determine sensitivity to violations of the assumption of normal distribution, and concluded that the consequences of such violations were not severe. They state that "the F test is robust to non-normality if it is caused by skewness rather than outliers" (p.137). Few outliers were observed in the DV scores, and when these were excluded from the normality tests, there was no significant difference in the test results. For the assumption of homogeneity of covariance variance, according to Stevens (1995), multivariate analysis is "robust if the group sizes are equal or approximately equal – largest/smallest < 1.5" (p.238). This condition is met in this study.

In considering the assumption of Independence of Observations, it was noted that group learning environments might cause some related learning effects. According to Glass and Hopkins (1984) "where treatments involve interaction among persons, such as discussion method or group counselling, the observations may influence each other" (p. 353). In this study, for the experimental group, although class discussions were used to promote understanding of the subject of positive psychology, much of the material was read, and all interventions were practiced independently, outside the classroom environment.

3.5 Repeated Measures MANOVAs by Group: T1-T2

In order to evaluate the intervention of this present study, analyses were conducted to determine whether there was an interaction effect of Group (experimental and control) and Time. Two multivariate analyses were performed; one with the six positive affect variables and one with the three negative affect variables, for T1 and T2. T3 scores consisted of two positive affect DVs and were analysed separately. Significant effects were identified, and for these, an examination

was made of the univariate test results, means and standard deviations, and graphs of means.

3.5.1   *Positive Affect T1-T2*

The multivariate effects for the positive affect DVs are presented in Table 13, below.

Table 13: Multivariate Effects (Positive) at T1-T2

Multivariate Effect	Test Result	
Group:	$F(6,67)=1.41$,	ns
Time:	$F(6,67)=123.71$,	$p<0.001$
Group x Time:	$F(6,67)=3.47$,	$p<0.01$

ns=not significant

The multivariate main effect of Group (experimental and control) was not significant with $p>0.05$. Therefore, when T1 and T2 scores were combined, the participants in the experimental and control groups did not differ with respect to their scores on the six positive affect scales. Univariate results are provided in Appendix K.1 but will not be discussed, as the multivariate effect was not significant.

The multivariate main effect of Time was found to be significant with $p<0.001$. Therefore, when experimental and control group scores were combined, it was significant as to whether scores were measured at T1 or T2. Univariate results with means and standard deviations (SD) are presented in Table 14, below. Two of the six positive affect DVs (Authentic Happiness Inventory and Positive and Negative Affect Schedule-Pos) showed significant effects, so these measures differed in whether they were taken at T1 or T2, regardless of which Group (experimental or control) they were in. As Table 14 shows, participants increased in happiness from T1 to T2, as measured by the Authentic Happiness Inventory. However, participants decreased in happiness from T1 to T2, as measured by the Positive and Negative Affect Schedule-Positive.

Table 14: Univariate Effects (Positive) for Time (T1-T2)

N=74 Dependent Variable / Scale	Test Result		T1 Mean (SD)	T2 Mean (SD)
Subjective Happiness Scale	$F(1,72)=0.53$,	ns	5.01 (1.01)	5.05 (0.91)
Fordyce Emotions Questionnaire Q1	$F(1,72)=1.45$,	ns	7.24 (1.11)	7.32 (1.01)
Fordyce Emotions Questionnaire Q2a	$F(1,72)=1.89$,	ns	56.70 (23.67)	59.66 (21.20)
Satisfaction With Life Scale	$F(1,72)=0.06$,	ns	23.85 (4.97)	23.70 (3.17)
Authentic Happiness Inventory	$F(1,72)=403.56$,	$p<.001$	3.15 (0.46)	4.06 (0.57)
Pos. and Neg. Affect Schedule-Pos	$F(1,72)=4.18$,	$p<.05$	33.39 (7.28)	31.77 (6.57)

ns=not significant

The multivariate interaction effect of Group (experimental and control) and Time (T1 and T2) for the six positive affect DVs was found to be significant with $p<0.01$. Univariate results with means and standard deviations (SD) are presented in Table 15, below. Four of the six positive affect DVs (Subjective Happiness Scale, Fordyce Emotions Questionnaire Q1, Authentic Happiness Inventory, and Positive and Negative Affect Schedule-Positive) returned significant univariate results.

Table 15 and Figure 1, Figure 2, Figure 3, and Figure 4, below, show that three of the four significant DVs (Subjective Happiness Scale, Fordyce Emotions Questionnaire Q1, Authentic Happiness Inventory) in the experimental group tended to have a higher positive affect score at T2 than at T1, and three of the four significant DVs (Subjective Happiness Scale, Fordyce Emotions Questionnaire Q1, Positive and Negative Affect Schedule-Pos) in the control group tended to have a lower positive affect score at T2 than at T1. In terms of the fourth significant DV (Positive and Negative Affect Schedule-Pos), it seemed that the control group decreased in positive affect and the experimental stayed at approximately the same level. (Time and Group interaction graphs of the two DVs with non-significant univariate effects are provided in Appendix K.2).

In summary, a significant interaction effect of Group and Time for positive affect was found, and there was some evidence that the experimental group participants were happier after the course than they had been before.

Table 15: Interaction Effects (Positive) for Group and Time

EG N=33, CG N=41 Dependent Variable	Test Result	Grp	Time 1 Mean (SD)	Time 2 Mean (SD)
Subjective Happiness Scale	F(1,72)=7.80, p<.01	EG	4.86 (1.16)	5.14 (0.94)
		CG	5.13 (0.87)	4.97 (0.88)
Fordyce Emotions Questionnaire Q1	F(1,72)=8.01, p<.01	EG	7.09 (1.07)	7.45 (0.83)
		CG	7.37 (1.13)	7.22 (1.13)
Fordyce Emotions Questionnaire Q2a	F(1,72)=1.52, ns	EG	54.85 (25.60)	61.06 (21.28)
		CG	58.20 (22.20)	58.54 (21.34)
Satisfaction With Life Scale	F(1,72)=0.33, ns	EG	24.03 (5.16)	24.18 (3.75)
		CG	23.71 (4.87)	23.32 (2.60)
Authentic Happiness Inventory	F(1,72)=15.78, p<.001	EG	3.13 (0.50)	4.23 (0.63)
		CG	3.17 (0.44)	3.91 (0.48)
Positive and Negative Affect Schedule-Pos	F(1,72)=5.49, p<.05	EG	34.18 (7.72)	34.39 (5.79)
		CG	32.76 (6.93)	29.66 (6.47)

ns=not significant
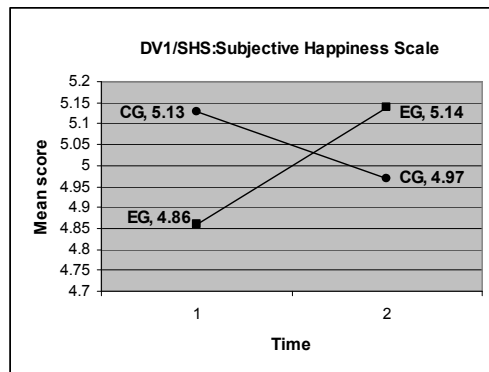
Figure 1: Subjective Happiness Scale T1-T2
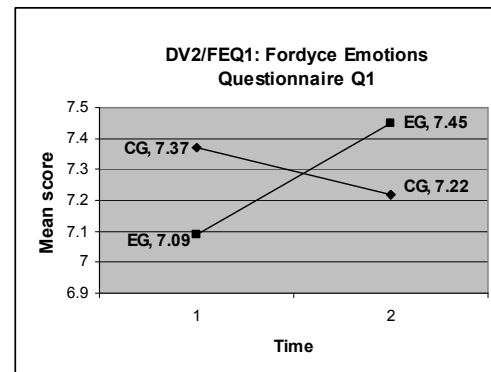
Figure 2: Fordyce Emotions Questionnaire Q1 T1-T2
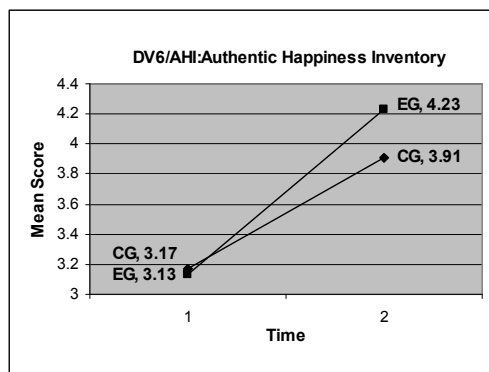
Figure 3: Authentic Happiness Inventory T1-T2
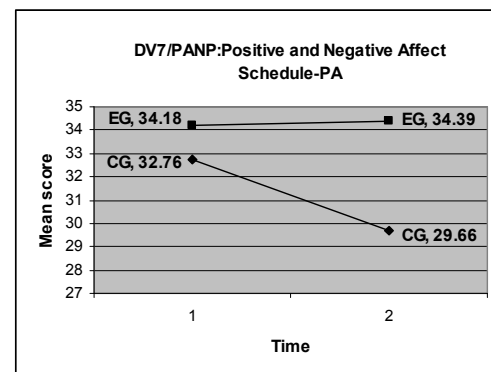
Figure 4: Pos. and Neg. Affect Schedule–Pos T1-T2

3.5.2 Negative Affect T1-T2

The multivariate effects for the negative affect DVs are presented in Table 16, below.

Table 16: Multivariate Effects (Negative) at T1-T2

Multivariate Effect	Test Result	
Group:	$F(3,70)=1.08,$	ns
Time:	$F(3,70)=0.60,$	ns
Group x Time:	$F(3,70)=4.31,$	$p<0.01$

ns=not significant

The multivariate main effect of Group (experimental and control) was not significant with $p>0.05$. Therefore, when T1 and T2 scores were combined, the participants in the experimental and control groups did not differ with respect to their scores on the three negative affect scales. Univariate results are provided in Appendix K.3 but will not be discussed, as the multivariate effect was not significant.

The multivariate main effect of Time was not found to be significant with $p>0.05$. Therefore when experimental and control group scores were combined, it was not significant as to whether scores were measured at T1 or T2. Univariate results are provided in Appendix K.4.

The multivariate interaction effect of Group (experimental and control) and Time (T1 and T2) for the three negative affect DVs was found to be significant with $p<0.01$. Univariate results with means and standard deviations (SD) are presented in Table 17, below.

Two of the three negative affect DVs (Fordyce Emotions Questionnaire Q2b and Center for Epidemiologic Studies-Depression) returned significant univariate results. The third variable (Positive and Negative Affect Schedule-Negative) was approaching significance with $p=0.08$. Table 17, Figure 5 and Figure 6 below, show that all three of the DVs in the experimental group tended to have a lower negative affect score at T2 than at T1, and all variables in the control group tended to have a higher negative affect score at T2 than at T1. (The interaction graph for the non-significant variable Positive and Negative Affect Schedule-Neg is provided in appendix K.5).

In summary, a significant interaction effect of group and time for negative affect was found, and there is some evidence that the experimental group participants were less unhappy/depressed after the course than they had been before, compared to the control group.

Table 17: Interaction Effects (Negative) for Group and Time

EG N=33, CG N=41 Dependent Variable	Test Result	Grp	Time 1 Mean (SD)	Time 2 Mean (SD)
Fordyce Emotions Questionnaire Q2b	$F(1,72)=7.07$, p<.05	EG	17.03 (10.21)	13.88 (8.06)
		CG	11.07 (8.84)	13.41 (9.25)
Positive and Negative Affect Schedule-Neg	$F(1,72)=3.17$, ns, (p=0.08)	EG	15.97 (4.97)	15.15 (5.18)
		CG	13.88 (3.57)	15.24 (5.49)
Center for Epidemiologic Studies–Depression	$F(1,72)=9.04$, p<.01	EG	8.24 (7.95)	5.48 (5.07)
		CG	5.05 (4.66)	6.90 (5.95)
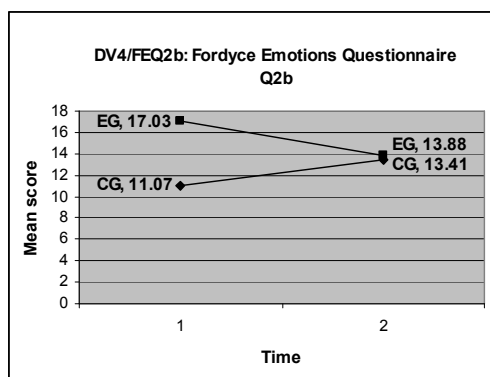
Figure 5: Fordyce Emotions Questionnaire Q2b T1-T2
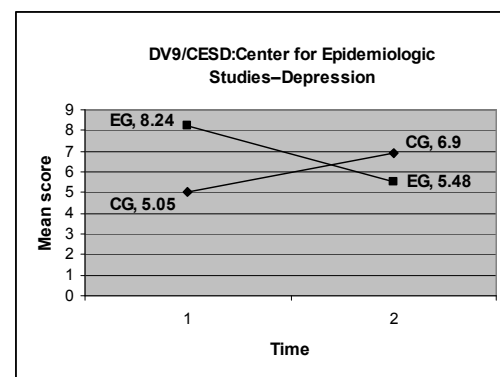
Figure 6: Center for Epidemiologic Studies-Depr T1-T2

3.6   Repeated Measures MANOVAs by Group: T1-T2-T3

A follow-up (T3) questionnaire recorded a third set of responses for two of the positive affect DVs: Subjective Happiness Scale and Fordyce Emotions Questionnaire Q1. In order to evaluate the intervention of this present study at three times (pre-intervention, post-intervention and three-month follow-up), an analysis is conducted to determine whether there is an interaction effect of Group (experimental and control) and Time.

Independent t-tests were computed to test for any significant difference between the Groups (experimental and control) at T1 for the 65 participants that completed questionnaires at T1, T2 and T3. The t-values computed for these positive affect DVs were not found to be significant, as reported by the questionnaire Subjective Happiness Scale ($t(63)=-1.51$, ns) and the subscale Fordyce Emotions Questionnaire Q1 ($t(63)=-1.17$, ns). Therefore there was not a significant difference in mean scores at T1 between the experimental group and the control group.

A multivariate analysis was performed on the two positive affect variables, for T1, T2, and T3, and the results are presented in Table 18, below. Significant effects were identified, and an examination was made of the univariate test results, means and standard deviations, and graphs of means.

Table 18: Multivariate Effects at T1-T2-T3

Multivariate Effects	Test Result	
Group:	$F(2,62)=0.65,$	ns
Time:	$F(4,60)=1.82,$	ns
Group x Time:	$F(4,60)=6.14,$	$p<0.001$

ns=not significant

The multivariate main effects of Group (experimental and control) and Time (T1, T2, and T3) were not significant with $p>0.05$. Therefore, when T1 and T2 scores were combined, the participants in the experimental and control groups did not differ with respect to their scores on the two positive affect scales. When experimental and control group scores were combined, it was not significant as to whether scores were measured at T1 or T2. Univariate results for the main effect of Group are provided in Appendix L.1 and the main effect of Time, in Appendix L.2, and are not discussed, as the multivariate effects were not significant.

The multivariate interaction effect of Group and Time was found to be significant with $p<0.001$. The univariate interaction effects for Group and Time are presented in Table 19 below, with means and standard deviations (SD), followed by graphs of the univariate means by Group at all times. Significant univariate interaction effects were found for both Subjective Happiness Scale, and Fordyce Emotions Questionnaire Q1. These measures showed a significant effect on resulting scores when both to which Group a participant belonged, and at what Time the score was measured, were taken into account.

An examination of Table 19 and the graphs of means for Subjective Happiness Scale (Figure 7) and Fordyce Emotions Questionnaire Q1 (Figure 8) shows both measures with similar directions of change over time.

Table 19: Univariate Interaction Effects for Group and Time

EG N=29, CG N=36			Time 1	Time 2	Time 3
Dependent Variable	**Test Result**	**Grp**	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**
Subjective Happiness Scale (Pos)	$F_{(2,126)}=6.69, p<.01$	EG	4.80 (1.16)	5.20 (0.98)	5.21 (0.77)
		CG	5.18 (0.86)	4.97 (0.92)	5.15 (0.97)
Fordyce Emotions Questionnaire Q1 (Pos)	$F_{(2,126)}=7.13, p<.01$	EG	7.03 (1.05)	7.52 (0.83)	7.69 (0.54)
		CG	7.36 (1.17)	7.19 (1.17)	7.28 (1.06)
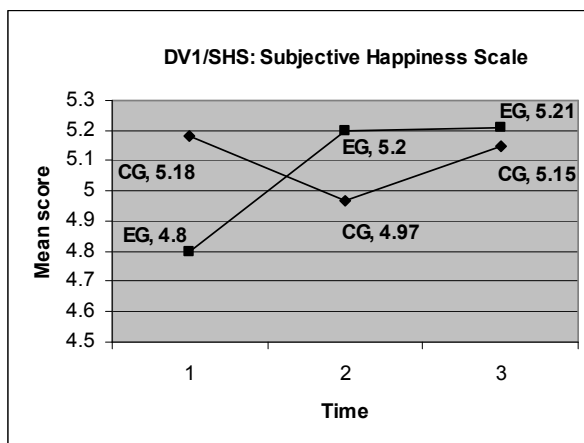
Figure 7: Subjective Happiness Scale T1-T2-T3
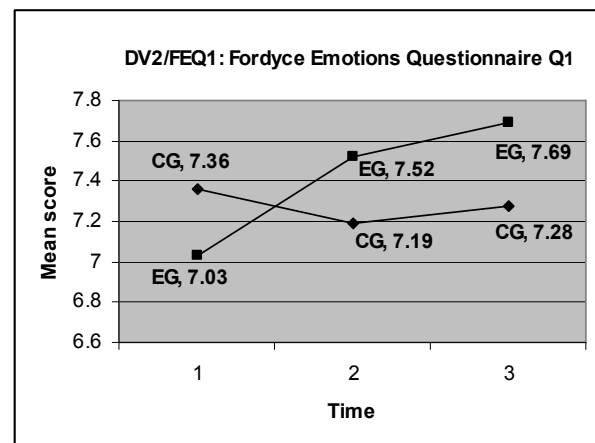
Figure 8: Fordyce Emotions Questionnaire Q1 T1-T2-T3

In order to verify whether the apparent changes within groups were significant, post-hoc dependent t-tests were performed and the results presented in Table 20, below.

For the experimental group, both variables showed a significant increase in happiness scores from T1 to T2 and non-significant changes from T2 to T3. The overall change from T1 to T3 was significant for both variables. For the control group, one of the variables (Subjective Happiness Scale) showed a significant decrease in mean happiness score from T1 to T2, and the other (Fordyce Emotions Questionnaire Q1) showed a non-significant change. Both variables showed non-significant effects for T2 to T3, as well as non-significant effects for overall changes from T1 to T3 for both variables.

In summary, the experimental group appeared to increase happiness levels from before the course to after the course and then maintain that higher level of happiness three months later. The control group appeared to decrease in happiness from before the course until after the course, and then maintain a level similar to the starting level three months later, without a significant overall effect.

Table 20: Post-hoc Dependent t-tests: Within Groups

		Test Results		
Group	**Dependent Variable**	**T1-T2**	**T2-T3**	**T1-T3**
EG *(N=29)*	Subjective Happiness Scale	t(28)=-2.68, p<0.05	t(28)=-0.07, ns	t(28)=-2.92, p<0.01
	Fordyce Emotions Questionnaire Q1	t(28)=-3.52, p<0.01	t(28)=-1.22, ns	t(28)=-3.93, p<0.01
CG *(N=36)*	Subjective Happiness Scale	t(35)=2.53, p<0.05	t(35)=-1.35, ns	t(35)=0.32, ns
	Fordyce Emotions Questionnaire Q1	t(35)=1.23, ns	t(35)=-0.52, ns	t(35)=0.55, ns

ns=not significant

3.7 Controlling and Moderating Effects

The results of tests of differences in demographic variables between the experimental and control groups suggested that the influence of the variables of Age and Gender on the outcome variables should be considered (section 3.2). An analysis was undertaken to ascertain whether controlling for Age or Gender would change the results. These variables and other demographic variables were additionally analysed to establish whether some people benefit more than others from the intervention.

3.7.1   Age

Age was tested for the assumption of normal distribution, by sample and by group. The Shapiro-Wilks W test did not report a violation of the assumption, with all p>0.05. A median split was performed on Age, and the median determined to be 55 years. Participants were placed into an Age Group of either 'Y' (Younger) aged less than 55 or 'O' (Older) aged 55 or over. Group sizes are presented in Table 21, below.

Table 21: Age Group sample sizes

Age Group	**Experimental Group**	**Control Group**	**All Participants**
Y (Younger)	23	13	36
O (Older)	10	28	38

Two Repeated Measures MANOVAs for T1/pre-course and T2/post-course were conducted on the nine DVs by Group (experimental and control) with the categorical predictor of Age Group (Younger and Older). The DVs were grouped into the six positive and three negative affect scales for the two MANOVAs, in order to compare the results with the MANOVAs conducted without the Age Group factor (as analysed in section 3.5.1.).

3.7.1.1 *Positive Affect T1-T2 with Age Group Factor*

The multivariate effects for the original positive affect MANOVA are presented with the MANOVA including Age Group factor, in Table 22, below.

Table 22: Multivariate Effects (Positive) for Age Group

Multivariate Effect	Original MANOVA		MANOVA with Age Group	
Group (EG, CG)	$F(6,67)=1.41$,	ns	$F(6,65)=1.08$,	ns
Time (T1, T2)	$F(6,67)=123.71$,	$p<0.001$	$F(6,65)=101.83$,	$p<0.001$
Time x Group	$F(6,67)=3.47$,	$p<0.01$	$F(6,65)=2.47$,	$p<0.05$
Age Group (Y, O)			$F(6,65)=0.13$,	ns
Group x Age Group			$F(6,65)=2.85$,	$p<0.05$
Time x Age Group			$F(6,65)=0.31$,	ns
Time x Group x Age Group			$F(6,65)=2.24$,	ns ($p=0.05$)

ns=not significant

The original positive affect MANOVA without additional factors, and the MANOVA including Age Group factor, shared similarly non-significant effects for the multivariate main effect of Group, similarly significant effects for the multivariate main effect of Time ($p<0.001$) and both were significant for the multivariate interaction effect of Time and Group, with the original MANOVA significant with $p<0.01$ and the MANOVA with Age Group significant with $p<0.05$. These multivariate effects including Age Group as a factor did not change significantly from the original positive affect MANOVA effects without additional factors. Thus, although the experimental group and control group differed in age, controlling for Age in the positive affect MANOVA did not change the overall results.

The MANOVA including the Age Group (younger or older) factor showed non-significant effects for the multivariate main effect of Age Group (univariate results are presented in Appendix M.1) and the multivariate interaction effect of Time and Age Group (univariate results are presented in Appendix M.2). It was not significant which Age Group participants were in (whether they were younger or older) for overall happiness scores, nor did the scores of the age groups differ significantly over time, so neither younger nor older participants were significantly happier (or less happy) over time. In summary, whether participants were younger or older had

no significant effect on how happy they were, or how much their happiness changed between T1 and T2.

The multivariate interaction effect of Group and Age Group was significant with p<0.05. The univariate interaction effects are presented in Table 23, below, with means and standard deviations (SD). One of the six positive affect DVs (Satisfaction With Life Scale) showed a significant effect with p<0.05. An inspection of the means showed that younger participants in the experimental group were happier than the older participants in the experimental group, whereas the younger participants in the control group were less happy than the older participants in the control group.

Table 23: Univariate Interaction Effects (Positive) for Group and Age Group

| | | | Age Group | |
| | | | Y (ounger) *EG N=23* *CG N=13* Mean (SD) | O (lder) *EG N=10* *CG N=28* Mean (SD) |
Dependent Variable	**Test Result**	**Group**		
Subjective Happiness Scale	F(1,70)=0.11, ns	EG CG	4.97 (0.89) 5.09 (0.73)	5.08 (1.17) 5.04 (0.89
Fordyce Emotions Questionnaire Q1	F(1,70)=0.00, ns	EG CG	7.26 (0.80) 7.27 (0.81)	7.30 (1.09) 7.30 (1.18)
Fordyce Emotions Questionnaire Q2a	F(1,70)=3.47, ns	EG CG	60.54 (19.22) 51.38 (18.71)	52.00 (22.20) 61.61 (20.20)
Satisfaction With Life Scale	F(1,70)=4.56, p<.05	EG CG	24.87 (3.98) 22.58 (3.39)	22.35 (5.13) 23.95 (3.83)
Authentic Happiness Inventory	F(1,70)=2.22, ns	EG CG	3.75 (0.52) 3.46 (0.34)	3.52 (0.50) 3.58 (0.47)
Positive and Negative Affect Schedule-Pos	F(1,70)=0.01, ns	EG CG	34.26 (6.35) 31.31 (5.58)	34.35 (5.27) 31.16 (6.44)

ns=not significant

3.7.1.2   *Negative Affect T1-T2 with Age Group Factor*

The multivariate effects for the original negative MANOVA are presented with the MANOVA including Age Group factor, in Table 24, below.

Table 24: Multivariate Effects (Negative) for Age Group

Multivariate Effect	Original MANOVA	MANOVA with Age Group
Group (EG, CG):	$F(3,70)=1.08$, ns	$F(3,68)=0.69$, ns
Time (T1, T2):	$F(3,70)=0.60$, ns	$F(3,68)=0.70$, ns
Time x Group:	$F(3,70)=4.31$, $p<0.01$	$F(3,68)=3.93$, $p<0.05$
Age Group (Y, O):		$F(3,68)=0.72$, ns
Group x Age Group:		$F(3,68)=0.27$, ns
Time x Age Group:		$F(3,68)=1.64$, ns
Time x Group x Age Group:		$F(3,68)=1.02$, ns

ns=not significant

The original negative MANOVA without additional factors, and the MANOVA including the Age Group factor, shared similarly non-significant effects for the multivariate main effects of Group and Time, and both were significant for the multivariate interaction effect of Time and Group, with the original MANOVA significant with $p<0.01$ and the MANOVA with Age Group significant with $p<0.05$. These multivariate effects including Age Group as a factor did not change significantly from the original negative affect MANOVA effects without additional factors. Thus, although the experimental group and control group differed in age, controlling for Age in the negative affect MANOVA did not change the overall results.

All additional effects of the MANOVA including the Age Group factor were not found to be significant and univariate effects can be seen in Appendix M (multivariate main effect of Age Group in appendix M.3, multivariate interaction effects of Group and Age Group in appendix M.4, Time and Age Group in appendix M.5, and Time, Group and Age Group in appendix M.6).

The Age Group to which participants belong, did not appear to moderate the outcome for negative affect DVs. Whether participants were younger or older had no significant effect on whether they were happier, or the extent to which they benefited from the intervention.

3.7.2   *Gender*

Gender frequency by Group is presented in Table 25, below. The difference between the total number of females (N=56) and the total number of males (N=18), and the low number of Male Gender participants in the experimental group (N=4) gives concern for drawing meaningful conclusions from Gender analysis in this research, and the results are treated as highly tentative.

Table 25: Gender Frequency Table

| Group | Gender | | *Group Total* |
	Female	Male	
Experimental	29	4	33
Control	27	14	41
Gender Total	56	18	74

Two Repeated Measures MANOVAs for T1/pre-course and T2/post-course were conducted on the nine DVs by Group (experimental and control) with the categorical predictor of Gender (Female and Male). The DVs were grouped into the six positive and three negative affect scales for the two MANOVAs, in order to compare the results with the MANOVAs conducted without the Gender factor (as analysed in section 3.5.1.).

3.7.2.1   Positive Affect T1-T2 with Gender Factor

The multivariate effects for the original positive affect MANOVA are presented with the MANOVA including Gender factor, in Table 26, below.

Table 26: Multivariate Effects (Positive) for Gender

Multivariate Effects	**Original MANOVA**		**MANOVA with Gender**	
Group (EG, CG):	$F(6,67)=1.41$,	ns	$F(6,65)=0.96$,	ns
Time (T1, T2):	$F(6,67)=123.71$,	p<0.001	$F(6,65)=72.80$,	p<0.001
Time x Group:	$F(6,67)=3.47$,	p<0.01	$F(6,65)=2.33$,	p<0.05
Gender (F, M):			$F(6,65)=2.81$,	p<0.05
Group x Gender:			$F(6,65)=1.85$,	ns
Time x Gender:			$F(6,65)=0.83$,	ns
Time x Group x Gender:			$F(6,65)=1.33$,	ns

ns=not significant

The original positive MANOVA without additional factors, and the MANOVA including the

Gender factor, shared a similarly non-significant multivariate main effect for Group, similarly significant multivariate main effect for Time ($p<0.001$), and both were significant for the multivariate interaction effect of Time and Group, with the original MANOVA significant with $p<0.01$ and the MANOVA with the Gender factor significant with $p<0.05$.

These multivariate effects did not change significantly from the original positive affect MANOVA effects without additional factors. Thus, although the experimental group and control group differed by gender, controlling for Gender in the positive affect MANOVA did not change the overall results.

The MANOVA including the Gender (female or male) factor showed a significant main effect of Gender with $p<0.05$. Univariate results are presented in Table 27, below, with means and standard deviations. Although there was a significant multivariate main effect for gender, the univariate effects in Table 27 all failed to reach significance. This suggests that on none of the happiness scales females scored significantly higher or lower than males.

Table 27: Univariate Effects (Positive) for Gender

Dependent Variable	Test Result	Female N=56 Mean (SD)	Male N=18 Mean (SD)
Subjective Happiness Scale	$F(1,70)=0.00$, ns	5.02 (0.94)	5.06 (1.03)
Fordyce Emotions Questionnaire Q1	$F(1,70)=2.64$, ns	7.36 (0.89)	7.06 (1.47)
Fordyce Emotions Questionnaire Q2a	$F(1,70)=2.13$, ns	60.18 (22.21)	51.97 (22.54)
Satisfaction With Life Scale	$F(1,70)=2.81$, ns	23.99 (4.12)	23.11 (3.94)
Authentic Happiness Inventory	$F(1,70)=0.06$, ns	3.58 (0.55)	3.69 (0.39)
Pos. and Neg. Affect Schedule-Pos	$F(1,70)=0.68$, ns	32.21 (7.47)	33.75 (4.84)

ns=not significant

The MANOVA including the Gender (female or male) factor showed non-significant effects for the multivariate interaction effects of Group and Gender, Time and Gender, and Time, Group and Gender (univariate results are provided in appendices N.1, N.2 and N.3). Therefore it appears that neither females nor males became significantly happier between T1 and T2, and neither benefited more from the intervention.

The Gender to which participants belong, did not appear to moderate the outcome for positive affect DVs. Whether participants were female or male had no significant effect on whether they were happier, or the extent to which they benefited from the intervention.

3.7.2.2 *Negative Affect T1-T2 with Gender Factor*

The multivariate effects for the original negative affect MANOVA are presented with the MANOVA including Gender factor, in Table 28, below.

Table 28: Multivariate Effects (Negative) for Gender

Multivariate Effect	Original MANOVA	MANOVA with Gender
Group (EG, CG):	$F(3,70)=1.08$, ns	$F(3,68)=1.50$, ns
Time (T1, T2):	$F(3,70)=0.60$, ns	$F(3,68)=1.94$, ns
Time x Group:	$F(3,70)=4.31$, $p<0.01$	$F(3,68)=7.58$, $p<0.001$
Gender (F, M):		$F(3,68)=1.49$, ns
Group x Gender:		$F(3,68)=0.75$, ns
Time x Gender:		$F(3,68)=3.13$, $p<0.05$
Time x Group x Gender:		$F(3,68)=3.17$, $p<0.05$

ns=not significant

The original negative MANOVA without additional factors, and the MANOVA including the Gender factor, shared similarly non-significant multivariate main effects for Group and Time, and both were significant for the multivariate interaction effect of Time and Group, with the original MANOVA significant with $p<0.01$ and the MANOVA with the Gender factor significant with $p<0.001$. These multivariate effects did not change significantly from the original negative affect MANOVA effects without additional factors. Thus, although the experimental group and control group differed by gender, controlling for Gender in the negative affect MANOVA did not change the overall results.

The MANOVA including the Gender factor, showed non-significant effects for the multivariate main effect of Gender and the multivariate interaction effect of Group and Gender (univariate results can be seen in appendix N.4 and N.5, respectively).

The MANOVA including the Gender factor showed a significant interaction effect of Time and Gender with $p<0.05$, implying that males and females changed in unhappiness differently over time. Univariate results are presented in Table 29, below, with means and standard deviations. Two of the three DVs (Positive and Negative Affect Schedule-Neg and Center for Epidemiologic Studies–Depression) showed significant effects. An inspection of the means for these significant effects shows that female participants appeared to become more unhappy from T1 to T2, while males appeared to become less unhappy from T1 to T2.

Table 29: Univariate Interaction Effects (Negative) for Time and Gender

Dependent Variable	Test Result	Female N=56 Mean (SD)		Male N=18 Mean (SD)	
		T1	*T2*	*T1*	*T2*
Fordyce Emotions Quest. Q2b	F(1,70)=1.32, ns	13.70 (9.65)	13.21 (7.89)	13.83 (10.81)	14.89 (10.96)
Pos. and Neg. Affect Schedule-Neg	F(1,70)=8.79, p<.001	14.36 (3.82)	15.21 (5.54)	16.22 (5.59)	15.17 (4.71)
Center for Epid. Studies–Deprn	F(1,70)=6.19, p<.05	5.82 (5.74)	6.02 (5.69)	8.50 (8.29)	7.06 (5.33)

ns=not significant

The multivariate interaction effect of Time, Group and Gender was significant with p<0.05, implying that females and males change unhappiness differently in the experimental and control groups over time. The univariate interaction effects are presented in Table 30, below, with means and standard deviations. Two of the three DVs (Fordyce Emotions Questionnaire Q2b, and Positive and Negative Affect Schedule-Neg) showed significant effects, and the third variable (Center for Epidemiologic Studies–Depression) was approaching significance with p=0.06.

Figure 9 and Figure 10 below, graph the mean scores of each of the two significant DVs for females and males in experimental and control groups over time. The males in the experimental group appeared to have a sharp decrease in negative affect over time in comparison to the other groups. Although it appears that males became less unhappy as a result of the intervention (experimental group), due to the low number of males in that group (N=4), whether this result is meaningful would need to be the subject of further research. No conclusion could be drawn as to whether men or women benefited more from the intervention.

Table 30: Univariate Interaction Effects (Negative) for Time, Group and Gender

Dependent Variable	Test Result	Female EG N=29 Mean (SD)		Female CG N=27 Mean (SD)		Male EG N=4 Mean (SD)		Male CG N=14 Mean (SD)	
		T1	*T2*	*T1*	*T2*	*T1*	*T2*	*T1*	*T2*
Fordyce Emotions Questionnr Q2b	F(1,70)=6.18, p<.05	15.93 (10.17)	13.97 (8.17)	11.30 (8.61)	12.41 (7.64)	25.00 (7.07)	13.25 (8.30)	10.64 (9.59)	15.36 (11.84)
Pos. and Neg. Affect Sched.-Neg	F(1,70)=7.16, p<.01	15.14 (4.14)	15.38 (5.47)	13.52 (3.31)	15.04 (5.71)	*22.00 (6.98)*	*13.50 (1.73)*	14.57 (4.05)	15.64 (5.21)
Center for Epid. Studies–Deprsn	F(1,70)=3.78, ns (p=0.06)	7.03 (6.63)	5.34 (5.25)	4.52 (4.37)	6.74 (6.14)	*17.00 (12.19)*	*6.50 (3.87)*	6.07 (5.20)	7.21 (5.79)

ns=not significant
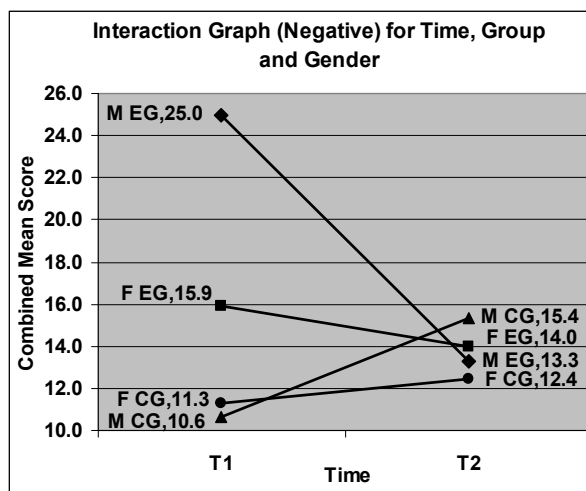
Figure 9: Fordyce Emot.Questnr Q2b for Time, Group and Gender (at T1-T2)
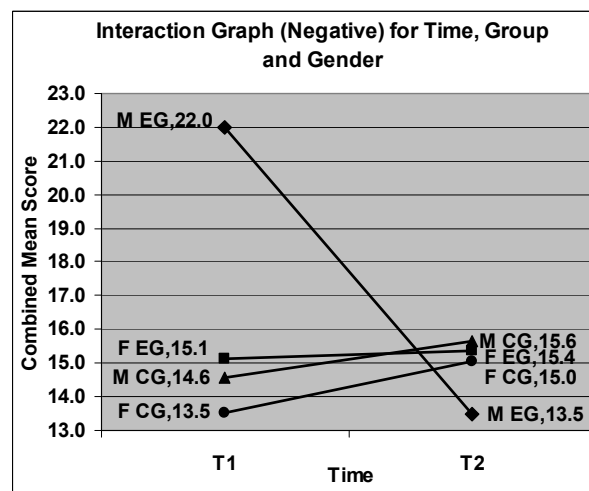
Figure 10: Pos. and Neg. Affect Sched.-Neg for Time, Group and Gender (at T1-T2)

3.7.3   Other Demographic Variables

Demographic variables other than those already tested (Age and Gender) were analysed to determine whether some people were happier or more depressed than others, and whether any demographic variables collected may moderate the effects of the intervention.

Two separate sets of repeated measures MANOVAs were computed for each of the demographic variables; one set for positive affect variables and one for negative affect variables. The results of the MANOVAs were assessed for significant main effects of the demographic variable and the three-way interaction effects of the demographic variable with the group (experimental and control) over time (T1 and T2). The results are presented in Table 31, below.

Table 31: Demographic Significance: Main and Interaction Effects at T1-T2

Variable	Values	Test Results: Positive		Test Results: Negative	
		Main Effect	Three-way Interaction Effect (Group,Time, Variable)	Main Effect	Three-way Interaction Effect (Group,Time, Variable)
Previous Courses	y, n (yes, no)	$F_{(6,65)}=2.20$, ns	$F_{(6,65)}=3.12$, p<0.01	$F_{(3,68)}=0.06$, ns	$F_{(3,68)}=0.71$, ns
Education	s, h (school, higher)	$F_{(6,65)}=1.36$, ns	$F_{(6,65)}=1.13$, ns	$F_{(3,68)}=0.28$, ns	$F_{(3,68)}=2.19$, ns
Employ-ment	y, n (yes, no)	$F_{(6,65)}=0.59$, ns	$F_{(6,65)}=0.77$, ns	$F_{(3,68)}=1.03$, ns	$F_{(3,68)}=0.40$, ns
Income	l, h (less than $40,000 p.a., more)	$F_{(6,65)}=0.42$, ns	$F_{(6,65)}=0.93$, ns	$F_{(3,68)}=1.02$, ns	$F_{(3,68)}=0.13$, ns
Living	a, w (alone, married/ with others)	$F_{(6,65)}=1.49$, ns	$F_{(6,65)}=0.95$, ns	$F_{(3,68)}=0.53$, ns	$F_{(3,68)}=0.67$, ns
Children	y, n (yes, no)	$F_{(6,51)}=0.80$, ns	$F_{(6,51)}=0.71$, ns	$F_{(3,54)}=0.16$, ns	$F_{(3,68)}=0.38$, ns
Town /Rural	t, r (town, rural)	$F_{(6,65)}=1.23$, ns	$F_{(6,65)}=0.35$, ns	$F_{(3,68)}=0.08$, ns	$F_{(3,68)}=0.25$, ns

ns=not significant

No significant main or three-way interaction effects were found for the negative affect DV set. No significant main effects for the positive affect sets of scales were found for any of these demographic variables. One significant three-way interaction effect was found for positive affect scales for the demographic variable of 'Previous Courses attended' by group and time. Univariate results for this effect are presented in Table 32 below, with means and standard deviations. Two of the six DVs (Subjective Happiness Scale and Authentic Happiness Inventory) were shown to have significant effects. Figure 11 and Figure 12 below, graph the mean scores of each of the two significant DVs for participants that have attended previous courses and those that have not, in experimental and control groups over time. No consistent patterns of directions of change were found for the variables. No conclusion could be drawn as to whether participants who had attended courses previously or those that had not, benefited more from the intervention. Generally it was not found that any particular subgroup was happier or more depressed than any other, not did any gain more or less from the intervention.

Table 32: Univariate Interaction Effects (Positive) for Group, Time and Prev. Courses

Dependent Variable	Test Result	Prev.Crs EG N=13 Mean (SD)		Prev.Crs CG N=33 Mean (SD)		No Prev.Crs EG N=20 Mean (SD)		No Prev.Crs CG N=8 Mean (SD)	
		T1	*T2*	*T1*	*T2*	*T1*	*T2*	*T1*	*T2*
Subjective Happiness Scale	$F_{(1,70)}=7.92$, $p<.01$	4.65 (1.11)	4.71 (0.92)	5.17 (0.93)	5.12 (0.88)	5.00 (1.20)	5.43 (0.87)	5.00 (0.52)	4.34 (0.55)
Fordyce Emot. Questionre Q1	$F_{(1,70)}=3.31$, ns	7.08 (0.95)	7.08 (0.76)	7.45 (1.00)	7.33 (1.14)	*7.10 (1.17)*	*7.70 (0.80)*	7.00 (1.60)	6.75 (1.04)
Fordyce Emot. Questionre Q2a	$F_{(1,70)}=0.40$, ns	55.38 (21.93)	53.08 (24.46)	62.00 (20.66)	60.91 (20.90)	*54.50 (28.28)*	*66.25 (17.69)*	42.50 (22.68)	48.75 (21.67)
Satisfaction With Life Scale	$F_{(1,70)}=2.68$, ns	24.46 (3.71)	23.15 (3.36)	23.58 (5.12)	23.39 (2.70)	23.75 (5.99)	24.85 (3.91)	24.25 (3.92)	23.00 (2.27)
Auth. Happiness Inventory	$F_{(1,70)}=6.19$, $p<0.05$	3.10 (0.49)	3.99 (0.48)	3.14 (0.46)	3.91 (0.51)	3.15 (0.51)	4.39 (0.67)	3.30 (0.29)	3.92 (0.33)
Pos. and Neg. Affc Sched.-Pos	$F_{(1,70)}=0.49$, ns	35.15 (7.56)	34.77 (5.99)	3.14 (0.46)	29.52 (6.77)	33.55 (7.94)	34.15 (5.80)	30.75 (5.15)	30.25 (5.39)

ns=not significant
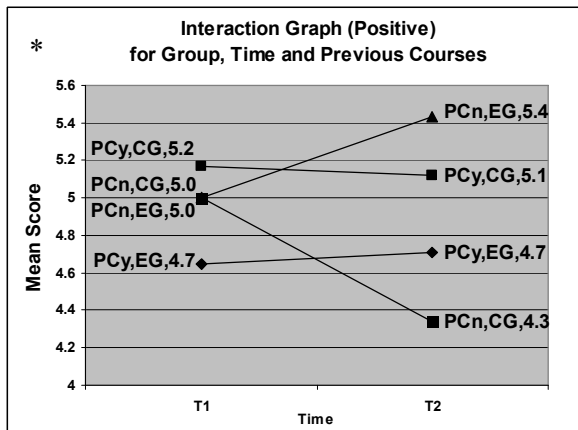
Figure 11: Subjective Happiness Scale (at T1-T2)
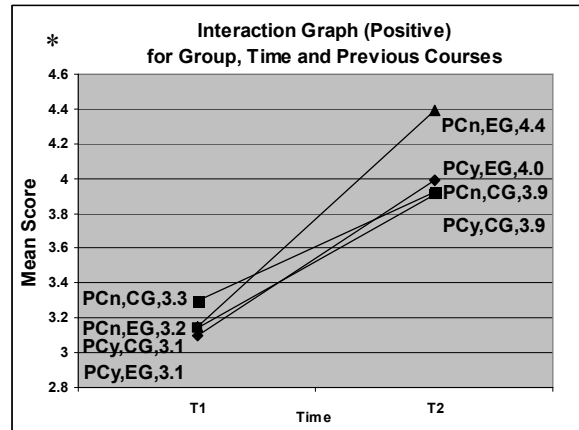
Figure 12: Authentic Happiness Inventory (at T1-T2)

* PCn and PCy = Previous courses No and Yes respectively

3.7.4   Strengths

An analysis was made into whether participants who had particular strengths were happier or more depressed than others, and whether having a particular strength moderated how much happier or depressed a participant became as a result of the intervention (without control group data). The 33 experimental group participants completed a Brief Strengths Test (Appendix I) (described in section 2.3.7) during the second class of the positive psychology course, to

determine each of their top three character strengths as defined by the CSV (Peterson & Seligman, 2004). Table 33, below, details the numbers of participants that had each of the strengths as the first, second or third highest ranked. These strengths were grouped by virtue category for analysis, and total numbers of participants with and without any strengths in a virtue category are shown in the table.

Many of the virtue categories were found to have quite different Ns in the 'With Virtue' and 'Without Virtue' groups (for example Temperance 3 and 30 respectively, and Justice 9 and 24 respectively), so the assumption of equal group sizes is violated, and further analysis and discussion was undertaken for exploratory interest.

Table 33: Brief Strengths Test Results

N=33 Virtue Category	Character Strength	First Strength (Num)	Second Strength (Num)	Third Strength (Num)	Strength Total (Num)	Total Participants with this Virtue	Total Participants without this Virtue
Courage		**2**	**4**	**7**		**11**	**22**
	Bravery	1	0	2	3		
	Honesty	0	4	1	5		
	Perseverance	1	0	1	2		
	Zest	0	0	3	3		
Humanity		**5**	**9**	**3**		**14**	**19**
	Kindness	1	3	1	5		
	Love	2	6	2	10		
	Social	2	0	0	2		
Justice		**4**	**4**	**3**		**9**	**24**
	Citizenship	1	0	0	1		
	Fairness	3	3	2	8		
	Leadership	0	1	1	2		
Temperance		**1**	**2**	**0**		**3**	**30**
	Forgiveness	1	2	0	3		
	Modesty	0	0	0	0		
	Prudence	0	0	0	0		
	Self-control	0	0	0	0		
Transcendence		**8**	**7**	**9**		**17**	**16**
	Beauty	3	1	2	6		
	Gratitude	1	2	3	6		
	Hope	1	1	1	3		
	Humour	2	1	0	3		
	Spirituality	1	2	3	6		
Wisdom		**13**	**7**	**11**		**22**	**11**
	Creativity	1	3	2	6		
	Curiosity	3	1	5	9		
	Judgement	3	1	1	5		
	Learning	5	2	0	7		
	Perspective	1	0	3	4		

Two repeated Measures MANOVAs (one for the six positive affect scales and one for the three negative affect scales) were conducted for each of the six virtues to test for a main effect of the virtue, and moderating effects on differences between scores at T1 and T2 of a participant having the virtue in any of the top three strengths. Results can be seen in Table 34, below.

For the positive affect MANOVA, the multivariate main effect of the virtue of Transcendence (which includes the strengths of Appreciation of Beauty, Gratitude, Hope, Humour, and Spirituality), was found to be significant with $p<0.05$. For the negative affect MANOVA, no significant effects were found.

Table 34: Multivariate Effects of Strengths/Virtues

Virtue	Test Result: Positive		Test Result: Negative	
	Main Effect	**Interaction Effect (Time x Virtue)**	**Main Effect**	**Interaction Effect (Time x Virtue)**
Courage	$F_{(6,26)}= 0.78$, ns	$F_{(6,26)}= 1.36$, ns	$F_{(3,29)} = 1.70$, ns	$F_{(3,29)} = 0.22$, ns
Humanity	$F_{(6.26)}= 0.59$, ns	$F_{(6.26)}= 0.68$, ns	$F_{(3,29)} = 2.07$, ns	$F_{(3,29)} = 1.50$, ns
Justice	$F_{(6,26)}= 0.28$, ns	$F_{(6,26)}= 0.28$, ns	$F_{(3,29)} = 0.54$, ns	$F_{(3,29)} = 1.05$, ns
Temperance	$F_{(6,26)}= 0.50$, ns	$F_{(6,26)}= 1.77$, ns	$F_{(3,29)} = 1.41$, ns	$F_{(3,29)} = 0.46$, ns
Transcendence	$F_{(6,26)}= 2.98$, $p<0.05$	$F_{(6,26)}= 2.11$, ns	$F_{(3,29)} = 0.02$, ns	$F_{(3,29)} = 0.56$, ns
Wisdom	$F_{(6,26)}= 0.57$, ns	$F_{(6,26)}= 1.71$, ns	$F_{(3,29)} = 1.85$, ns	$F_{(3,29)} = 2.64$, ns

ns=not significant

An inspection of the positive affect univariate effects for the virtue of transcendence (Table 35, below) shows that two of the six DVs (Fordyce Emotions Questionnaire Q1 and Positive and Negative Affect Schedule-Pos) were significant with $p<0.05$. Inspections of the means shows that these scales have higher mean happiness scores for participants with Transcendence than for participants without.

Table 35: Univariate Results and Means for Transcendence Virtue

Dependent Variable	Test Result	With Transcendence N=17 Mean (SD)	Without Transcendence N=16 Mean (SD)
Subjective Happiness Scale	$F(1,31)=1.34$, ns	5.19 (0.95)	4.80 (0.97)
Fordyce Emotions Questionnaire Q1	$F(1,31)=6.35$, $p<0.05$	7.62 (0.78)	6.91 (0.84)
Fordyce Emotions Questionnaire Q2a	$F(1,31)=0.52$, ns	60.44 (21.96)	55.31 (18.50)
Satisfaction With Life Scale	$F(1,31)=2.96$, ns	25.24 (3.47)	22.91 (4.29)
Authentic Happiness Inventory	$F(1,31)=2.03$, ns	3.80 (0.56)	3.55 (0.44)
Pos. and Neg. Affect Schedule-Pos	$F(1,31)=4.54$, $p<0.05$	36.32 (6.24)	32.13 (4.96)

ns=not significant

It would appear that people whose character predominates with any of the strengths of Appreciation of Beauty, Gratitude, Hope, Humour, and Spirituality that make up the Transcendent virtue might have been happier than others. Having any particular strength did not appear to have any significant affect on how much a participant benefited from the intervention.

4. Discussion

This study examined whether participation in a positive psychology (PP) course that included the practice of validated interventions, would increase levels of happiness and decrease symptoms of depression. 33 participants (PP experimental group) attended a two-hour, once a week course for seven weeks with instruction in aspects of positive psychology and assignment for the practice of an associated intervention each week. The aim of the course was to implement much of what has been learned so far through the understanding of the positive aspects of human experience that has resulted from research. The topics included were gratitude, forgiveness, hope, optimism, flow, mindfulness and character strengths. 41 participants (non-PP control group) attended non-positive psychology courses in a similar timeframe. Immediately before and after attendance at the courses, all participants completed a set of questionnaires that measured levels of subjective wellbeing that included happiness and symptoms of depression. Three months after the courses finished, a shorter set of questionnaires measuring subjective wellbeing was completed.

The findings of the present study are discussed following, in the context of whether happiness can be taught and how the findings relate to other studies, whether group differences affected the results, and whether some people benefit more from this intervention than others or are happier or more depressed than others. Strengths and limitations of this study are considered, along with practical and theoretical implications, and possible future research. Final conclusions regarding the study are then drawn.

4.1 Findings

4.1.1   Intervention effects on outcome measures

This chapter discusses the question of whether happiness can be taught, in context of previous studies. Overall significant interaction effects were found for the PP and non-PP group participants from before the course to after the course for both the positive affect set of scales and the negative affect set of scales. A tendency was shown for the PP intervention group participants to increase happiness scores and decrease depression scores relative to the non-PP group, which generally supported the expectation that happiness can be increased and depression can be decreased through the participation in intentional happiness promoting activities, such as was provided through the present study's course format of education and multiple PP interventions. This was in line with previous findings in the 1977 and 1983 studies by Fordyce in which adult community education courses with a set of happiness exercises were given to participants, and which provided some evidence for an increase in happiness levels as a result of participation. Although the Fordyce studies included measures of depression, results were only

discussed in terms of increases in happiness, and no distinction was made between the effects on happiness scores and depression scores. However, the present study considered both positive and negative affect separately, finding some evidence for benefits to both. The internet study (Seligman, Steen, Park, & Peterson, 2005) that tested specific interventions in isolation, found particular long-term benefits with two of the interventions (strengths and gratitude) that were then included in this present study. Although the internet study was undertaken using a different format from the class-based multiple interventions of the present study, results from the present study and the two beneficial internet interventions were found to have similar benefits in terms of the apparent increase in levels of happiness and decrease in symptoms of depression over time. The follow-up tests in both studies showed the benefits were maintained, with the internet study using a six-month period and the present study using a three-month period for follow-up. The findings in this present study were also somewhat in line with results from studies that used different intervention formats, such as the uncontrolled retrospective analysis on participants that received electronic newsletters to administer a six-month, twice-a-week PP course (Dean, 2006) where it was found that life satisfaction scores increased and depressive symptoms decreased.

The independently tested gratitude intervention that demonstrated benefits in the internet study and was included in the present study, had previously been tested in a course and intervention practice format (Emmons & McCullough, 2003) similar to the present study format, where a similar result had been found in increasing the experience of positive affect, tested over a three week period. The other interventions included in the present study were selected for having provided some research evidence leading to an expectation that happiness levels might increase and depression levels might decrease. These included studies on flow, showing that the experience of flow tends to increase the experience of positive emotions (Peterson, 2006), forgiveness, that found an increase in subjective wellbeing through the practise of forgiveness activities (Worthington Jr et al., 2000), hope, that found a decrease in depressive symptoms and positive effects on wellbeing (Klausner, Snyder, & Cheavens, 2000; Sheldon & Houser-Marko, 2001; C. R. Snyder, Ilardi, Michael, & Cheavens, 2000), optimism, that found optimism building activities appeared to lower symptoms of depression (Seligman, Schulman, DeRubeis, & Hollon, 1999), and mindfulness and meditation, that showed that the practice of these appeared to decrease levels of depression and increase subjective wellbeing (Brown & Ryan, 2003; Lyubomirsky, Tkach, & Sheldon, 2004; S. L. Shapiro, Schwartz, & Bonner, 1998).

The overall evidence for an increase in happiness and a decrease in depression was tempered by the variety of results found in the study details. Four of the six positive affect (happiness) scales provided significant results for the interaction of time and group, and three of these showed a

tendency for the PP participants to increase in happiness (the fourth scale showed little difference from before the course to after the course), and three showed a tendency for the non-PP participants to decrease in happiness (the fourth scale showed an increase from before the course to after the course). Two of the three negative affect scales provided significant results for the interaction of time and group (with the third approaching significance). These scales showed a tendency for a decrease in negative affect for the PP participants and an increase in negative affect for the non-PP participants from before the course to after the course.

Both PP course participants and non-PP course participants appeared to be similarly happy when measuring happiness before the courses began, but the PP group was found to be significantly more depressed than the non-PP group when measuring depression before the courses. This may partially be accounted for by the fact that a course in positive psychology (entitled 'The Science of Happiness') may be more likely to attract participants who have greater symptoms of depression and who hold the hope for some relief. This finding provides further support for the theory that positive and negative affect have different correlates (Barrett & Russell, 1998; Bradburn & Noll, 1969), where, with two groups showing similar levels of happiness, one group may show a higher level of depression.

It appears that through participation in the PP intervention, participants increased in happiness and there is some evidence showing that they became at least similar to, or happier after the course than the non-PP group. It also seems that through participation in the PP intervention, participants become less depressed, and that after the course, they had a similar level of depression scores to the non-PP group. The importance of the comparison group (non-PP participants) in this present study is illustrated by the fact that, without it, a fairly simple picture would be presented with an increase in happiness and decrease in depression by the PP group. The non-PP participant group created a more complex picture that identified the differences with the PP group (as shown in the significant difference in depression scores before the course) and differences in trends that may have been caused by more global factors.

This present study provided a third measurement time three months after the course, using two of the positive affect scales. The purpose was to make a preliminary assessment of possible longer-term effects, in consideration of the theories for a genetic set-point of happiness (Lykken & Tellegen, 1996) which might result in a tendency to return to baseline happiness over time (Lucas, 2007; Suh, Diener, & Fujita, 1996) and adaptation to positive and negative events (Kahneman, 1999). These theories imply that it may not be possible to maintain a higher level of happiness or a lower level of depression over a longer period of time. This present study found

that the levels of happiness measured three months after the courses were very little different from the levels of happiness immediately after the courses for both the PP and non-PP participants, with the implication that any benefits from learning about, and practising happiness activities that occurred through participation in the PP course, was maintained for a period after the course completion. Across all three measures of time, it appeared that the PP group increased happiness from before the course to after the course and then maintained that higher level of happiness three months later. The non-PP group showed no significant overall effect from before the course, to the follow-up.

This present study has provided some preliminary evidence to suggest that teaching happiness may provide benefits in terms of happiness and depression.

4.1.2   Group Differences

Several demographic variables were found to have significant differences between the PP and non-PP groups in the present study. These were the variables of age, gender, previous number of courses attended, and employment. The PP group had a relatively lower age, attended fewer courses previously, fewer males and more employed (fewer retired) participants. This may be explained partially by the participants' reasons for attending the PP course. When asked for a primary reason for attending, to select from personal development, professional development, a combination of personal and professional development, or any other reason, most participants responded that they were attending for professional development. It is possible that the answers were influenced by the fact that the question was asked verbally to the group, most of whom did not know each other, and responses were taken from each participant in the hearing of the other group members. Once the first few group members had answered that they were there for professional development, it may have influenced the other members to do likewise. It was also noted that the participants were almost all involved in some kind of 'helping' profession, including counselling, District Health Board positions, nursing, psychological practice, and life-coaching. This group of participants was therefore more likely to be working, of pre-retirement age, and possibly with less leisure time available to attend general interest community classes than the members of the non-PP group who were older, a greater number being retired, and who had attended more courses previously. It may be hypothesised that the comparatively low number of males in the PP group is partially due to the greater number of females in the population working in 'helping' professions.

Analyses were conducted to determine whether these variables that differed between the groups affected the original results. Due to the correlation of previous courses with age, and the

confounding of employment and age, analyses were conducted to assess the effects of using age and gender. No significant change to the effects of the original analyses without these factors was found. Thus, although the PP group and non-PP group differed by age and gender, controlling for these did not change the overall results.

4.1.3   Subgroup analyses

The possibility that the PP intervention might be more beneficial for some participants than for others was explored, along with whether some participants might be happier or more depressed than others.

This present study supported the findings of previous research with little effect on happiness and depression, or participation in happiness interventions, of differences in age (Lyubomirsky & Lepper, 1999; Peterson, 2006; Radloff, 1977). Whether participants were younger or older did not appear to have a significant effect on how much their happiness changed over time.

Considering effects of gender, in the present study although it appeared that males became less unhappy as a result of the PP intervention, due to the very low number of male gender participants in that group, whether this result is meaningful would need to be the subject of further research. So no conclusion was drawn as to whether men or women benefited more from the intervention, and it did not appear that men or women were happier. Previous studies generally found little effect of gender (Andrews & Withey, 1976; Inglehart, 1990; Lyubomirsky & Lepper, 1999; Myers & Diener, 1995; Radloff, 1977; Watson, Clark, & Tellegen, 1988).

This present study did not find married (partnered) participants were happier, or gained more from the intervention than others, which did not entirely support the findings of a previous study that married people are happier than others (Mastekaasa, 1994) and the consensus from multiple studies that found being married had a moderate correlation with happiness (Peterson, 2006). Other factors that were not found to have significant effects and that supported results of previous studies were income level (Argyle, 2001; Diener, Suh, Lucas, & Smith, 1999; Myers & Diener, 1996), level of education attained (Radloff, 1977), and whether participants had children (Gilbert, 2006; Peterson, 2006). Additionally this present study did not find significant effects of employment status, whether participants lived in town or rurally, or whether they had attended previous adult community education courses.

Generally it was not found that any particular subgroup was happier or more depressed than any other, not did any gain more or less from the intervention.

4.1.4   Individual Character Strengths

This present study explored the possible impact on levels of happiness and depression, and

changes to these as a result of the intervention, of participants having any particular character strength as based on the CSV virtue categories (Peterson & Seligman, 2004). The exploration used data provided by the PP group without control data. Due to the group size differences between participants that had a virtue/strength and those that did not, and the small size of some groups, these results are treated as highly tentative.

It was found that those participants whose characters predominated with the virtue of transcendence (consisting of the strengths of appreciation of beauty, gratitude, hope, humour, and spirituality) showed significant positive associations with levels of happiness (and not with depression). All other virtues were not found to have a significant effect on happiness or depression scores. Having any particular strength did not appear to have any significant affect on how much a participant benefited from the intervention

4.1.5   *Correlations between independent variables*

Analyses were performed on the nine dependent variables that were provided by the six questionnaires to verify expected correlational direction and assess the strength of correlations.

All dependent variables were correlated before the course to verify that the six positive affect dependent variables correlated positively with each other and negatively with the three negative affect dependent variables. All correlations were found to be significant in the expected direction. Positive-positive dependent variables showed medium to strong correlations, negative-negative dependent variables showed medium correlations and positive-negative showed low to medium strength correlations[1].

Previous studies have demonstrated that positive and negative affects have different correlates (Barrett & Russell, 1998; Bradburn & Noll, 1969), and a separate study showed that these have a weak negative correlation (Watson, 2002). This present study somewhat supported these findings with most of the lowest correlations between positive and negative dependent variables, although these still had low to medium strength. A weak correlation had previously been demonstrated between the positive and negative subscales of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). This present study found this correlation to be the lowest of all the dependent variable correlations[2].

In order to verify that the responses to each questionnaire correlated consistently across the times, dependent variables were correlated at each available time (nine dependent variables

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[1] Positive-positive range .39 to .78, negative–negative range .46 to .54, positive-negative range .24-.55

[2] PANAS positive to PANAS negative r=-0.24, p<0.05

before and after the course, and two dependent variables before, and after the course and at three month follow up). All correlations were found to be positive and relatively stable for all dependent variables at all times, with medium to strong correlations.

The Authentic Happiness Inventory (AHI) (Peterson, 2005) included in this study is a relatively new measure that is pending validation. This present study provided an opportunity to correlate AHI results with existing, more extensively validated questionnaires. The alpha reliability test showed that the scale has the highest internal consistency of all the questionnaires used in this present study[3]. The scale had medium strength correlations with the other positive affect dependent variables, showed a correlation across time that was consistent with the other dependent variables, and had similar correlations with the negative dependent variables as the other positive affect dependent variables. The AHI showed an acceptable similarity in correlations compared to the other dependent variables and supported its inclusion in this study.

4.1.6   NZ Sample Comparisons

A comparison of the New Zealand sample in this present study was made to samples from the USA. Of the six questionnaires included in this present study, normative data on representative samples was available for the Fordyce Emotions Questionnaire and the Center for Epidemiologic Studies–Depression. Additionally, two studies conducted on character strengths were compared to the strengths findings of the present study.

4.1.6.1 Fordyce Emotions Questionnaire

In a happiness study using the Fordyce Emotions Questionnaire (Fordyce, 1988), a sample of 3,050 adults in the USA reported feeling happy on average 54% of the time, and unhappy or neutral 46% of the time. In this present study, the relatively small sample of 74, including all participants (PP and non-PP) showed similar average happiness of 57%, and unhappiness/neutral feelings of 43%. The group attending the non-PP courses (N=41) provided an average happiness of 58% and unhappiness/neutral feelings of 42% and those attending the PP courses (N=33) provided an average happiness of 55% and unhappiness/neutral feelings of 45%. The differences between the present study scores and the Fordyce study scores were not found to be significant and it appears that the results from this present New Zealand study are consistent with the previous results in the USA study and that samples have a similar level of happiness.

4.1.6.2 Center for Epidemiologic Studies–Depression

The mean depression score of the present study as measured using the Center for Epidemiologic

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[3] AHI: alpha of .92 at T1

Studies–Depression, was compared to the study in which the same questionnaire was administered to a representative sample of 3574 USA participants (Radloff, 1977)[4]. The comparison found a lower mean depression score for the New Zealand sample than the USA adult community population sample so it appears that the New Zealand sample is less depressed than the USA sample.

4.1.6.3 Brief Strengths Test

This present study did not confirm a previous study (Park, Peterson, & Seligman, 2004) into the relationship between specific character strengths and 'satisfaction with life' measures that found that the strengths of zest, gratitude, hope and love were consistently more strongly associated with life satisfaction than other strengths[5]. Using the Satisfaction With Life dependent variable from the present study, a non-significant result was achieved, showing that those having any of these strengths were no more satisfied with life than those without the strengths.

Another previous strength-based study identified the most and least commonly endorsed strengths (Park, Peterson, & Seligman, 2006) in the USA and in 54 other nations. The most commonly endorsed strengths had been found to be kindness, fairness, honesty and gratitude, and the least were prudence, modesty and self-regulation. In this present study, the most endorsed strengths were love, curiosity, fairness and love of learning, and the least were prudence, modesty and self-regulation. The most endorsed strengths in this present study shared one similarity out of the four strengths with the previous study (fairness), and all three least endorsed strengths were shared.

4.2 Strengths and Limitations

With respect to dropouts, the rate in this study was not considered to have been high and an adequate number of participants were retained from before the intervention, to after the intervention and to the three-month follow-up. Tests for differences in the captured demographic variables between drop-outs and remaining participants were not significant, so no particular demographic group was significantly more likely to have dropped out than any other. This was a result similar to that found in the internet study (Seligman, Steen, Park, & Peterson, 2005) where

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[4] Center for Epidemiologic Studies–Depression study (Radloff, 1977): N=3574, Mean=8.17 (SD=8.23) and Mean=9.25 (SD=8.58). Present study: N=74, Mean=6.47 (SD=6.50). Single sample t-test with test value=8.17 provided $t(73)=-2.25$, $p<0.05$. Single sample t-test with test value=9.25 provided $t(73)=-3.68$, $p<0.001$.

[5] Participants were assigned to one of two groups; those that had one of the strengths listed from the previous study in the top three (N=21, Mean=24.95(5.14)) and those that did not (N=12, Mean=22.42 (4.98). Result: $F(1,31)=0.97$, ns.

it was found that participants who dropped out of the study did not differ in baseline happiness or depression from those who remained.

This study benefited from the use of an active control group that was participating in community education courses. This participation meant that benefits that may have arisen from social interaction in group education was controlled for. It is recognised that, due to the initial higher depression levels in the experimental PP group participants, participants may have been motivated to try things to feel better, so a more suitable control group may be a waitlist group for the positive psychology course, rather than participants who had not applied to attend the positive psychology course at all. If possible, the members of the control and experimental groups would be randomised from all applicants to positive psychology courses. The control group could be provided with a non-positive psychology course to attend in the same timeframe.

The demographic differences that were found between experimental and control groups for age, gender, employment status and previous courses attended, may be avoided by using a waitlist control group, although these demographic variables did not show significant effects on the outcome variables. The differences may be explained in part by the limitations inherent in the differences in the nature of the courses included in the study. The PP course (experimental group) could be used for professional development, confirmed by a survey of the course attendees with more than 95% giving this reason for attendance. These participants were therefore more likely to be employed and in the predominant working age-group.

This study benefited from a follow-up measurement three months after the intervention. The follow-up questionnaire completed by many of the participants included two positive affect (happiness) scales. In order to analyse the longer-term effects on depression of attending the positive psychology course, it would be useful to include measures of depression in addition to those of happiness. A more effective design would be to include the full set of questionnaires at all times, and also a year later, in order to measure longer-term sustainability effects to test the possible effects of adaptation (Kahneman, 1999) and happiness set-points (Lucas, 2007; Suh, Diener, & Fujita, 1996).

The researcher in this present study was briefly introduced to the PP group attendees during the first class session, and attended the first class in order to take cognisance of any unanticipated intervention implementation conditions. The researcher took the opportunity to capture the reasons given by participants for attendance at the course. None of the attendees was known to the researcher and as questionnaire responses were all taken through postal mail, it is hoped that no significant bias occurred. It is not unusual for researchers to conduct experimental group

interventions directly. It was not practical for the researcher to be introduced to the non-PP group participants due to the number of different classes that were attended.

The set of interventions that were included in the positive psychology course were determined by the course tutor with input from the researcher. These interventions were selected for evidence-based benefits to subjective wellbeing and to provide a variety of interventions for the set. One intervention that had previously demonstrated a high level of successful association with high happiness was not included in the design, and this was an intervention for the practice of altruism or acts of kindness (Peterson, 2006). Due to the group learning environment and standardisation of group discussions, no attempt was made to determine the best person-fit of particular interventions, and the intervention set was based on generalised knowledge of what has been shown to benefit most people.

In this present study, as is typical in happiness studies, self-reporting instruments were used to measure happiness and depression. Although these measures remain open to criticism largely due to the nature of the subjectivity of responses, they have been found to have high correlations with similar measures, as is confirmed in this present study. The present study incorporated the best available measuring strategy, combining the use of multiple and diverse scales for measurement to allow for a multi-dimensional capture of emotional experience including happiness, unhappiness, satisfaction, positive and negative affect, and depression. The scales included the utilisation of different time frames for the emotional appraisal, such as general feelings, feelings of the previous week and day, and current emotional state.

The study sample was limited to volunteer attendees at adult community education courses. This sample was largely financially comfortable, as the courses were mostly leisure courses for which a fee was paid, and most are likely to have been active seekers of knowledge. The PP course attendees differed in that they showed higher levels of depression than the non-PP group, and it is unknown whether the sample included individuals with diagnosed mental illnesses. Therefore any conclusions drawn from the study can only be generalised to other populations with caution and the limits to the generality of the use of this positive psychology intervention is unknown.

4.3   *Practical and theoretical implications*

This study is designed to contribute to the empirical body of research within the developing knowledge database of positive psychology.

The study found some evidence for the effectiveness of a seven-week education and intervention strategy and supported previous findings that participation in an educational course that includes a set of interventions (Fordyce, 1977, 1983) may increase levels of happiness experienced. The

study also demonstrated a possible reduction in symptoms of depression, although this was demonstrated by a group that had higher depression scores than the control group. In addition, the study supports the potential positive effects of happiness enhancing volitional activities on subjective wellbeing. Interventions that had previously been validated in isolation (Seligman, Steen, Park, & Peterson, 2005) were used to form the set of interventions in the study, and supported the findings of increases to happiness and decreases to depression. Longer-term sustainability of changed happiness levels was demonstrated with a three-month follow-up measurement. This study supported the findings in previous studies that demonstrated a lack of effect of various demographic variables including age (Lyubomirsky & Lepper, 1999; Peterson, 2006; Radloff, 1977), gender (Inglehart, 1990; Myers & Diener, 1995), income (Argyle, 2001; Diener, Suh, Lucas, & Smith, 1999), level of education (Radloff, 1977), and having children (Gilbert, 2006; Peterson, 2006), but did not support previous findings that married people are happier than others (Mastekaasa, 1994; Peterson, 2006). No significant effects were found for employment status, living in town or rurally, or previous attendance at community education courses.

If the preliminary results that show the possibility of an increase in happiness and a decrease in depression from participation in the intervention are validated in future studies, there is an implication for the further development of positive psychology interventions and their use in community and other settings, such as schools and workplaces. If the format used in this study is confirmed to be effective, it will add to the options for implementing happiness-inducing strategies.

This study has shown benefits for the reduction of symptoms of depression. Depression is one of the most pervasive mental illnesses, and according to research by the World Health Organisation, depression will be the second leading cause of disability in the world by 2020. By tackling the issue of depression before major symptoms become apparent, through the use of depression-reducing strategies such as offered in this study, it is possible that early prevention can strengthen resilience against the development of the condition. The potential benefits of early prevention are substantial, with the potential decrease in the effects of, for example, post-natal depression, suicide, and anti-social behaviour. This present study seemed to show particular benefit to those participants with greater levels of depression, and this has therapeutic implications for the use of the intervention for mental disorders.

It is hoped that the links that have previously been found between happiness and health, and supported by studies such as this, that demonstrate that levels of happiness and depression may

be altered by education and interventions, will have an effect on public health strategies and government policies. More effective primary prevention that may utilise similar happiness-inducing interventions may lessen the likelihood of future psychological difficulties. Some headway into mental health promotion has been made in New Zealand with several public mental health units (for example in Timaru and several NGOs in Auckland) adopting positive approaches to mental health care with great success. Various papers have been published that include The New Zealand Health Strategy (Ministry of Health, 2000), with suggestions for preventive approaches to population health, The Primary Health Care Strategy (Ministry of Health, 2001), with discussion on the promotion of wellbeing and preventing illness, the Ministry of Health publication 'Building on strengths: A Mental Health Promotion Strategy' (2002), and the Mental Health Foundation publication, 'Mind Your Health – how to promote mental health and wellbeing' (2004). In 2006, the Mental Health Foundation featured 'happiness' in the Mental Health Awareness Week . This present study provides more supporting evidence for the efficacy of happiness interventions and consideration may be given to how these can be used within health-promoting strategies. The New Zealand Quality of Life Project was established in 1999 (Ministry of Social Development and NZ City Councils, 2006) to provide social, economic and environmental indicators of quality of life in several cities (12 cities are included in the 2006 survey). The survey includes questions about New Zealanders' perceptions of health and wellbeing. More than half of New Zealanders surveyed rated their emotional wellbeing as 4 'Positive' on a scale of 1 to 5, with 1 being 'very negative' and 5 being 'very positive'. The implementation of interventions to enhance happiness and reduce symptoms of depression may be able to lift these subjective wellbeing indicators to higher levels. The infusion of positive psychology and the practice of interventions into existing curricula in schools may show the benefits found through increasing subjective wellbeing, and may support building resilience in children and developing character strengths. This may have a roll-on effect for reducing the symptoms of adult depression.

The previously unvalidated Authentic Happiness Inventory (Peterson, 2005) was assessed in this present study, and found to have a high internal consistency, correlated well with other positive affect scales, correlated in a similar way as other positive affect scales with negative affect scales, and showed a consistent correlation across time.

4.4 Future research

This preliminary study was not designed to take into account all factors that may be of interest in happiness research and which may moderate outcome variables, and future research may take several of these other factors into account. Previous research has found that high self-esteem

provides many benefits to those that possess it (Heatherton & Wyland, 2003) and a strong correlation found between happiness and self-esteem (Peterson, 2006) suggests that future research into enhancing subjective wellbeing may usefully assess whether participation in volitional happiness enhancing education may positively affect the level of self-esteem, as well as assess whether those with higher self-esteem benefit differently from happiness-inducing interventions than those with lower self-esteem. Similar analyses may be useful in assessing whether low self-efficacy may be a barrier to a greater improvement in subjective wellbeing through education, as studies have found low self-efficacy to be a barrier to learning (Chemers, Hu, & Garcia, 2001; Lane & Lane, 2001), and also whether improvements in subjective wellbeing may change levels of self-efficacy. Emotional intelligence is another factor that could be of interest in happiness intervention studies. The questions may be asked whether those with higher or lower scores in emotional intelligence respond better to happiness interventions, and whether levels of emotional intelligence may be changed by the practice of happiness interventions. Other factors that could be considered for possible moderating effects due to the findings of strong correlations with happiness include those of close social relationships (Bradburn & Noll, 1969; Myers, 1999) and religious conviction (Condor, 1998; Smith, McCullough, & Poll, 2003).

Further research could also specifically include those with diagnosed mental illnesses, such as depression and anxiety, in order to ascertain the potential benefits of happiness interventions for subjective wellbeing, with attention to whether the rate of relapse for those who show improvements, can be reduced.

This study demonstrated the potential benefits to subjective wellbeing of a seven-week, seven interventions format. Future research may indicate whether a shorter or longer course duration would be of greater benefit, and whether a different number of practice interventions may provide different results, or whether the sequence of interventions is important. Consideration could also be given to the specific selection of appropriate interventions for each participant, possibly based on identified character strengths, or personality type, rather than a one-size-fits-all intervention set. Future studies using a similar format may be undertaken on single individuals rather than strictly in a group environment. A comparison of results of individual education and group education may provide further insight into the potential benefits of the social interaction used in disseminating and discussing the subject matter.

The PP course that formed the context for this present study was designed for an adult community education group. Further research may be undertaken into possible modifications and

effectiveness of using the course within workplaces, schools, with mentally ill or physically infirm people, in youth intervention programmes and in offender environments.

Further longitudinal studies are essential to establish whether happiness levels are maintained over a longer time period of at least a year. Future research would benefit from the use of larger, more diverse and randomised samples. Any PP course used in future studies should be maintained to incorporate the most recent knowledge within the positive psychology database, and apply any new information and newly validated interventions and measures.

4.5 Conclusion

Many have argued that happiness is the ultimate purpose of human life and that an intrinsic motivation to pursue it exists. The positive psychology movement strives to add to the developing database of knowledge of the positive aspects of human experience. Many reasons have been found as to why this research focus may be important, the least of which includes that greater subjective wellbeing may lead to extended physical, intellectual, and social resources (Fredrickson, 1998), more flexible thought processes (Isen & Daubman, 1984), an expansion of attentional focus (Derryberry & Tucker, 1994), an increase in longevity (Danner & Snowdon, 2001; Ostir, Markides, Black, & Goodwin, 2000), a reduction in the risk of heart disease (Stansfeld, Fuhrerb, Shipley, & Marmot, 2002), an increase in immune system functioning (Dillon, Minchoff, & Baker, 1985; Stone, Cox, Valdimarsdottir, & Jandorf, 1987; Stone, Neale, Cox, & Napoli, 1994), and a reduction in symptoms of psychopathology (Diener & Seligman, 2002; Koivumaa-Honkanen et al., 2001). The present study was designed to contribute to this positive psychology database by considering the question as to whether happiness can be taught.

The findings of this preliminary study have shown the possibility that through participation in a course in positive psychology that was designed to incorporate current knowledge and a set of validated interventions, participants may increase their levels of happiness and decrease symptoms of depression. The groups used for the study were small and not randomised, so results should be regarded as preliminary. The findings suggest that people may not necessarily be genetically bound to experience a predetermined amount of happiness, and that volitional behaviours and the application of effective strategies may make a positive difference to subjective wellbeing. The course format in positive psychology that was used as the context for this study has shown some effectiveness in achieving the desired result of an increase in subjective wellbeing in the short-term, with some evidence that the benefits may well be longer-lasting. Due to the growing prevalence of depression in the western world, interventions, such as is offered by this study, which may support a reduction in depressive symptoms, may play an

important role in therapeutic environments in the future.

Also considered was the question as to whether some subgroups are generally happier or more depressed than others, and whether some people benefit more from the intervention. Generally speaking, the study did not find that any particular subgroups benefited more from the intervention than others, nor were any happier or more depressed than others. An assessment of character strengths showed the possibility that the virtue of transcendence in an individual may be associated with a higher level of happiness, but conclusions are highly tentative.

The present study has yielded some promising findings that may be useful additions to the continued development of the database of knowledge of positive psychology, as it finds its way further into mainstream psychology.

> Confucius believed that humankind should cultivate its virtues through
> learning, and by doing so, take responsibility for creating its own happiness.
> (Confucius, Legge, & Mencius, 1930).

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APPENDICES

Appendix A.   Pre-course Consent Form

Research Project: Consent Form

Alison Ogier
Psychology Department
University of Canterbury
Private Bag 4800
Christchurch 8140
New Zealand

April 2006

> ***Project: A study of the effects on subjective wellbeing of attending courses at UC Opportunity community education at the University of Canterbury.***

I have read and understood the description of the above-named project. On this basis, I agree to participate as a subject in the project, and I consent to publication of the results of the project with the understanding that anonymity will be preserved.

I understand also that I may at any time withdraw from the project, including withdrawal of any information I have provided.

NAME (please print):   _____

Signature: _____

Date: _____

Appendix B.   Pre-course Experimental Group Cover Letter

Research Project: Information Sheet

Alison Ogier

Psychology Department

University of Canterbury

Private Bag 4800, Christchurch 8140

April 2006

As you are enrolled in the Science of Happiness course at Community Education at the University of Canterbury, you are invited to participate in an associated research project. This study aims to test the effects on levels of happiness of attending the course.

Your involvement in this study would require that you complete the enclosed questionnaire before you start the course, which asks about general feelings of happiness and wellbeing. A similar questionnaire will be mailed to you after the course, and then a brief 5-minute questionnaire two months later. It is expected that each of the first two questionnaires will take about 10 to 15 minutes to complete.

If you agree to participate in this study, please would you be kind enough to return the signed consent form, along with the completed questionnaire, in the stamped envelope.

In recognition of the value of your contribution to this research, on completion of the 3 questionnaires, you will be entered into a draw to: win one of two $50 vouchers for use at any store in Westfield Shopping Mall.

Your participation is entirely voluntary and you may withdraw at any time, including withdrawal of any information provided, without giving any reasons.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: the identity of participants will not be made public. To ensure confidentiality, only a code will be used on your questionnaires, and any information that may identify you (for entry into the voucher draw), will be kept in a locked facility with access restricted to the principal researcher.

The project is being carried out as a requirement for an MSc degree in Psychology by Alison Ogier, who can be contacted by email on ajo34@student.canterbury.ac.nz or by phone on 364-2987 x.7988, under the supervision of Dr Roeline Kuijer, who can be contacted at 364-2987 x.3401. We will be pleased to discuss any concerns you may have about participation in the project.

The project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

Your contribution to this study is very valuable and would be greatly appreciated.

Appendix C.   Pre-course Control Group Cover Letter

Research Project: Information Sheet

Alison Ogier
Psychology Department
University of Canterbury
Private Bag 4800, Christchurch 8140

April 2006

As you are enrolled in a course at UC Opportunity community education at the University of Canterbury, I have been given permission to invite you to participate in a research project. This study aims to test the effects on levels of happiness of attending courses such as the Science of Happiness course, or any other course, such as the one you are attending.

If you agree to participate in this study, a questionnaire asking about general feelings of happiness and wellbeing, will be mailed to you for completion before the start of your course. A similar questionnaire will be mailed to you after the course, and then a brief 5-minute questionnaire two months later. It is expected that each of the first two questionnaires will take about 10 to 15 minutes to complete, and a stamped return envelope will be included to return the completed questionnaires.

In recognition of the value of your contribution to this research, on completion of the 3 questionnaires, you will be entered into a draw to: win one of two $50 vouchers for use at any store in Westfield Shopping Mall.

Your participation is entirely voluntary and you may withdraw at any time, including withdrawal of any information provided, without giving any reasons.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: the identity of participants will not be made public. To ensure confidentiality, only a code will be used on your questionnaires, and any information that may identify you (for entry into the voucher draw), will be kept in a locked facility with access restricted to the principal researcher.

The project is being carried out as a requirement for an MSc degree in Psychology by Alison Ogier, who can be contacted by email on ajo34@student.canterbury.ac.nz or by phone on 364-2987 x.7988, under the supervision of Dr Roeline Kuijer, who can be contacted at 364 2987 x.3401. We will be pleased to discuss any concerns you may have about participation in the project.

The project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

If you are willing to participate in this project, please sign and
return the enclosed Consent Form in the stamped envelope,
and the questionnaire will be mailed to you.

Your contribution to this study is very valuable and would be greatly appreciated.

Appendix D.   Pre-course Instruction and Demographic Sheet

INSTRUCTIONS

Please read the instructions below before completing the questionnaire.

Please answer all of the questions according to the instructions. If you are unsure about how to answer, please give the best answer you can. There are no 'right' or 'wrong' answers. Don't take too long over your replies; your immediate reaction to each question will probably be more accurate than a long thought-out response. It is important that you fill out the questionnaire on your own without input from anyone else.

Please would you mail the questionnaires back in the stamped return envelope as soon as possible.

It is not anticipated that participation in the study will involve any risk to you. However, if at any time during participation in this study you experience distress of any kind and want to talk to someone about your experience, please contact either the principal researcher, Alison Ogier-Price (364-2987 x.7988), or the project supervisor, Dr Roeline Kuijer (03 364 2987 x.3401) for advice regarding psychological assistance or other forms of assistance.

Thank you very much for your willingness to participate in this study.

Questions will be asked in several different formats

- Most of the time you will be asked to circle a number on a scale. For example:

    I consider my life to be happy   *Strongly disagree* - 1 2 3 4 ⑤ 6 7 - *Strongly agree*

- Sometimes you may be asked to pick a statement that best describes you. For example:

    C   I have more joy than sorrow in my life

    Ⓓ   I have much more joy than sorrow in my life

    E   My life is filled with joy

Research Demographics: Please fill in, mark appropriate box, or comment if unsure.

Age: ☐ years   Gender: Male ☐   Female ☐   Number of Children ☐

Education level completed: Some schooling ☐   School Cert ☐   Tertiary Cert/Degree ☐   Post-grad ☐

Living arrangement: Married/with partner ☐   Flatting ☐   Boarding ☐   Live alone ☐   (or Comment)

Employment: Retired ☐   Homemaker ☐   Student ☐   Full-time ☐   Part-time ☐ Unemployed ☐

Income: < 20,000 ☐ $21,000-40,000 ☐ $41,000-60,000 ☐ $61,000+ ☐

Nearest large town: Christchurch   Other _____

Town/Rural: Town ☐   Rural ☐

How many other courses have you attended at Community Education in the last 2 years?

Which courses? _____

Comment: _____

_____

Appendix E.   Pre- and Post-course Questionnaire Set

Section 1	(SHS)

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In General I consider myself:

    Not a very happy person - 1   2   3   4   5   6   7 - *A very happy person*

2. Compared to most of my peers, I consider myself:

    Less happy - 1   2   3   4   5   6   7 - *More happy*

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

    Not at all - 1   2   3   4   5   6   7 - *A great deal*

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

    Not at all - 1   2   3   4   5   6   7 - *A great deal*

Section 2	(FEQ)

1. **In general, how happy or unhappy do you usually feel? Circle the number next to the ONE statement that best describes your average happiness.**

10.	Extremely happy	(feeling ecstatic, joyous, fantastic!)
9.	Very happy	(feeling really good, elated!)
8.	Pretty happy	(spirits high, feeling good)
7.	Mildly happy	(feeling fairly good and somewhat cheerful
6.	Slightly happy	(just a bit above neutral)
5.	Neutral	(not particularly happy or unhappy)
4.	Slightly unhappy	(just a bit below neutral)
3.	Mildly unhappy	(just a bit low)
2.	Pretty unhappy	(somewhat 'blue', spirits down)
1.	Very unhappy	(depressed, spirits very low)

2. **Consider your emotions a moment further and answer the following:**

    On the average, what percent of the time do you feel happy?   _____ %

    What percent of the time do you feel unhappy?   _____ %

    What percent of the time do you feel neutral (neither happy nor unhappy)?   _____ %

    (Make sure that the three numbers add up to 100%)   ***Total: 100 %***

Section 3		**(SWLS)**

Below are five statements that you may agree or disagree with. Read each one and then circle the number using the 1-7 scale to the right of the statement that best describes how strongly you agree or disagree. All statements should have one selection circled.

*Strongly **disagree*** ⬇   ⬇ *Strongly **agree***

1. In most ways, my life is close to ideal   - 1 2 3 4 5 6 7 -

2. The conditions of my life are excellent   - 1 2 3 4 5 6 7 -

3. I am satisfied with my life   - 1 2 3 4 5 6 7 -

4. So far, I have gotten the important things I want in life   - 1 2 3 4 5 6 7 -

5. If I could live my life over, I would change almost nothing - 1 2 3 4 5 6 7 -

Section 4		**(AHI)**

Please read each group of statements carefully. Then pick the ONE statement in each group that best describes the way you have been feeling for the past week, including today. Be sure to read all of the statements in each group before making your choice by circling the letter next to it.

1	A	I have felt like a failure.
	B	I have not felt like a winner.
	C	I have felt like I have succeeded more than most people.
	D	As I look back on my life, all I see are victories.
	E	I have felt I am extraordinarily successful.
2	A	I have usually been in a bad mood
	B	I have usually been in a neutral mood
	C	I have usually been in a good mood
	D	I have usually been in a great mood
	E	I have usually been in an unbelievably great mood
3	A	When I was working, I paid more attention to what was going on around me than to what I was doing
	B	When I was working, I paid as much attention to what was going on around me as to what I was doing
	C	When I was working, I paid more attention to what I was doing than to what was going on around me
	D	When I was working, I rarely noticed what was going on around me
	E	When I was working, I paid so much attention to what I was doing that the outside world practically ceased to exist
4	A	My life did not have any purpose or meaning
	B	I did not know the purpose or meaning of my life

	C	I had a hint about my purpose in life
	D	I had a pretty good idea about the purpose or meaning of my life
	E	I had a very clear idea about the purpose or meaning of my life
5	A	I rarely got what I wanted
	B	Sometimes, I got what I wanted, and sometimes not
	C	Somewhat more often than not, I got what I wanted
	D	I usually got what I wanted
	E	I always got what I wanted
6	A	I had sorrow in my life
	B	I had neither sorrow nor joy in my life
	C	I had more joy than sorrow in my life
	D	I had much more joy than sorrow in my life
	E	My life was filled with joy
7	A	Most of the time I felt bored
	B	Most of the time I felt neither bored nor interested in what I was doing
	C	Most of the time I felt interested in what I was doing
	D	Most of the time I felt quite interested in what I was doing
	E	Most of the time I felt fascinated by what I was doing
8	A	I felt cut off from other people
	B	I felt neither close to nor cut off from other people
	C	I felt close to friends and family members
	D	I felt close to most people, even if I did not know them well
	E	I felt close to everyone in the world
9	A	By objective standards, I did poorly
	B	By objective standards, I did neither well nor poorly
	C	By objective standards, I did rather well
	D	By objective standards, I did quite well
	E	By objective standards, I did amazingly well
10	A	I was ashamed of myself
	B	I was not ashamed of myself
	C	I was proud of myself
	D	I was very proud of myself
	E	I was extraordinarily proud of myself
11	A	Time passed slowly during most of the things that I did
	B	Time passed quickly during some of the things that I did and slowly for other things
	C	Time passed quickly during most of the things that I did

	D	Time passed quickly during all of the things that I did
	E	Time passed so quickly during all of the things that I did that I did not even notice it
12	A	I felt that in the grand scheme of things, my existence may hurt the world
	B	I felt that my existence neither helps nor hurts the world
	C	I felt that my existence has a small but positive effect on the world
	D	I felt that my existence makes the world a better place
	E	I felt that my existence has a lasting, large, and positive impact on the world
13	A	I did not do most things very well
	B	I did okay at most things I was doing
	C	I did well at some things I was doing
	D	I did well at most things I was doing
	E	I did really well at whatever I was doing
14	A	I had little or no enthusiasm
	B	My enthusiasm level was neither high nor low
	C	I had a good amount of enthusiasm
	D	I felt enthusiastic doing almost everything
	E	I had so much enthusiasm that I felt I could do most anything
15	A	I did not like my work (paid or unpaid)
	B	I felt neutral about my work
	C	For the most part, I liked my work
	D	I really liked my work
	E	I truly loved my work
16	A	I was pessimistic about the future
	B	I was neither optimistic nor pessimistic about the future
	C	I felt somewhat optimistic about the future
	D	I felt quite optimistic about the future
	E	I felt extraordinarily optimistic about the future
17	A	I felt that I have accomplished little in life
	B	I felt that I have accomplished no more in life than most people
	C	I felt that I have accomplished somewhat more in life than most people
	D	I felt that I have accomplished more in life than most people
	E	I felt that I have accomplished a great deal more in my life than most people

18	A	I was unhappy with myself
	B	I was neither happy nor unhappy with myself - I was neutral
	C	I was happy with myself
	D	I was very happy with myself
	E	I could not have been any happier with myself
19	A	My skills were never challenged by the situations I encountered
	B	My skills were occasionally challenged by the situations I encountered
	C	My skills were sometimes challenged by the situations I encountered
	D	My skills were often challenged by the situations I encountered
	E	My skills were always challenged by the situations I encountered
20	A	I spent all of my time doing things that were unimportant
	B	I spent a lot of time doing things that were neither important nor unimportant
	C	I spent some of my time every day doing things that were important
	D	I spent most of my time every day doing things that were important
	E	I spent practically every moment every day doing things that were important
21	A	I felt that if I were keeping score in life, I would be behind
	B	I felt that if I were keeping score in life, I would be about even
	C	I felt that if I were keeping score in life, I would be somewhat ahead
	D	I felt that if I were keeping score in life, I would be ahead
	E	I felt that if I were keeping score in life, I would be far ahead
22	A	I experienced more pain than pleasure
	B	I experienced pain and pleasure in equal measure
	C	I experienced more pleasure than pain
	D	I experienced much more pleasure than pain
	E	My life was filled with pleasure
23	A	I did not enjoy my daily routine
	B	I felt neutral about my daily routine
	C	I liked my daily routine, but I was happy to get away from it
	D	I liked my daily routine so much that I rarely took breaks from it
	E	I liked my daily routine so much that I almost never took breaks from it
24	A	I felt that my life is a bad one
	B	I felt that my life is an OK one
	C	I felt that my life is a good one
	D	I felt that my life is a very good one
	E	I felt that my life is a wonderful one

Section 5 **(PAN)**

This list consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate number next to that word, using the scale from 1 to 5.

Indicate to what extent you have felt this way during the past 24 hours

	very slightly or not at all	a little	moderately	quite a bit	extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Excited	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

Section 6   **(CES-D)**

Everyone - no matter how happy they are - experiences other feelings from time to time. Consider each question and circle the letter that best describes how often you have felt this way over the PAST WEEK. *(All statements must have one selection.)*

	During the past week…	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)
1	I was bothered by things that usually don't bother me	A	B	C	D
2	I did not feel like eating; my appetite was poor	A	B	C	D
3	I felt that I could not shake off the blues even with help from my family and friends	A	B	C	D
4	I felt that I was not as good as other people	A	B	C	D
5	I had trouble keeping my mind on what I was doing	A	B	C	D
6	I felt depressed	A	B	C	D
7	I felt that everything I did was an effort	A	B	C	D
8	I felt hopeless about the future	A	B	C	D
9	I thought my life had been a failure	A	B	C	D
10	I felt fearful	A	B	C	D
11	My sleep was restless	A	B	C	D
12	I was unhappy	A	B	C	D
13	I talked less than usual	A	B	C	D
14	I felt lonely	A	B	C	D
15	People were unfriendly	A	B	C	D
16	I did not enjoy life	A	B	C	D
17	I had crying spells	A	B	C	D
18	I felt sad	A	B	C	D
19	I felt that people disliked me	A	B	C	D
20	I could not get "going"	A	B	C	D

Appendix F.   Post-course Cover Letter

Research Project: Questionnaire

Alison Ogier
Psychology Department
University of Canterbury
Private Bag 4800
Christchurch 8140
New Zealand

June 2006

I would like to thank you again for your willingness to participate in this study into happiness and subjective wellbeing. Your support is greatly appreciated and essential to the value of the research.

Attached is a questionnaire similar to the one you completed previously. Please would you complete the questionnaire by answering all of the questions according to the instructions. If you are unsure about how to answer, please give the best answer you can. There are no 'right' or 'wrong' answers. Don't take too long over your replies; your immediate reaction to each question will probably be more accurate than a long thought-out response. It is important that you fill out the questionnaire on your own without input from anyone else. It should take approximately 10 to 15 minutes to complete.

Please would you return the completed questionnaire in the enclosed stamped addressed envelope as soon as possible.

Just a reminder that in recognition of the value of your contribution to this research, on completion of the questionnaires, you will be entered into a draw to win one of two $50 vouchers for use at any store in Westfield Shopping Mall.

You may be assured of the complete confidentiality of data gathered in this investigation, with your responses to the questionnaires coded for anonymity. If you have any questions or concerns about this research, please contact Alison Ogier by email on ajo34@student.canterbury.ac.nz or by phone on 364-2987 x.7988.

Many thanks
Alison

Appendix G.   Follow-up Cover Letter

Research Project: FINAL Questionnaire

Alison Ogier

Psychology Department
University of Canterbury
P.Bag 4800
Christchurch 8140

September 2006

> **THIS IS THE FINAL QUESTIONNAIRE YOU ARE ASKED TO COMPLETE**
>
> **On return of this questionnaire, in recognition of your contribution to the research, you will be entered into the draw to win one of two $50 Westfield Mall Shopping Vouchers.**

I would like to thank you again for your willingness to participate in this study into happiness and subjective wellbeing. Your support is greatly appreciated and each and every response is essential to the value of the research.

Please would you answer the 5 questions below according to the instructions. If you are unsure about how to answer, please give the best answer you can, and go with your immediate reaction – there are no 'right' or 'wrong' answers. It is important that you answer the questions on your own without any input from anyone else. It should take no more than a few minutes to complete.

Again, you may be assured of the complete confidentiality of data gathered in this investigation, with your responses to questionnaires coded for anonymity.

Several participants have requested feedback on the results of this research and this will be provided in due course. Please feel free to make a comment on this sheet or email me on AlisonO@msn.com if you would like this information.

Please would you return the completed questionnaire in
the enclosed stamped addressed envelope as soon as
possible.

Many thanks

Alison

Appendix H.   Follow-up Questionnaire

Follow-up Questionnaire   (FEQ)

In general, how happy or unhappy do you usually feel?

Circle the number next to the ONE statement that best describes your average happiness.

- 10. Extremely happy   (feeling ecstatic, joyous, fantastic!)
- 9. Very happy   (feeling really good, elated!)
- 8. Pretty happy   (spirits high, feeling good)
- 7. Mildly happy   (feeling fairly good and somewhat cheerful
- 6. Slightly happy   (just a bit above neutral)
- 5. Neutral   (not particularly happy or unhappy)
- 4. Slightly unhappy (just a bit below neutral)
- 3. Mildly unhappy   (just a bit low)
- 2. Pretty unhappy   (somewhat 'blue', spirits down)
- 1. Very unhappy   (depressed, spirits very low)

(SHS)

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In General I consider myself:

    Not a very Happy Person   1   2   3   4   5   6   7   A very happy person

2. Compared to most of my peers, I consider myself:

    Less Happy   1   2   3   4   5   6   7   More Happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

    Not at all   1   2   3   4   5   6   7   A great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

    Not at all   1   2   3   4   5   6   7   A great deal

Comment:

Appendix I.   Experimental Group In-class Questionnaire

Brief Strengths Test

Think about how you have acted in the actual situations described below during the past month (four weeks). Please answer in terms of what you actually did. Read each one and then circle the number corresponding to your response to the statement.

		Never/ rarely	Occas- ionally	Half the time	Usually	Always
1	Think of actual situations in which you had the opportunity to do something that was novel or innovative. How frequently did you show CREATIVITY or INGENUITY in these situations?	1	2	3	4	5
2	Think of actual situations in which you had the opportunity to explore something new or to do something different. How frequently did you show CURIOSITY or INTEREST in these situations?	1	2	3	4	5
3	Think of actual situations in which you had a complex and important decision to make. How frequently did you show CRITICAL THINKING, OPEN-MINDEDNESS, or GOOD JUDGMENT in these situations?	1	2	3	4	5
4	Think of actual situations in which you had the opportunity to learn more about some topic, in or out of school. How frequently did you show LOVE OF LEARNING in these situations?	1	2	3	4	5
5	Think of actual situations in which you had the opportunity to offer advice to another person who needed it. How frequently did you show PERSPECTIVE or WISDOM in these situations?	1	2	3	4	5
6	Think of actual situations in which you experienced fear or threat. How frequently did you show BRAVERY or COURAGE in these situations?	1	2	3	4	5
7	Think of actual situations in which you faced a difficult and time-consuming task. How frequently did you show PERSEVERANCE, PERSISTENCE, DILIGENCE, or INDUSTRIOUSNESS in these situations?	1	2	3	4	5
8	Think of actual situations in which it was possible for you to present a false view of who you are or what had happened. How frequently did you show HONESTY or AUTHENTICITY in these situations?	1	2	3	4	5
9	Think of your everyday life. How frequently did you show ZEST or ENTHUSIASM when it was possible to do so?	1	2	3	4	5
10	Think of your everyday life. How frequently did you express your LOVE or ATTACHMENT to others (friends, family members) when it was possible to do so?	1	2	3	4	5

		Never/ rarely	Occas-ionally	Half the time	Usually	Always
11	Think of your everyday life. How frequently did you show KINDNESS or GENEROSITY to others when it was possible to do so?	1	2	3	4	5
12	Think of actual situations in which the motives of other people needed to be understood and responded to. How frequently did you show SOCIAL INTELLIGENCE or SOCIAL SKILLS in these situations?	1	2	3	4	5
13	Think of actual situations in which you were a member of a group that needed your help and loyalty. How frequently did you show TEAMWORK in these situations?	1	2	3	4	5
14	Think of actual situations in which you had some power or influence over two or more other people. How frequently did you show FAIRNESS in these situations?	1	2	3	4	5
15	Think of actual situations in which you were a member of a group that needed direction. How frequently did you show LEADERSHIP in these situations?	1	2	3	4	5
16	Think of actual situations in which you had been hurt by someone else. How frequently did you show FORGIVENESS or MERCY in these situations?	1	2	3	4	5
17	Think of your everyday life. How frequently did you show MODESTY or HUMILITY when it was possible to do so?	1	2	3	4	5
18	Think of actual situations in which you were tempted to do something that you might later regret. How frequently did you show PRUDENCE, DISCRETION, or CAUTION in these situations?	1	2	3	4	5
19	Think of actual situations in which you experienced wishes, desires, impulses, or emotions that you wished to control. How frequently did you show SELF-CONTROL or SELF-REGULATION in these situations?	1	2	3	4	5
20	Think of your everyday life. How frequently did you show APPRECIATION OF BEAUTY AND EXCELLENCE or AWE when it was possible to do so?	1	2	3	4	5
21	Think of actual situations in which someone else helped or benefited you. How frequently did you show GRATITUDE or THANKFULNESS?	1	2	3	4	5
22	Think of actual situations in which you experienced failure or a setback. How frequently did you show HOPE or OPTIMISM in these situations?	1	2	3	4	5
23	Think of your everyday life. How frequently did you show PLAYFULNESS or HUMOR when it was possible to do so?	1	2	3	4	5
24	Think of your everyday life. How frequently did you show RELIGIOUSNESS or SPIRITUALITY when it was possible to do so?	1	2	3	4	5

Appendix J.   Assumptions Testing at T1

N=84 Dep.Var.	Shapiro-Wilks W (p)	Levene (df=72) F (p)	Mean	SD	Skew	Kurtosis
Positive Affect Scales						
Subjective Happiness Scale	0.98 (p=0.29) EG: 0.97; CG: 0.97	5.39 (p=0.02)*	5.01	1.01	-0.20	-0.55
Fordyce Emot. Questionnaire Q1	0.81 (p=0.00)*** EG: 0.87; CG: 0.74	0.20 (p=0.66)	7.24	1.11	-1.50	3.37
Fordyce Emot. Questionnaire Q2a	0.92 (p=0.00)*** EG: 0.91; CG: 0.92	2.07 (p=0.15)	56.70	23.67	-0.46	-1.02
Satisfaction With Life Scale	0.95 (p=0.01) EG: 0.95; CG: 0.94	0.10 (p=0.75)	23.85	4.97	-0.46	-0.68
Authentic Happiness Inventory	0.98 (p=0.43) EG: 0.97; CG: 0.97	0.43 (p=0.51)	3.15	0.46	-0.05	-0.55
Pos. and Neg. Affect Sched.-Pos	0.97 (p=0.08) EG: 0.98; CG: 0.95	0.67 (p=0.42)	33.39	7.28	-0.41	-0.09
Negative Affect Scales						
Fordyce Emot. Questionnaire Q2b	0.84 (p=0.00)*** EG: 0.90; CG: 0.74	2.14 (p=0.15)	13.73	9.87	1.36	1.95
Pos. and Neg. Affect Sched.-Neg	0.86 (p=0.00)*** EG: 0.86; CG: 0.86	1.78 (p=0.19)	14.81	4.35	1.54	3.05
Center for Epid.Studies–Depressn	0.84 (p=0.00)*** EG: 0.84; CG: 0.90	7.02 (p=0.01)*	6.47	6.50	1.80	4.51

*Note: * = p<.05, ** = p<.01, *** = p<.001*

Appendix K.   Univariate Results (Additional) at T1-T2

K.1   Univariate Effects (Positive) for Group (at T1-T2)

The multivariate main effect of Group was not significant with p>0.05. The univariate effects for the main effect of Group are presented in Table 36, below.

Table 36: Univariate Effects (Positive) for Group (EG/CG)

Dependent Variable / Scale	EG N=33 Mean (SD)	CG N=41 Mean (SD)	Test Result
Subjective Happiness Scale	5.00 (0.96)	5.05 (0.84)	$F(1,72)=0.05$, ns
Fordyce Emotions Questionnaire Q1	7.27 (0.88)	7.29 (1.07)	$F(1,72)=0.01$, ns
Fordyce Emotions Questionnaire Q2a	57.95 (20.21	58.37 (20.09)	$F(1,72)=0.01$, ns
Satisfaction With Life Scale	24.11 (4.00)	23.51 (3.37)	$F(1,72)=0.48$, ns
Authentic Happiness Inventory	3.68 (0.51)	3.54 (0.43)	$F(1,72)=1.65$, ns
Pos. and Neg. Affect Schedule-Pos	34.29 (5.96)	31.21 (6.11)	$F(1,72)=4.75$, $p<.05$

ns=not significant

K.2   Interaction Graphs (Positive) (Additional) at T1-T2

The positive affect dependent variables Fordyce Emotions Questionnaire Q2a and Satisfaction With Life Scale were not significant for the interaction effects of Group and Time, or for the main effects of Group or Time. Graphs of the interaction of means by Group and Time are shown in Figure 13 and Figure 14, respectively.
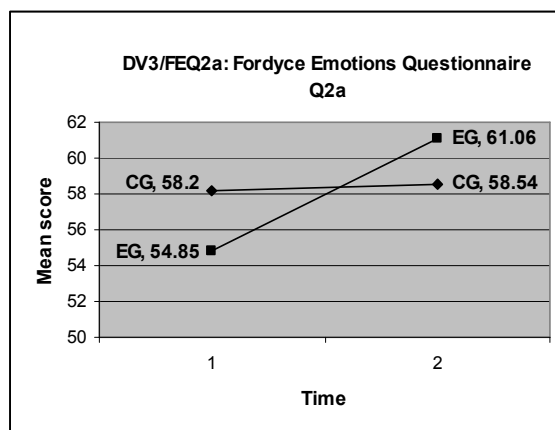

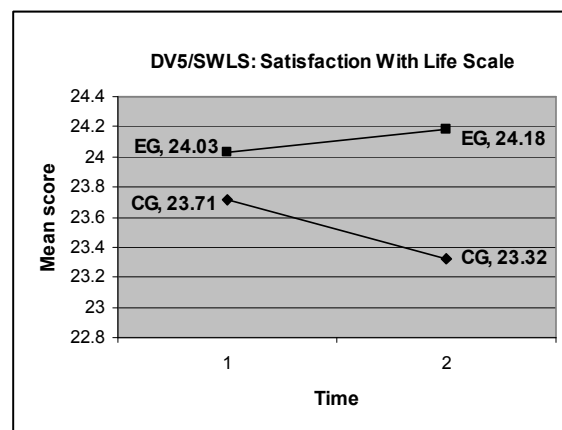*Figure 13: Fordyce Emotions Questionnaire Q2a T1-T2*

Figure 14: Satisfaction With Life Scale T1-T2

K.3 Univariate Effects (Negative) for Group (at T1-T2)

The multivariate main effect of Group (experimental and control) was not significant with p>0.05. The univariate effects for Group are presented in Table 37, below.

Table 37: Univariate Effects (Negative) for Group (EG/CG)

Dependent Variable / Scale	Result	
Fordyce Emotions Questionnaire Q2b	$F(1,72)=2.97$,	ns (p=0.09)
Positive and Negative Affect Schedule-Neg	$F(1,72)=1.11$,	ns
Center for Epidemiologic Studies–Depression	$F(1,72)=0.58$,	ns

ns=not significant

K.4 Univariate Effects (Negative) for Time (at T1-T2)

The multivariate main effect of Time (T1 and T2) was not significant with p>0.05. The univariate effects for Time are presented in Table 38, below.

Table 38: Univariate Effects (Negative) for Time (T1/T2)

Dependent Variable / Scale	Result	
Fordyce Emotions Questionnaire Q2b	$F(1,72)=0.15$,	ns
Positive and Negative Affect Schedule	$F(1,72)=0.20$,	ns
Center for Epidemiologic Studies–Depression	$F(1,72)=0.35$,	ns

ns=not significant

K.5 Interaction Graphs (Negative) (Additional) at T1-T2

The negative affect dependent variable Positive and Negative Affect Schedule-Neg was not significant for the interaction effect of Group and Time, or for the main effects of Group or Time. A graph of the interaction of means by Group and Time is shown in Figure 14, below.
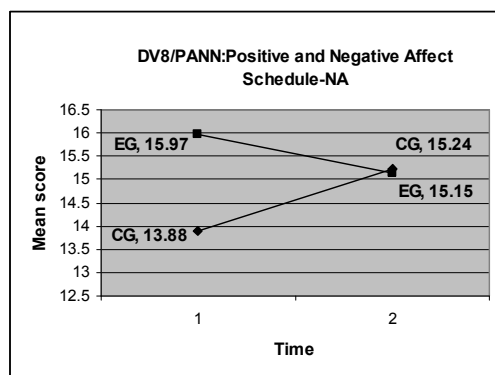

Figure 15: Pos. and Neg. Affect Schedule-Neg T1-T2

Appendix L. Univariate Results (Additional) at T1-T2-T3

L.1 Univariate Effects for Group (at T1-T2-T3)

The multivariate main effect of group was not significant with $p>0.05$. The univariate effects for Group (experimental and control) for each of the two positive dependent variables is presented in Table 39, below.

Table 39: Univariate Effects (Positive) for Group (EG/CG)

Dependent Variable / Scale	Test Result
Subjective Happiness Scale (Pos)	$F(1,63)=0.02$, ns
Fordyce Emotions Questionnaire Q1 (Pos)	$F(1,63)=0.38$, ns

ns=not significant

L.2 Univariate Effects for Time (T1-T2-T3)

The multivariate main effect of time was not significant with $p>0.05$. The univariate effects for Time (T1, T2, and T3) for each of the two positive dependent variables is presented in Table 40, below.

Table 40: Univariate Effects (Positive) for Time (T1-T2-T3)

Dependent Variable / Scale	Test Result
Subjective Happiness Scale (Pos)	$F(2,126)=2.35$, ns
Fordyce Emotions Questionnaire Q1 (Pos)	$F(2,126)=3.60$, $p<.05$

ns=not significant

Appendix M. Moderating Effects of Age Group (Additional)

M.1 Main Effect (Positive) for Age Group

The multivariate main effect of Age Group (Younger and Older) was not significant with $F(6,65)=0.13$, $p>0.05$. The univariate effects for Age Group are presented in Table 41, below.

Table 41: Univariate Effects (Positive) for Age Group

Dependent Variable / Scale	Test Result
Subjective Happiness Scale	$F(1,70)=0.01$, ns
Fordyce Emotions Questionnaire Q1	$F(1,70)=0.02$, ns
Fordyce Emotions Questionnaire Q2a	$F(1,70)=0.03$, ns
Satisfaction With Life Scale	$F(1,70)=0.40$, ns
Authentic Happiness Inventory	$F(1,70)=0.20$, ns
Positive and Negative Affect Schedule	$F(1,70)=0.00$, ns

ns=not significant

M.2 Interaction Effect (Positive) for Time and Age Group

The multivariate effect of Time (T1 and T2) and Age Group (Younger and Older) was not significant with $F(6,65)=0.31$, $p>0.05$. The univariate interaction effects of Time and Age Group are presented in Table 42, below.

Table 42: Univariate Interaction Effects (Positive) for Time and Age Group

Dependent Variable / Scale	Test Result
Subjective Happiness Scale	$F(1,70)=0.09$, ns
Fordyce Emotions Questionnaire Q1	$F(1,70)=0.08$, ns
Fordyce Emot. Questionnaire Q2a	$F(1,70)=0.08$, ns
Satisfaction With Life Scale	$F(1,70)=0.72$, ns
Authentic Happiness Inventory	$F(1,70)=0.43$, ns
Pos. and Neg. Affect Schedule-Pos	$F(1,70)=0.14$, ns

ns=not significant

M.3 Main Effect (Negative) for Age Group

The multivariate main effect of Age Group (Younger and Older) was not significant with $F(3,68)=0.72$, $p>0.05$. The univariate effects for Age Group are presented in Table 43, below.

Table 43: Univariate Effects (Negative) for Age Group

Dependent Variable / Scale	Test Result
Fordyce Emotions Questionnaire Q2b	$F(1,70)=1.24$, ns
Pos. and Neg. Affect Schedule-Neg	$F(1,70)=0.03$, ns
Center for Epid. Studies–Depression	$F(1,70)=1.25$, ns

ns=not significant

M.4   Interaction Effect (Negative) for Group and Age Group

The multivariate interaction effect of Group (experimental and control) and Age Group (Younger and Older) was not significant with $F(3,68)=0.27$, $p<0.05$. The univariate interaction effects for Group and Age Group are presented in Table 44, below.

Table 44: Univariate Interaction Effects (Negative) for Group and Age Group

Dependent Variable / Scale	Test Result
Fordyce Emotions Questionnaire Q2b	$F(1,70)=0.19$, ns
Pos. and Neg. Affect Schedule-Neg	$F(1,70)=0.14$, ns
Center for Epid. Studies–Depression	$F(1,70)=0.77$, ns

ns=not significant

M.5   Interaction Effect (Negative) for Time and Age Group

The multivariate interaction effect of Time (T1 and T2) and Age Group (Younger and Older) was not significant with $F(3,68)=1.64$, $p>0.05$. The univariate interaction effects for Time and Age Group are presented in Table 45, below.

Table 45: Univariate Interaction Effects (Negative) for Time and Age Group

Dependent Variable / Scale	Test Result
Fordyce Emotions Questionnaire Q2b	$F(1,70)=0.95$, ns
Pos. and Neg. Affect Schedule-Neg	$F(1,70)=2.92$, ns ($p=0.09$)
Center for Epid. Studies–Depression	$F(1,70)=0.00$, ns

ns=not significant

M.6   Interaction Effect (Negative) for Time, Group and Age Group

The multivariate interaction effect of Time (T1 and T2), Group (experimental and control) and Age Group (Younger and Older) was not significant with $F(3,68)=1.02$, $p>0.05$. The univariate interaction effects for Time, Group and Age Group are presented in Table 46, below.

Table 46: Univariate Interaction Effects (Negative) for Time, Group and Age Group

Dependent Variable / Scale	Test Result
Fordyce Emotions Questionnaire Q2b	$F(1,70)=0.66$, ns
Pos. and Neg. Affect Schedule-Neg	$F(1,70)=2.99$, ns (p=0.09)
Center for Epid. Studies–Depression	$F(1,70)=1.94$, ns

ns=not significant

Appendix N. Moderating Effects: Gender (Additional)

N.1 Interaction Effects (Positive) for Group and Gender

The multivariate effect of Group (experimental and control) and Gender (female and male) was not significant with $F(6,65)=1.85$, $p>0.05$. The univariate interaction effects for Group and Gender are presented in Table 47, below.

Table 47: Univariate Interaction Effects (Positive) for Group and Gender

Dependent Variable / Scale	Test Result	Group	Female *EG N=29 CG N=27* Mean (SD)	Male *EG N=4 CG N=14* Mean (SD)
Subjective Happiness Scale	$F(1,70)=0.07$, ns	EG	5.01 (0.95)	4.94 (1.22)
		CG	5.03 (0.77)	5.10 (0.98)
Fordyce Emot. Questionnaire Q1	$F(1,70)=1.53$, ns	EG	7.38 (0.79)	6.50 (1.22)
		CG	7.33 (0.82)	7.21 (1.46)
Fordyce Emot. Questionnaire Q2a	$F(1,70)=0.01$, ns	EG	59.14 (19.80)	49.38 (24.18)
		CG	61.30 (19.49)	52.71 (20.72)
Satisfaction With Life Scale	$F(1,70)=5.01$, $p<.05$	EG	24.64 (3.75)	20.25 (4.11)
		CG	23.30 (3.62)	23.93 (2.91)
Authentic Happiness Inventory	$F(1,70)=4.09$, $p<.05$	EG	3.71 (0.53)	3.46 (0.35)
		CG	3.43 (0.44)	3.75 (0.34)
Pos. and Neg. Affect Sched.-Pos	$F(1,70)=1.70$, ns	EG	34.40 (6.14)	33.50 (5.15)
		CG	29.85 (6.56)	33.82 (4.19)

ns=not significant

N.2 Interaction Effects (Positive) for Time and Gender

The multivariate effect of Time (T1 and T2) and Gender (female and male) was not significant with $F(6,65)=0.83$, $p>0.05$. The univariate interaction effects for Time and Gender are presented in Table 48, below.

Table 48: Univariate Interaction Effects (Positive) for Time and Gender

Dependent Variable / Scale	Test Result
Subjective Happiness Scale	$F(1,70)=0.07$, ns
Fordyce Emotions Questionnaire Q1	$F(1,70)=0.11$, ns
Fordyce Emot. Questionnaire Q2a	$F(1,70)=1.07$, ns
Satisfaction With Life Scale	$F(1,70)=1.71$, ns
Authentic Happiness Inventory	$F(1,70)=1.49$, ns
Pos. and Neg. Affect Schedule-Pos	$F(1,70)=0.34$, ns

ns=not significant

N.3 Univariate Interaction Effects (Positive) for Time, Group and Gender

The multivariate interaction effect of Time (T1 and T2), Group (experimental and control) and Gender (female and male) was not significant with $F(6,65)=1.33$, $p>0.05$. The univariate interaction effects are presented in Table 49, below.

Table 49: Univariate Interaction Effects (Positive) for Time, Group and Gender

Dependent Variable / Scale	Test Result
Subjective Happiness Scale	$F(1,70)=0.30$, ns
Fordyce Emotions Questionnaire Q1	$F(1,70)=0.09$, ns
Fordyce Emotions Questionnaire Q2a	$F(1,70)=0.02$, ns
Satisfaction With Life Scale	$F(1,70)=4.98$, $p<.05$
Authentic Happiness Inventory	$F(1,70)=0.24$, ns
Positive and Negative Affect Schedule-Pos	$F(1,70)=0.01$, ns

ns=not significant

N.4 Univariate Effects (Negative) for Gender

The multivariate main effect of Gender was not significant with $F(3,68)=1.49$, $p>0.05$. The univariate interaction effects are presented in Table 50, below.

Table 50: Univariate Effects (Negative) for Gender

Dependent Variable / Scale	Test Result
Fordyce Emotions Questionnaire Q2b	$F(1,70)=1.12$, ns
Pos. and Neg. Affect Schedule-Neg	$F(1,70)=1.70$, ns
Center for Epid. Studies–Depression	$F(1,70)=4.60$, $p<.05$

ns=not significant

N.5 Univariate Interaction Effects (Negative) for Group and Gender

The multivariate interaction effect of Group (experimental and control) and Gender (female and male) was not significant with $F(9,62)=1.26$, $p>0.05$. The univariate interaction effects for Group and Gender for each dependent variable can be seen in Table 51, below.

Table 51: Univariate Interaction Effects (Negative) for Group and Gender

Dependent Variable / Scale	Test Result
Fordyce Emotions Questionnaire Q2b (Neg)	$F(1,70)=0.36$, ns
Positive and Negative Affect Schedule (Neg)	$F(1,70)=0.43$, ns
Center for Epid. Studies–Depression (Neg)	$F(1,70)=2.20$, ns

ns=not significant